
International Standard



6788

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Assembly tools for screws and nuts — Four-way socket wrenches

Outils de manœuvre pour vis et écrous — Clés en croix

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Descriptors : tools, assembly tools, wrenches, socket wrenches, dimensions, testing conditions.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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International Standard ISO 6788 was developed by Technical Committee ISO/TC 29, *Small tools*, and was circulated to the member bodies in May 1981.

It has been approved by the member bodies of the following countries :
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Australia	Israel	South Africa, Rep. of
Austria	Italy	Spain
Belgium	Japan	Sweden
China	Korea, Dem. P. Rep. of	Switzerland
Egypt, Arab Rep. of	Korea, Rep. of	United Kingdom
France	Mexico	USA
Germany, F. R.	Poland	USSR
Hungary	Romania	

The member body of the following country expressed disapproval of the document on technical grounds :

Czechoslovakia

Assembly tools for screws and nuts — Four-way socket wrenches

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1 Scope and field of application

This International Standard specifies the dimensions of socket heads in millimetres of four-way socket wrenches types 1, 2, 3 and 4 and also lays down test conditions to check the suitability of tool performance.

This International Standard applies to four-way socket wrenches for assembling screws and nuts with widths across flats of metric dimensions for trucks and cars.

The wrenches are listed under number 21 in ISO 1703.

2 References

ISO 272, *Fasteners — Hexagon products — Widths across flats.*

ISO 691, *Spanner gaps and sockets — Metric series — Tolerances for general use.*

ISO 1174, *Assembly tools for bolts and screws — Driving square for power socket wrenches and hand socket wrenches.*

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ISO 1703, *Assembly tools for screws and nuts — Nomenclature.*

ISO 1711, *Hand operated wrenches and sockets — Technical specifications.*

ISO 2236, *Assembly tools for screws and nuts — Forged and tubular socket wrenches — Metric series — Maximum outside dimensions.*

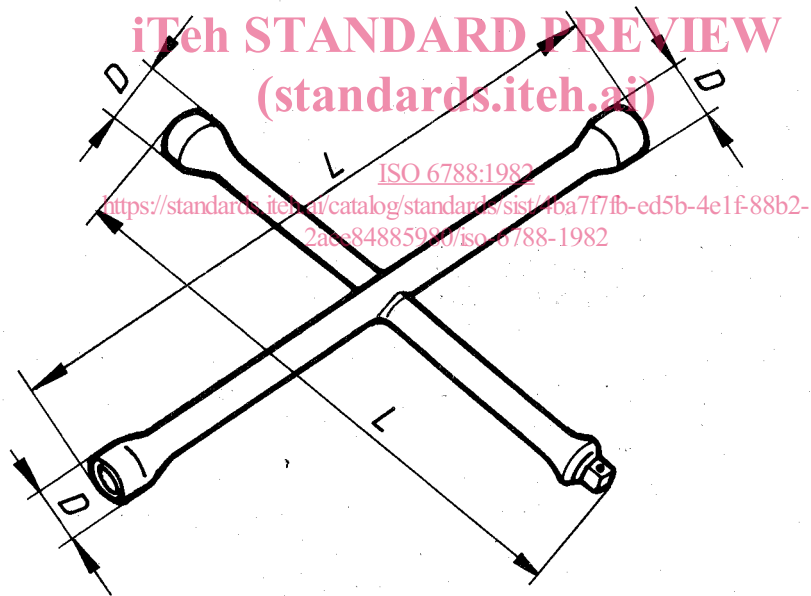
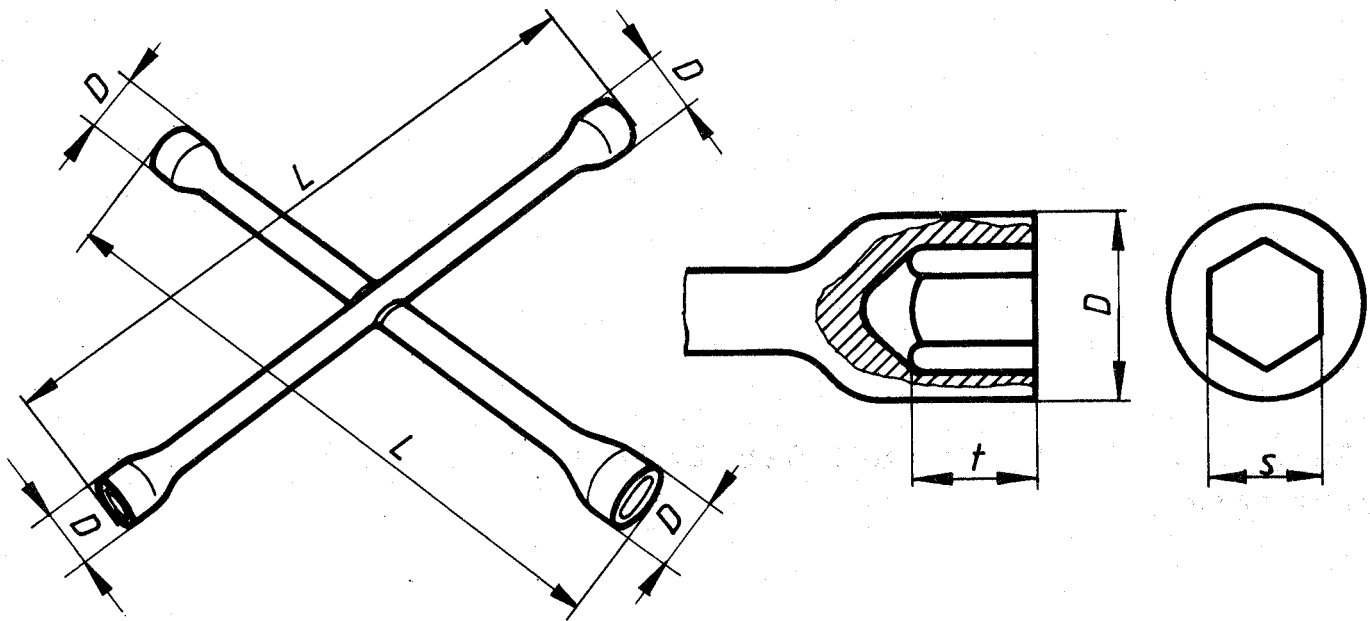
ISO 3316, *Assembly tools for screws and nuts — Attachments for hand-operated square drive socket wrenches — Torque testing.*

