

## DYNAMIC BALANCING OF LARGE ROTORS: A CASE STUDY

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Proper balancing of impellers of fans and pumps is necessary to ensure long life of the bearings. Balancing a newly-fabricated rotor to ensure smooth running is a frequent problem in the local industry. Dynamic balancing invariably requires two-plane balancing. This could be achieved by one of two methods, namely, balancing in one plane at a time or balancing in two planes simultaneously. Both these methods involve trial and error procedure with expensive electronic equipment. Further, these conventional balancing machines are used only for mass-produced shafts and rotors.

Dynamic balancing of a large impeller of an exhaust gas fan (1.80 m diameter), fabricated at Puttalam Cement Works, was achieved using a locally constructed balancing machine and a stroboscope having contactor facility.

### References :

1. Maxwell, R. L. (1960) Kinematics and dynamics of machinery. Prentice Hall International Inc., Chapter 18, pp. 336-356.
2. Den Hartog. (1956) 4th edition, Mechanical Vibrations. McGraw Hill Book Co., Chapter 6. pp. 242-243.
3. Thearle, E. L. (1934) Dynamic balancing of rotating machinery in the field. Trans. A.S.M.E. Vol. 56, pp. 745-763.
4. Mahalinga Iyer, R. & Jayasuria, S. (1979) Balancing of a large impeller at the Puttalam Cement Works. Dept of Mech. Engineering Internal report ME/TR/79/1.