

Specification for

# Milling cutters and reamers —

**Part 1: Milling cutters**

# 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:—

|                                                               |                                                                 |
|---------------------------------------------------------------|-----------------------------------------------------------------|
| Admiralty*                                                    | Institute of Marine Engineers                                   |
| Air Ministry                                                  | Institute of Petroleum                                          |
| Associated Offices Technical Committee                        | Institution of Civil Engineers                                  |
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| British Compressed Air Society                                | Institution of Mechanical Engineers*                            |
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| British Electricity Authority and Area Boards                 | Institution of Production Engineers*                            |
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| D.S.I.R. — Mechanical Engineering Research Organization       | Ministry of Transport                                           |
| Engineering Equipment Users' Association                      | Ministry of Works                                               |
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|                                                               | War Office                                                      |

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, and the following scientific and industrial organizations were directly represented on the committee entrusted with the preparation of this standard:—

|                                                       |                                                            |
|-------------------------------------------------------|------------------------------------------------------------|
| Gauge and Tool Makers' Association                    | North East Coast Institution of Engineers and Shipbuilders |
| Institution of Engineers and Shipbuilders in Scotland | Society of Motor Manufacturers and Traders                 |
| Milling Cutter and Reamer Trades Association          |                                                            |

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## Foreword

This standard makes reference to the following British Standards:—

BS 328, *Twist drills and combined drills and countersinks (centre drills)*.

BS 1660-1, *Self-holding tapers*.

This British Standard has been prepared under the authority of the Mechanical Engineering Industry Standards Committee.

The standard for milling cutters and reamers was first published in 1920 and subsequent editions were issued in 1931 and 1938. The present revision is in two parts, Part 1 relating to milling cutters and Part 2 (published separately) relating to reamers, countersinks and counterbores.

The scope of Part 1 of this standard corresponds to that of the equivalent section on milling cutters in the 1938 edition, but gear forming tools have been omitted since they will be dealt with in a separate standard now in course of preparation.

Definitions for the various types of cutter, and requirements and recommendations on some matters of detail such as side clearance and provision of a radius or flat have been included. It will be appreciated, however, that there are certain constructional features, e.g. limitation of shape of teeth in relation to size of cutter, which it is not practicable to standardize, and these are left to the option of the manufacturer.

Complete dimensions of standard arbors for shell end mills are also given and information regarding Morse tapers is included in an appendix.

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 50 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 the following types of cutter:

Cylindrical, side and face, slotting, screw slotting, single, double and equal angle cutters; T slot, convex, single and double corner rounding cutters; metal slitting saws; taper and parallel shank slot drills; shell end mills; taper and parallel shank end mills; hollow mills.

General requirements and dimensions and tolerances are specified for the various types of cutters listed above. Diameters of arbors and standard bores and the dimensions of keys for arbors and the corresponding keyways are given, and the complete dimensions of standard arbors for shell end mills are also included.

## 2 Hand of cutter

Reference to hand of cutter is made in a number of tables, and for the purposes of this British Standard the following definitions shall apply:—

*Right hand cutting.* The anti-clockwise rotation of a cutter when viewed facing the spindle nose.

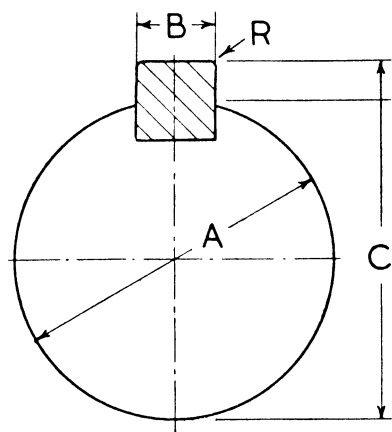
*Left hand cutting.* The clockwise rotation of a cutter when viewed facing the spindle nose.

