

INTERNATIONAL STANDARD

ISO
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Screwdrivers for cross-recessed head screws —

Part 1: **Driver points**

Tournevis pour vis à empreinte cruciforme —
Partie 1: Extrémités de tournevis



Reference number
ISO 8764-1:1992(E)

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.

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.

International Standard ISO 8764-1 was prepared by Technical Committee ISO/TC 29, *Small tools*, Sub-Committee SC 10, *Spanners and wrenches*.

This first edition of ISO 8764-1 cancels and replaces ISO 8764:1989, tables 1 to 4 and table 6 of which have been technically revised.

ISO 8764 consists of the following parts, under the general title *Screwdrivers for cross-recessed head screws*:

- *Part 1: Driver points*
- *Part 2: General requirements, lengths of blades and marking of hand-operated screwdrivers*

Annex A of this part of ISO 8764 is for information only.

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Screwdrivers for cross-recessed head screws —

Part 1: Driver points

1 Scope

This part of ISO 8764 specifies the shapes and dimensions, the technical requirements and torque test methods for the points of hand drivers and of machine-operated bits for cross-recessed head screws.

This part of ISO 8764 specifies two types of driver points as follows:

- type PH for type H recesses;
- type PZ for type Z recesses.

H and Z type recesses are specified in ISO 4757.

General requirements, lengths of blades and marking of hand-operated screwdrivers are given in ISO 8764-2.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8764. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8764 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4757:1983, *Cross recesses for screws*.

ISO 8764-2:1992, *Screwdrivers for cross-recessed head screws — Part 2: General requirements, lengths of blades and marking of hand-operated screwdrivers*.

3 Shapes and dimensions

The shapes and dimensions of the points shall conform with the requirements given in figure 1 and table 1 for type PH and figure 2 and table 2 for type PZ.

The axis of the point shall be concentric with the axis of the tool.

When a plated finish is used, the dimensions shall be met after plating.

4 Technical requirements

4.1 Materials

Components shall be manufactured from steel which when suitably heat-treated satisfies the mechanical requirements and torque tests specified in 4.2 and clause 6 respectively.

4.2 Heat treatment and hardness

The tools shall be hardened and tempered throughout their entire length; the screwdriver points shall have a minimum hardness of

- 54 HRC for hand-operated screwdrivers,
- 58 HRC for machine-operated screwdrivers,

for a minimum length of three times the nominal blade diameter measured from the driving end.

All hardness measurements shall be taken on ground flats, parallel with the axis and of sufficient area to give an accurate reading.

4.3 Finish

Components shall be free from cracks, blemishes and other deleterious defects.

