

5. DESIGN & DEVELOPMENT OF SLIPRINGS

Problem Statement:

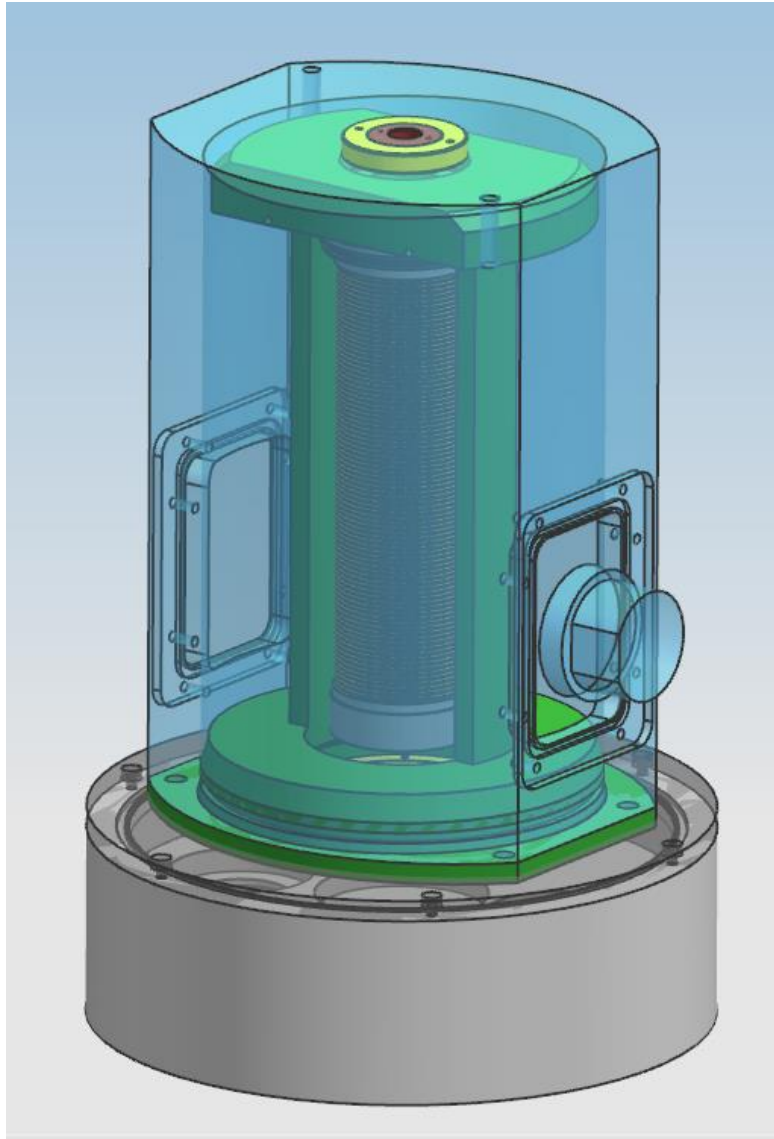
While scanning the market for opportunities to expand and diversify, our Group Company Legend Technologies was selected by Vikram Sarabhai Space Centre, ISRO for the licensed production of precision sliprings to meet their requirements. A technology transfer agreement was concluded between ISRO & Legend Technologies in June 2000. It is to be however noted that Legend technologies is the only company to whom VSSC has so far transferred its technology in this field.

Scope of Work:

In order to continuously improve its technology and extend its range of products we unambiguously decided to support our Group Company in carrying out innovation in Sliprings.

Challenges:

- Based on different applications we developed sliprings of various sizes and channels to meet the customer requirements.
- Earlier sliprings were made of Carbon brushes. Due to very high wear & tear rate, we innovatively developed brushes made up of Berillium-Copper with Gold plating which proved to be highly efficient in reducing the wear property.
- Sliprings had to be designed & developed to work under extreme conditions effectively.
- The interface was designed to have a high performance efficiency to transmit the movement & electrical power and signals in order to ensure minimum losses in mechanism.
- The length of the slipring currently used is 300 mm with 57 channels. We are effectively working towards decreasing the sliprings length to 100 mm with 70 channels.



Designed Slip ring

Execution Strategy:

- Detailed study of the AWG standards & working of the slipring was carried out.
- Regular discussions were held with customers on the required outputs to make it effectively work in extreme conditions.
- Electrical Isolational Test, Continuity test, Vibrational test, Insulation Test, Line resistance & Contact Noise Test, Power & Temperature Rise Test and Switching Spike Test were carried out for the slipring.
- Geometrical tolerances upto a minimum of 5 microns was maintained in order to achieve smooth and stress free operations of slipring.

Value Added:

- Research & Development was carried which ensured that sliprings developed by us would incorporate the latest technology & match the best in the world.
- Indigenisation & development of these Sliprings confirmed that our Group Company-- Legend Technologies remained the leader in delivering sliprings to the various industry segments in India.



Manufactured Slip ring by Group Company-Legend Technologies