

FRICTION AND LUBRICATION IN METAL PROCESSING

F. F. Ling et al (Ed.)

The American Society of Mechanical Engineers, 1966.

Contents

Opening Remarks

A Survey on Friction and Lubrication in Metal Processing

R. L. Whiteley viii

Basic Phenomena of Friction and Lubrication

Friction with Liquid Lubricants in Plastic Compression

T. Sata, D. Lee and W. A. Backofen 1

Dry Friction in Hot Metalworking

J. A. Schey 20

Friction and Lubrication at Extreme Pressures

M. B. Peterson and F. F. Ling 39

PlastoHydrodynamic Lubrication

H. S. Cheng 69

Compatibility Criteria for Sliding Metals

E. Rabinowicz 90

Process Aspects of Friction and Lubrication

Friction in the cold Rolling of Steel Strip

W. L. Roberts 103

Lubrication in Metalworking Under High Fluid Pressure

A. Bobrowsky and E. A. Stack 122

Experimental Study on the Minimum Thickness in Reduced Cold Rolling of Steel

K. Takahashi, K. Nakajima and K. Murata 137

Lubrication as a Parameter in the Extrusion of Metals

I. Perlmutter, V. DePierre and C. M. Pierce 147

Special Lubricants and Lubrication Methods

Development of Steel Extrusion with Glass Lubricant

J. Sejournet 162

Solid Lubricants for High Temperature Metalworking

H. E. Sliney and E. E. Bisson 185

Metal Oxides for High Temperature Lubrication

A. T. Male 200

Some Observations on the Wear and Lubrication of Grinding Wheels

R. S. Hohn 209

Effects of Conventional and New Types of Cutting Fluids for Machining Aerospace Materials

E. K. Henriksen and P. R. Arzt 234

New Lubricants for the Heat Resistant Alloys

R. W. Roberts and R. S. Owens 244

Ring Rolling of Titanium Tubing

E. D. Dilling 256

Errata 263

General Discussion 267

Panel Forum and Summation 289