Australian Standard®

NUMERICAL CONTROL OF MACHINES

Part 1—DATA FORMAT FOR POSITIONING, LINE MOTION AND CONTOURING CONTROL EQUIPMENT

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Part 1—DATA FORMAT FOR POSITIONING, LINE MOTION AND CONTOURING CONTROL EQUIPMENT

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PREFACE

This standard was prepared by the Association's Committee on Information Processing Systems. It is identical with and has been reproduced from International Standard ISO 6983/1—1982, drawn up by ISO/TC 97, Information Processing Systems.

This standard supersedes the following standards:

AS 1114 Coded character set for the numerical control of machines

AS 1116 Coding of preparatory functions G and miscellaneous functions M for the numerical control of machines

AS 1117 Interchangeable punched tape variable block format for positioning and straight-cut numerically controlled machines

AS 1118 Punched tape variable block format for positioning and straight-cut numerically controlled machines

AS 1119 Punched tape fixed block format for positioning and straight-cut numerically controlled machines

The purpose of this standard is to serve as a guide in the coordination of system design, to minimize the variety of program manuscripts required, to promote uniformity of programming techniques, and to foster interchangeability of input programs between numerically controlled machines of the same classification by type, process, function, size and accuracy.

For the purpose of this Australian standard, the text of the ISO standard given herein should be modified as follows:

(a) Terminology: The words 'Australian standard' should replace the words 'International Standard' wherever they appear.

(b) Cross-references: The references to International Standards should be replaced by references to Australian standards as follows:

(c) Cross-references: The references to International Standards should be replaced by references to Australian standards as set out below.

Where reference is made to 'this part of ISO 6983' read 'this standard'.

Where reference is made to—

(i) 'Part 2 of this International Standard';

(ii) 'Part 2 of ISO 6982'; or

(iii) 'IS 6983/2';

see ISO/DIS 6983/2. At present there is no appropriate Australian standard for this.

Reference to International Standard	*Appropriate Australian Standard*
ISO 646, Data processing—7-bit coded character set for information interchange	AS 1776, Information processing—7-bit coded character set for information interchange
ISO 841, Numerical control of machines—Axis and motion nomenclature	AS 1115, Axis and motion conventions for numerically controlled machines
ISO 1154, Information processing—Punched paper tape—Dimensions and location of feed holes and code holes	AS 1069, Dimensions for punched paper tape for data interchange
ISO 1729, Information processing—Unpunched paper tape—Specification	AS 1341, Information processing—Unpunched paper tape
ISO 2806, Numerical control of machines—Vocabulary	AS 1189, Data processing—Vocabulary Part 24—Numerical control of machines

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Contents

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Numerical control of machines—Program format and definition of address words— Part 1: Data format for positioning line motion and contouring control systems

0 Introduction

A word address program format is described in this International Standard for machine control programs on perforated tape, magnetic media, or provided from a remote data source. The standards cover variable block format only and are not intended to specify machine design.

0.1 This International Standard will replace

a) ISO 840, *Numerical control of machines — 7-bit coded character set.*

b) ISO 1056, *Numerical control of machines — Punched tape formats — Coding of preparatory functions G and miscellaneous functions M*

c) ISO 1057, *Numerical control of machines — Interchangeable punched tape variable block format for positioning and straight-cut machining.*

d) ISO 1058, *Numerical control of machines — Punched tape variable block for positioning and straight-cut machining.*

e) ISO 1059, *Numerical control of machines — Punched tape fixed block format for positioning and straight-cut machining.*

f) ISO 2539, *Numerical control of machines — Punched tape variable block format contouring and contouring positioning.*

0.2 Compliance with this International Standard does not guarantee interchangeability of machine programs between machines. Annex D details some of the additional considerations necessary to ensure this interchangeability.

The purpose of this revision of International Standards is:

a) to consolidate the previous format standards into one International Standard for positioning, line motion and contouring systems;

b) to remove outmoded provisions of the previous International Standards, where feasible;

c) to introduce format standards for new functions, not covered by the previous International Standards;

d) to reduce the difference in programming between different machine/control units;

e) to provide guidelines for achieving program interchangeability between machines of similar capacity;

f) to include the preparatory and miscellaneous codes.

This International Standard will consist of several parts; for the moment there are two parts: part 1, the details of data format, and part 2, the preparatory and miscellaneous codes.

1 Scope and field of application

This part of ISO 6983 specifies requirements and makes recommendations for a data format for positioning, line motion and contouring control systems used in the numerical control of machines. This International Standard helps the co-ordination of system design in order to minimize the variety of program manuscripts required, to promote uniformity of programming techniques, and to foster interchangeability of input programs between numerically controlled machines of the same classification by type, process, function, size and accuracy. It is intended that simple numerically controlled machines be programmed using a simple format, which is systematically extensible for more complex machines.

This International Standard is not intended for use in specialized case of numerically controlled flame cutting machines and drafting machines used specifically and exclusively in the shipbuilding industry. In this specialized application a related format, the “ESSI Format”, is specified in ISO 6582.

2 References

This part of ISO 6983 requires, and is based upon, conformance to the International Standards cited below, with the further requirements that character coding shall be selected to provide even parity and the characters used shall be limited to those identified in annex A of this part of ISO 6983.

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