
International Standard



7994

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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

Aéronautique et espace — Empreinte cruciforme déportée d'entraînement intérieur (Torq-Set®) pour dispositifs de fixation montés par rotation — Série métrique

First edition — 1985-11-15

UDC 621.882.216.5 : 629.7

Ref. No. ISO 7994-1985 (E)

Descriptors : aircraft industry, aircraft equipment, fasteners, dimensions, designation.

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7994 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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

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 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.