

CONFIRMED
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Specification for

Straight-sided splines and serrations

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British Compressed Air Society	Institution of Heating and Ventilating Engineers
British Electrical and Allied Manufacturers’ Association*	Institution of Mechanical Engineers*
British Electricity Authority and Area Boards	Institution of Mechanical Engineers (Automobile Division)*
British Engineers’ Association*	Institution of Production Engineers*
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Engineering Equipment Users’ Association	Ministry of Transport
Gas Council	Ministry of Works
	National Physical Laboratory
	Radio Industry Council
	War Office

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Bright Steel Bar Association	Society of British Aircraft Constructors
Gauge and Tool Makers’ Association	Society of Motor Manufacturers and Traders
Institution of Engineers and Shipbuilders in Scotland	Taper Pin Manufacturers’ Association

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Foreword

This standard makes reference to the following British Standards:—

BS 969, *Plain limit gauges. Limits and tolerances.*

BS 1044, *Recommended designs for gauges.*

This British Standard has been prepared under the authority of the Mechanical Engineering Industry Standards Committee in order to combine in a single publication a revision of the four British Standards which have hitherto related to the various types of splines and serrations and which have now been superseded by this comprehensive standard covering the needs of the general engineering, aircraft and automobile industries.

The first British Standard relating to splines was No. 5015, “*British Standard dimensions for splines (bottom fitting) for automobiles*”, which was published in 1927 by the British Engineering Standards Association (the earlier name of the British Standards Institution). It included dimensional details and tolerances for 4, 6, 10 and 16 straight sided splines based on the existing S.A.E. standards. In 1929, Part 2 of No. 46 was published with the title “*Splines and serrations*” (Part 1 of No. 46 having been concerned with keys and keyways) and was in effect an extension of No. 5015 relating to a larger range of shaft diameters than those covered by the automobile standard. A fundamental distinction between the two standards was that while the fits in No. 5015 were based on those of the S.A.E., those in No. 46, Part 2, were based on the provisions of report No. 164, 1924, which later developed into BS 164, “*Limits and fits*”.

By 1935 it was apparent that revision of both the specifications was necessary and it was decided to embody the revised provisions for the automobile industry in the revision of BS 46-2. The draft proposals were completed and circulated to industry for comment in May, 1939, but the war intervened before the matter could be completed.

Early in 1941, resulting from the problems of production, an investigation into the question of gauges for both spline and serration production disclosed that neither BS 46-2, nor the proposed revision, included tolerances which were suitable for war production, and this led to the decision to prepare a war emergency specification relating to serrations and appropriate gauges, suitable for the aircraft industry. This specification, BS A.19, was issued in two parts, Part 1 in 1941 and Part 2 in 1942, which were subsequently brought together in one publication. The specification covered a range of fine and a range of coarse serrations, together with dimensional details for a complete set of Full Form and feature gauges. The issue of A.19 for serrations was followed by the publication, later in the same year, of A.20 for spline shafts and holes prepared for the same reason and under the same terms as A.19. In both cases it was found desirable and possible to relax the tolerances given in BS 46-2, to reduce the number of classes of fit, and to reduce the actual number of serrations and splines respectively.

In view of the urgency with which the provisions of A.20 were awaited, it was not felt possible to delay publication while the gauging provisions were finalized. Accordingly this specification, unlike A.19, was issued without a section on spline gauges, but a note under Clause 4 stated that a recommended gauging system would be issued later as a supplement.

Due to wartime conditions and a subsequent decision to proceed with the preparation of a comprehensive standard, the supplement was never completed. The present standard supersedes BS 46-2; BS 5015 and BS A19 and BS A20, and embodies the results of a considerable amount of research in the aircraft, automobile and general engineering industries. The subject matter allows for convenient division into two parts, of which the first relates to straight-sided splines, together with the appropriate gauges and the second to straight-sided serrations, together with the appropriate gauges.

The widespread development and use of involute splines has made necessary the preparation of a separate British Standard for this type. Consequently, instead of being divided into aircraft, general or automobile types, splines will be differentiated as being of straight-sided or involute form.

This specification has been prepared on the hole basis; that is to say, the hole is the constant member and different fits are obtained by varying the size of the splined or serrated shaft.

NOTE This practice accords with the recommendation in BS 1916, "*Limits and fits for engineering*". BS 1916 superseded BS 164, in which a similar recommendation appeared.

In all the tables in the standard actual maximum and minimum figures have been given while the maximum metal condition has been shown first in all cases.

A number of appendices give appropriate information on various aspects of gauging, calculations, effects of errors, tolerances, etc.

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.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 52 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.

Part 1: Straight-sided splines (parallel rectangular section) and gauges for splines

1 Introduction

a) *Fits*. The dimensions and resultant fits given in the tables of Part 1 of this standard are based upon the finished hole.

A major consideration in spline production is that the broach is the most costly single tool, is held in large stocks and, during manufacture, can be kept to very high precision limits of tolerance, thus making possible the perpetuation of identical splined bores and therefore a consistent foundation for various fits. Since the original specification was produced in 1927 many developments in the usage of splines (and serrations) have taken place, particularly in the automobile and aircraft industries. As a result of the thorough investigation which has been made into those developments and tendencies, it has been found possible to simplify this Part very considerably. For instance, No. 5015 contained tables for 4, 6, 10 and 16 splines, while BS 46-2, included tables of multiple splines covering from 8 to 80 splines on shafts from 1 in to 10 in. in diameter. The present standard includes 6 splines only, irrespective of the shaft diameter, with two depths known as “shallow” and “deep”.

In all cases the splines are bottom fitting, i.e. they have top clearance.

It is considered that 6 splines produced to the dimensions given in Table 1 and Table 2 will be suitable for most applications requiring straight-sided splines, and it is strongly recommended that serious consideration should be given to the adoption of serrations or involute splines in those cases where multi-splines have been in use.

It has not been found necessary to perpetuate the four grades of fit given in the standards now rendered obsolete as three grades are considered sufficient. The basis or constant for each fit is the splined hole.

The grades of fit have been based on the principle of variations in the diameter of the shaft at the root of the splines, in conjunction with variations in the widths of the splines themselves. These variations bear a geometrical relationship to each other and have been introduced in order to assist production by allowing for the use of a single form tool or hob, which, on being sunk deeper towards the centre by progressive steps, produces the resultant dimensions given in Table 1 and Table 2 according to the design requirements. With this method, if W represents the width of spline, and d the diameter of the shaft at the root of the splines, then the result of successive radial settings of the cutter will be that, the decrement in W : decrement in d ::1:2.

NOTE Some geometrical and diagrammatic notes on this aspect are given in Appendix A and Appendix B.

In compiling the tables, calculations have been made for the following classes of fit :—

Fit 1. Represents the condition of closest fit. It is designed for use where minimum backlash is necessary.

Fit 2. Has a positive allowance, being designed for conditions where ease of assembly is required.

Fit 3. Has a larger positive allowance than that given for *Fit 2* when such clearances can be accepted in the assembly.

All three fits allow for clearance on the sides of splines (widths) but in *Fit 1* the minor diameters of the hole and shaft may be identical in size.

When considering the assembly of a splined shaft and hole, the designed profile of each must be borne in mind. Consideration should be concentrated on the maximum diameter of the shaft and the widths of external splines in association with the minimum diameter of the hole and the widths of internal splineways or, in other words, both the external and internal splines in the maximum metal condition. Furthermore, it should be appreciated that the accuracy of spacing of the splines will have a proportionate bearing on the resultant fit. For instance if angular position is inaccurate or the splines are not parallel with the axis (alignment error) then interference between the hole and the shaft could result.

The method of presentation of the tolerances has been to show maximum and minimum limits of size for the various features and it should be understood that there can be no errors of form, i.e. spacing, alignment, roundness, etc., with maximum metal conditions.

Note should be made of one variable which might cause needless concern. If two shafts are splined to different fits by the same cutter which has been adjusted radially in accordance with the principles previously noted, the radius of the arc at the root being constant will vary slightly from the designed arc. The actual amount of this variation, however, is infinitesimal and in any case will lie within the limits of size (see Appendix B). Similarly, any error of form arising from the use of a single hob for producing the three fits of shaft will be negligible.

In the case of a spline which is to be longer than the appropriate gauges, alignment errors can assume serious proportions (see Clause 6, Table 13).

b) *Gauging*. The general principle of the system of gauging in this standard for both internal and external splines is the use of Full Form GO gauges in conjunction with NOT GO gauges for individual features. It is recognized that it is possible to produce both internal and external splines without the use of gauge, but that generally such production would be uneconomic.

