BRITISH STANDARD

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*Incorporating*
*Amendment No. 1*

## Specification for

# Screw thread measuring cylinders

# Co-operating organizations

The Mechanical Engineering Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

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# Contents

# Foreword

This standard makes reference to the following British Standards:

BS 84, *Parallel screw threads of Whitworth form.*

BS 93, *British Association (B.A.) screw threads.*

BS 427, *Vickers hardness test — Part 1:1961 Testing of metals.*

BS 1580, *Unified screw threads.*

BS 3643, *Metric screw threads.*

This British Standard which relates to screw thread measuring cylinders, used in the determination of the effective diameter *E* of external screw threads, has been prepared under the authority of the Mechanical Engineering Industry Standards Committee in response to requests from the National Physical Laboratory and from user sources.

Thread measuring cylinders have been employed in the measurement of external screw threads for many years and their use for this purpose has long been familiar. During World War I the National Physical Laboratory established a recommended series of so-called "Best-size" cylinders for use in the measurement of screw threads of Whitworth, ISO Metric and B.A. thread forms. This series, amended and enlarged to include Unified threads, has been used extensively ever since and is still in use in this country at the present time.

In issuing this first British Standard for screw thread measuring cylinders opportunity has been taken to draw on the considerable experience gained in screw thread measurement over the years. Two grades of measuring cylinders are provided for in the standard, viz., Grade A (pitch-line) cylinders and Grade B (grouped) cylinders. Grade B cylinders are the same as the N.P.L. "Best-size" cylinders referred to above; Grade A cylinders are new and are chosen to make contact with the flanks of the screw thread under measurement very close to the pitch-line. This entails a particular size of Grade A cylinder for each form and pitch of screw thread.

SPECIAL NOTE. The introduction of Grade A (pitch-line) cylinders with their finer diametral tolerances renders the term "Best-size" (as applied to the series originally covered by the N.P.L. Schedule) anomalous, and the designation "Best-size" is therefore not recognized in this standard.

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 and ii, pages 1 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.

## 1 Scope

This British Standard relates to two grades of screw thread measuring cylinders intended for use in checking external screw threads by means of pitch diameter measuring machines.

NOTE For a full description of this well established method of measuring the effective diameter of an external screw thread when using thread measuring cylinders, and also for an explanation of the *P* value used in this measurement, see "Notes on Applied Science No.1" issued by the Department of Scientific and Industrial Research and entitled "Gauging and Measuring Screw Threads", published by Her Majesty's Stationery Office.

The standard comprises two parts:

Part 1 gives the bases for the diametral tolerances of Grade A and Grade B screw thread measuring cylinders and the relative merits of the two grades.

Part 2 gives the complete specification for both grades of cylinders suitable for the forms and pitches of screw threads shown in Table 1.

## 2 Terminology

*"Pairs" and "sets" of screw thread measuring, cylinders*. When two cylinders are used for measuring the effective diameter of a screw thread they are referred to in this standard as a "pair" and when three cylinders are used they are referred to as a "set".

# Part 1. Grades of cylinders

## 3 Tolerances and *P* values

a) *Grade A (pitch-line) screw thread measuring cylinders*. Grade A cylinders nominally make contact with the flanks of the screw thread on the pitch line; it follows that a pair (or a set) will be required for each pitch and form of screw thread to be measured. A diametral tolerance of ± 0.000 02 in from nominal size is allowed. It is intended that the *P* value associated with Grade A cylinders should be calculated on the nominal diameter of the cylinders used, regardless of where their actual diameters lie within the ± 0.000 02 in tolerance zone.

NOTE Should the actual diameters of a pair or set of Grade A cylinders all happen to fall on the upper or on the lower limit of the ± 0.000 02 in tolerance zone, then the basing of the *P* value on the nominal diameter of the thread measuring cylinder could give rise to an error of 0.000 02 inches in the measured effective diameter of Whitworth, Unified and ISO Metric threads, and 0.000 03 inches in the case of B.A. threads. These small inaccuracies of measurement. which only occur in extreme cases, are considered to be insignificant; they could of course bc entirely eliminated, if desired, by calculating the *P* value using the actual mean diameter of the thread measuring cylinders instead of the nominal diameter.

b) *Grade B (grouped) screw thread measuring cylinders (original N.P.I. "Best-size" cylinders).* Grade B cylinders have larger diametral tolerances than those of Grade A to enable an individual pair or set to be used for measuring a specified range of screws of different form and pitch.

