BRITISH STANDARD

BS EN ISO 4757:1995

Cross recesses for screws

The European Standard EN ISO 4757:1994 has the status of a British Standard

UDC 621.882.215.6

Cooperating organizations

The European Committee for Standardization (CEN), under whose supervision this European Standard was prepared, comprises the national standards organizations of the following countries:

Austria	Oesterreichisches Normungsinstitut
Belgium	Institut belge de normalisation
Denmark	Dansk Standard
Finland	Suomen Standardisoimisliito, r.y.
France	Association française de normalisation
Germany	Deutsches Institut für Normung e.V.
Greece	Hellenic Organization for Standardization
Iceland	Technological Institute of Iceland
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Switzerland	Association suisse de normalisation
United Kingdom	British Standards Institution

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on
15 January 1995

The following BSI references relate to the work on this standard:
Committee reference GME/9
Draft for comment 82/70263 DC

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Amendments issued since publication

Amd. No.	Date	Comments

Contents

National foreword

This British Standard has been prepared under the direction of the Engineering Sector Board and is the English language version of EN ISO 4757:1994 *Cross recesses for screws,* published by the European Committee for Standardization (CEN). It is identical with ISO 4757:1983, published by the International Organization for Standardization (ISO). EN ISO 4757:1994 was produced as a result of international discussions in which the United Kingdom took an active part.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN ISO title page, pages 2 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 4757

July 1994

UDC 621.882.215.6

Descriptors: Fasteners, screws, cruciform recessed screws, dimensions

English version

Cross recesses for screws

(ISO 4757:1983)

Empreintes cruciformes pour vis
(ISO 4757:1983)

Kreuzschlitze für Schrauben
(ISO 4757:1983)

This European Standard was approved by CEN on 1994-07-26. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been taken over by the Technical Committee CEN/TC 185, Threaded and non-threaded mechanical fasteners and accessories, from the work of ISO/TC 2, Fasteners, of the International Organization for Standardization (ISO).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 1995, and conflicting national standards shall be withdrawn at the latest by January 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 Scope and field of application

This International Standard defines two types of cross recesses for screws:

— recess type H;

— recess type Z.

Included in this International Standard is a method of penetration gauging for both types.