The gauges, details of which are given in this standard, are those necessary for the production of the grades of splines given in Table 1 and Table 2.

2 Scope

Part 1 of this British Standard relates to straight parallel-sided splines, produced in holes or on shafts having a nominal size from ½ in. to 6 in. inclusive.

Provision is made for 6 equi-spaced splines in all cases irrespective of diameter and for two depth designated “shallow” and “deep”. The type is that known as “bottom fitting” (top clearance).

The nomenclature and terms used are defined.

The dimensions given in Table 1 and Table 2 allow for three grades of fit and apply whether the components are in the heat-treated condition or not. (Details of these fits are given in the introduction.)

Details are given of dimensions and design of the gauges required for all sizes.

Details are also included of the maximum errors of twist permissible when a spline is considerably longer than the gauges, thus making direct measurement necessary.

Notes on a method of producing various fits and a graphical representation of such fits are given in Appendices.

3 Nomenclature and definitions

straight sided spline or splineway

one whose sides (or flanks) are normal to a tangent touching the centre of the arc at the major diameter of a spline or splineway. The sides are parallel to each other through their depth and length and are known as straight to distinguish them from those having flanks of involute or other curved form

tolerance zone

the area bounded by maximum and minimum metal conditions

bottom fitting (top clearance)

that condition of spline assembly in which the minor diameter of the hub bears on the minor diameter of the shaft with a positive (and comparatively large) clearance between the major diameter of the shaft spline and major diameter of the hub splineway

spacing (positional) error

an angular displacement of a spline or splineway in relation to its design position

alignment error (twist)

any deviation of a spline, along its length, from parallelism with the axis of the shaft or hole

feature

an elemental part, such as one spline, one splineway, the width or the depth of one spline, the radius or chamfer at the corners of a spline, etc

4 Dimensions and fits

- a) The dimensions and resultant fits of shafts and holes having 6 equi-spaced splines, shallow, bottom fitting, shall be as given in Table 1.
- b) The dimensions and resultant fits of shafts and holes having 6 equi-spaced splines, deep, bottom fitting, shall be as given in Table 2.

5 Gauges

- c) The dimensions and tolerances of the Full Form GO plug and ring gauges, together with the NOT GO feature gauges shall be as specified in Table 3 to Table 12 inclusive, and in general form the gauges shall be as illustrated in Figure 3 to Figure 12 inclusive.

An allowance for wear consisting of 50 per cent of the relevant gauge tolerance, subject to a minimum of 0.000 2 in., shall be added to the tolerances given in the tables. The disposition of these wear allowances is shown in single hatching in Figure 19.

Formerly the limits of tolerance allowed for inspection gauges were outside the limits of tolerance allowed for the work itself but the gauges specified in this standard accord with the revised British Standard practice wherein the GO gauge limit of size lies within the work limit of size. As these spline GO gauges are compound gauges it has been considered necessary to permit the wear allowance to lie outside the limit of size of the work.

Go gauges for individual features would tend to indicate as acceptable elements which might later be unacceptable to the Full Form GO gauge. Users are warned however that when, for any reason, it is not intended to use Full Form GO gauges, then direct measurement is necessary, as GO feature gauges will not suffice and may in fact be dangerous, for the reason mentioned above.

It is possible, when both the splined component and the Full Form GO gauge are in the maximum metal condition, that the gauge will not accept the component, although the latter may be within the limits of size. It is recommended that direct measurement should be used in such cases.

The method of presentation of the tolerances has been to show maximum and minimum limits of size for the various features and it should be understood that there can be no errors of form, i.e. spacing, alignment, roundness, etc., with maximum metal conditions.

NOTE The relationship of the lettering used for the splined hole in Table 1 and Table 2 to the lettering used for the Full Form GO plug gauge in Table 3 is shown diagrammatically in Figure 4.

The relationship of the lettering used for the spline shaft in Table 1 and Table 2 to the lettering used for the Full Form GO ring gauge, including the three grades of fit in Table 4 for shallow, and Table 5 for deep splines, is shown diagrammatically in Figure 9.

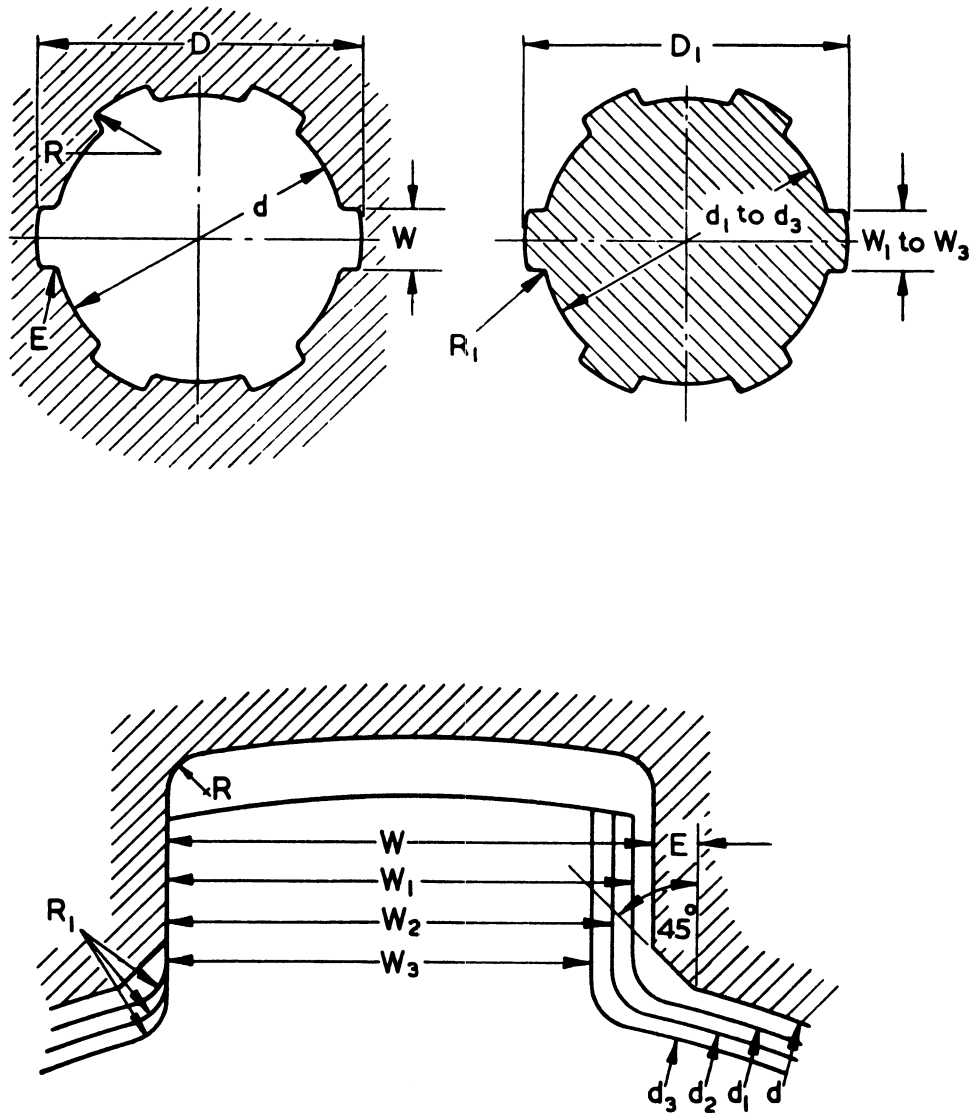


Figure 1 — Shallow splines (see Table 1)

Table 1 — Straight-sided splines, bottom fitting. Shallow (see Figure 1)

