



**National
Aerospace
Laboratories**

Class RESTRICTED

No. of copies 15

Title EXPERIMENTAL EVALUATION OF STATIC STIFFNESS OF
CYLINDRICAL TYPE OF SQUEEZE FILM DAMPER RINGS

Author/s
V. ARUN KUMAR , ANTONY MICHAEL
U. P. SANKUNNI , M. ANANDA

Division PROPULSION

NAL Project No. PR-0-180

Document No. PD - PR - 9326

Date of issue JULY, 1993

Contents **Pages** **Figures** **Tables** **References**

External Participation NIL

Sponsor GAS TURBINE RESEARCH ESTABLISHMENT, BANGALORE.

Approval  HEAD PROPULSION DIVISION

Remarks

Keywords DAMPER RINGS , CYLINDRICAL TYPE , SQUEEZE FILM
STATIC STIFFNESS

Abstract

Squeeze film dampers which have become an extremely important component in any high speed turbomachinery needs a careful indepth study from the point of view of the support characteristics. Cylindrical type of squeeze film dampers which have become very popular from the point of view of their capability for providing static stiffness are being evaluated in terms of quantitative value of static stiffness in a rig built for the purpose. The details of the versatile static test rig facilitating the loading of the damper ring upto 5000- N in the bearing plane, the related instrumentation and the experiments carried out are discussed in this document. The static stiffness of a particular damper ring was obtained using the test set up.