Their diametral tolerances are controlled, so as to allow them to make contact with the flanks of the thread anywhere within a distance on each side of the pitch-line equal to one-twentieth of the length of the straight portion of the flank. (This requirement is modified slightly for screw threads of Unified and ISO Metric form; for these threads the cylinders make contact with the flanks anywhere within a distance on each side of the pitch line equal to one-tenth of the length of the straight portion *above the pitch-line*.)

Calculating the diametral tolerance zones on the above basis for cylinders to be used on threads of Whitworth, Unified, ISO Metric and B.A. forms, reveals that the zones for some thread, forms overlap. Thus it is possible to select a restricted tolerance zone which is common for threads of different form which can be served by a single pair (or set) of cylinders. The details relating to Grade B cylinders given in Table 7 have been worked out on this basis.

Sometimes a pair or set of Grade B cylinders is purchased for the measurement of a screw thread of one form only. In this case the permitted diametral tolerance band for the cylinders is calculated for the particular form of screw thread in question, using the appropriate formula given in Table 8.

The *P* value to be associated with a pair or set of Grade B cylinders is calculated on the *mean* of the measured diameters of the two or three cylinders concerned.

When Grade B cylinders are used to measure a screw thread whose flank angles are in error by as much as the full equivalent of the tolerance allowed on the effective diameter of the thread, the error which could arise in measuring the effective diameter (on the assumption that the flank angles were correct) could, in the extreme case, be about one-tenth of the tolerance allowed on that diameter.

## 4 Relative merits of Grade A and Grade B screw thread measuring machines

The choice between Grade A and Grade B cylinders will depend on the nature and variety of the screw thread measurements to be undertaken. The following assessment of the relative merits of the two grades is included in the standard to help the purchaser in making his choice.

With Grade A cylinders, a pair (or set) of cylinders is required for each pitch and form of screw thread to be measured. On the other hand, with Grade B cylinders, 30 pairs (or sets) will serve to measure the entire range of screw threads of the forms mentioned in Clause **5** having pitches ranging from 3 to 80 t.p.i. (or 8 mm to 0.35 mm). Should the user be interested in a wide range of screw threads then, on economic grounds, Grade B cylinders would be preferred to Grade A.

Grade A cylinders possess certain advantages over Grade B cylinders. These include:

a) *Freedom from the effects of flank angle errors*. The measured effective diameters obtained with Grade A cylinders are not influenced by flank angle errors and these cylinders therefore give, in general, a slightly enhanced accuracy of measurement as compared with Grade B cylinders.

b) *Simplicity of replacement and constancy of P value*. The replacement of a Grade A cylinder due to loss, breakage or wear, does not necessitate any change in the *P* value of the particular pair or set since this value is based on the nominal diameter of the cylinders and is therefore constant for all certified cylinders intended for use with one particular thread form and pitch.

c) *Ease of identification*. Separate identification of Grade A cylinders is not important; it is only necessary to indicate on the identification disk the thread form and pitch of the screw for which a Grade A cylinder is required. The allocation of serial numbers to individual Grade A cylinders is not necessary.

# Part 2. Specification for thread measuring cylinders

## 5 Measuring range

The Grade A and Grade B cylinders covered by this standard are intended for use on screw threads of the forms and pitches given in Table 1. The cylinders may be used in pairs or sets.

NOTE A pair of cylinders can only be used when the measurement is constrained to be at right angles to the axis of the screw thread, as is the case with the N.P.L. type of "floating diameter" measuring machine.

**Table 1 — Range of screw threads**

| Screw thread system[a] | | Range |
|---|---|---|
| Unified and ISO inch | (60°) | From 4 t.p.i. to 80 t.p.i. inc. |
| Whitworth | (55°) | From 3 t.p.i. to 40 t.p.i. inc. |
| ISO metric | (60°) | From 8 mm pitch to 0.35 mm pitch inc. |
| BA | ($47^1/_2$°) | From 0 BA to 10 BA inc. |

[a] Details of these threads are given in the following British Standards:
BS 84, "*Parallel screw threads of Whitworth form*".
BS 93, "*British Association (B.A.) screw threads*".
BS 1580, "*Unified screw threads*".
BS 3643, "*Metric screw threads*".