(All dimensions are in inches)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Nom. size	Hole					Shaft								Resultant clearance fit in thousandths of an inch						Nom. size
	D	d	W	R	E Chamfer at 45°	Fit 1		Fit 2		Fit 3		R ₁	1		2		3			
						D ₁	d ₁	W ₁	d ₂	W ₂	d ₃		W ₃	on dia. d - d ₁	on spline W - W ₁	on dia. d - d ₂	on spline W - W ₂	on dia. d - d ₃	on spline W - W ₃	
1/2	0.520 0.530	0.4500 0.4510	0.1250 0.1265	0.010 0.005	0.007 0.010	0.4990 0.4970	0.4500 0.4485	0.1240 0.1225	0.4485 0.4465	0.1232 0.1215	0.4470 0.4445	0.1224 0.1205	0.006 0.003	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	1/2
5/8	0.645 0.655	0.5630 0.5640	0.1560 0.1575	0.010 0.005	0.007 0.010	0.6240 0.6210	0.5630 0.5615	0.1550 0.1535	0.5615 0.5595	0.1542 0.1525	0.5600 0.5575	0.1534 0.1515	0.006 0.003	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	5/8
3/4	0.770 0.780	0.6750 0.6760	0.1870 0.1885	0.010 0.005	0.008 0.011	0.7490 0.7460	0.6750 0.6735	0.1860 0.1845	0.6735 0.6715	0.1852 0.1835	0.6720 0.6695	0.1844 0.1825	0.007 0.004	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	3/4
7/8	0.905 0.915	0.7880 0.7890	0.2180 0.2195	0.015 0.010	0.009 0.012	0.8740 0.8710	0.7880 0.7865	0.2170 0.2155	0.7865 0.7845	0.2162 0.2145	0.7850 0.7825	0.2154 0.2135	0.008 0.005	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	7/8
1	1.030 1.040	0.9000 0.9010	0.2490 0.2510	0.015 0.010	0.010 0.013	0.9990 0.9950	0.9000 0.8985	0.2480 0.2460	0.8985 0.8965	0.2472 0.2450	0.8970 0.8945	0.2464 0.2440	0.009 0.005	0 2.5	1.0 5.0	1.5 4.5	1.8 6.0	3.0 6.5	2.6 7.0	1
1 1/8	1.155 1.165	1.0130 1.0140	0.2800 0.2820	0.015 0.010	0.012 0.015	1.1240 1.1190	1.0130 1.0115	0.2790 0.2770	1.0115 1.0090	0.2782 0.2757	1.0100 1.0065	0.2774 0.2744	0.011 0.005	0 2.5	1.0 5.0	1.5 5.0	1.8 6.3	3.0 7.5	2.6 7.6	1 1/8
1 1/4	1.280 1.290	1.1250 1.1260	0.3120 0.3140	0.015 0.010	0.013 0.017	1.2490 1.2450	1.1250 1.1235	0.3110 0.3090	1.1235 1.1210	0.3102 0.3077	1.1220 1.1185	0.3094 0.3064	0.012 0.005	0 2.5	1.0 5.0	1.5 5.0	1.8 6.3	3.0 7.5	2.6 7.6	1 1/4
1 3/8	1.405 1.415	1.2380 1.2390	0.3430 0.3450	0.015 0.010	0.014 0.018	1.3740 1.3700	1.2380 1.2365	0.3420 0.3400	1.2365 1.2340	0.3412 0.3387	1.2350 1.2315	0.3404 0.3374	0.013 0.005	0 2.5	1.0 5.0	1.5 5.0	1.8 6.3	3.0 7.5	2.6 7.6	1 3/8
1 1/2	1.560 1.570	1.3500 1.3510	0.3740 0.3765	0.030 0.015	0.015 0.019	1.4990 1.4940	1.3500 1.3485	0.3730 0.3705	1.3485 1.3460	0.3722 0.3692	1.3470 1.3435	0.3714 0.3679	0.014 0.005	0 2.5	1.0 6.0	1.5 5.0	1.8 7.3	3.0 7.5	2.6 7.6	1 1/2
1 5/8	1.685 1.695	1.4630 1.4645	0.4050 0.4075	0.030 0.015	0.017 0.021	1.6240 1.6190	1.4630 1.4615	0.4035 0.4010	1.4615 1.4585	0.4027 0.3995	1.4600 1.4555	0.4019 0.3980	0.015 0.005	0 3.0	1.5 6.5	1.5 6.0	2.3 8.0	3.0 9.0	3.1 9.5	1 5/8
1 3/4	1.810 1.820	1.5750 1.5765	0.4370 0.4395	0.030 0.015	0.018 0.022	1.7490 1.7440	1.5750 1.5735	0.4355 0.4330	1.5735 1.5705	0.4347 0.4315	1.5720 1.5675	0.4339 0.4300	0.016 0.005	0 3.0	1.5 6.5	1.5 6.0	2.3 8.0	3.0 9.0	3.1 9.5	1 3/4
1 7/8	1.935 1.945	1.6880 1.6895	0.4680 0.4705	0.030 0.015	0.019 0.023	1.8740 1.8690	1.6880 1.6865	0.4665 0.4640	1.6865 1.6835	0.4657 0.4625	1.6850 1.6805	0.4649 0.4610	0.017 0.005	0 3.0	1.5 6.5	1.5 6.0	2.3 8.0	3.0 9.0	3.1 9.5	1 7/8
2	2.060 2.070	1.8000 1.8015	0.4980 0.5010	0.030 0.015	0.021 0.026	1.9990 1.9940	1.8000 1.7985	0.4965 0.4935	1.7985 1.7955	0.4957 0.4920	1.7970 1.7925	0.4949 0.4905	0.019 0.005	0 3.0	1.5 7.5	1.5 6.0	2.3 9.0	3.0 9.0	3.1 10.5	2
2 1/4	2.330 2.340	2.0250 2.0265	0.5610 0.5640	0.040 0.020	0.023 0.028	2.2490 2.2440	2.0250 2.0235	0.5595 0.5565	2.0235 2.0200	0.5587 0.5547	2.0220 2.0165	0.5579 0.5529	0.021 0.005	0 3.0	1.5 7.5	1.5 6.5	2.3 9.3	3.0 10.0	3.1 11.1	2 1/4
2 1/2	2.580 2.590	2.2500 2.2515	0.6230 0.6260	0.040 0.020	0.025 0.030	2.4990 2.4940	2.2500 2.2485	0.6215 0.6185	2.2485 2.2450	0.6207 0.6167	2.2470 2.2415	0.6199 0.6149	0.023 0.005	0 3.0	1.5 7.5	1.5 6.5	2.3 9.3	3.0 10.0	3.1 11.1	2 1/2
2 3/4	2.830 2.840	2.4750 2.4765	0.6860 0.6895	0.040 0.020	0.028 0.033	2.7490 2.7440	2.4750 2.4735	0.6845 0.6810	2.4735 2.4700	0.6837 0.6792	2.4720 2.4665	0.6829 0.6774	0.026 0.005	0 3.0	1.5 8.5	1.5 6.5	2.3 10.3	3.0 10.0	3.1 12.1	2 3/4
3	3.080 3.090	2.7000 2.7015	0.7480 0.7515	0.040 0.020	0.031 0.036	2.9990 2.9930	2.7000 2.6985	0.7465 0.7430	2.6985 2.6950	0.7457 0.7412	2.6970 2.6915	0.7449 0.7394	0.029 0.010	0 3.0	1.5 8.5	1.5 6.5	2.3 10.3	3.0 10.0	3.1 12.1	3
3 1/4	3.330 3.340	2.9250 2.9265	0.8110 0.8145	0.040 0.020	0.033 0.038	3.2490 3.2430	2.9250 2.9230	0.8090 0.8055	2.9230 2.9190	0.8080 0.8035	2.9210 2.9150	0.8070 0.8015	0.030 0.010	0 3.5	2.0 9.0	2.0 7.5	3.0 11.0	4.0 11.5	4.0 13.0	3 1/4
3 1/2	3.580 3.590	3.1500 3.1515	0.8730 0.8765	0.040 0.020	0.036 0.042	3.4990 3.4930	3.1500 3.1480	0.8710 0.8675	3.1480 3.1440	0.8700 0.8655	3.1460 3.1400	0.8690 0.8635	0.033 0.010	0 3.5	2.0 9.0	2.0 7.5	3.0 11.0	4.0 11.5	4.0 13.0	3 1/2
3 3/4	3.830 3.840	3.3750 3.3765	0.9360 0.9400	0.040 0.020	0.039 0.045	3.7490 3.7420	3.3750 3.3730	0.9340 0.9300	3.3730 3.3685	0.9330 0.9277	3.3710 3.3640	0.9320 0.9254	0.036 0.010	0 3.5	2.0 10.0	2.0 8.0	3.0 12.3	4.0 12.5	4.0 14.6	3 3/4
4	4.080 4.090	3.6000 3.6015	0.9980 1.0020	0.040 0.020	0.041 0.047	3.9990 3.9920	3.6000 3.5980	0.9960 0.9920	3.5980 3.5935	0.9950 0.9897	3.5960 3.5890	0.9940 0.9874	0.038 0.010	0 3.5	2.0 10.0	2.0 8.0	3.0 12.3	4.0 12.5	4.0 14.6	4
4 1/4	4.330 4.340	3.8250 3.8270	1.0600 1.0640	0.040 0.020	0.043 0.049	4.2490 4.2420	3.8250 3.8230	1.0580 1.0540	3.8230 3.8185	1.0570 1.0517	3.8210 3.8140	1.0560 1.0494	0.040 0.010	0 4.0	2.0 10.0	2.0 8.5	3.0 12.3	4.0 13.0	4.0 14.6	4 1/4
4 1/2	4.580 4.590	4.0500 4.0520	1.1220 1.1260	0.040 0.020	0.045 0.051	4.4990 4.4910	4.0500 4.0480	1.1200 1.1160	4.0480 4.0435	1.1190 1.1137	4.0460 4.0390	1.1180 1.1114	0.042 0.010	0 4.0	2.0 10.0	2.0 8.5	3.0 12.3	4.0 13.0	4.0 14.6	4 1/2
4 3/4	4.830 4.840	4.2750 4.2770	1.1850 1.1895	0.040 0.020	0.048 0.054	4.7490 4.7410	4.2750 4.2730	1.1825 1.1780	4.2730 4.2680	1.1815 1.1755	4.2710 4.2630	1.1805 1.1730	0.044 0.010	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	4 3/4
5	5.080 5.090	4.5000 4.5020	1.2470 1.2515	0.040 0.020	0.051 0.057	4.9990 4.9910	4.5000 4.4980	1.2445 1.2400	4.4980 4.4930	1.2435 1.2375	4.4960 4.4880	1.2425 1.2350	0.047 0.010	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5
5 1/4	5.330 5.340	4.7250 4.7270	1.3100 1.3145	0.040 0.020	0.053 0.060	5.2490 5.2410	4.7250 4.7230	1.3075 1.3030	4.7230 4.7180	1.3065 1.3005	4.7210 4.7130	1.3055 1.2980	0.049 0.010	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5 1/4
5 1/2	5.580 5.590	4.9500 4.9520	1.3720 1.3765	0.040 0.020	0.055 0.062	5.4990 5.4900	4.9500 4.9480	1.3695 1.3650	4.9480 4.9430	1.3685 1.3625	4.9460 4.9380	1.3675 1.3600	0.051 0.010	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5 1/2
5 3/4	5.830 5.840	5.1750 5.1770	1.4350 1.4395	0.040 0.020	0.060 0.067	5.7490 5.7400	5.1750 5.1730	1.4325 1.4280	5.1730 5.1680	1.4315 1.4255	5.1710 5.1630	1.4305 1.4230	0.056 0.015	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5 3/4
6	6.080 6.090	5.4000 5.4020	1.4970 1.5015	0.040 0.020	0.061 0.068	5.9990 5.9900	5.4000 5.3980	1.4945 1.4900	5.3980 5.3930	1.4935 1.4875	5.3960 5.3880	1.4925 1.4850	0.057 0.015	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	6

