

STP 1548

Bearing Steel Technologies: 9th Volume, Advances in Rolling Contact Fatigue Strength Testing and Related Substitute Technologies

Table of Contents

Overview

Rolling Contact Fatigue Process and Related Test Methods

Rolling Contact Fatigue Testing, Bearing Life Prediction, and Steel Properties—*T. B. Lund*

Evaluation of Repaired Gas Turbine Engine Bearings Demonstrates Absence of Subsurface Fatigue Propagation in Appropriately Designed Applications—*O. Beer, E. Streit, P. Mirring, J. Brock*

Structured Approach to Material Testing Ensures Reliable Introduction of New Technologies: Advances in Rolling Contact Fatigue Strength Testing and Related Substitute Technologies—*E. Streit, P. Mirring, J. Brock*

Rolling Contact Fatigue Strength Testing and Material Developments in Aerospace Bearings—*A Retrospective Analysis—M.A. Ragen, G.A. Zimmerman*

Service Life Testing of Components with Defects in the Rolling Contact Fatigue Zone—*C. Tarawneh, L.W. Koester, A.J. Fuller, B.M. Wilson, J.A. Turner*

Near-race Ultrasonic Detection of Subsurface Defects in Bearing Rings—*L.W. Koester, C. Zuhlke, D. Alexander, A.J. Fuller, B.M. Wilson, J.A. Turner*

Steel Cleanliness and Bearing Life—*W. Trojahn, S. Rösch*

Material Quality Related Rolling Contact Fatigue Testing

Rolling Contact Fatigue Evaluation of Materials Using NTN-SNR FB2 Test Rig—
A Useful Piece of Equipment for the Qualification of Steels and Steelmakers and for Research—
C. Sidoroff, D. Girodin, P. Dierickx, G. Dudragne

Rolling Contact Fatigue Testing of Stainless Steel and Cobalt-based Components
Using Water as the Lubricant—*M.Y. Sherif, B. Han, L. Kahlman*

Structural Testing as a Substitute to Contact Fatigue Testing Gigacycle Fatigue: A New Tool for
Exploring Bearing Steel—*C. Bathias*

Rotating Beam Testing of Bearing Steels—An Effective Rolling Contact Fatigue
Test Complement—*K. Ryden, T.B. Lund*

Rolling Contact and Compression-Torsion Fatigue of 52100 Steel with Special
Regard to Carbide Distribution—*K. Burkart, H. Bomas, R. Schroeder, H.-W. Zoch*

Development of Ultrasonic Torsional Fatigue Tester to Evaluate Rolling Bearing Steels—
N. Sakanaka, Y. Matsubara, Y. Shimamura, H. Ishii

Substitute RCF Metallurgical Test Methods

Improvement in Efficiency of Ultrasonic Tests for the Macroscopic Inclusions
Evaluation—*Y. Aoyama, I. Takasu, Y. Unigame*

Advanced Methods for Assessing the Quality of Bearing Steels—*P.F. Morris, S. Carey*

Material Response Analysis and Rolling Contact Fatigue

Raceway Grooving: A Tool for Monitoring Microstructural Changes—*J.-E. Andersson,
G. Wicks, P.L. Olund*

Comparison of the Microstructural Changes and X-ray Diffraction Peak Width
Decrease during Rolling Contact Fatigue in Martensitic Microstructures—*J. Gegner, W. Nierlich*

Material Response Bearing Testing Under Vibration Loading—*W. Nierlich, J. Gegner*

Metal Physics and Rolling Contact Fatigue Testing—*R.H. Vegter, J.T. Slycke*

Statistics of Rolling Contact Fatigue Testing and Advances in Modelling

Rolling Contact Fatigue in Bearings: Phenomenology and Modelling Techniques—
P.E. Rivera-Díaz-del-Castillo

Monte Carlo Comparison of Weibull Two and Three Parameters in the Context of the
Statistical Analysis of Rolling Bearings Fatigue Testing—*S. Blachère, A. Gabelli*

Influence of Fiber Flow on Rolling Contact Fatigue Life: Model Validation for Non-Metallic
Inclusion—*M. Meheux, A. Stienon, A. Fazekas, A. Vincent, G. Baudry*

Author Index

Subject Index