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Second edition  
2022-12

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# Fasteners — Button head screws with reduced loadability —

## Part 1: Hexagon socket button head screws

*Fixations — Vis à tête cylindrique bombée plate à capacité de charge réduite —*

*Partie 1: Tête cylindrique bombée plate à six pans creux*



Reference number  
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## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Dimensions</b> .....	<b>2</b>
<b>5 Requirements and reference International Standards</b> .....	<b>6</b>
<b>6 Marking and labelling</b> .....	<b>7</b>
6.1 Marking on product.....	7
6.2 Labelling on package.....	7
<b>7 Designation</b> .....	<b>8</b>
<b>Bibliography</b> .....	<b>9</b>

## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 11, *Fasteners with metric external thread*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 185, *Fasteners*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 7380-1:2011), which has been technically revised.

The main changes are as follows:

- the whole standard (including title) has been improved to clearly point out that these hexagon socket button head screws have reduced loadability because of their head design (head dimensions and penetration of the hexagon socket);
- the reference thread length  $b$  has been increased to  $3d$  for partially threaded screws M16, so that these screws can be tensile tested in accordance with ISO 3506-1 ( $b \geq 3d$  is required to tensile test screws with reduced loadability);
- the reference datum for the outer diameter of the bearing face has been specified (see [Figure 1](#)), and the minimum values have been reduced to  $d_{w,\min} = d_{k,\min} \times 0,92$  considering the manufacturing aspects for "button head" (see [Table 1](#));
- $e_{\min}$  values have been rounded to two decimal places (see [Table 1](#));
- the maximum depth of the hexagon socket  $t_{\max}$  has been added (see [Table 1](#));
- symbol  $w$  has been substituted by the new symbol  $w_b$  in order to define the wall thickness between the bottom of the cylindrical broached hole and the bearing face (see [Figure 2](#) and [Table 1](#));
- the definition of  $r_f$  in [Figure 1](#) has been changed to allow the offset of the centre of the radius from the thread axis;
- the smallest and greatest standard lengths have been amended (see [Table 2](#));

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- stainless steel grades A3 and A5 have been deleted from [Table 3](#);
- the minimum ultimate tensile loads were recalculated and have been changed to more precise values for steel screws with property classes 8.8 (M5, M12 and M16), 10.9 (M3, M6 and M10) and 12.9/12.9 (M4 to M8) and for stainless steel screws with property classes 70 (M3 to M10 and M16) and 80 (M5, M12 and M16); see [Table 4](#);
- specifications for marking and labelling have been added as new [Clause 6](#).

A list of all parts in the ISO 7380 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).