2 Recess type H

2.1 Dimensions

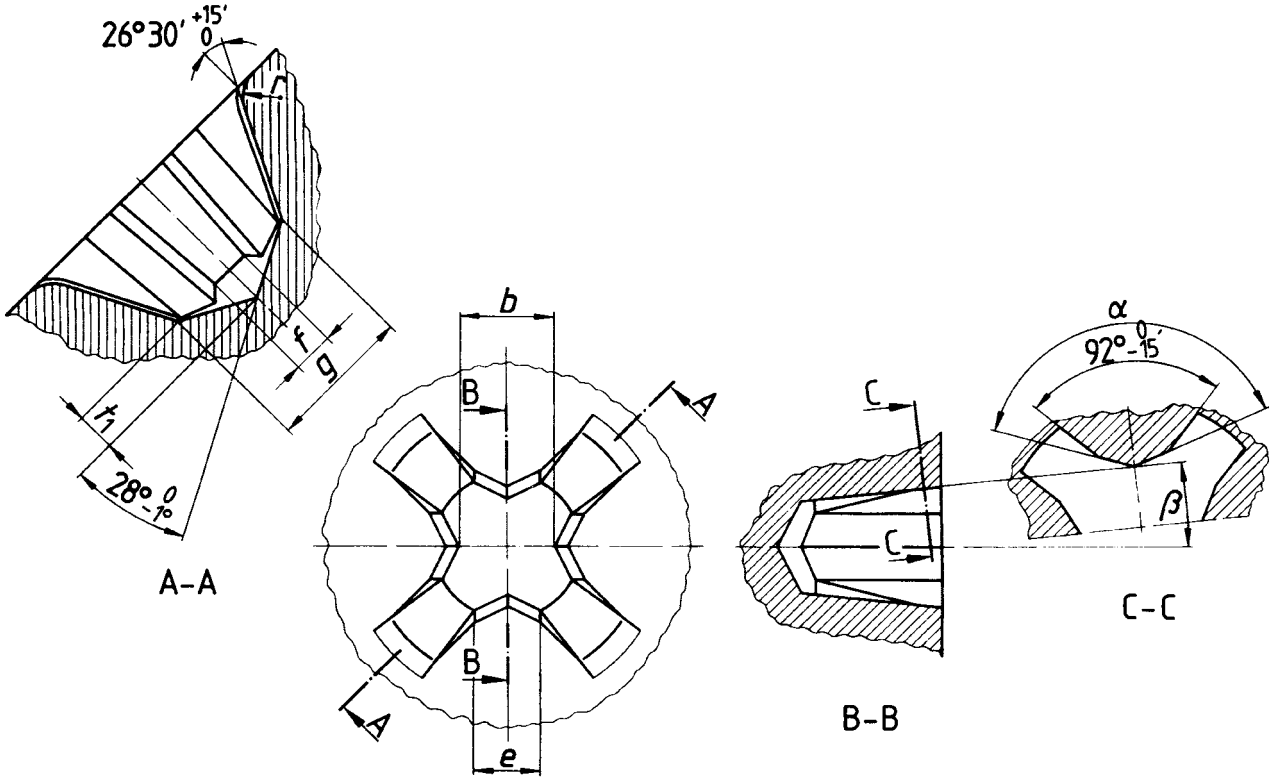


Table 1 — Recess type H

Dimensions in millimetres

Recess No.		0	1	2	3	4
b	$^{0}_{-0,03}$	0,61	0,97	1,47	2,41	3,48
e		0,26 – 0,36	0,41 – 0,46	0,79 – 0,84	1,98 – 2,03	2,39 – 2,44
g	$^{+0,05}_{0}$	0,81	1,27	2,29	3,81	5,08
f		0,31 – 0,36	0,51 – 0,56	0,66 – 0,74	0,79 – 0,86	1,19 – 1,27
r	nom.	0,3	0,5	0,6	0,8	1
t_1	ref.	0,22	0,34	0,61	1,01	1,35
α	$^{0}_{-15'}$	[a]	138°	140°	146°	153°
β	$^{+15'}_{0}$	7°	7°	5° 45′	5° 45′	7°

[a] This will be replaced by r min. 0,25 mm; r max. 0,36 mm.
Dimensions shown are theoretical values.