**Table 1 — Diameters of arbors and standard bores**

| 1                                                                                                                                                                        | 2                                       | 3                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------|
| Class of cutter                                                                                                                                                          | Diameter of arbor                       | Diameter of bore                            |
|                                                                                                                                                                          | Tolerance<br>−0.000 5 in.<br>−0.001 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. |
|                                                                                                                                                                          | in.                                     | in.                                         |
| Screw slotting cutters and shell end mills                                                                                                                               | ½                                       | ½                                           |
| Screw slotting cutters only                                                                                                                                              | ⅝                                       | ⅝                                           |
| Screw slotting cutters and shell end mills                                                                                                                               | ¾                                       | ¾                                           |
| Cylindrical, slotting, side and face, angle and screw slotting cutters; metal slitting saws; shell end mills; convex; concave; single and double corner rounding cutters | 1                                       | 1                                           |
| Cylindrical, slotting, side and face and angle cutters; shell end mills; convex and concave cutters.                                                                     | 1 ¼                                     | 1 ¼                                         |
| Cylindrical, slotting; side and face cutters and shell end mills                                                                                                         | 1 ½                                     | 1 ½                                         |
| Cylindrical cutters; inserted tooth side and face cutters and shell end mills                                                                                            | 2                                       | 2                                           |

**Table 2 — Keys for arbors**

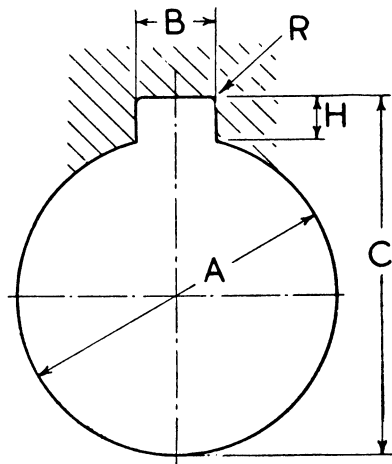
NOTE Dimensions of keys relating to a full range of arbors have been included in this table for reference purposes; the *standard* bore sizes for the various types of cutter are those given in the individual tables.

**Figure A**

| 1                      | 2                   | 3                                     | 4                                     | 5                        |
|------------------------|---------------------|---------------------------------------|---------------------------------------|--------------------------|
| Diameter of arbor<br>A | Nominal size of key | Width of key<br>B                     | Diameter plus height of key<br>C      | Corner radii of key<br>R |
|                        |                     | Tolerance<br>+0.000 in.<br>-0.005 in. | Tolerance<br>+0.000 in.<br>-0.005 in. |                          |
| in.                    | in.                 | in.                                   | in.                                   | in.                      |
| $\frac{3}{8}$          | $\frac{3}{32}$      | 0.094                                 | 0.422                                 | 0.020                    |
| $\frac{1}{2}$          | $\frac{3}{32}$      | 0.094                                 | 0.547                                 | 0.020                    |
| $\frac{5}{8}$          | $\frac{1}{8}$       | 0.125                                 | 0.688                                 | $\frac{1}{32}$           |
| $\frac{3}{4}$          | $\frac{1}{8}$       | 0.125                                 | 0.812                                 | $\frac{1}{32}$           |
| $\frac{7}{8}$          | $\frac{1}{8}$       | 0.125                                 | 0.938                                 | $\frac{1}{32}$           |
| 1                      | $\frac{1}{4}$       | 0.250                                 | 1.094                                 | $\frac{3}{64}$           |
| $1\frac{1}{4}$         | $\frac{5}{16}$      | 0.312                                 | 1.375                                 | $\frac{1}{16}$           |
| $1\frac{1}{2}$         | $\frac{3}{8}$       | 0.375                                 | 1.656                                 | $\frac{1}{16}$           |
| $1\frac{3}{4}$         | $\frac{7}{16}$      | 0.438                                 | 1.938                                 | $\frac{1}{16}$           |
| 2                      | $\frac{1}{2}$       | 0.500                                 | 2.188                                 | $\frac{1}{16}$           |
| $2\frac{1}{2}$         | $\frac{5}{8}$       | 0.625                                 | 2.718                                 | $\frac{1}{16}$           |
| 3                      | $\frac{3}{4}$       | 0.750                                 | 3.250                                 | $\frac{3}{32}$           |
| $3\frac{1}{2}$         | $\frac{7}{8}$       | 0.875                                 | 3.875                                 | $\frac{3}{32}$           |
| 4                      | 1                   | 1.000                                 | 4.375                                 | $\frac{3}{32}$           |
| $4\frac{1}{2}$         | $1\frac{1}{8}$      | 1.125                                 | 4.938                                 | $\frac{1}{8}$            |
| 5                      | $1\frac{1}{4}$      | 1.250                                 | 5.500                                 | $\frac{1}{8}$            |

**Table 3 — Keyways**

NOTE Dimensions of keyways relating to a full range of bore sizes have been included in this table for reference purposes; the *standard* bore sizes for the various types of cutter are those given in the individual tables.

