

IEEE Recommended Practice for the Repair and Rewinding of Motors for the Petroleum and Chemical Industry

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Sponsor

Petroleum and Chemical Industry Committee of the
IEEE Industry Applications Society
and the Electric Machinery Committee of the
IEEE Power Engineering Society

Approved May 31, 1990

IEEE Standards Board

Abstract: IEEE Std 1068-1990, *IEEE Recommended Practice for the Repair and Rewinding of Motors for the Petroleum and Chemical Industry*, is a reference document for owners of motors that need repair as well as for owners and operators of establishments that offer motor repair services. The use of this recommended practice is expected to result in higher-quality, more cost-effective, and timely repairs. It also provides guidelines for evaluating repairs and facilities.
Keywords: Motors, repair and rewinding of; horizontal motors; vertical motors.

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Foreword

(This Foreword is not a part of IEEE Std 1068-1990, IEEE Recommended Practice for the Repair and Rewinding of Motors for the Petroleum and Chemical Industry.)

This recommended practice was conceived at the Petroleum and Chemical Industry Conference held in September 1984 in San Francisco, following a panel discussion on motor repair. The Project Authorization Request was submitted September 26, 1984, and approved by the IEEE Standards Board on December 13, 1984. The project was sponsored jointly by the Petroleum and Chemical Industry Committee (PCIC) of the Industry Applications Society and the Electric Machinery Committee (EMC)* of the Power Engineering Society. The first ballot was mailed out in June 1989. Although the required affirmative votes were received and negative ballots were resolved, it was felt that a rebalot was in order, and the second ballot was mailed in November 1989.

The IEEE Motor Repair and Rewind Working Group, which had members from both the PCIC and the EMC, had the following membership:

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Contents

SECTION	PAGE
1. Introduction	7
1.1 Purpose	7
1.2 Scope	7
1.3 References	7
1.4 Other Insulation Systems	8
1.5 Definitions	8
2. Prerepair Activity and Responsibility	9
2.1 User Responsibility	9
2.2 Repair Facility Responsibility	10
2.3 Damage Appraisal	12
3. Recondition without Damage Repair	15
4. Repair Period	15
4.1 Repair Facility	15
4.2 Field Repairs	20
5. Postrepair	20
5.1 Repair Facility	20
5.2 Postrepair User	20
6. Bibliography	21
TABLE	
Table 1 Maximum Amplitude, Inch, Peak-to-Peak, Measured on Bearing Housing in any Direction (with Half Key)	19
APPENDIXES	
Appendix A Motor Repair Report Form	22
Appendix B Motor Data Insulation Resistance Record	23

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IEEE Recommended Practice for the Repair and Rewinding of Motors for the Petroleum and Chemical Industry

1. Introduction

1.1 Purpose. This recommended practice is intended to be a basic or primary document that can be utilized and referenced by owners of motors that need repair as well as by owners and operators of establishments that offer motor repair services. It has been developed primarily for the needs of the Petroleum and Chemical Industry but can be adapted to other applications.

The use of this recommended practice by users and repair facilities is expected to result in higher-quality, more cost-effective, and timely repairs. It also provides a means of evaluating repairs and facilities.

1.2 Scope. This recommended practice covers general recommendations for the repair of electric motors and includes recommendations for both the user and the repair facility. It is not intended to supplant specific instructions contained in the manufacturer's instruction book or in any contractual agreement between a manufacturer and a purchaser of a given machine.

These recommendations apply to horizontal and vertical motors, NEMA frame size 140 and above, having a voltage rating of 15 kV or less. These recommendations apply only to the repair of motors and are not intended to cover major modifications.

Excluded from the scope of this recommended practice are the following:

1.2.1 Specific requirements, certification, and inspection required for listed explosionproof and dust-ignition-proof machines.

1.2.2 Any specific or additional requirements for hermetic motors, hydrogen-cooled machines, submersible motors, or Class 1E nuclear service motors.

1.3 References

1.3.1 General. Definitions, construction, and test methods not specifically covered in this recommended practice should comply with the following publications and standards insofar as they are applicable. When approved revisions of reference standards are issued, the revision shall apply.

[1] IEEE Std 1-1986, IEEE Standard Principles for Temperature Limits in the Rating of Electric Equipment and for the Evaluation of Electrical Insulation (ANSI).¹

[2] IEEE Std 432-1976 (Reaff 1982), IEEE Guide for Insulation Maintenance for Rotating Electrical Machinery (5 hp to less than 10 000 hp) (ANSI).

[3] ANSI/NEMA MG1-1986, Motors and Generators (Revision 7).²

[4] API 541-1987, Form-Wound Squirrel-Cage Induction Motors 250 hp and Larger, 2nd ed.³

1.3.2 Insulation Tests. Where appropriate to the construction, tests should be made in accordance with the following IEEE test procedures:

[5] IEEE Std 43-1974 (Reaff 1984), IEEE Recommended Practice for Testing

¹IEEE publications can be obtained from the Institute of Electrical and Electronics Engineers, Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

²ANSI/NEMA publications are available from the Sales Department, American National Standards Institute, 1430 Broadway, New York, NY 10018, or from the National Electrical Manufacturers Association, 2101 L Street NW, Washington, DC 20037.

³API publications are available from the American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20037.