

**GOVERNMENT OF INDIA  
MINISTRY OF DEFENCE  
RESEARCH AND DEVELOPMENT ORGANISATION  
DIRECTORATE OF AERONAUTICS**

**TYPE APPROVAL No : 160**

ISSUED TO : HINDUSTAN AERONAUTICS LIMITED  
KORAPUT DIVISION

FOR : CAST IRON XM SEALING RINGS

CO-ORDINATED BY : CRE (KORAPUT)

This is to certify that Cast Iron XM sealing rings developed by M/s. Hindustan Aeronautics Ltd, Koraput Division and conforming to USSR Technical Instruction 37M-123, MTY-71 & M985 have satisfactorily completed test requirements laid down by the Directorate of Aeronautics.

2. **BASIS FOR APPROVAL :**

- (a) Conformity of chemical composition of virgin material required for casting as laid down in Appendix I.
  - (b) Conformity of chemical composition of cast iron grade XM as laid down in Appendix II.
  - (c) Satisfactory compliance of casting processes as per the Russian instruction M-985.
  - (d) Satisfactory completion of the test schedule laid down by the Chief Resident Engineer (Koraput), Directorate of Aeronautics as per Appendix III.
  - (e) Satisfactory condition of the sealing rings after prolong test on an engine.
4. This approval is contingent upon the quality control aspects of bulk production being cleared by DTD&P(Air), Ministry of Defence, New Delhi.
5. Prior agreement of Directorate of Aeronautics will have to be obtained if this approval is transferred to any other agency or if any change in type record as contained in appendices (i) (ii) and (iii) are affected.

Encl : Appendix I to IV

No. : AERO/RD-132/144/5

Date : 17 Nov75



( VIVEK R. SINHA )  
Director of Aeronautics