**Figure B**

| 1                     | 2                                     | 3                                      | 4                              |
|-----------------------|---------------------------------------|----------------------------------------|--------------------------------|
| Diameter of bore<br>A | Width of keyway<br>B                  | Diameter plus<br>height of keyway<br>C | Corner radii of<br>keyway<br>R |
|                       | Tolerance<br>+0.007 in.<br>+0.002 in. | Tolerance<br>+0.015 in.<br>-0.000 in.  |                                |
| in.                   | in.                                   | in.                                    | in.                            |
| $\frac{3}{8}$         | 0.094                                 | 0.432                                  | 0.020                          |
| $\frac{1}{2}$         | 0.094                                 | 0.557                                  | 0.020                          |
| $\frac{5}{8}$         | 0.125                                 | 0.698                                  | $\frac{1}{32}$                 |
| $\frac{3}{4}$         | 0.125                                 | 0.822                                  | $\frac{1}{32}$                 |
| $\frac{7}{8}$         | 0.125                                 | 0.948                                  | $\frac{1}{32}$                 |
| 1                     | 0.250                                 | 1.104                                  | $\frac{3}{64}$                 |
| $1\frac{1}{4}$        | 0.312                                 | 1.385                                  | $\frac{1}{16}$                 |
| $1\frac{1}{2}$        | 0.375                                 | 1.666                                  | $\frac{1}{16}$                 |
| $1\frac{3}{4}$        | 0.438                                 | 1.948                                  | $\frac{1}{16}$                 |
| 2                     | 0.500                                 | 2.198                                  | $\frac{1}{16}$                 |
| $2\frac{1}{2}$        | 0.625                                 | 2.733                                  | $\frac{1}{16}$                 |
| 3                     | 0.750                                 | 3.265                                  | $\frac{3}{32}$                 |
| $3\frac{1}{2}$        | 0.875                                 | 3.890                                  | $\frac{3}{32}$                 |
| 4                     | 1.000                                 | 4.390                                  | $\frac{3}{32}$                 |
| $4\frac{1}{2}$        | 1.125                                 | 4.953                                  | $\frac{1}{8}$                  |
| 5                     | 1.250                                 | 5.515                                  | $\frac{1}{8}$                  |