## 6 Material and finish

Thread measuring cylinders shall be made of steel and shall be hardened. To avoid brittleness and breakages in use, a hardness value of about 700 HV is recommended.

NOTE Details of a suitable method of measuring the hardness of cylinders are given in Appendix B of BS 427, "*Vickers hardness test*", Part 1:1961, "*Testing of metals*".

The working surface shall have a lapped finish, free from any blemishes such as scratches, pits and rust stains.

## 7 Form and general dimensions

a) *Form*. The general form of the cylinders shall be as shown in Figure 1.

b) *Overall length*. Recommended approximate overall lengths *L* of screw thread measuring cylinders are given in Table 2.

c) *Working length*. The working length $l$ is defined as that part of the overall length beginning at a distance of not more than 0.1 inch from below the part of the cylinder having a cap or hole and ending at a distance of not more than 0.1 inch from the other end of the cylinder. (See Figure 1.)

The requirements for accuracy and hardness shall apply to the working length as defined above.

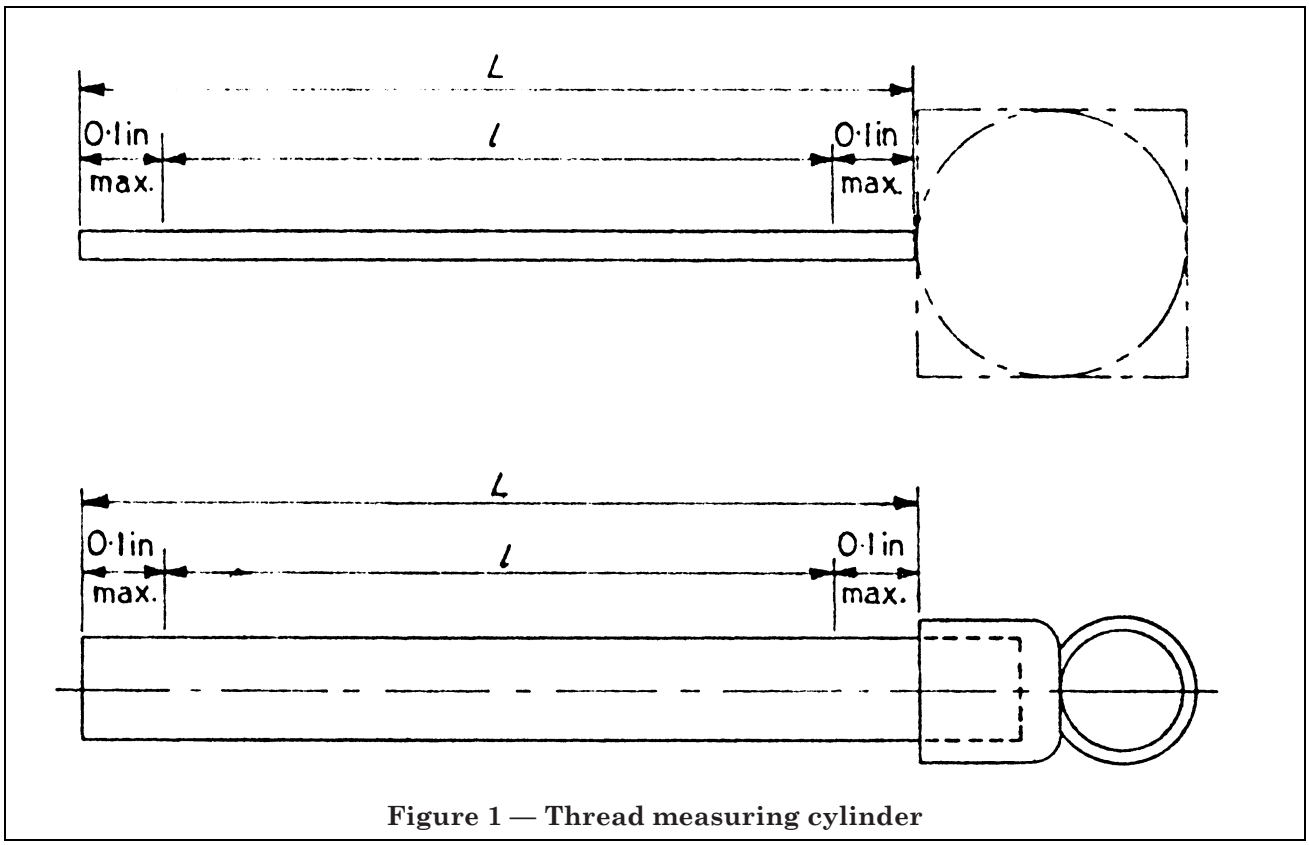



**Figure 1 — Thread measuring cylinder**

**Table 2 — Recommended overall lengths**

| Diameter of cylinder | | Overall length *L* (approx.) |
|---|---|---|
| Over | Up to and including | |
| | in | in |
| — | 0.01 | $^{7}/_{8}$ |
| 0.01 | 0.02 | 1 |
| 0.02 | 0.04 | $1^{1}/_{8}$ |
| 0.04 | 0.06 | $1^{1}/_{4}$ |
| 0.06 | 0.08 | $1^{3}/_{8}$ |
| 0.08 | — | $1^{1}/_{2}$ |

## 8 Accuracy

a) *Straightness.* When a cylinder is held against a slip gauge at any position around its circumference by a cylindrical contact face exerting a force of 8 ozf, no light shall be visible between the thread measuring cylinder and the slip gauge over a length of $^{5}/_{16}$ in. (See Figure 2.)