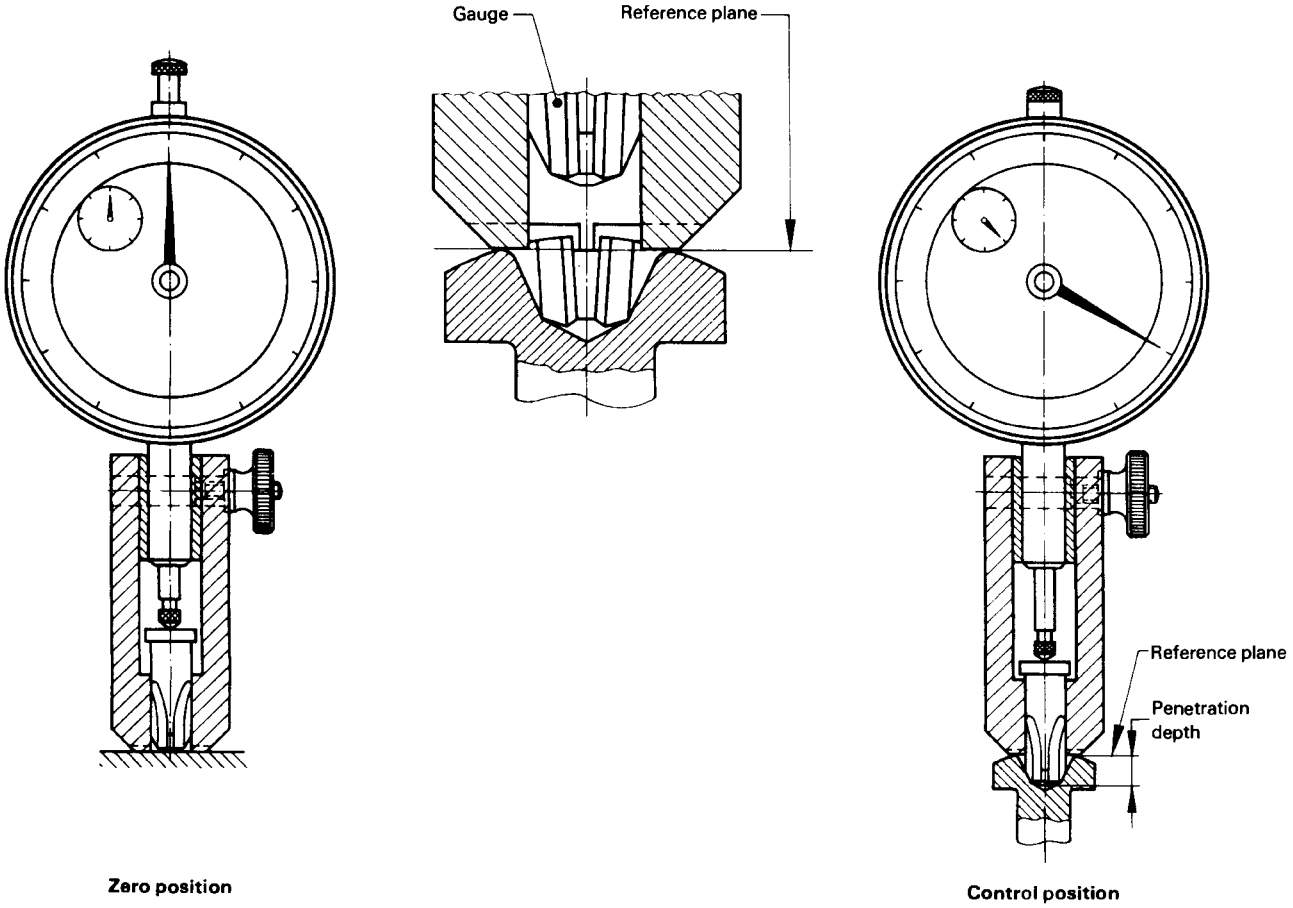
2.2 Recess penetration gauging and gauge dimensions for recess type H

The penetration depth of the depth gauge (minimum dimension) is indicated in the different product standards. It is the test dimension for the usability of the cross recess.

The point of the gauge is identical with the point of the respective screwdriver. A sleeve serves to guide the gauge and fix the reference plane. This plane passes through the point of intersection of the recess wings and the top surface of the screw head. It corresponds thus to the surface of a screw with flat head. In the case of crowned screw heads, it lies below the crown in the transition area from the recess wings to the surface of the head. For these screw heads, the reference plane is fixed with the help of the bearing surfaces of the gauge sleeve.

The penetration depth of the gauge is measured from the reference plane by using a dial gauge. The zero and control positions of the depth gauge can be found on a flat surface.

Due to the permissible error for the core thickness b of the gauge point, an inaccuracy of up to 0,13 mm can arise when measuring the penetration depth.