## Light duty and high power cylindrical cutters

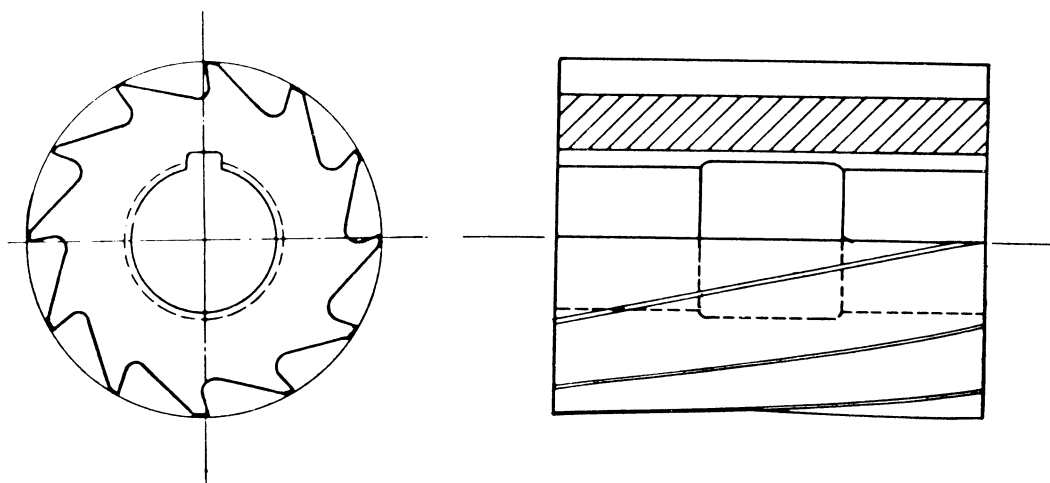


Figure 1 — Light duty type

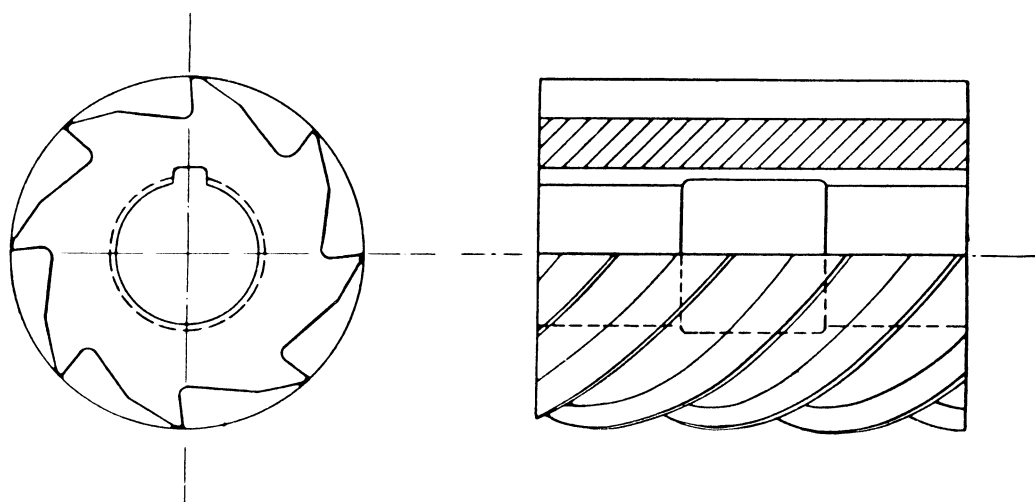


Figure 2 — High power type

## 3 Light duty and high power cylindrical cutters

- a) *Definition.* A cutter primarily used for surfacing, with teeth on the periphery only; light duty or high power type cutters can be supplied. (See Figure 1 and Figure 2 above.)
- b) *Keyways.* The dimensions of the keyways shall be as given in Table 3.
- c) *Helix.* The purchaser should state in his enquiry and order whether a left-hand or right-hand helix is required.

Table 4 — Light duty and high power cylindrical cutters

| 1                                     | 2                                           | 3                                                                                                       |
|---------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Lengths                                                                                                 |
| Tolerance<br>+0.045 in.<br>-0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>Up to and including 6 in. { +0.03 in.<br>-0.00 in.<br>Above 6 in. { +0.06 in.<br>-0.00 in. |
| in.                                   | in.                                         | in.                                                                                                     |
| 2½                                    | 1                                           | 1, 2, 3, 4                                                                                              |
| 3                                     | 1¼                                          | 1, 2, 3, 4, 5, 6                                                                                        |
| 3½                                    | 1¼                                          | 2, 3, 4, 5, 6, 7                                                                                        |
| 4                                     | 1¼ or 1½ <sup>a</sup>                       | 2, 3, 4, 5, 6, 7, 8                                                                                     |
| 4½                                    | 1½ or 2 <sup>a</sup>                        | 2, 3, 4, 5, 6, 7, 8, 9                                                                                  |

<sup>a</sup> The larger diameter of bore is recommended.

