



A Product of the
Cooperative Engineering Program

SAE J1195 MAR86

Cylinder Rod Wiper Seal Ingression Test

**SAE Recommended Practice
Reaffirmed March 1986**

**S. A. E.
LIBRARY**

CANCELLED



*This standard is indexed
in the Standards Search Database*

SAE GLOBAL MOBILITY DATABASE

**No part of this publication may be reproduced in any form,
in an electronic retrieval system or otherwise, without the
prior written permission of the publisher.**

Copyright 1986 Society of Automotive Engineers, Inc.

Full document details: SAE J1195_199308

AVA **Documents**
Document Sharing Hub

RATIONALE:

Not applicable.

RELATIONSHIP OF SAE STANDARD TO ISO STANDARD:

Not applicable.

REFERENCE SECTION:

ANSI B93.19-1972

SAE ARP 785, Procedure for the Determination of Particulate Contamination in Hydraulic Fluids by the Control Filter Gravimetric Procedure

APPLICATION:

This SAE Recommended Practice provides a method for determining the capability of a wiper seal used on hydraulic cylinders, to withstand cyclic movement of the sealing surface in a contaminated environment and restrict the passage of particulate contaminant under conditions of zero side load.

COMMITTEE COMPOSITION:

DEVELOPED BY SUBCOMMITTEE 4, HYDRAULIC FLUID POWER SYSTEMS AND COMPONENTS:

R. B. Janvrin, Fluid Controls Inc., Easley, SC - Chairman
W. L. Snyder, Deere & Co., Waterloo, IA - Vice Chairman
H. P. Barthe, Schroeder Brothers Corp., McKees Rocks, PA
C. L. Brundidge, Eaton Corp., Eden Prairie, MN
J. Burt, Shamban Seal Division, Fort Wayne, IN
J. F. Carlin, Cessna Aircraft Co., Hutchinson, KS
C. A. Caulpetzer, Texas Hydraulics, Inc., Athens, TN
P. K. Chatterjea, Dresser Industries, Libertyville, IL
W. L. Chichester, Clark Material System Technology Co., Battle Creek, MI
J. P. Fairbairn, Koehring Benton Harbor, Benton Harbor, MI
E. C. Fitch Jr., Oklahoma State University, Stillwater, OK
J. R. Frahm, Ford Motor Co., Troy, MI
W. F. Heilman, Allis-Chalmers Corp., Matteson, IL
W. A. Hertel, Parker-Hannifin Corp., Cleveland, OH
M. Krazemien, Shamban Seal Division, Fort Wayne, IN
D. J. MacIntosh, Sundstrand Corp., Ames, IA
V. Nanda, Sperry Vickers, Troy, MI
J. T. Parrett, AMCA International Corp., Benton Harbor, MI
G. B. Randall, Harrison, MI
S. D. Royle, Parker Hannifin, Elyria, OH
R. E. Schwary, Wooster, OH
S. F. Stockwell, Joppatowne, MD
D. D. Straight, Minneapolis, MN
L. D. Strantz, Dresser Industries, Peoria, IL
G. L. Strouse, Greene, Tweed & Co., Inc., North Wales, PA
R. W. White, Caterpillar Tractor Co., Joliet, IL
J. L. Zagotta, J. I. Case Co., Tenneco Inc., Hinsdale, IL
W. F. Zoller, Double A Products Co., Manchester, MI

SPONSORED BY THE SAE OFF-ROAD MACHINERY TECHNICAL COMMITTEE:

W. L. Black, Clark Michigan Co., Buchanan, MI - Chairman
G. C. Randall, Ford Motor Co., Troy, MI - Vice Chairman
G. R. Bailey, Bailey Marketing Inc., Crystal Lake, IL
W. F. Busbey, Caterpillar Tractor Co., Decatur, IL
D. G. Castine, Trojan Industries, Inc., Batavia, NY
J. B. Codlin, Springfield, IL
C. T. Crawshaw, Aurora, IL
W. L. Daniels Sr., B. F. Goodrich Co., Bloomington, IN
D. W. Driscoll, Cummins Engine Co., Inc., Columbus, IN
G. W. Dudley, Caterpillar Tractor Co., Peoria, IL
B. Gill, American Honda Motor Co., Inc., Gardena, CA
F. A. Green, GMC, La Grange, IL
W. C. Jackson, Evans, Charles & Associates, Inc., Las Cruces, NM
R. B. Janvrin, Fluid Controls Inc., Easley, SC
A. D. Lewis, Sparta, NJ
L. R. McLean, Ford Motor Co., Troy, MI
L. E. Miller, Davenport, IA
M. E. Moore, Caterpillar Tractor Co., Peoria, IL
R. J. Nelissen, John Deere Dubuque Works, Dubuque, IA
D. Oldenburg, Caterpillar Tractor Co., Aurora, IL
J. E. Page, Harnischfeger Corporation, Escanaba, MI
J. T. Parrett, St. Joseph, MI
S. P. Pertzsch, Harley-Davidson Motor Co., Milwaukee, WI
P. D. Redenbarger, Flotec Inc., Indianapolis, IN
G. H. Ritterbusch, Caterpillar Tractor Co., Peoria, IL
R. G. Rumpf, Dresser Industries, Peoria, IL
G. A. Stangl, Charles Machine Works, Inc., Perry, OK
D. R. Thomas, Dresser Industries Inc., Peoria, IL



Documents

Document Sharing Hub

CYLINDER ROD WIPER SEAL INGRESSION TEST

INTRODUCTION: In fluid power systems, a hydraulic cylinder wiper seal is required to restrict the passage of particulate contaminant from the external environment into annular clearance spaces exposed to the environment. The configuration and materials used in the design of the wiper seal are critical factors influencing its function. The service life of a wiper seal is an important parameter in its application.

1. **SCOPE:** To provide a method for determining the capability of a wiper seal used on hydraulic cylinders, to withstand cyclic movement of the sealing surface in a contaminated environment and restrict the passage of particulate contaminant under conditions of zero side load.
2. **PURPOSE:** To verify whether or not a wiper seal will exhibit a given service life in a contaminated environment and maintain its capability of restricting the passage of particulate contaminant.
3. **DEFINITIONS:**
 - 3.1 **Cycle:** One full extension and one full retraction of the cylinder rod.
 - 3.2 **Cycling Distance:** The total distance traveled by the cylinder rod in completing one cycle multiplied by the accumulated cycles.
 - 3.3 **Service Life:** The cycling distance during which the wiper seal is capable of maintaining a given performance under specified operating and environmental conditions.

SAE Technical Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.