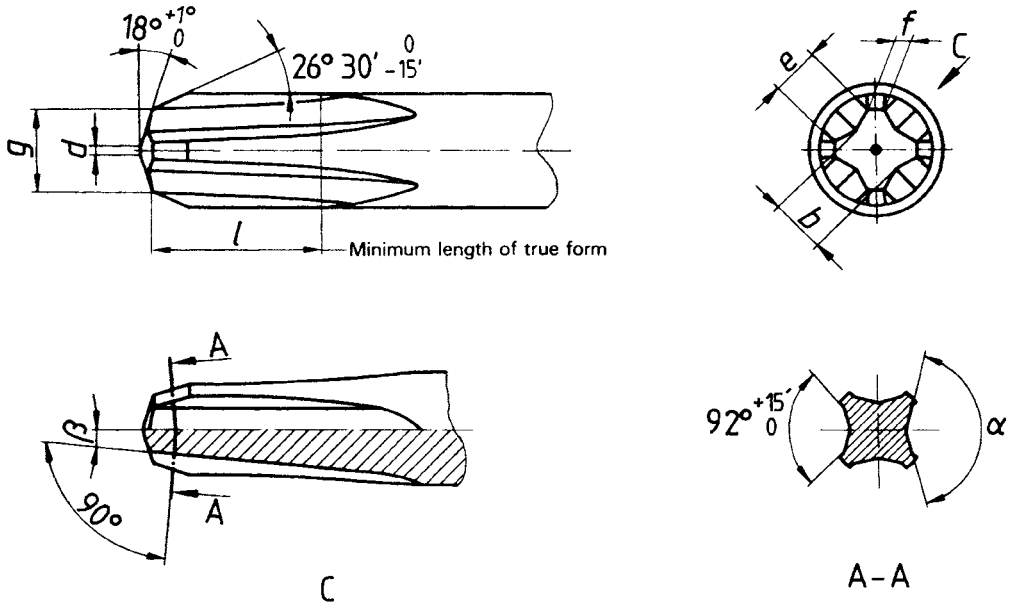


Table 2 — Gauge dimensions for recess type H

Dimensions in millimetres

Gauge No.		0	1	2	3	4
b	0 –0,025	0,64	1,001	1,539	2,497	3,574
g	+0,025 0	0,813	1,27	2,286	3,81	5,08
d	+0,13 0	0,25	0,38	0,38	0,38	0,38
e	0 –0,025	0,315	0,513	1,102	2,098	2,738
f	0 –0,06	0,31	0,51	0,64	0,79	1,12
l	min.	3,17	3,17	4,78	7,14	8,74
α	+15′ 0	[a]	138°	140°	146°	153°
β	0 –15′	7°	7°	5° 45′	5° 45′	7°

[a] This will be replaced by $r = 0{,}25 \pm 0{,}025$ mm.