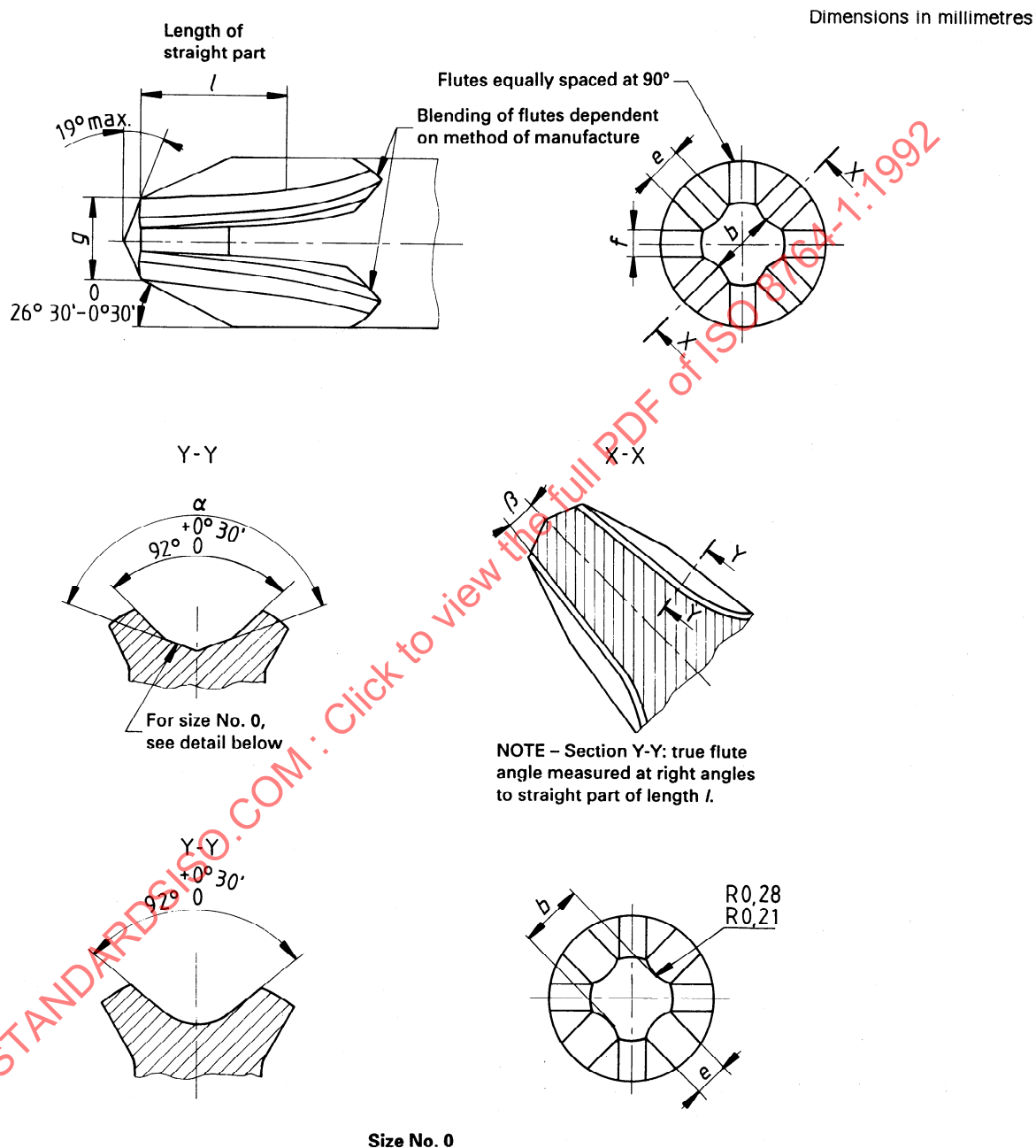


Figure 1 — Type PH points

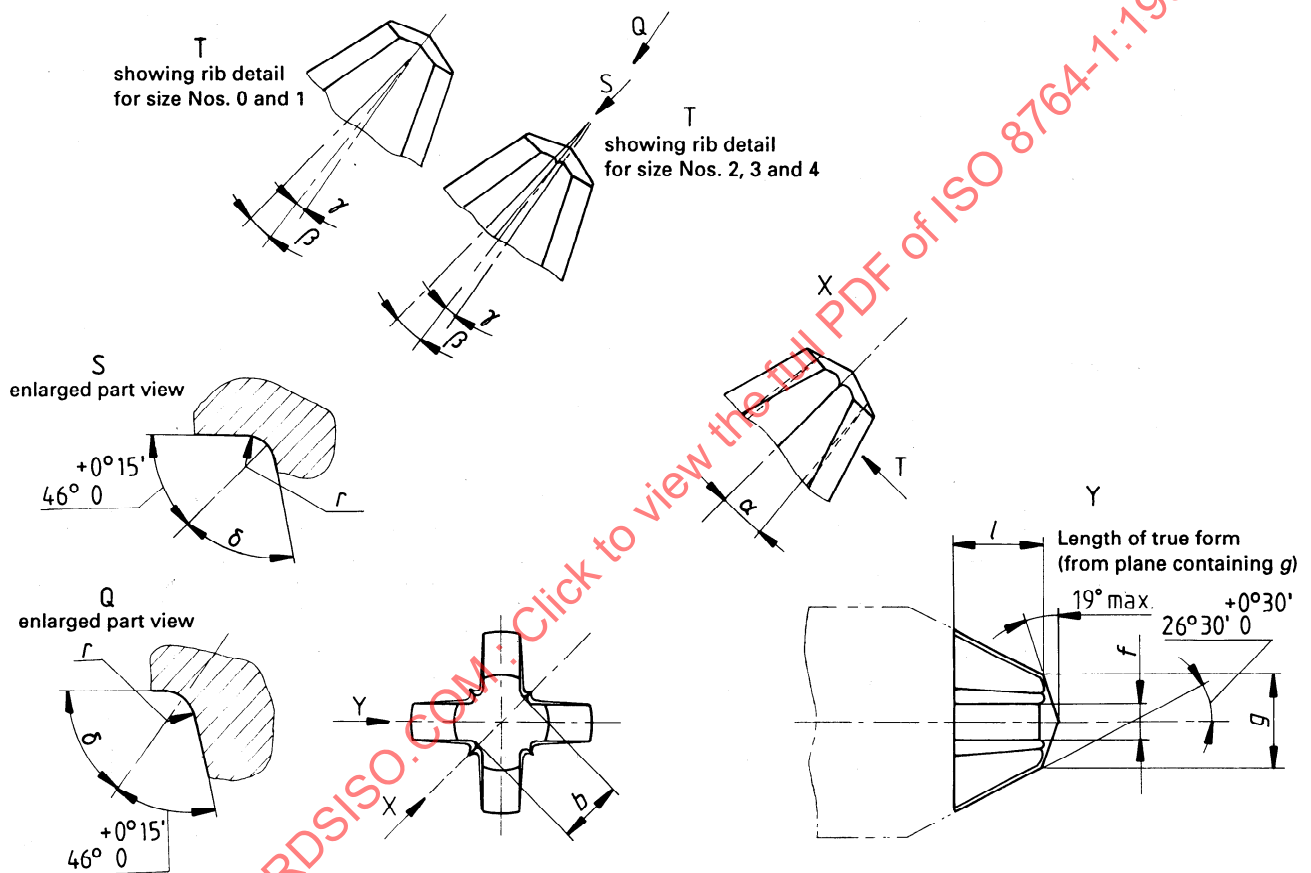


Figure 2 — Type PZ points

Table 1 — Dimensions of type PH points

Dimensions in millimetres

Point size	Nominal blade diameter	<i>b</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>l</i> min.	α	β
0	3	0,61 0,56	0,38 0,29	0,31 0,26	0,84 0,79	2,78	See figure 1	7°00' 6°30'
1	4,5	1,03 0,98	0,54 0,49	0,53 0,48	1,30 1,25	2,78	138°30' 138°00'	7°00' 6°30'
2	6	1,56 1,51	1,13 1,08	0,64 0,59	2,31 2,26	4,37	140°30' 140°00'	5°45' 5°15'
3	8	2,52 2,47	2,12 2,07	0,81 0,73	3,84 3,79	6,74	146°30' 146°00'	5°45' 5°15'
4	10	3,60 3,55	2,76 2,71	1,12 1,04	5,11 5,06	8,34	153°30' 153°00'	7°00' 6°30'