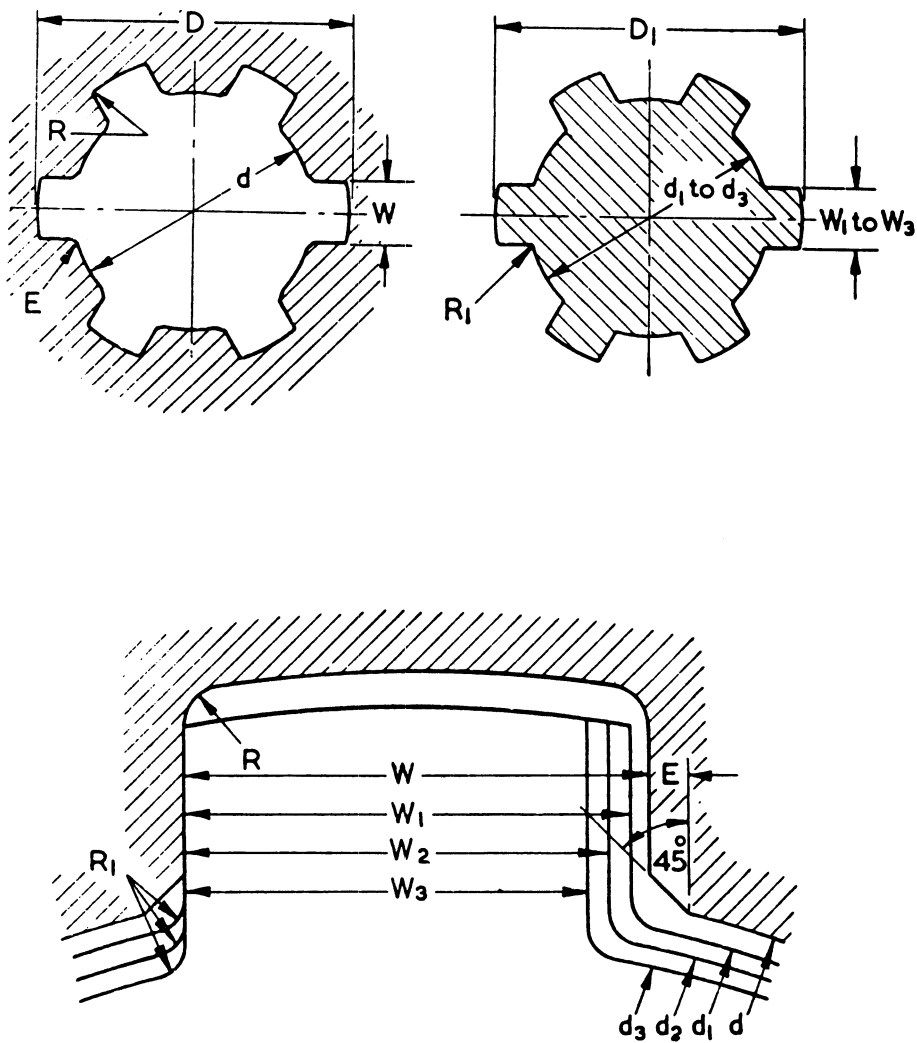


Figure 2 — Deep splines (see Table 2)

Table 2 — Straight-sided splines, bottom fitting. Deep (see Figure 2)