3 Dimensions

The tolerances on wrench openings are those specified in ISO 691 in the “unmachined closed” series.

Driving squares shall be as specified in ISO 1174 for hand socket wrenches.

The maximum outside dimensions of socket heads D are 10 % greater than those given in ISO 2236.



Dimensions in millimetres

Type	Maximum socket A/F ¹⁾ s	Driving square nominal dimension ¹⁾	Maximum outside dimension D max.	L min.	t min.
1	24	12,5	38	355	0,8 s
2	27	12,5	42,5	450	
3	32	20	49,5	630	
4	41	20	63	700	

1) Four-way socket wrenches shall have four sockets, of which one can be a male driving square in accordance with ISO 1174. Sizes across flats and the layout are not specified. Tolerances of s shall be as specified in ISO 691 for "unmachined closed".

Figure 1

The half-arms shall all be of the same length with a tolerance of $\pm 3\%$ of L . The angle formed by both arms shall be $90^\circ \pm 2^\circ$.

The whole wrench shall be heat-treated and the heads shall have a minimum hardness as specified in ISO 1711.

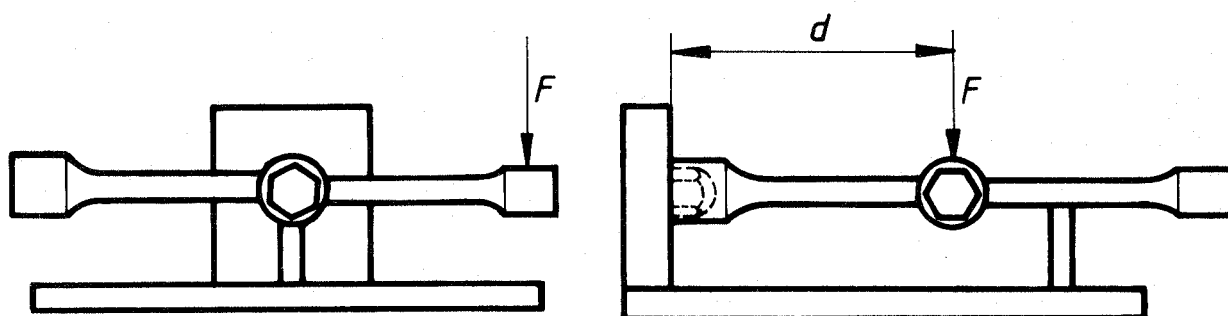
4 Torque testing

Place the socket or the square drive over a male hexagonal test mandrel or a female square test mandrel and apply the corresponding torque.

The minimum test torques shall be those given in ISO 1711 — Series A — for hexagonal sockets, and for square drive, those given in ISO 3316.

It is necessary to use a support to avoid the bending moment that would occur as a consequence of the distance, d , between the application point of the load, F , and the base of the mandrel. (See figure 2.)

After the minimum torque test application, the wrench shall present no permanent deformation or any other defect that may influence its correct use.



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