

**TEST FACILITIES AT R&D BEML LIMITED, KGF**

**I. STRUCTURAL ENGINEERING LABORATORY:**

**For Fatigue/Performance Testing of Structures/ Components:**

Laboratory is equipped with 5 nos of 500 kN (Different strokes) and 1 no. of 1500 kN fatigue rated hydraulic linear actuators with HSM and 2 nos of Hydraulic power pack of 230 lpm/210 bar capacity. The actuators are operated with PC based 8 channel actuator controller.

1. Fatigue testing of structures (For example: Chassis, Metro bogie frame) with static strain measurement
2. Endurance testing of structural components like Mounting cushions, Springs, Air craft lifting slings etc
3. **ROPS (Roll Over Protective Structures) testing** as per ISO 3471 -2008 for Earth Moving machinery cabin.
4. **FOPS (Falling Object protective structures) testing** as per ISO 3449- 2005 for Earth Moving machinery cabin.

**Note:** Test facilities at sl.no. 3 & 4 are accredited in accordance with the standard, ISO 17025-2017 by NABL, New Delhi. Certificate number: TC-5705

Scan QR code for NABL Scope of Accreditation



**II. MATERIALS SCIENCE LABORATORY:**

**Laboratory is equipped with the following instruments for Metallography and Spectrometry**

1. **Hardness Test:** Brinell Hardness (HBW), Micro Vickers Hardness (HV), Rockwell Hardness (HRBW & HRC) as per IS standards.
2. **Optical emission spectrometer – CCD base** – 41 elements in metal sample can be determined as per IS and ASTM standards

3. **Carbon and Sulphur determinator** – Range: 0 to 99.9% as per ASTM standards

4. **Image analyser** for finding out Retained austenite, inclusion rating, grain size of metals, coating thickness of metallic and non-metallic materials.

5. **Fourier Transform Infrared Spectrometer (FTIR)**: Identification of rubbers, including thermoplastic elastomers, either in the raw state or in the form of vulcanized or unvulcanized mixes

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### III. FLUID POWER LABORATORY:

Laboratory is equipped with two different capacities of hydraulic tank (1000 litres and 2000 litres) and different hydraulic pump capacities (Maximum flow: 600 lpm) for testing the following aggregates.

1. Gear pumps up to 210 bar, 600 lpm and 2500 rpm
2. Control valves up to 320 bar and 600 lpm
3. Hydraulic cylinders up to 50 tons capacity

### IV. POWERLINE LABORATORY:

For testing of following Powerline aggregates:

1. **Axles** (one input and two outputs) with T configuration  
Range: 350 kW and Output speeds up to 300 rpm.

#### Types of tests that can be conducted

- a) Load testing
- b) Endurance testing
- c) Brake performance

Possible to record / monitor data like Speeds, Torque, Oil temperature, Pressures 36 channels.

2. **Transmission** (Mechanical gear box, hydro shift, Power shift, Automatic gear shifting) with one input and one output **in-line** can be tested.

**Capacity:** 100 kW to 500 kW with transmission output speeds ranging from 50 rpm to 3000rpm.

Types of tests that can be conducted

- a) Load testing
- b) Endurance testing
- c) Modulation performance
- d) Dynamic / Cyclic load testing with inertial simulation

Possible to record / monitor data like Speeds, Torque, Oil temperature, Pressures  
36 channels

### Contact Details:

#### RESEARCH AND DEVELOPMENT DIVISION

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#### HYDRAULIC & POWERLINE DIVISION

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## TEST FACILITIES AT BEML LIMITED, MYSORE

BEML Mysore Complex is extending the following test facilities available at Central Test Laboratory to external customers along with Engine Testing on Dynamometer upto 700 KW Engines:

- a) Dimensional Metrology
- b) Hardness Test: Brinnell, Rockwell, Vickers (BHN, HRC, HRB, HV..)
- c) Chemical analysis in Emission Spectrometer (Ferrous & Non-Ferrous Metals)
- d) Dimensional Inspection on CMM

### **Contact Details:**

#### **TRUCK DIVISION**

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## TEST FACILITIES AT OTHER BEML DIVISIONS

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