(All dimensions are in inches)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Nom. size	Hole					Shaft									Resultant clearance fit in thousandths of an inch						Nom. size
	D	d	W	R	E Chamfer at 45°	D ₁	Fit 1		Fit 2		Fit 3		R ₁	1		2		3			
							d ₁	W ₁	d ₂	W ₂	d ₃	W ₃		on dia. d – d ₁	on spline W – W ₁	on dia. d – d ₂	on spline W – W ₂	on dia. d – d ₃	on spline W – W ₃		
1/2	0.520 0.530	0.4250 0.4260	0.1250 0.1265	0.010 0.005	0.010 0.013	0.4990 0.4970	0.4250 0.4235	0.1240 0.1225	0.4235 0.4215	0.1232 0.1215	0.4220 0.4195	0.1224 0.1205	0.009 0.005	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	1/2	
5/8	0.645 0.655	0.5320 0.5330	0.1560 0.1575	0.010 0.005	0.010 0.013	0.6240 0.6210	0.5320 0.5305	0.1550 0.1535	0.5305 0.5285	0.1542 0.1525	0.5290 0.5265	0.1534 0.1515	0.009 0.005	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	5/8	
3/4	0.770 0.780	0.6380 0.6390	0.1870 0.1885	0.010 0.005	0.012 0.015	0.7490 0.7460	0.6380 0.6365	0.1860 0.1845	0.6365 0.6345	0.1852 0.1835	0.6350 0.6325	0.1844 0.1825	0.010 0.005	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	3/4	
7/8	0.905 0.915	0.7440 0.7450	0.2180 0.2195	0.015 0.010	0.014 0.018	0.8740 0.8710	0.7440 0.7425	0.2170 0.2155	0.7425 0.7405	0.2162 0.2145	0.7410 0.7385	0.2154 0.2135	0.012 0.005	0 2.5	1.0 4.0	1.5 4.5	1.8 5.0	3.0 6.5	2.6 6.0	7/8	
1	1.030 1.040	0.8500 0.8510	0.2490 0.2510	0.015 0.010	0.016 0.020	0.9990 0.9950	0.8500 0.8485	0.2480 0.2460	0.8485 0.8465	0.2472 0.2450	0.8470 0.8445	0.2464 0.2440	0.014 0.005	0 2.5	1.0 5.0	1.5 4.5	1.8 6.0	3.0 6.5	2.6 7.0	1	
1 1/8	1.155 1.165	0.9560 0.9570	0.2800 0.2820	0.015 0.010	0.018 0.022	1.1240 1.1190	0.9560 0.9545	0.2790 0.2770	0.9545 0.9520	0.2782 0.2757	0.9530 0.9495	0.2774 0.2744	0.016 0.005	0 2.5	1.0 5.0	1.5 5.0	1.8 6.3	3.0 7.5	2.6 7.6	1 1/8	
1 1/4	1.280 1.290	1.0630 1.0640	0.3120 0.3140	0.015 0.010	0.020 0.025	1.2490 1.2450	1.0630 1.0615	0.3110 0.3090	1.0615 1.0590	0.3102 0.3077	1.0600 1.0565	0.3094 0.3064	0.018 0.005	0 2.5	1.0 5.0	1.5 5.0	1.8 6.3	3.0 7.5	2.6 7.6	1 1/4	
1 3/8	1.405 1.415	1.1690 1.1700	0.3430 0.3450	0.015 0.010	0.020 0.025	1.3740 1.3700	1.1690 1.1675	0.3420 0.3400	1.1675 1.1650	0.3412 0.3387	1.1660 1.1625	0.3404 0.3374	0.018 0.005	0 2.5	1.0 5.0	1.5 5.0	1.8 6.3	3.0 7.5	2.6 7.6	1 3/8	
1 1/2	1.560 1.570	1.2750 1.2760	0.3740 0.3765	0.030 0.015	0.023 0.028	1.4990 1.4940	1.2750 1.2735	0.3730 0.3705	1.2735 1.2710	0.3722 0.3692	1.2720 1.2685	0.3714 0.3679	0.021 0.005	0 2.5	1.0 6.0	1.5 5.0	1.8 7.3	3.0 7.5	2.6 8.6	1 1/2	
1 5/8	1.685 1.695	1.3810 1.3825	0.4050 0.4075	0.030 0.015	0.025 0.030	1.6240 1.6190	1.3810 1.3795	0.4035 0.4010	1.3795 1.3765	0.4027 0.3995	1.3780 1.3735	0.4019 0.3980	0.023 0.005	0 3.0	1.5 6.5	1.5 6.0	2.3 8.0	3.0 9.0	3.1 9.5	1 5/8	
1 3/4	1.810 1.820	1.4880 1.4895	0.4370 0.4395	0.030 0.015	0.027 0.032	1.7490 1.7440	1.4880 1.4865	0.4355 0.4330	1.4865 1.4835	0.4347 0.4315	1.4850 1.4805	0.4339 0.4300	0.024 0.005	0 3.0	1.5 6.5	1.5 6.0	2.3 8.0	3.0 9.0	3.1 9.5	1 3/4	
1 7/8	1.935 1.945	1.5940 1.5955	0.4680 0.4705	0.030 0.015	0.030 0.035	1.8740 1.8690	1.5940 1.5925	0.4665 0.4640	1.5925 1.5895	0.4657 0.4625	1.5910 1.5865	0.4649 0.4610	0.027 0.010	0 3.0	1.5 6.5	1.5 6.0	2.3 8.0	3.0 9.0	3.1 9.5	1 7/8	
2	2.060 2.070	1.7000 1.7015	0.4980 0.5010	0.030 0.015	0.030 0.035	1.9990 1.9940	1.7000 1.6985	0.4965 0.4935	1.6985 1.6955	0.4957 0.4920	1.6970 1.6925	0.4949 0.4905	0.027 0.010	0 3.0	1.5 7.5	1.5 6.0	2.3 9.0	3.0 9.0	3.1 10.5	2	
2 1/4	2.330 2.340	1.9130 1.9145	0.5610 0.5640	0.040 0.020	0.034 0.040	2.2490 2.2440	1.9130 1.9115	0.5595 0.5565	1.9115 1.9080	0.5587 0.5547	1.9100 1.9045	0.5579 0.5529	0.031 0.010	0 3.0	1.5 7.5	1.5 6.5	2.3 9.3	3.0 10.0	3.1 11.1	2 1/4	
2 1/2	2.580 2.590	2.1250 2.1265	0.6230 0.6260	0.040 0.020	0.038 0.044	2.4990 2.4940	2.1250 2.1235	0.6215 0.6185	2.1235 2.1200	0.6207 0.6167	2.1220 2.1165	0.6199 0.6149	0.034 0.010	0 3.0	1.5 7.5	1.5 6.5	2.3 9.3	3.0 10.0	3.1 11.1	2 1/2	
2 3/4	2.830 2.840	2.3380 2.3395	0.6860 0.6895	0.040 0.020	0.042 0.048	2.7490 2.7440	2.3380 2.3365	0.6845 0.6810	2.3365 2.3330	0.6837 0.6792	2.3350 2.3295	0.6829 0.6774	0.038 0.010	0 3.0	1.5 8.5	1.5 6.5	2.3 10.3	3.0 10.0	3.1 12.1	2 3/4	
3	3.080 3.090	2.5500 2.5515	0.7480 0.7515	0.040 0.020	0.046 0.052	2.9990 2.9930	2.5500 2.5485	0.7465 0.7430	2.5485 2.5450	0.7457 0.7412	2.5470 2.5415	0.7449 0.7394	0.042 0.010	0 3.0	1.5 8.5	1.5 6.5	2.3 10.3	3.0 10.0	3.1 12.1	3	
3 1/4	3.330 3.340	2.7630 2.7645	0.8110 0.8145	0.040 0.020	0.050 0.056	3.2490 3.2430	2.7630 2.7610	0.8090 0.8055	2.7610 2.7570	0.8080 0.8035	2.7590 2.7530	0.8070 0.8015	0.046 0.010	0 3.5	2.0 9.0	2.0 7.5	3.0 11.0	4.0 11.5	4.0 13.0	3 1/4	
3 1/2	3.580 3.590	2.9750 2.9765	0.8730 0.8765	0.040 0.020	0.053 0.060	3.4990 3.4930	2.9750 2.9730	0.8710 0.8675	2.9730 2.9690	0.8700 0.8655	2.9710 2.9650	0.8690 0.8635	0.048 0.010	0 3.5	2.0 9.0	2.0 7.5	3.0 11.0	4.0 11.5	4.0 13.0	3 1/2	
3 3/4	3.830 3.840	3.1880 3.1895	0.9360 0.9400	0.040 0.020	0.056 0.063	3.7490 3.7420	3.1880 3.1860	0.9340 0.9300	3.1860 3.1815	0.9330 0.9277	3.1840 3.1770	0.9320 0.9254	0.051 0.010	0 3.5	2.0 10.0	2.0 8.0	3.0 12.3	4.0 12.5	4.0 14.6	3 3/4	
4	4.080 4.090	3.4000 3.4015	0.9980 1.0020	0.040 0.020	0.061 0.068	3.9990 3.9920	3.4000 3.3980	0.9960 0.9920	3.3980 3.3935	0.9950 0.9897	3.3960 3.3890	0.9940 0.9874	0.055 0.015	0 3.5	2.0 10.0	2.0 8.0	3.0 12.3	4.0 12.5	4.0 14.6	4	
4 1/4	4.330 4.340	3.6130 3.6150	1.0600 1.0640	0.040 0.020	0.064 0.072	4.2490 4.2420	3.6130 3.6110	1.0580 1.0540	3.6110 3.6065	1.0570 1.0517	3.6090 3.6020	1.0560 1.0494	0.058 0.015	0 4.0	2.0 10.0	2.0 8.5	3.0 12.3	4.0 13.0	4.0 14.6	4 1/4	
4 1/2	4.580 4.590	3.8250 3.8270	1.1220 1.1260	0.040 0.020	0.068 0.076	4.4990 4.4910	3.8250 3.8230	1.1200 1.1160	3.8230 3.8185	1.1190 1.1137	3.8210 3.8140	1.1180 1.1114	0.062 0.015	0 4.0	2.0 10.0	2.0 8.5	3.0 12.3	4.0 13.0	4.0 14.6	4 1/2	
4 3/4	4.830 4.840	4.0380 4.0400	1.1850 1.1895	0.040 0.020	0.072 0.080	4.7490 4.7410	4.0380 4.0360	1.1825 1.1780	4.0360 4.0310	1.1815 1.1755	4.0340 4.0260	1.1805 1.1730	0.066 0.015	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	4 3/4	
5	5.080 5.090	4.2500 4.2520	1.2470 1.2515	0.040 0.020	0.076 0.084	4.9990 4.9910	4.2500 4.2480	1.2445 1.2400	4.2480 4.2430	1.2435 1.2375	4.2460 4.2380	1.2425 1.2350	0.069 0.020	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5	
5 1/4	5.330 5.340	4.4630 4.4650	1.3100 1.3145	0.040 0.020	0.080 0.088	5.2490 5.2410	4.4630 4.4610	1.3075 1.3030	4.4610 4.4560	1.3065 1.3005	4.4590 4.4510	1.3055 1.2980	0.073 0.020	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5 1/4	
5 1/2	5.580 5.590	4.6750 4.6770	1.3720 1.3765	0.040 0.020	0.083 0.091	5.4990 5.4900	4.6750 4.6730	1.3695 1.3650	4.6730 4.6680	1.3685 1.3625	4.6710 4.6630	1.3675 1.3600	0.076 0.020	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5 1/2	
5 3/4	5.830 5.840	4.8880 4.8900	1.4350 1.4395	0.040 0.020	0.087 0.095	5.7490 5.7400	4.8880 4.8860	1.4325 1.4280	4.8860 4.8810	1.4315 1.4255	4.8840 4.8760	1.4305 1.4230	0.080 0.020	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	5 3/4	
6	6.080 6.090	5.1000 5.1020	1.4970 1.5015	0.040 0.020	0.090 0.100	5.9990 5.9900	5.1000 5.0980	1.4945 1.4900	5.0980 5.0930	1.4935 1.4875	5.0960 5.0880	1.4925 1.4850	0.082 0.020	0 4.0	2.5 11.5	2.0 9.0	3.5 14.0	4.0 14.0	4.5 16.5	6	

