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Product Name :

Whirling of Shaft Apparatus

Product Code :

SLE/MCE/81



Science Lab
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Description :

Whirling of Shaft Apparatus (Product Code: SLE/MCE/81) is a rotor dynamics trainer used to find the critical (whirling) speeds and mode shapes of slender rotating shafts in mechanical engineering laboratories. Six high-strength steel rotor shafts of 3, 6 and 7 mm diameter and 600or 900 mm length are driven by a 0.37 kW adjustable-speed motor up to 6000 rpm behind a transparent protective cover. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**,an OEM manufacturer of engineering lab equipment in India, at its own factory in Ambala.

Specifications

Parameter	Detail
Rotor shafts	6, high-strength steel
Shaft diameters	3 mm, 6 mm, 7 mm
Shaft lengths	600 mm, 900 mm
Other listed data	Diameter 80 mm; weight 1 kg
Experiment variables	Bearing spacing and shaft diameter; mode shapes of continuous rotor shafts
Motor	0.37 kW, adjustable speed, digital display, potentiometer adjustment, 2 preselectable rotational speeds
Speed range	0–6000 min?¹ (rpm)
Guard	Transparent protective cover for clear observation
Dimensions	1400 x 600 x 800 mm
Weight	85 kg
Power supply	230 V, 50 Hz, 1 phase; or 230 V, 60 Hz, 1 phase; or 120 V, 60 Hz, 1 phase
Product code	SLE/MCE/81
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM
Country of origin	India (made in Ambala, Haryana)

What Is the Whirling of Shaft Apparatus Used For?

Every slender shaft has speeds at which it bows outward and whirls, because the running speed coincides with a natural frequency of transverse vibration. Students fit a rotor shaft, raise the motor speed slowly with the potentiometers, and note on the digital display the speed at which the shaft visibly whirls, then compare it with the value calculated from shaft stiffness, mass and support conditions.

Repeating the run with the 3, 6 and 7 mm shafts, the 600 and 900 mm lengths and different bearing spacing shows how diameter, length and support position move the critical speed, while highe nake it qui critica rly

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