3 Recess type Z

3.1 Dimensions

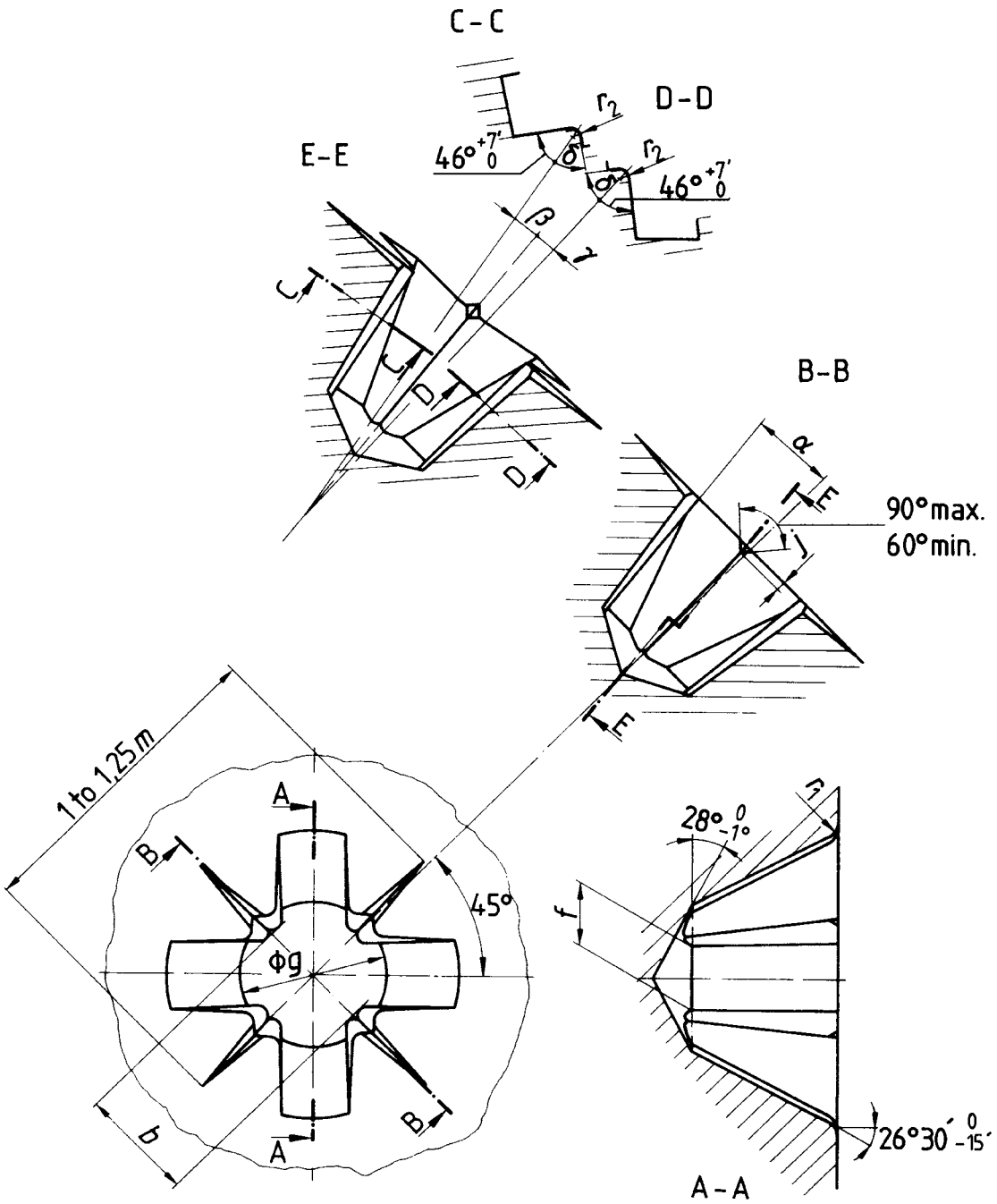


Table 3 — Recess type Z

Dimensions in millimetres

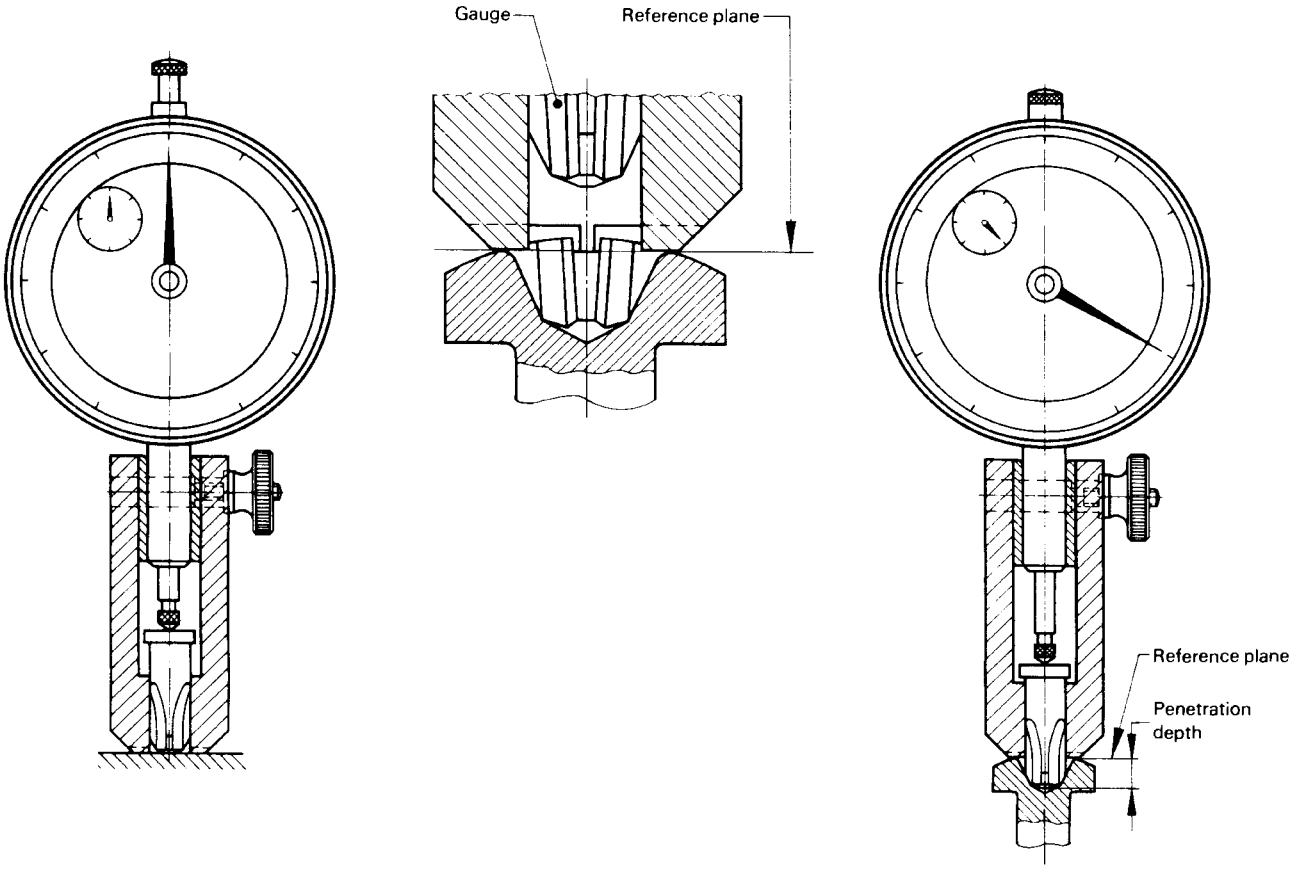
Recess No.		0	1	2	3	4
b	$^{0}_{-0,05}$	0,76	1,27	1,83	2,72	3,96
f	$^{0}_{-0,025}$	0,48	0,74	1,03	1,42	2,16
g	$^{0}_{-0,05}$	0,86	1,32	2,34	3,86	5,08
r_1	max.	0,30	0,30	0,38	0,51	0,64
r_2	max.	0,10	0,13	0,15	0,25	0,38
j	max.	0,13	0,15	0,15	0,20	0,20
α	$^{+15'}_{0}$	7°	7°	5° 45′	5° 45′	7°
β	$^{0}_{-15'}$	7° 45′	7° 45′	6° 20′	6° 20′	7° 45′
γ	$^{0}_{-15'}$	4° 23′	4° 23′	3°	3°	4° 23′
δ	$^{0}_{-7'}$	46°	46°	46°	56° 15′	56° 15′
Dimensions shown are theoretical values.						