Table 2 — Dimensions of type PZ points

Dimensions in millimetres

Point size	Nominal blade diameter	<i>b</i>	<i>f</i>	<i>g</i>	<i>l</i> min.	<i>r</i>	α	β	γ	δ
0	3	0,78 0,70	0,45 0,42	0,92 0,89	1,54	0,10 0,07	7°00' 6°30'	8°15' 7°45'	4°53' 4°23'	46°15' 46°00'
1	4,5	1,19 1,11	0,71 0,68	1,40 1,37	2,02	0,13 0,10	7°00' 6°30'	8°15' 7°45'	4°53' 4°23'	46°15' 46°00'
2	6	1,78 1,70	1,00 0,95	2,44 2,39	3,17	0,30 0,15	5°45' 5°15'	6°50' 6°20'	3°30' 3°00'	46°15' 46°00'
3	8	2,65 2,55	1,38 1,33	3,96 3,91	4	0,36 0,20	5°45' 5°15'	6°50' 6°20'	3°30' 3°00'	56°30' 56°15'
4	10	4,02 3,92	2,10 2,05	5,18 5,13	5,4	0,51 0,36	7°00' 6°30'	8°15' 7°45'	4°53' 4°23'	56°30' 56°15'

5 Inspection of dimensions

Conformance with the dimensions specified in clause 3 shall be determined either by direct measurement or by the use of suitable inspection gauges as defined in 5.1 and 5.2.

5.1 Inspection gauges for type PH points

The dimensions of the points are in accordance with this part of ISO 8764 when they fit properly into the

gauge and when the edges of the points at which the two cones of 53° and 142° meet, lie within step *C* of the gauge (see figure 3 and table 3) (see annex A for an explanation of the choice of dimensions).

5.2 Inspection gauges for type PZ points

The dimensions of the points are in accordance with this part of ISO 8764 when they fit properly into the gauge and when the plane containing *G* lies within the step of the inspection gauge between dimensions *I* and *K* (see figure 4 and table 4).