### Helical cylindrical cutters

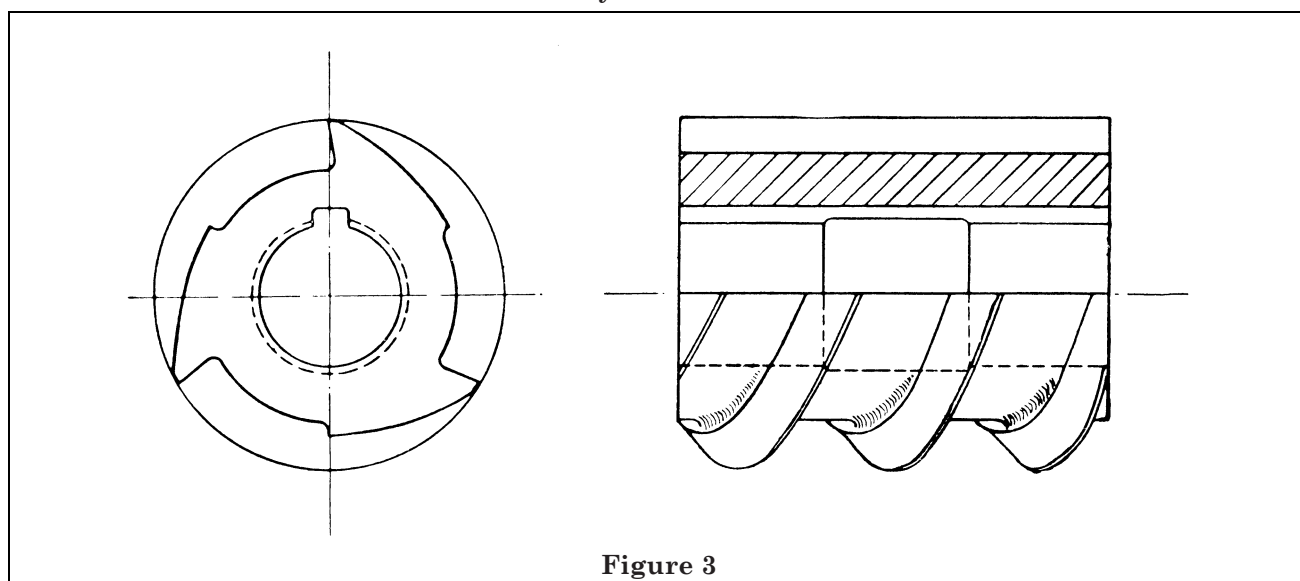


Figure 3

### 4 Helical cylindrical cutters

- a) *Definition.* A cutter primarily used for heavy surfacing cuts, having a large angle of helix relative to the axis of the cutter. It has a small number of teeth on the periphery only. (See Figure 3 above.)
- b) *Keyways.* The dimensions of the keyways shall be as given in Table 3.
- c) *Helix.* The purchaser should state in his enquiry and order whether a left-hand or right-hand helix is required.

Table 5 — Helical cylindrical cutters

| 1                                     | 2                                           | 3                                   |
|---------------------------------------|---------------------------------------------|-------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Lengths                             |
| Tolerance<br>+0.045 in.<br>−0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>+0.03 in.<br>−0.00 in. |
| in.                                   | in.                                         | in.                                 |
| 3                                     | 1 1/4                                       | 2, 3, 4, 6,                         |
| 4                                     | 1 1/2                                       | 2, 3, 4, 6,                         |
| 5                                     | 1 1/2 or 2 <sup>a</sup>                     | 2, 3, 4, 6,                         |

<sup>a</sup> The larger diameter of bore is recommended.

