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**Road vehicles — Design and  
performance specifications for  
the WorldSID 50th percentile male  
side-impact dummy —**

**Part 4:  
User's manual**

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*Véhicules routiers — Conception et spécifications de performance pour  
le mannequin mondial (WorldSID), 50<sup>e</sup> percentile homme, de choc  
latéral —*

ISO 15830-4:2005  
*Partie 4: Manuel de l'utilisateur*

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## 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 2.

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.

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

ISO 15830-4 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 12, *Passive safety crash protection systems*.

ISO 15830 consists of the following parts, under the general title *Road vehicles — Design and performance specifications for the WorldSID 50th percentile male side impact dummy*:

— *Part 1: Terminology and rationale*

— *Part 2: Mechanical subsystems*

— *Part 3: Electronic subsystems*

— *Part 4: User's manual*

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## Introduction

This first edition of ISO 15830 (all parts) has been prepared on the basis of the existing design, specifications and performance of the WorldSID 50<sup>th</sup> percentile adult male (PAM) side impact dummy. The purpose of ISO 15830 is to document the design and specifications of this side impact dummy in a form suitable and intended for worldwide regulatory use.

In 1997, ISO/TC22/SC12 initiated the WorldSID 50<sup>th</sup> PAM dummy development, with the aims of defining a global-consensus side impact dummy, having a wider range of human-like anthropometry, biofidelity and injury monitoring capabilities, suitable for regulatory use. Participating in the development were research institutes, dummy and instrumentation manufacturers, governments, and vehicle manufacturers from around the world.

With regard to potential regulatory, consumer information or research, and development use of ISO 15830, the respective parties will need to define which of the permissive elements defined in Part 3 are to be used in a given application.

In order to apply ISO 15830 properly, it is important that all four parts be used together.

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# Road vehicles — Design and performance specifications for the WorldSID 50th percentile male side-impact dummy —

## Part 4: User's manual

### 1 Scope

This part of ISO 15830 specifies requirements for assembling and disassembling of the WorldSID 50<sup>th</sup> percentile side impact dummy, a standard anthropomorphic dummy for side impact testing of road vehicles.

It is applicable to impact tests involving:

- passenger vehicles of categories M1 and goods vehicles of categories N1,
- impacts to the side of the vehicle structure, and
- impact tests involving the use of an anthropometric dummy as a human surrogate for the purpose of evaluating compliance with vehicle safety standards.

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### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15830-1, *Design and performance specifications for the WorldSID 50th percentile adult male side impact dummy — Part 1: Terminology and rationale*

ISO 15830-3, *Design and performance specifications for the WorldSID 50th percentile adult male side impact dummy — Part 3: Electronic subsystems*

### 3 Terms and definitions

For the purposes of this document the terms and definitions given in ISO 15830-1 apply.

## 4 Requirements

### 4.1 Disassembly and assembly

The WorldSID shall be disassembled and assembled according to the procedures in Annex A.

Unless noted otherwise, all fasteners shall be installed using the torques in Annex C.

### 4.2 Full arm changeover

If a full arm is to be relocated from the left side of the dummy to the right side, or from the right side of the dummy to the left side, then this shall be done using the procedures given in A.4.5.

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## Annex A (normative)

### Procedures for disassembling and assembling the WorldSID

#### A.1 Head

##### A.1.1 Parts list for head

Note that Table A.1 lists the parts required for assembling the WorldSID head, which are illustrated in Figure A.1. Note that part numbers correspond to those on electronic drawing W50-10000.

**Table A.1 — Parts list for WorldSID head**

Item number	Description	Quantity	Part number
1	Head core	1	W50-10007
2	Moulded head	1	W50-14014
3	Rotational accelerometer, Endevco 7302BM4 <sup>a</sup>	3	ISO 15830-3:2005, 4.1.3.3
4	Dual-axis tilt sensor	1	ISO 15830-3:2005, 4.1.3.4.1
5	Linear triaxial accelerometer	1	ISO 15830-3:2005, 4.1.3.2
6	Neck load cell structural replacement	1	W50-71003
7	SHCS M3 x 0,5 x 6	6	5000393
8	Cheese screw, M2 x 16	1	5000254
9	SHCS M4 x 0,7 x 10	1	5000151
10	SHCS M6 x 1 x 16	4	5000081
11	Flat washer M8 (8,9 ID x 18,8 OD x 2,3 thick)	1	5000123
12	BHCS M8 x 1,25 x 25	1	5000255
13	Neck shroud assembly	1	W50-24103
14	SHCS M6 x 12	4	5000281
15	BHCS M4 x 0,7 x 10	5	5000010
not shown	Rotational accelerometer mass replacement	3	W50-10010
not shown	Linear triaxial accelerometer mass replacement	1	W50-61063
not shown	Dual-axis tilt sensor mass replacement	1	W50-10011
not shown	Universal neck load cell	1	W50-71000

<sup>a</sup> Accelerometer model 7302BM4 is a product supplied by Endevco Corp. San Juan Capistrano, California, USA. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of the product named. Alternative products may be used if they can be shown to lead to the same results.