Dimensions in millimetres

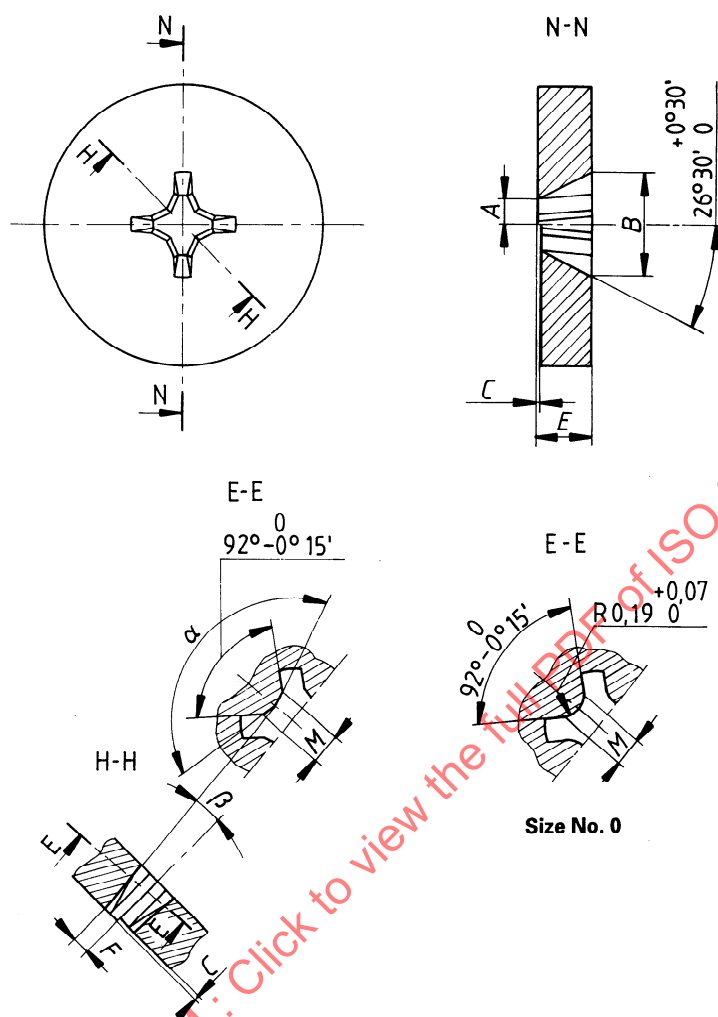


Figure 3 — Inspection gauge for type PH points

Table 3 — Dimensions of inspection gauge for type PH points

Dimensions in millimetres

Point size	A $\pm 0,005$	B min.	C $\pm 0,025$	E max.	F $\pm 0,005$	M $\begin{smallmatrix} 0 \\ -0,02 \end{smallmatrix}$	α $\begin{smallmatrix} 0 \\ -0^{\circ}15' \end{smallmatrix}$	β $\begin{smallmatrix} +0^{\circ}15' \\ 0 \end{smallmatrix}$
0	0,419	3	0,254	2,38	0,284	0,29	—	7°
1	0,648	4,5		2,38	0,493	0,49	138°	
2	1,156	6		3,97	0,769	1,08	140°	5°45'
3	1,918	8		6,34	1,257	2,07	146°	
4	2,553	10		7,94	1,804	2,71	153°	7°