Side and face cutters

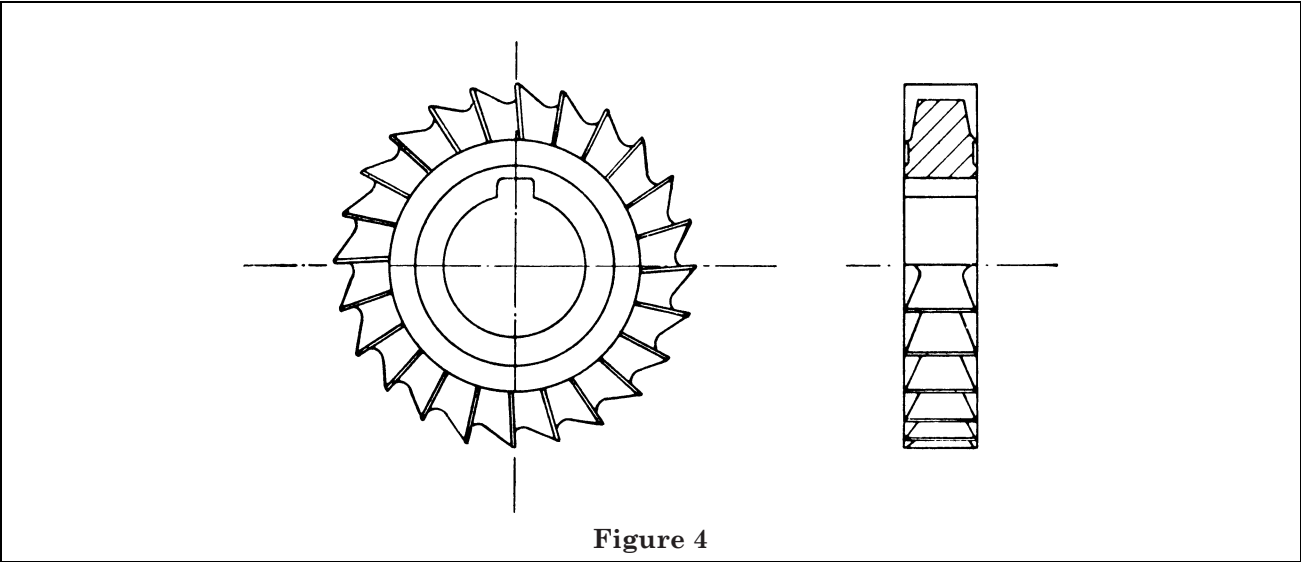


Figure 4

5 Side and face cutters

- a) *Definition.* A cutter with teeth on the periphery and both sides; high power or light duty type cutters can be supplied. (See Figure 4 above.)
- b) *Keyways.* The dimensions of the keyways shall be as given in Table 3.
- c) *Side clearance.* Side and face cutters may have each side ground to provide ¼° side clearance and the clearance may be amplified by recessing where the width and diameter of the cutter permit.

Table 6 — Side and face cutters

| 1                                     | 2                                           | 3                                     |
|---------------------------------------|---------------------------------------------|---------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Width of cutting edges and boss       |
| Tolerance<br>+0.045 in.<br>-0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>+0.005 in.<br>-0.000 in. |
| in.                                   | in.                                         | in.                                   |
| 2½                                    | 1                                           | ¼ 5/16 3/8 ½                          |
| 3                                     | 1                                           | ¼ 5/16 3/8 ½ 5/8                      |
| 3½                                    | 1                                           | ¼ 5/16 3/8 7/16 ½ 5/8 ¾               |
| 4                                     | 1 or 1¼ <sup>a</sup>                        | ¼ 3/8 ½ 5/8 ¾ 7/8 1                   |
| 5                                     | 1¼                                          | ½ 5/8 ¾ 7/8 1                         |
| 6                                     | 1¼ or 1½ <sup>a</sup>                       | ½ 5/8 ¾ 7/8 1 1¼                      |
| 7                                     | 1½                                          | ½ 5/8 ¾ 7/8 1 1¼                      |
| 8                                     | 1½                                          | 5/8 ¾ 7/8 1 1¼ 1½                     |

NOTE The use of these cutters for cutting keyways is not recommended as the width of the slot produced cannot be guaranteed. If, however, the cutters are required for cutting keyways to BS 46-1, the following special tolerances on the width of the cutter should be stated in the order:

Cutters up to and including 1 inch wide: -0.0005 in  
-0.001 in  
Cutters over 1 inch wide: -0.001 in  
-0.002 in

<sup>a</sup> The larger diameter of bore is recommended.