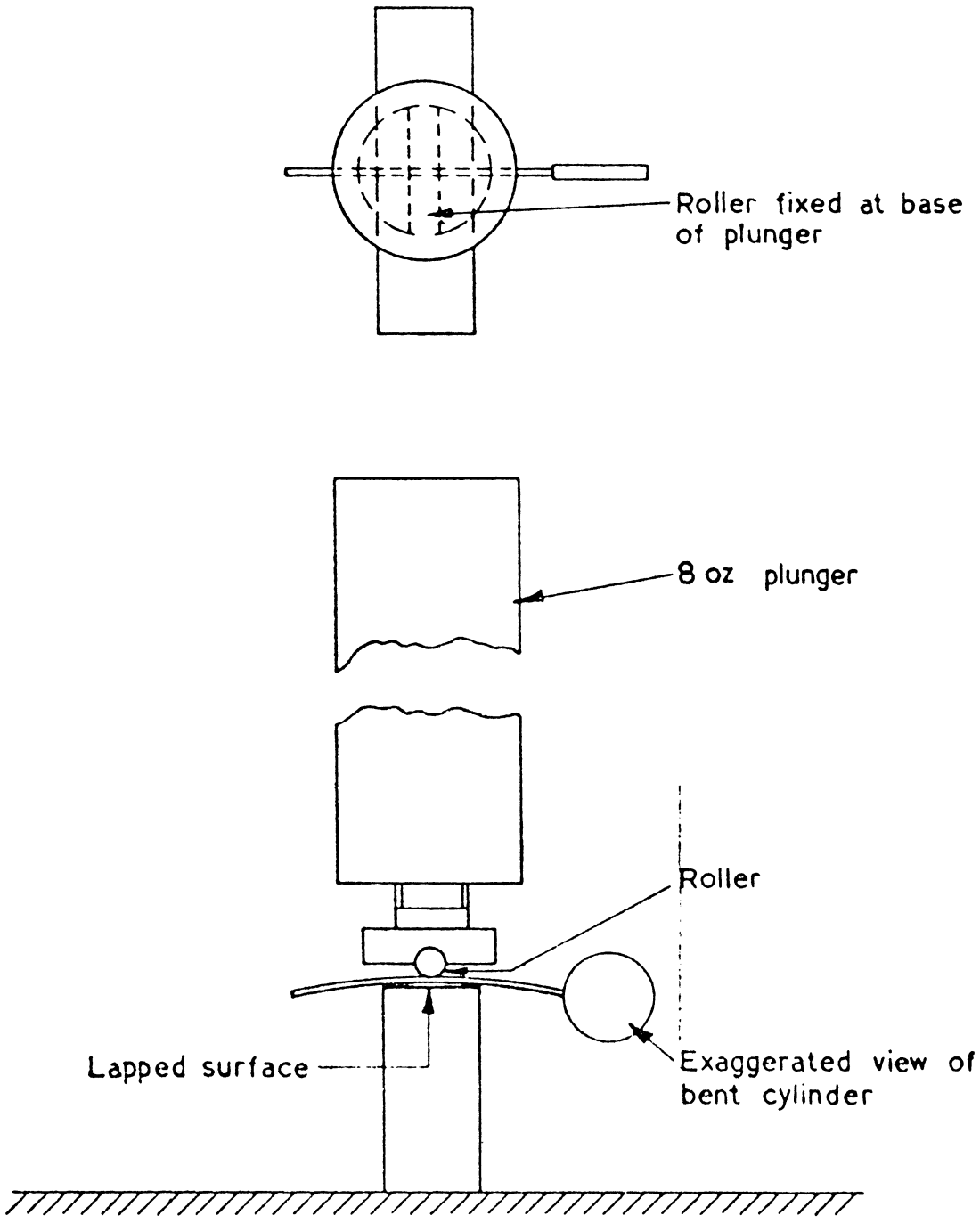



**Figure 2 — Testing straightness of cylinders**

b) *Uniformity of diameter*. The diameter of the working length of a cylinder shall be uniform to within 0.000 04 in. This value of 0.000 04 in shall include any out-of-roundness of the cylinder (lobing) as detected by rotating it in a screw thread having an included angle of 55°, under a suitable measuring head, and shall apply primarily to the diameter of the central portion of the working length.

c) *Mean diameters*.

i) *Grade A cylinders*. The mean diameter of each Grade A cylinder shall lie within a tolerance zone of ± 0.000 02 in from the nominal values given in Table 3 to Table 6 inclusive for Unified, Whitworth, ISO Metric and BA threads respectively.

ii) *Grade, B cylinders*. The mean diameter of each Grade B cylinder shall lie between the limits of size given in Columns 2 and 3 of Table 7.

The maximum difference between the mean diameters of each cylinder comprising a pair or a set of Grade B cylinders shall not exceed 0.000 3 in for a pair or 0.000 1 in for a set.

