Australian Standard®

ELECTRICAL ARC WELDING POWER SOURCES

Part 2—ROTARY TYPE

This Australian standard was prepared by Committee EL/19 Electric Welding Plant. It was approved on behalf of the Council of the Standards Association of Australia on 17 January 1985 and published on 10 May 1985.

The following interests are represented on Committee EL/19:

Australian Electrical and Electronic Manufacturers Association
Australian Welding Institute
Confederation of Australian Industry
Electricity Supply Association of Australia
University of New South Wales

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PREFACE

This standard was prepared by the Association's Committee on Electrical Welding Plant to supersede in part AS 1966—1976, Electric Arc Welding Machines.

Being published concurrently with this standard is AS 1966.1, Electric Arc Welding Power Sources, Part 1—Transformer Type, which supersedes the remainder of AS 1966—1976.

This standard makes many changes to AS 1966—1976, the most significant of which concerns the requirements for rated load voltage (Clause 1.7.3) which have been expanded to include the three welding processes designated MMAW, GTAW and GMAW (see Table 1.1).

Where local conditions and practices have allowed, IEC and ISO requirements have been included.

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard for ELECTRIC ARC WELDING POWER SOURCE

PART 2—ROTARY TYPE

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for the design, performance and rating of rotating a.c. and/or d.c. electric arc welding power sources (hereinafter referred to as 'welding power source') consisting of alternators or generators with suitable control for regulating welding current, and driven by electric motors, internal combustion engines or mechanical drives from separate prime movers.

This standard does not include requirements for connected equipment such as welding leads, electrode holders and automatic wire feeders, etc.

1.2 APPLICATION. This standard applies to rotating welding power sources having an output of the drooping characteristic type (substantially constant current) and welding power sources of the flat characteristic type (substantially constant voltage).

1.3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1042	Direct-acting Indicating Electrical Measuring Instruments and their Accessories
AS 1202	A.C. Motor Starters (Up to and Including 1000 V)
AS 1359	General Requirements for Rotating Electrical Machines
AS 1939	Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment
AS 1966.1	Electrical Arc Welding Power Sources—Part 1—Transformer Type
AS 2745	Electric Welding Safety
AS 3000	SAA Wiring Rules
AS 3100	Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment
AS ZS	Glossary of Metal Welding Terms and Definitions*
BS 115	Metallic Resistance Materials for Electrical Purposes
BS 5514	Specification for Reciprocating Internal Combustion Engine: Performance

1.4 DEFINITIONS. For the purpose of this standard, the following definition in addition to those contained in AS 1966.1 and AS Z5 applies:

Electric arc welding power source (rotary)—an a.c. or d.c. generator with driving and output regulating means capable of supplying current for metal-arc welding.

1.5 SAFETY REQUIREMENTS.

1.5.1 General. This standard does not include all the safety requirements which must be observed to secure approval for connection or sale of welding power sources in Australia. The welding power source shall, in addition to complying with the relevant requirements of this standard, comply with the appropriate requirements of AS 3000, AS 3100 and AS 2745.

1.5.2 Earthing facilities. Except where provided with double-insulation (see Clause 1.5.3), every welding power source shall be provided with facilities for earthing in accordance with the relevant requirements of Clause 5.3 of AS 3100 and shall be marked in accordance with Clause 7.4 of AS 3100.

The welding power source shall be capable of passing the test of earthing facilities prescribed in Clause 8.5 of AS 3100.

Any earthing conductor used within the welding power source shall comply with the appropriate requirements of Clause 5.3.5 of AS 3100. Soft soldering shall not be solely relied upon for the attachment of any internal earthing conductor; if soldering is used it shall be supplemented by bolting, riveting or the like.

There shall be no direct connection between the welding circuit and the power source earth terminal. This requirement shall not exclude the connection of radio frequency suppression and similar circuits.

1.5.3 Double insulation. Every welding power source provided with double insulation shall comply with the appropriate requirements of AS 3100.

1.6 SERVICE CONDITIONS. The welding power source shall be capable of delivering its rated output and operating satisfactorily under the following conditions:

(a) A maximum ambient air temperature of 40 °C and with machine components at maximum operating temperature.

(b) Exposure to gases produced by the arc.

(c) Exposure to dust from welding and associated operations.

NOTE: The rating and performance of a welding power source for operation under conditions other than those listed above is a matter for agreement between the purchaser and the supplier.

1.7 RATING AND CLASSIFICATION.

1.7.1 Rating and classification of welding power sources.

1.7.1.1 *General.* A welding power source shall be rated in terms of its rated output current and class as specified in Clauses 1.7.1.2 to 1.7.1.4 (see also Table 1.1).

* In course of revision