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Powered lawn, garden and horticultural equipment — Operator controls — Guidance on actuating forces, displacement, location and methods of operation

Matériel à moteur pour jardins, pelouses et pour l'horticulture — Commandes de l'opérateur — Lignes directrices pour les forces d'actionnement, déplacements, emplacements et méthodes de fonctionnement

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed every three years with a view to deciding whether it can be transformed into an International Standard.

Attention is drawn to the possibility that some of the elements of ISO/TS 15079 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 15079 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 13, *Powered lawn and garden equipment*.

This first edition of ISO/TS 15079 replaces ISO 3789-3:1989, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Location and method of operation of operator controls — Part 3: Controls for powered lawn and garden equipment*, which has been technically revised.

Introduction

This Technical Specification gives guidance on the design of operator controls (herein called “controls”) with respect to their method of operation, actuating force, displacement and location. The controls are those located at the operator’s normal working position, readily accessible and conveniently placed for the operator. The provisions contained in this Technical Specification were derived from experience, current practice, ergonomic literature and existing standards.

Generalized control data pertaining to control-actuation forces, displacement and location found in a number of ergonomic texts and references are not in total agreement. The myriad of variables affecting control design indicates that these control parameters are interactive and that no single value is correct for a given control design. Control method of operation has been standardized for a number of years and the operational methods contained in this Technical Specification are consistent with the International Standard it replaces as well as other standards relating to controls.

Control design involves complex issues and is influenced by control size, actuation, direction, displacement, and the relationship with, or proximity to, other controls and the operator. Operator capabilities are also influenced by many factors, including body position and control location or displacement direction relative to the operator. The unique situation in which, and the purpose for which, a control device is to be used can materially affect the appropriateness of a given type of control and can justify (or virtually require) variations from a set of general recommendations or practice based on research or experience. It is therefore imperative that tests involving multiple operators be performed as a prerequisite to final judgement of a machine control design essential to the correct operation of that machine.

Control shape, size, texture, proximity, clearance and markings are essential elements of good control design. However, these control elements are not included in this Technical Specification. For additional information concerning these subjects, the reader should consult an ergonomic reference or references.

It is generally desirable to design a machine and its controls for the 5th to 95th percentile operator. In some cases, compromise is essential for meeting the multitude of objectives involved in the design of a machine. By testing a control system with multiple operators, final judgement can be made on controls involved in such compromises.