Each pair or set of Grade B cylinders shall be accompanied by a certificate giving the mean diameter of each cylinder, together with the appropriate *P* value for which each pair or set of cylinders is suitable.

## 9 Identification

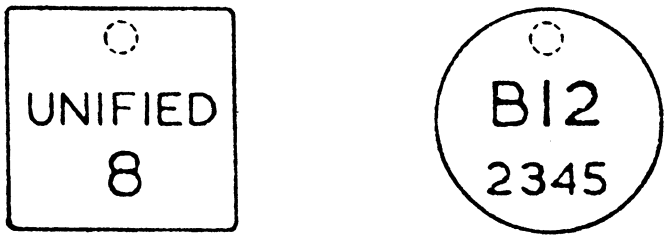
a) *Tags*. Grade A and Grade B cylinders shall be distinguished from each other by the use of square and round identification tags respectively as shown in Figure 3.

The tag shall be attached by a single link to the cylinder cap or directly to the cylinder in the case of the larger sizes; the use of a split ring for attachment purposes is not permissible.

b) *Marking*.

i) Tags for Grade A cylinders shall be marked with the designation giving the form and pitch of the thread for which the cylinders are intended.

ii) Tags for Grade B cylinders shall be marked with a serial number and with a designation as shown in Column 1 of Table 7 but when a purchaser requires cylinders for Unified or ISO Metric pitches only they may be marked accordingly.




*a*. Grade A tags *b*. Grade B tags

**Figure 3 — Identification tags**

## 10 Container

Each pair or set of cylinders shall be supplied in a suitable container.