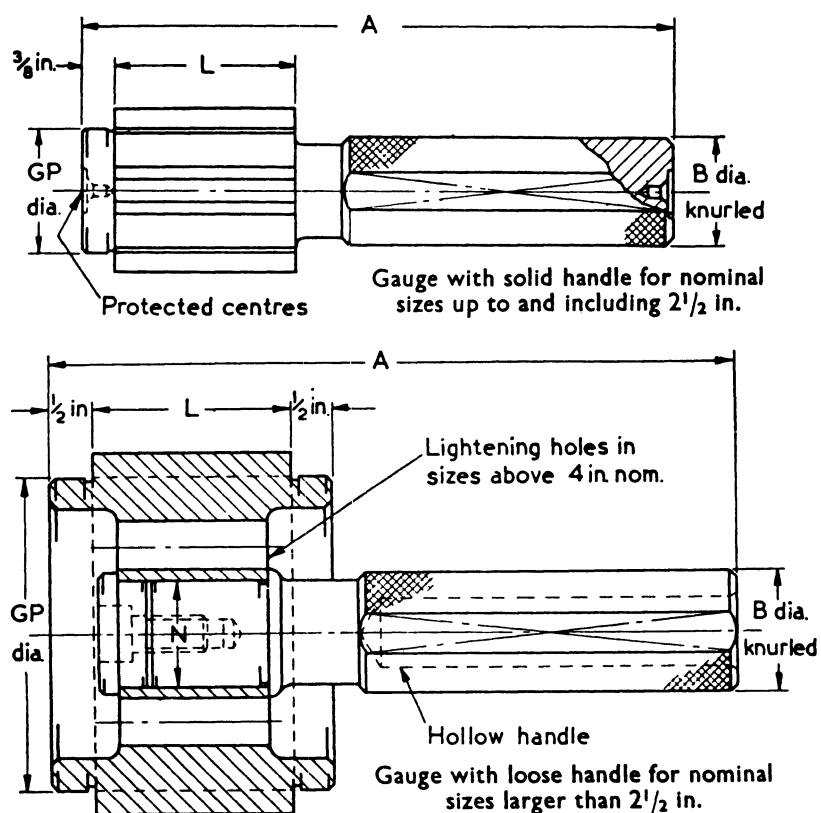


Figure 3 — Full Form GO plug gauges (see Table 3)

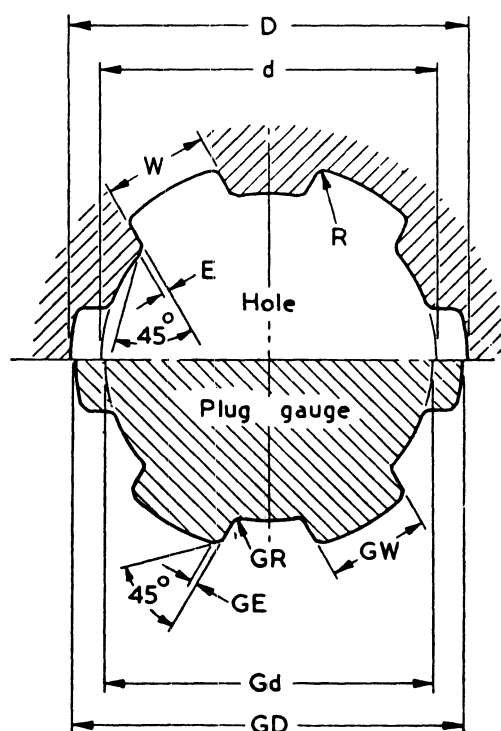


Figure 4 — Relationship of Full Form GO plug gauge and hole

Table 3 — Full Form “GO” plug gauges for shallow and deep splines (see Figure 3 and Figure 4)