Staggered tooth side and face cutters

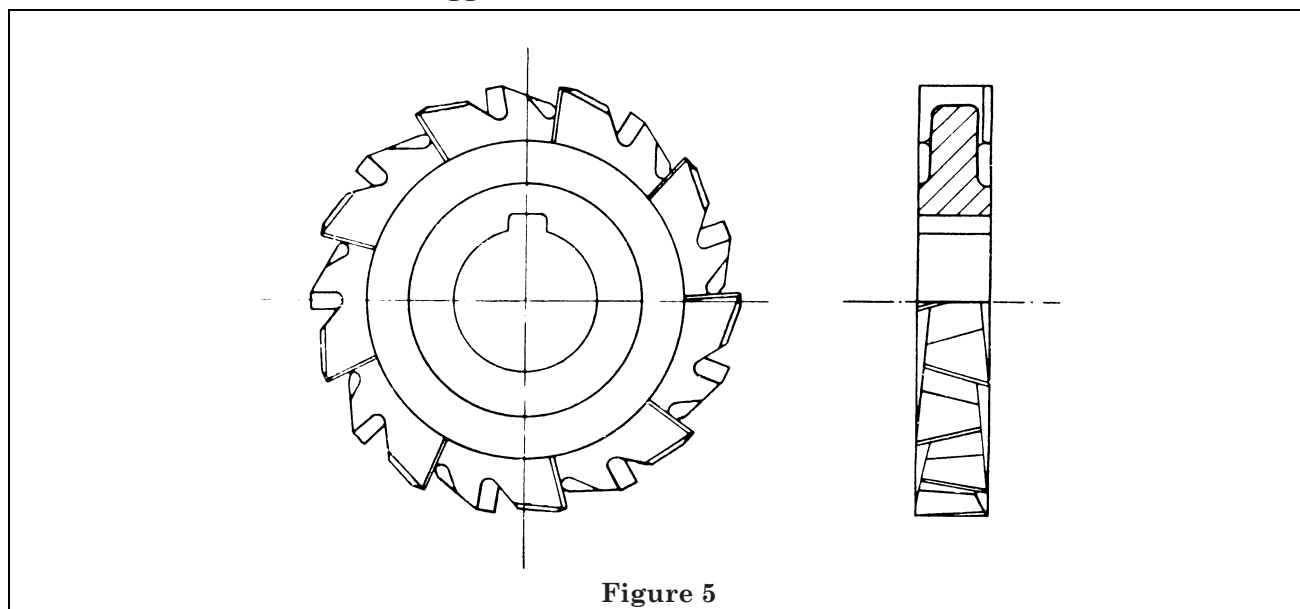


Figure 5

## 6 Staggered tooth side and face cutters

- a) *Definition.* A cutter with teeth on the periphery and both sides. The teeth are alternately right-hand and left-hand angled and have a positive rake. Alternate side teeth are removed. (See Figure 5 above.)
- b) *Keyways.* The dimensions of the keyways shall be as given in Table 3.

c) *Side clearance.* Side and face cutters may have each side ground to provide ¼° side clearance and the clearance may be amplified by recessing where the width and diameter of the cutter permit.

Table 7 — Staggered tooth side and face cutters

| 1                                     | 2                                           | 3                                     |
|---------------------------------------|---------------------------------------------|---------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Width                                 |
| Tolerance<br>+0.045 in.<br>−0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>+0.005 in.<br>−0.000 in. |
| in.                                   | in.                                         | in.                                   |
| 3                                     | 1                                           | 1/4 5/16 3/8 1/2                      |
| 4                                     | 1                                           | 1/4 5/16 3/8 1/2 5/8                  |
| 5                                     | 1 1/4                                       | 3/8 1/2 5/8                           |
| 6                                     | 1 1/4                                       | 3/8 1/2 5/8 3/4                       |
| 7                                     | 1 1/2                                       | 1/2 5/8 3/4 7/8                       |
| 8                                     | 1 1/2                                       | 5/8 3/4 7/8 1                         |

NOTE The use of these cutters for cutting keyways is not recommended as the width of the slot produced cannot be guaranteed. If, however, the cutters are required for cutting keyways to BS 46-1, the special tolerance of −0.0005 in −0.001 in on the width of the cutter should be stated in the order.