**Table 3 — Nominal diameters and associated *P* values of Grade A (pitch-line) cylinders for unified and ISO inch Threads**

| 1 | 2 | 3 |
|---|---|---|
| **Unified and ISO inch pitch** | **Nominal diameter of cylinder**[a] | ***P* value** |
| t.p.i. | in | in |
| 4 | 0.144 34 | 0.072 17 |
| $4^1/_2$ | 0.128 30 | 0.064 15 |
| 5 | 0.115 47 | 0.057 74 |
| 6 | 0.096 22 | 0.048 12 |
| 7 | 0.082 48 | 0.041 24 |
| 8 | 0.072 17 | 0.036 08 |
| 9 | 0.064 15 | 0.032 08 |
| 10 | 0.057 73 | 0.028 87 |
| 11 | 0.052 49 | 0.026 24 |
| 12 | 0.048 11 | 0.024 06 |
| 13 | 0.044 41 | 0.022 21 |
| 14 | 0.041 24 | 0.020 62 |
| 16 | 0.036 08 | 0.018 05 |
| 18 | 0.032 08 | 0.016 03 |
| 20 | 0.028 87 | 0.014 43 |
| 24 | 0.024 06 | 0.012 02 |
| 28 | 0.020 62 | 0.010 31 |
| 32 | 0.018 04 | 0.009 02 |
| 36 | 0.016 04 | 0.008 02 |
| 40 | 0.014 43 | 0.007 22 |
| 44 | 0.013 12 | 0.006 56 |
| 48 | 0.012 03 | 0.006 01 |
| 56 | 0.010 31 | 0.005 15 |
| 64 | 0.009 02 | 0.004 51 |
| 72 | 0.008 02 | 0.004 01 |
| 80 | 0.007 22 | 0.003 61 |

[a] Nominal diameter for pitch-line contact = 0.577 35 × pitch of thread.

**Table 4 — Nominal diameters and associated *P* values of Grade A (pitch-line) cylinders for whitworth threads**

| 1 | 2 | 3 |
|---|---|---|
| **Whitworth pitch** | **Nominal diameter of cylinder**[a] | ***P* value** |
| t.p.i. | in | in |
| 3 | 0.187 90 | 0.101 13 |
| $3^1/_4$ | 0.173 44 | 0.093 36 |
| $3^1/_2$ | 0.161 05 | 0.086 69 |
| 4 | 0.140 92 | 0.075 86 |
| $4^1/_2$ | 0.125 26 | 0.067 43 |
| 5 | 0.112 74 | 0.060 68 |
| 6 | 0.093 95 | 0.050 57 |
| 7 | 0.080 53 | 0.043 34 |
| 8 | 0.070 46 | 0.037 93 |
| 9 | 0.062 63 | 0.033 71 |
| 10 | 0.056 37 | 0.030 34 |
| 11 | 0.051 24 | 0.027 59 |
| 12 | 0.046 97 | 0.025 29 |
| 14 | 0.040 26 | 0.021 68 |
| 16 | 0.035 23 | 0.018 96 |
| 18 | 0.031 32 | 0.016 85 |
| 19 | 0.029 67 | 0.015 97 |
| 20 | 0.028 18 | 0.015 18 |
| 22 | 0.025 62 | 0.013 79 |
| 24 | 0.023 49 | 0.012 64 |
| 26 | 0.021 68 | 0.011 67 |
| 28 | 0.020 13 | 0.010 84 |
| 32 | 0.017 62 | 0.009 48 |
| 36 | 0.015 66 | 0.008 43 |
| 40 | 0.014 09 | 0.007 59 |

[a] Nominal diameter for pitch-line contact = 0.563 69 × pitch of thread.