(All dimensions are in inches)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Nominal size	Shallow			Deep			Shallow and deep							Nominal size
	Gd	GP	GR	Gd	GP	GR	GD	GW	GE	A	B	L	N	
$1/2$	0.450 3 0.450 0	0.450 0 0.449 8	0.006 0.003	0.425 3 0.425 0	0.425 0 0.424 8	0.009 0.004	0.520 7 0.520 0	0.125 4 0.125 0	0.012 0.009	$4^{1/2}$	$3/8$ maximum	$3/4$	—	$1/2$
$5/8$	0.563 3 0.563 0	0.563 0 0.562 8	0.006 0.003	0.532 3 0.532 0	0.532 0 0.531 8	0.009 0.004	0.645 7 0.645 0	0.156 4 0.156 0	0.012 0.009	$4^{1/2}$	$1/2$ maximum	$7/8$	—	$5/8$
$3/4$	0.675 3 0.675 0	0.675 0 0.674 8	0.007 0.003	0.638 3 0.638 0	0.638 0 0.637 8	0.010 0.005	0.770 7 0.770 0	0.187 4 0.187 0	0.012 0.009	$4^{1/2}$	$5/8$ maximum	1	—	$3/4$
$7/8$	0.788 3 0.788 0	0.788 0 0.787 8	0.008 0.003	0.744 3 0.744 0	0.744 0 0.743 8	0.012 0.007	0.905 7 0.905 0	0.218 4 0.218 0	0.017 0.014	$5^{1/2}$	$1^{1/16}$	$1^{1/8}$	—	$7/8$
1	0.900 3 0.900 0	0.900 0 0.899 8	0.009 0.004	0.850 3 0.850 0	0.850 0 0.849 8	0.014 0.009	1.030 7 1.030 0	0.249 4 0.249 0	0.017 0.014	$5^{1/2}$	$3/4$	$1^{1/4}$	—	1
$1^{1/8}$	1.013 3 1.013 0	1.013 0 1.012 8	0.011 0.006	0.956 3 0.956 0	0.956 0 0.955 8	0.016 0.011	1.155 7 1.155 0	0.280 4 0.280 0	0.017 0.014	$5^{1/2}$	$1^{3/16}$	$1^{3/8}$	—	$1^{1/8}$
$1^{1/4}$	1.125 3 1.125 0	1.125 0 1.124 8	0.012 0.007	1.063 3 1.063 0	1.063 0 1.062 8	0.018 0.013	1.280 7 1.280 0	0.312 4 0.312 0	0.017 0.014	$5^{1/2}$	$7/8$	$1^{1/2}$	—	$1^{1/4}$
$1^{3/8}$	1.238 3 1.238 0	1.238 0 1.237 8	0.013 0.008	1.169 3 1.169 0	1.169 0 1.168 8	0.018 0.013	1.405 7 1.405 0	0.343 4 0.343 0	0.017 0.014	$6^{1/2}$	1	$1^{5/8}$	—	$1^{3/8}$
$1^{1/2}$	1.350 3 1.350 0	1.350 0 1.349 8	0.014 0.009	1.275 3 1.275 0	1.275 0 1.274 8	0.021 0.016	1.560 7 1.560 0	0.374 4 0.374 0	0.032 0.029	$6^{1/2}$	1	$1^{3/4}$	—	$1^{1/2}$
$1^{5/8}$	1.463 3 1.463 0	1.463 0 1.462 8	0.015 0.010	1.381 3 1.381 0	1.381 0 1.380 8	0.023 0.018	1.685 7 1.685 0	0.405 4 0.405 0	0.032 0.029	$6^{1/2}$	1	$1^{7/8}$	—	$1^{5/8}$
$1^{3/4}$	1.575 3 1.575 0	1.575 0 1.574 8	0.016 0.011	1.488 3 1.488 0	1.488 0 1.487 8	0.024 0.019	1.810 7 1.810 0	0.437 4 0.437 0	0.032 0.029	$6^{1/2}$	$1^{1/8}$	2	—	$1^{3/4}$
$1^{7/8}$	1.688 3 1.688 0	1.688 0 1.687 8	0.017 0.012	1.594 3 1.594 0	1.594 0 1.593 8	0.027 0.022	1.935 7 1.935 0	0.468 4 0.468 0	0.032 0.029	$6^{1/2}$	$1^{1/8}$	2	—	$1^{7/8}$
2	1.800 3 1.800 0	1.800 0 1.799 8	0.019 0.014	1.700 3 1.700 0	1.700 0 1.699 8	0.027 0.022	2.060 7 2.060 0	0.498 4 0.498 0	0.032 0.029	$6^{1/2}$	$1^{1/8}$	2	—	2
$2^{1/4}$	2.025 3 2.025 0	2.025 0 2.024 7	0.021 0.016	1.913 3 1.913 0	1.913 0 1.912 7	0.031 0.026	2.330 7 2.330 0	0.561 6 0.561 0	0.042 0.039	7	$1^{1/8}$	2	—	$2^{1/4}$
$2^{1/2}$	2.250 3 2.250 0	2.250 0 2.249 7	0.023 0.018	2.125 3 2.125 0	2.125 0 2.124 7	0.034 0.029	2.580 7 2.580 0	0.623 6 0.623 0	0.042 0.039	7	$1^{1/8}$	2	—	$2^{1/2}$
$2^{3/4}$	2.475 3 2.475 0	2.475 0 2.474 7	0.026 0.021	2.338 3 2.338 0	2.338 0 2.337 7	0.038 0.033	2.830 7 2.830 0	0.686 6 0.686 0	0.042 0.039	7	$1^{1/8}$	2	$2^{29/32}$	$2^{3/4}$
3	2.700 3 2.700 0	2.700 0 2.699 7	0.029 0.024	2.550 3 2.550 0	2.550 0 2.549 7	0.042 0.037	3.080 7 3.080 0	0.748 6 0.748 0	0.042 0.039	7	$1^{1/8}$	2	$2^{29/32}$	3
$3^{1/4}$	2.925 3 2.925 0	2.925 0 2.924 7	0.030 0.025	2.763 3 2.763 0	2.763 0 2.762 7	0.046 0.041	3.330 7 3.330 0	0.811 6 0.811 0	0.042 0.039	$7^{1/8}$	$1^{1/4}$	2	$1^{1/8}$	$3^{1/4}$
$3^{1/2}$	3.150 3 3.150 0	3.150 0 3.149 7	0.033 0.028	2.975 3 2.975 0	2.975 0 2.974 7	0.048 0.043	3.580 7 3.580 0	0.873 6 0.873 0	0.042 0.039	$7^{1/8}$	$1^{1/4}$	2	$1^{1/8}$	$3^{1/2}$
$3^{3/4}$	3.375 3 3.375 0	3.375 0 3.374 7	0.036 0.031	3.188 3 3.188 0	3.188 0 3.187 7	0.051 0.046	3.830 7 3.830 0	0.936 6 0.936 0	0.042 0.039	$7^{1/8}$	$1^{1/4}$	2	$1^{1/8}$	$3^{3/4}$
4	3.600 3 3.600 0	3.600 0 3.599 7	0.038 0.033	3.400 3 3.400 0	3.400 0 3.399 7	0.055 0.050	4.080 7 4.080 0	0.998 6 0.998 0	0.042 0.039	$7^{1/8}$	$1^{1/4}$	2	$1^{1/8}$	4
$4^{1/4}$	3.825 4 3.825 0	3.825 0 3.824 6	0.040 0.035	3.613 4 3.613 0	3.613 0 3.612 6	0.058 0.053	4.330 7 4.330 0	1.060 8 1.060 0	0.042 0.039	$7^{1/2}$	$1^{3/8}$	$2^{1/4}$	$1^{1/4}$	$4^{1/4}$
$4^{1/2}$	4.050 4 4.050 0	4.050 0 4.049 6	0.042 0.037	3.825 4 3.825 0	3.825 0 3.824 6	0.062 0.057	4.580 7 4.580 0	1.122 8 1.122 0	0.042 0.039	$7^{1/2}$	$1^{3/8}$	$2^{1/4}$	$1^{1/4}$	$4^{1/2}$
$4^{3/4}$	4.275 4 4.275 0	4.275 0 4.274 6	0.044 0.039	4.038 4 4.038 0	4.038 0 4.037 6	0.066 0.061	4.830 7 4.830 0	1.185 8 1.185 0	0.042 0.039	$7^{1/2}$	$1^{3/8}$	$2^{1/4}$	$1^{1/4}$	$4^{3/4}$
5	4.500 4 4.500 0	4.500 0 4.499 6	0.047 0.042	4.250 4 4.250 0	4.250 0 4.249 6	0.069 0.064	5.080 7 5.080 0	1.247 8 1.247 0	0.042 0.039	$7^{1/2}$	$1^{3/8}$	$2^{1/4}$	$1^{1/4}$	5
$5^{1/4}$	4.725 4 4.725 0	4.725 0 4.724 6	0.049 0.044	4.463 4 4.463 0	4.463 0 4.462 6	0.073 0.068	5.330 7 5.330 0	1.310 8 1.310 0	0.042 0.039	$7^{3/4}$	$1^{3/8}$	$2^{1/2}$	$1^{1/4}$	$5^{1/4}$
$5^{1/2}$	4.950 4 4.950 0	4.950 0 4.949 6	0.051 0.046	4.675 4 4.675 0	4.675 0 4.674 6	0.076 0.071	5.580 7 5.580 0	1.372 8 1.372 0	0.042 0.039	$7^{3/4}$	$1^{3/8}$	$2^{1/2}$	$1^{1/4}$	$5^{1/2}$
$5^{3/4}$	5.175 4 5.175 0	5.175 0 5.174 6	0.056 0.051	4.888 4 4.888 0	4.888 0 4.887 6	0.080 0.075	5.830 7 5.830 0	1.435 8 1.435 0	0.042 0.039	$7^{3/4}$	$1^{3/8}$	$2^{1/2}$	$1^{1/4}$	$5^{3/4}$
6	5.400 4 5.400 0	5.400 0 5.399 6	0.057 0.052	5.100 4 5.100 0	5.100 0 5.099 6	0.082 0.077	6.080 7 6.080 0	1.497 8 1.497 0	0.042 0.039	$7^{3/4}$	$1^{3/8}$	$2^{1/2}$	$1^{1/4}$	6

NOTE All errors of spacing, alignment, roundness, etc. shall lie within the limits of size (see Clause 5).