3.2 Recess penetration gauging and gauge dimensions for recess type Z

The penetration depth of the depth gauge (minimum and maximum dimension) is indicated in the different product standards. It is the test dimension for the usability of the cross recess.

The point of the gauge is identical with the point of the respective screwdriver. A sleeve serves to guide the gauge and fix the reference plane. This plane passes through the point of intersection of the recess wings and the top surface of the screw head. It corresponds thus to the surface of a screw with flat head. In the case of crowned screw heads, it lies below the crown in the transition area from the recess wings to the surface of the head. For these screw heads, the reference plane is fixed with the help of the bearing surfaces of the gauge sleeve.

The penetration depth of the gauge is measured from the reference plane by using a dial gauge. The zero and control positions of the depth gauge can be found on a flat surface.



Zero position

Control position

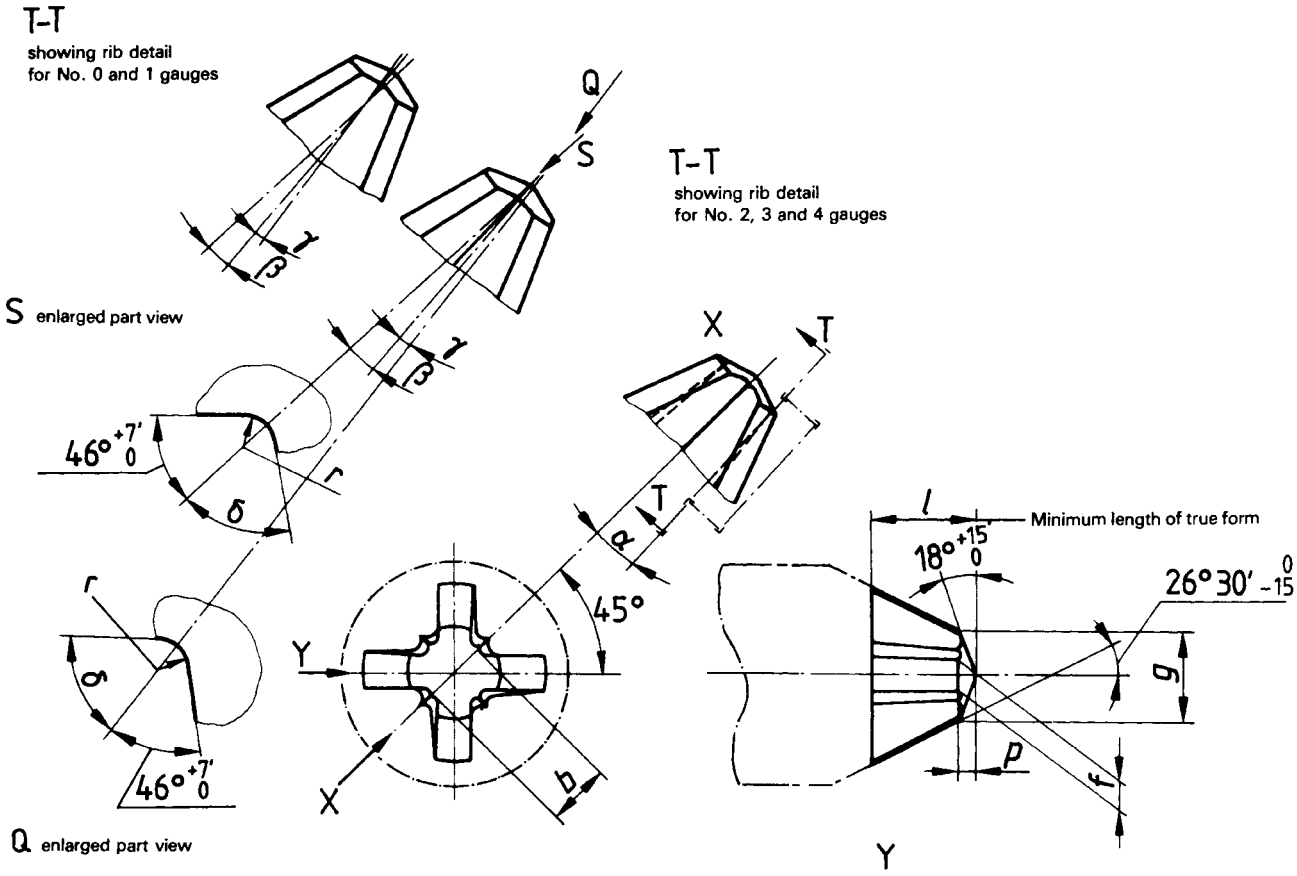


Table 4 — Gauge dimensions for recess type Z

Dimensions in millimetres

Gauge No.		0	1	2	3	4
b	max.	0,711	1,112	1,702	2,591	3,861
	min.	0,673	1,074	1,664	2,553	3,823
f	max.	0,445	0,698	0,990	1,372	2,083
	min.	0,420	0,673	0,965	1,346	2,057
g	max.	0,915	1,397	2,438	3,962	5,182
	min.	0,800	1,372	2,413	3,937	5,157
l	min.	3,17	3,17	4,78	7,14	8,74
p	max.	0,077	0,166	0,331	0,585	0,788
	min.	0,064	0,153	0,318	0,572	0,775
r	max.	0,1	0,13	0,2	0,31	0,51
	min.	0,08	0,1	0,15	0,2	0,36
α	$^{0}_{-6'}$	7°	7°	5° 45′	5° 45′	7°
β	$^{+6'}_{0}$	7° 45′	7° 45′	6° 20′	6° 20′	7° 45′
γ	$^{+6'}_{0}$	4° 23′	4° 23′	3°	3°	4° 23′
δ	$^{+7'}_{0}$	46°	46°	46°	56° 15′	56° 15′

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National annex NA (informative)
Committees responsible

The United Kingdom participation in the preparation of this European Standard was entrusted by the Engineering Sector Board to Technical Committee GME/9, upon which the following bodies were represented:

BEAMA Ltd.

British Constructional Steelwork Association Ltd.

British Industrial Fasteners Federation

British Steel Industry

British Steel Industry (Wire Section)

Gauge and Tool Makers' Association

National Association of Fastener Stockholders

Society of Motor Manufacturers and Traders Ltd.

Washer Manufacturers' Association of Great Britain

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

British Plastics Federation

Portable Electric Tool Manufacturers' Association

Small Electrical Appliances Marketing Association

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