**Table 5 — Nominal diameters and associated *P* values of Grade A (pitch-line) cylinders for ISO metric threads**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **ISO Metric pitch** | **Nominal diameter of cylinder**[a] | | ***P* value** | |
| mm | in | mm | in | mm |
| 8 | 0.181 84 | 4.618 8 | 0.090 92 | 2.309 4 |
| 6 | 0.136 38 | 3.464 1 | 0.068 19 | 1.732 1 |
| 5.5 | 0.125 02 | 3.175 4 | 0.062 51 | 1.587 6 |
| 5 | 0.113 65 | 2.886 7 | 0.056 83 | 1.443 4 |
| 4.5 | 0.102 29 | 2.598 1 | 0.051 14 | 1.299 0 |
| 4 | 0.090 92 | 2.309 4 | 0.045 46 | 1.154 6 |
| 3.5 | 0.079 56 | 2.020 7 | 0.039 78 | 1.010 2 |
| 3 | 0.068 19 | 1.732 0 | 0.034 10 | 0.866 1 |
| 2.5 | 0.056 83 | 1.443 4 | 0.028 41 | 0.721 6 |
| 2 | 0.045 46 | 1.154 7 | 0.022 73 | 0.577 4 |
| 1.75 | 0.039 78 | 1.010 4 | 0.019 89 | 0.505 2 |
| 1.5 | 0.034 10 | 0.866 0 | 0.017 04 | 0.432 8 |
| 1.25 | 0.028 41 | 0.721 7 | 0.014 21 | 0.360 8 |
| 1 | 0.022 73 | 0.577 4 | 0.011 37 | 0.288 6 |
| 0.8 | 0.018 19 | 0.461 9 | 0.009 09 | 0.230 8 |
| 0.75 | 0.017 05 | 0.433 0 | 0.008 52 | 0.216 4 |
| 0.7 | 0.015 91 | 0.404 1 | 0.007 96 | 0.202 2 |
| 0.6 | 0.013 64 | 0.346 4 | 0.006 82 | 0.173 2 |
| 0.5 | 0.011 37 | 0.288 7 | 0.005 68 | 0.144 2 |
| 0.45 | 0.010 23 | 0.259 8 | 0.005 11 | 0.129 8 |
| 0.4 | 0.009 09 | 0.230 9 | 0.004 55 | 0.115 6 |
| 0.35 | 0.007 96 | 0.202 1 | 0.003 97 | 0.101 0 |

[a] Nominal diameter for pitch-line contact = 0.577 35 × pitch of thread (pitch expressed either in inches or millimetres according to requirements).

**Table 6 — Nominal diameters and associated *P* values of Grade A (pitch-line) cylinders for B.A. threads**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **B.A. No.** | **Nominal diameter of cylinder**[a] | | ***P* value** | |
| | in | mm | in | mm |
| 0 | 0.021 51 | 0.546 3 | 0.012 84 | 0.326 1 |
| 1 | 0.019 35 | 0.491 6 | 0.011 57 | 0.293 9 |
| 2 | 0.017 42 | 0.442 5 | 0.010 41 | 0.264 3 |
| 3 | 0.015 70 | 0.398 8 | 0.009 38 | 0.238 0 |
| 4 | 0.014 19 | 0.360 5 | 0.008 48 | 0.215 6 |
| 5 | 0.012 69 | 0.322 3 | 0.007 58 | 0.192 2 |
| 6 | 0.011 40 | 0.289 5 | 0.006 81 | 0.172 8 |
| 7 | 0.010 32 | 0.262 2 | 0.006 17 | 0.156 6 |
| 8 | 0.009 25 | 0.234 9 | 0.005 52 | 0.140 2 |
| 9 | 0.008 39 | 0.213 0 | 0.005 01 | 0.127 0 |
| 10 | 0.007 53 | 0.191 2 | 0.004 49 | 0.114 2 |

[a] Nominal diameter for pitch-line contact = 0.546 3 × pitch of thread (pitch expressed either in inches or millimetres according to requirements)