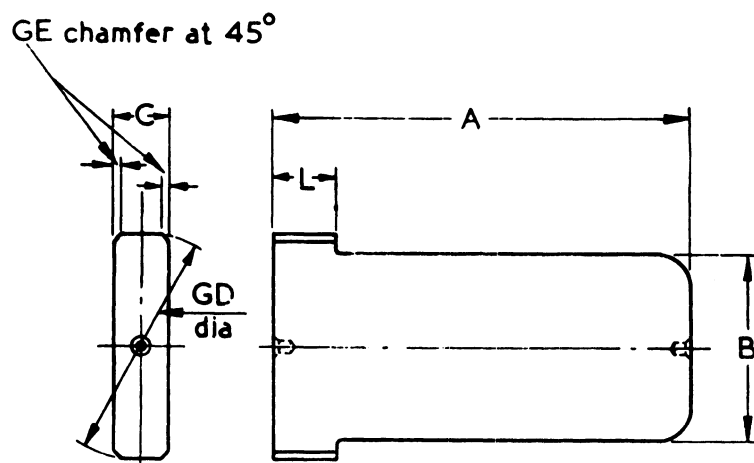
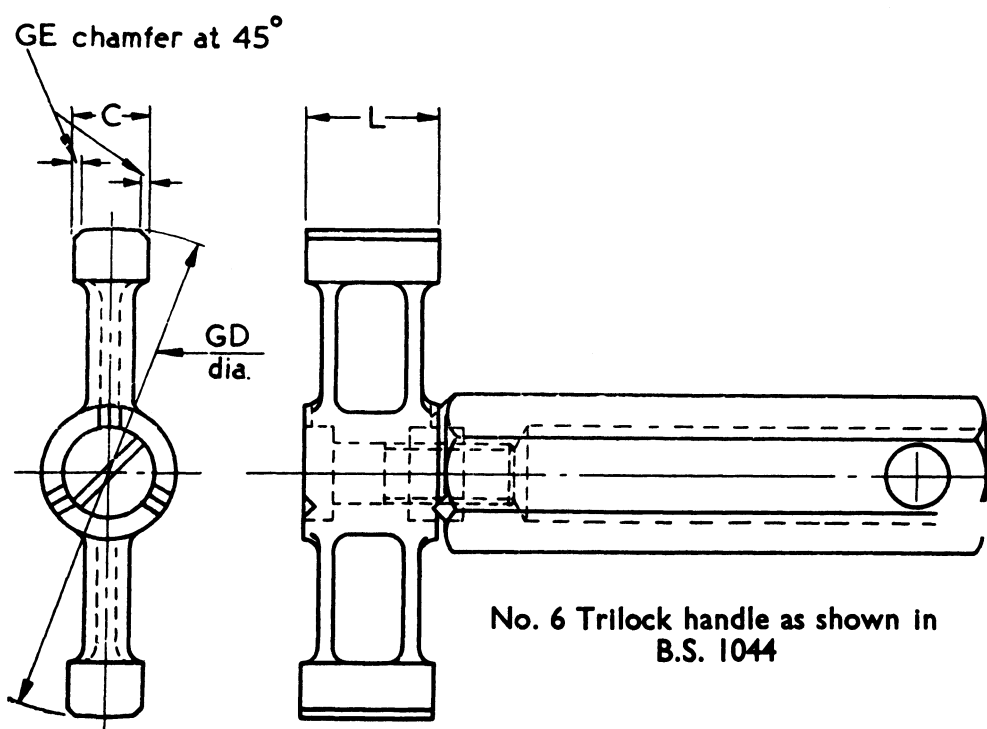


Plate form of gauge for sizes up to and including $2\frac{1}{2}$ in.



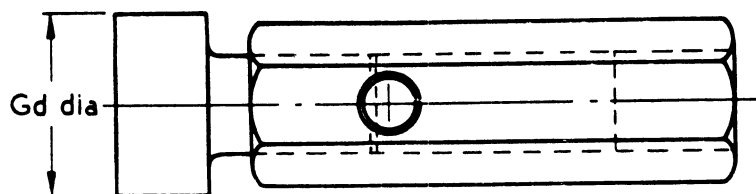
Blanks as shown in BS 1044, Table 9 are obtainable for sizes below $4\frac{1}{2}$ in.
Forging with loose handle for sizes larger than $2\frac{1}{2}$ in.

Figure 5 — NOT GO plug gauges for major diameter (see Table 4)

Table 4 — “NOT GO” plug gauges for major diameter (see Figure 5)

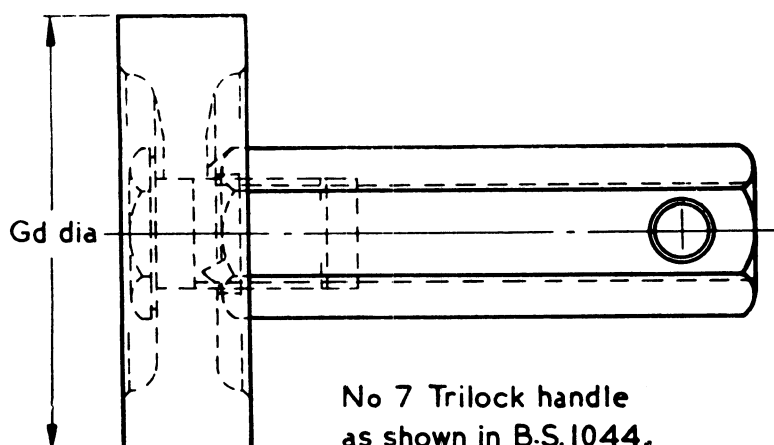
(All dimensions are in inches)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Nom. size	A	B	C	GD	GE	Nom. size	A	B	C	L	GD	GE	Nom. size	C	L	GD	GE
$1/2$	3	$1/2$	$3/32$	0.530 7 0.530 0	0.013 0.010	$1 3/4$	4	$1 1/2$	$13/32$	—	1.820 7 1.820 0	0.035 0.030	4	$5/8$	$1 1/8$	4.090 7 4.090 0	0.050 0.040
$5/8$	3	$5/8$	$1/8$	0.655 7 0.655 0	0.015 0.010	$1 7/8$	4	$1 5/8$	$7/16$	—	1.945 7 1.945 0	0.035 0.030	$4 1/4$	$5/8$	$1 1/8$	4.340 7 4.340 0	0.050 0.040
$3/4$	3	$3/4$	$5/32$	0.780 7 0.780 0	0.015 0.010	2	4	$1 3/4$	$15/32$	—	2.070 7 2.070 0	0.035 0.030	$4 1/2$	$11/16$	$1 3/16$	4.590 7 4.590 0	0.050 0.040
$7/8$	$3 1/2$	$7/8$	$3/16$	0.915 7 0.915 0	0.020 0.015	$2 1/4$	4	2	$1/2$	—	2.340 7 2.340 0	0.050 0.040	$4 3/4$	$11/16$	$1 3/16$	4.840 7 4.840 0	0.050 0.040
1	$3 1/2$	$15/16$	$7/32$	1.040 7 1.040 0	0.020 0.015	$2 1/2$	4	$2 1/4$	$1/2$	—	2.590 7 2.590 0	0.050 0.040	5	$11/16$	$1 3/16$	5.090 7 5.090 0	0.050 0.040
$1 1/8$	$3 1/2$	1	$1/4$	1.165 7 1.165 0	0.020 0.015	$2 3/4$	—	—	$1/2$	1	2.840 7 2.840 0	0.050 0.040	$5 1/4$	$3/4$	$1 1/4$	5.340 7 5.340 0	0.050 0.040
$1 1/4$	4	$1 1/8$	$9/32$	1.290 7 1.290 0	0.020 0.015	3	—	—	$1/2$	1	3.090 7 3.090 0	0.050 0.040	$5 1/2$	$3/4$	$1 1/4$	5.590 7 5.590 0	0.050 0.040
$1 3/8$	4	$1 1/4$	$5/16$	1.415 7 1.415 0	0.020 0.015	$3 1/4$	—	—	$9/16$	$1 1/16$	3.340 7 3.340 0	0.050 0.040	$5 3/4$	$3/4$	$1 1/4$	5.840 7 5.840 0	0.050 0.040
$1 1/2$	4	$1 3/8$	$11/32$	1.570 7 1.570 0	0.035 0.030	$3 1/2$	—	—	$9/16$	$1 1/16$	3.590 7 3.590 0	0.050 0.040	6	$13/16$	$1 5/16$	6.090 7 6.090 0	0.050 0.040
$1 5/8$	4	$1 7/16$	$3/8$	1.695 7 1.695 0	0.035 0.030	$3 3/4$	—	—	$5/8$	$1 1/8$	3.840 7 3.840 0	0.050 0.040					



Taper lock handle and blanks
as shown in tables 1 and 3 of B.S. 1044.

For sizes up to and including $2\frac{1}{2}$ in.



No 7 Trilock handle
as shown in B.S. 1044.

For sizes larger than $2\frac{1}{2}$ in.

Figure 6 — NOT GO plug gauges for minor diameter (see Table 5)