SEQ200

STATIC AND DYNAMIC BALANCING STUDY UNIT

Experimental capabilities

- **Static balancing concept**
- **Comparison of the balancing effects / static unbalance / dynamic .**
- **Effect of weight distribution along a shaft**
- **Measurement of dynamic loads on the bearings as a function of the angle of the shaft**

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SEQ200

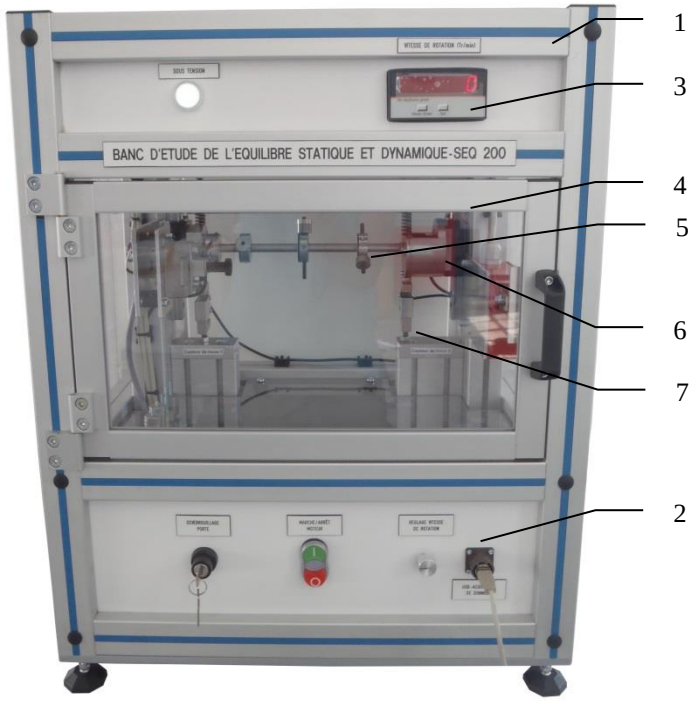
Operating principle

The SEQ 200 bench allows the study of the concepts of balancing of shafts in rotation around their axis.
The shaft studied has 3 discs each equipped with 2 threaded rods allowing to integrate flyweights.

According to the angular configuration of each disc and the flyweights in place on each one, the user has the possibility to define the static balancing angle of the shaft as well as the flyweights to be added to compensate for the static imbalance.
Once this static balancing is achieved , the user finds that its shaft has an angular equilibrium position infinite translating the balance "perfect"
He then proceeds to the initiation of the shaft drive motor and finds vibration.
These vibrations reflect the dynamic unbalance of the shaft
The user then directly visualizes the difference between static balancing and dynamic balancing concepts.

The system is fully instrumented. The setting equation of the shaft and the reported point masses can then be simulated (numerical analysis model provided) and confronted to the measurements performed on the machine.
These measures are available on USB port through integrated data acquisition card.

Illustrations



Technical details

1. Aluminium profile chassis on 4 feet anti-vibration dampers
2. Machine control panel - pushbuttons on / off motor door opening - the speed setting potentiometer - Connect USB linked to the bench acquisition card
3. Display of the shaft rotation speed
4. Door opening secured with access control.
5. Flyweight holder disc (* 3) - Graduated angular orientation every 10° - longitudinal position marked in mm
6. Angle sensor - Analog voltage supplied to the acquisition card.
7. 2 vertical force sensors gauge bridge (1 at each end of the shaft). These sensors are used to measure the dynamic effects of imbalance.

Services required

- Electrical supply : 230 Vac – 50 Hz – 6 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 700 x 600 x 750
- weight (Kg): 65

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

Documentation

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Software DAQ
- Certificate of conformity CE

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