**Table 7 — Limits of size for Grade B (grouped) cylinders**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Designation | Limits on diameter of cylinder[a] | | Screw threads for which cylinders are suitable | | | |
| | Minimum in | Maximum in | Unified and ISO Inch t.p.i | Whitworth t.p.i. | B.A. No. | ISO Metric mm pitch |
| B3 | 0.184 | 0.190 | — | 3 | — | 8 |
| B3 1/4 | 0.171 | 0.177 | — | 3 1/4 | — | — |
| B3 1/2 | 0.158 | 0.164 | — | 3 1/2 | — | — |
| B4 | 0.139 | 0.145 | 4 | 4 | — | 6 |
| B4 1/2 | 0.122 | 0.128 | 4 1/2 | 4 1/2 | — | 5.5 |
| B5 | 0.107 | 0.110 | 5 | 5 | — | 5 & 4.5 |
| B6 | 0.090 | 0.096 | 6 | 6 | — | 4 |
| B7 | 0.078 | 0.084 | 7 | 7 | — | 3.5 |
| B8 | 0.067 | 0.073 | 8 | 8 | — | 3 |
| B9 | 0.060 | 0.066 | 9 | 9 | — | — |
| B10 | 0.053 5 | 0.059 5 | 10 | 10 | — | 2.5 |
| B11 | 0.048 5 | 0.054 | 11 | 11 | — | — |
| B12 | 0.044 5 | 0.047 | 12 & 13 | 12 | — | 2 |
| B14 | 0.038 0 | 0.042 5 | 14 | 14 | — | 1.75 |
| B16 | 0.033 4 | 0.036 6 | 16 | 16 | — | 1.5 |
| B18 | 0.029 7 | 0.031 2 | 18 | 18 & 19 | — | — |
| B20 | 0.026 7 | 0.029 6 | 20 | 20 | — | 1.25 |
| B22 | 0.024 3 | 0.027 0 | — | 22 | — | — |
| B24 | 0.022 3 | 0.024 7 | 24 | 24 | — | — |
| B26 | 0.021 0 | 0.022 2 | — | 26 | 0 | 1 |
| B28 | 0.019 1 | 0.020 0 | 28 | 28 | 1 | — |
| B32 | 0.016 8 | 0.018 0 | 32 | 32 | 2 | 0.75 & 0.8 |
| B36 | 0.015 1 | 0.016 2 | 36 | 36 | 3 | 0.7 |
| B40 | 0.013 7 | 0.014 6 | 40 | 40 | 4 | 0.6 |
| B5B.A. | 0.012 2 | 0.013 1 | 44 | — | 5 | — |
| B6B.A. | 0.011 1 | 0.011 8 | 48 | — | 6 | 0.5 |
| B7B.A. | 0.010 0 | 0.010 7 | 56 | — | 7 | 0.45 |
| B8B.A. | 0.008 9 | 0.009 6 | 64 | — | 8 | 0.4 |
| B9B.A. | 0.008 1 | 0.008 6 | 72 | — | 9 | 0.35 |
| B10B.A. | 0.007 3 | 0.007 7 | 80 | — | 10 | — |

[a] These limits control the common tolerance zone referred to in Clause **3** b); they are based on the formulae given in Table 8 and are subject to an over-riding tolerance of 0.006 in.

**Table 8 — Formulae on which the diametral limits for Grade B cylinders are based**

| Form of thread | Lower limit | Upper limit |
|---|---|---|
| | in | in |
| Unified and ISO inch | 0.534*p* | 0.620*p* |
| Whitworth | 0.535*p* | 0.593*p* |
| ISO Metric | 0.534*p* | 0.620*p* |
| B.A. | 0.527*p* | 0.565*p* |
| *p* = pitch of thread | | |

An example showing how the common tolerance zone is deduced is given below:

*Cylinder designation: B*6

| Form of thread | Diametral limits (see Table 8) | |
|---|---|---|
| | Lower | Upper |
| | in | in |
| Unified and ISO inch | 0.0890 | 0.1033 |
| Whitworth | 0.0892 | 0.0988 |
| ISO Metric | 0.0841 | 0.0976 |

The zone common to all three thread forms lies between 0.0892 in and 0.0976 in, giving an overall tolerance of 0.0084 in. As this tolerance exceeds by 0.0024 in the agreed over-riding value of 0.006 in, each limiting value has to be adjusted by $\frac{0.0024}{2}$ inches in the following manner:

Adjusted lower limit = 0.0892 + 0.0012 in = 0.0904 in.

Adjusted upper limit = 0.0976 – 0.0012 in = 0.0964 in.

In Table 7, these values have been rounded to 0.090 in and 0.096 in respectively.

## British Standards

The following are available on application;
YEARBOOK
Including subject index and numerical list of British Standards 15*s*.

SECTIONAL LISTS. Gratis

Acoustics
Aircraft materials and components
Building materials and components
Chemical engineering
Chemicals, fats, oils, scientific apparatus, etc.
Cinematography and photography
Coal, coke and colliery requisites
Codes of Practice
Consumer goods
Documentation, including Universal Decimal Classification
Drawing practice
Electrical engineering
Farming, dairying and allied interests
Furniture, bedding and furnishings
Gas and solid fuel
Glassware including scientific apparatus
Hospital equipment
Illumination and lighting fittings
Iron and steel
Mechanical engineering
Nomenclature, symbols and abbreviations
Non-ferrous metals
Packaging and containers
Paints, varnishes and colours for paints
Personal safety equipment
Petroleum industry
Plastic
Printing, paper and stationery
Road engineering
Rubber
Shipbuilding
Textiles and clothing
Welding

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