

British Standard Aerospace Series : Specification for

Internal drive, offset cruciform recess (Torq-Set®) for rotary fastening devices. Metric series

[ISO title: Aerospace — Internal drive, offset cruciform recess (Torq-Set®) for rotary fastening devices — Metric series]

Série aérospatiale. Empreinte cruciforme déportée d'entraînement intérieur (Torq-Set)
pour dispositifs de fixation. Série métrique — Spécifications

Luft- und Raumfahrt-Reihe. Mechanische Verbindungselemente mit Innenantrieb
und Flügelkreuzschlitz (Torq-Set). Metrische Reihe

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National foreword

This British Standard, which has been prepared under the direction of the Aerospace Standards Committee, is identical with ISO 7994-1985 'Aerospace — Internal drive, offset cruciform recess (Torq-Set®) for rotary fastening devices — Metric series' published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words 'International Standard' appear referring to this standard, they should be read as 'British Standard'.

Cross-references

International standard	Corresponding British Standard
ISO 128-1982	BS 308 Engineering drawing practice Part 1 : 1984 Recommendations for general principles (Technically equivalent)
ISO 1101-1983	Part 3 : 1972 Geometrical tolerancing (Technically equivalent)

Attention is drawn to the fact that it is claimed that the 'Internal drive, offset cruciform recess (Torq-Set®) for rotary fastening devices' is the subject of British patent No. 1 473 969 copies of which can be obtained from the Patent Office, 25 Southampton Buildings, London WC2A 1AY. BSI takes no position as to the validity of the patent or whether it is still in force. The patent is irrevocably endorsed 'licences of right' under Section 46 of the Patents Act 1977, which states:

'(3) Where such an entry is made in respect of a patent —

(a) any person shall, at any time after the entry is made, be entitled as of right to a licence under the patent on such terms as may be settled by agreement or, in default of agreement, by the Comptroller on the application of the proprietor of the patent or the person requiring the licence.'

Licence details may be obtained from the registered proprietor of the patent.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

0 Introduction

Users of this International Standard are advised that the internal drive recess specified in this International Standard is the Torq-Set® recess and that trademark and proprietary rights apply¹⁾. Patent holders have agreed to negotiate licences on terms and conditions defined in statements that are available on request from the ISO Central Secretariat.

1 Scope

This International Standard specifies maximum and minimum dimensional requirements for an internal drive recess configuration for rotary fastening devices, and for the associated drivers and gauges, for metric design. The combinations suggested herein are provided for metric shank diameters.

2 Field of application

This configuration is intended primarily for use in aerospace applications and other critical areas where high assembly and removal torque capabilities are required.

3 References

ISO 128, *Technical drawings — General principles of presentation*.

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings*.

4 Definitions

4.1 internal drive recess: A formed indentation in the centre of the head of the fastener, with a main axis extending along the longitudinal centreline of the part, the function of which is to accept a closely fitting driving tool for the transmission of rotary movement.

4.2 driver: A co-operating tool for use with a fastener the form of which matches the indentation in the head of the fastener to provide a coupling between a rotary driving force and the head of the fastener.

4.3 offset cruciform recess: An internal drive recess of an offset cruciform configuration having four equally spaced radial grooves, the sides of which are parallel to each other and parallel to the axis of the fastener.

The clockwise (driving) sides are arranged on 90° radial planes and taper from a maximum diameter at the head surface to a minimum diameter below the head surface.

4.4 anticamout rib (ACR®): A projection of a small cross-section of material extending along a removal (counter-clockwise) recess wall and generally parallel to the recess axis. This rib is provided to allow preliminary indentation by the driver projections upon the application of a counter-clockwise torque and resist the tendency for the driver to ride up and out (self-eject) of the recess.

Drivers are also provided with projections along the removal walls which extend 90° to the axis in order to indent properly the recess projections upon application of a counter-clockwise torque.

1) Torq-Set® and ACR® are registered trademarks of the Phillips Screw Company.