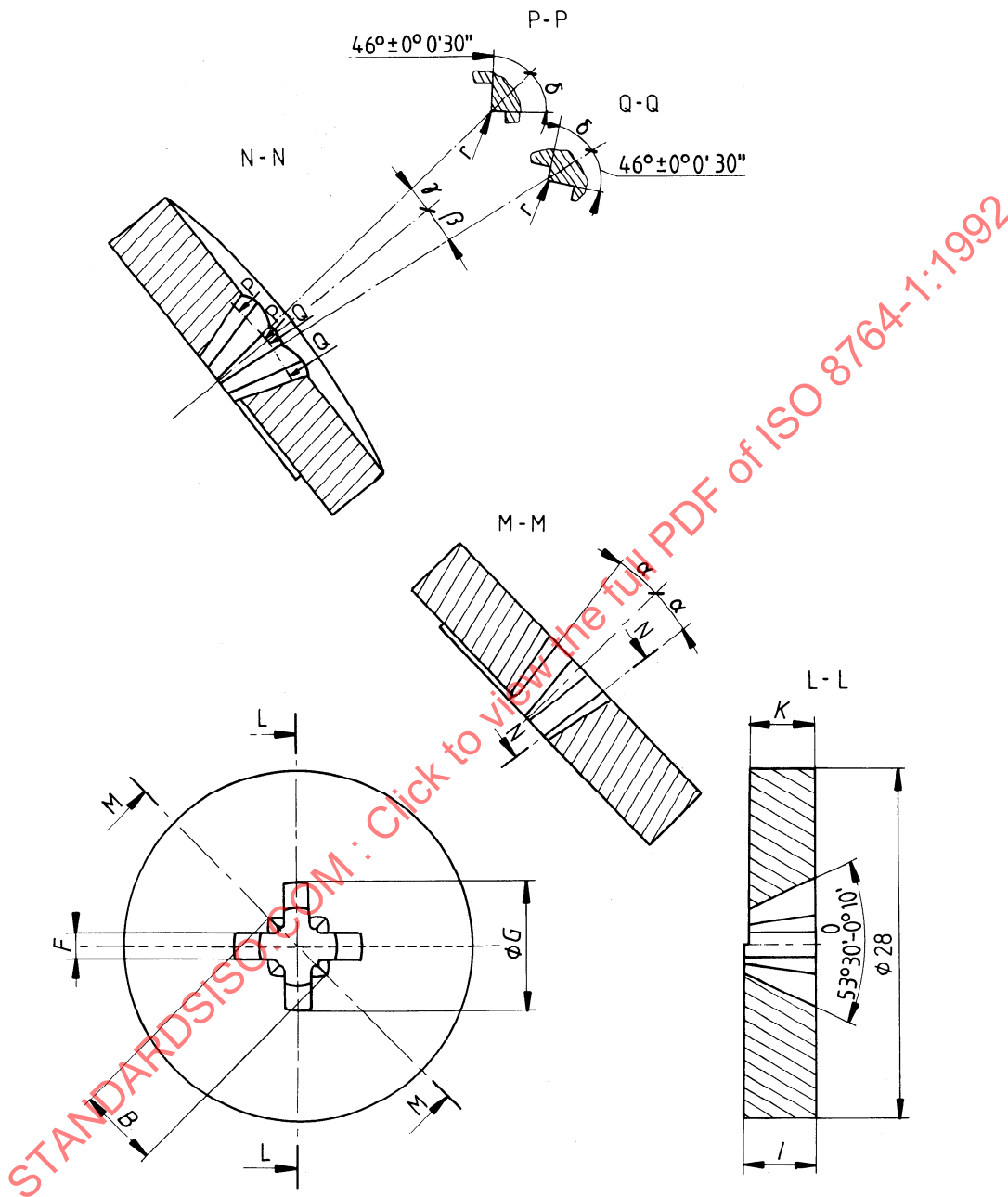


Figure 4 — Inspection gauge for type PZ points

Table 4 — Dimensions of inspection gauge for type PZ points

Dimensions in millimetres

Point size	<i>B</i>	<i>F</i>	<i>G</i>	<i>I</i>	<i>K</i>	<i>r</i>	α	β	γ	δ
0	1,188	0,490	2,629	1,800	1,570	0,10	7°20'	7°43'	5°15'	46°05'
	1,163	0,470	2,616	1,790	1,560	0,05	7°10'	7°33'	5°05'	45°55'
1	1,732	0,746	3,650	2,310	2,080	0,13	7°25'	7°48'	5°22'	46°05'
	1,707	0,726	3,637	2,300	2,070	0,08	7°15'	7°38'	5°12'	45°55'
2	2,453	1,054	5,769	3,525	3,275	0,13	6°00'	6°18'	3°45'	46°05'
	2,428	1,034	5,756	3,515	3,265	0,08	5°50'	6°08'	3°35'	45°55'
3	3,525	1,442	7,963	4,170	3,920	0,23	6°10'	6°28'	3°50'	56°20'
	3,500	1,422	7,950	4,160	3,910	0,18	6°00'	6°18'	3°40'	56°10'
4	5,425	2,153	9,900	5,820	5,570	0,38	7°20'	7°43'	5°15'	56°20'
	5,400	2,133	9,885	5,810	5,560	0,33	7°10'	7°33'	5°05'	56°10'

6 Torque test

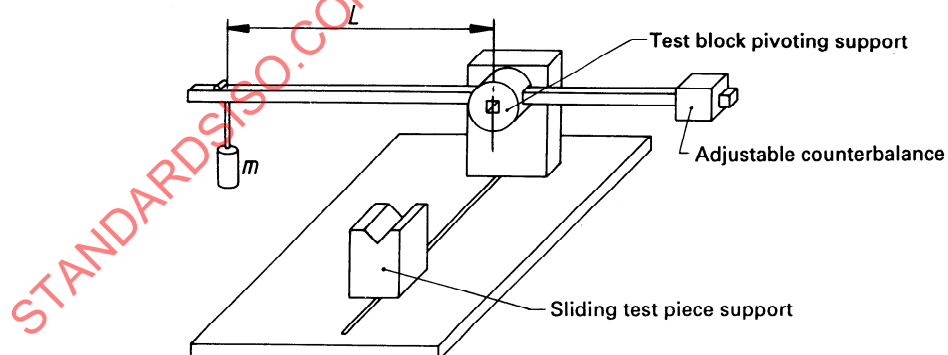
The test specified in this clause applies to the driver points only.

The test blade shall be gripped in the jaws of the mandrel of a torque testing device (see figure 5). The testing device shall also be equipped with a test block of the appropriate type and driver point size

to comply with the requirements of figure 6 and table 5.

The minimum hardness of the test block shall be 62 HRC.

After application of the minimum torque specified in table 6, the driver points shall not exhibit any fracture or permanent distortion.



m is the appropriate mass;

L is the distance from the fulcrum to the centre of the mass.

Figure 5 — Schematic representation of a torque testing device