Slotting cutters

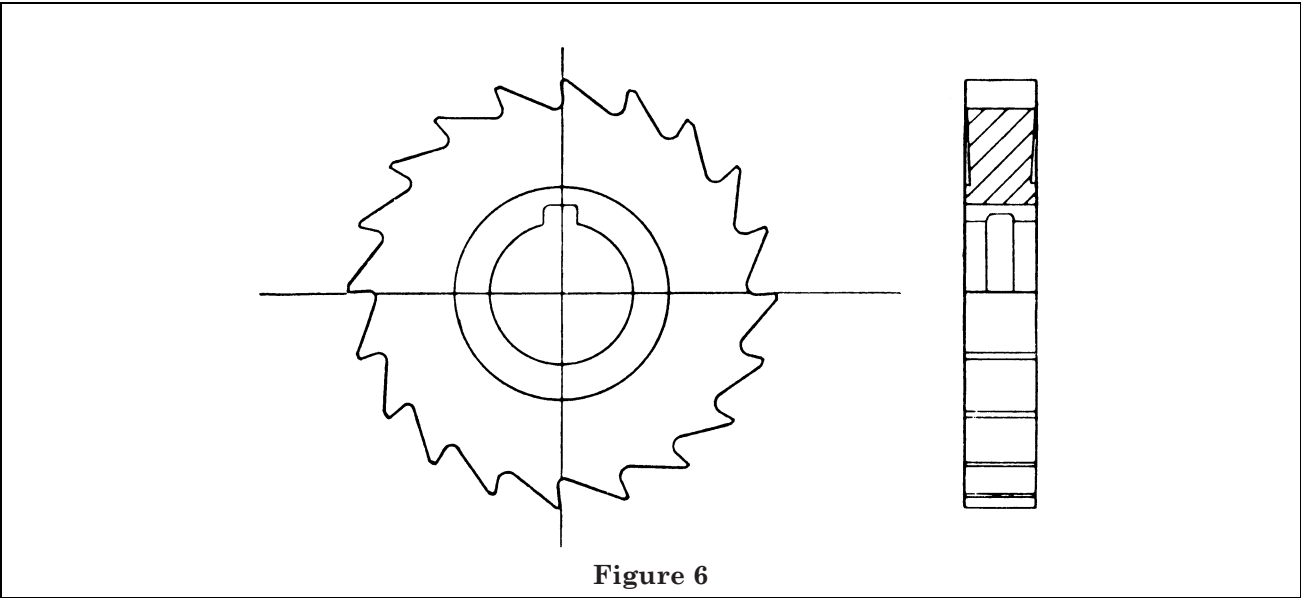


Figure 6

7 Slotting cutters

- a) *Definition.* A cutter with teeth on the periphery only, and having side clearance. (See Figure 6 above.)
- b) *Side clearance.* Slotted cutters shall have each side ground to provide side clearance and the clearance may be amplified by recessing where the width and diameter of the cutter permit.
- c) *Keyways.* The dimensions of the keyways shall be as given in Table 3.

Table 8 — Slotting cutters

| 1                                     | 2                                           | 3                                     |
|---------------------------------------|---------------------------------------------|---------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Width                                 |
| Tolerance<br>+0.045 in.<br>-0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>+0.001 in.<br>-0.001 in. |
| in.                                   | in.                                         | in.                                   |
| 2½                                    | 1                                           | ¼ 5/16 3/8 7/16 ½                     |
| 3                                     | 1                                           | ¼ 5/16 3/8 7/16 ½ 5/8 ¾               |
| 3½                                    | 1                                           | ¼ 5/16 3/8 7/16 ½ 5/8 ¾ 7/8           |
| 4                                     | 1                                           | ¼ 5/16 3/8 7/16 ½ 5/8 ¾ 7/8 1         |
| 5                                     | 1¼                                          | ¼ 5/16 3/8 7/16 ½ 5/8 ¾ 7/8 1         |
| 6                                     | 1¼                                          | ¼ 5/16 3/8 7/16 ½ 5/8 ¾ 7/8 1         |

NOTE The use of these cutters for cutting keyways is not recommended as the width of the slot produced cannot be guaranteed. If, however, the cutters are required for cutting keyways to BS 46-1, the special tolerance of -0.0005 in -0.001 in on the width of the cutter should be stated in the order

## Metal slitting saws

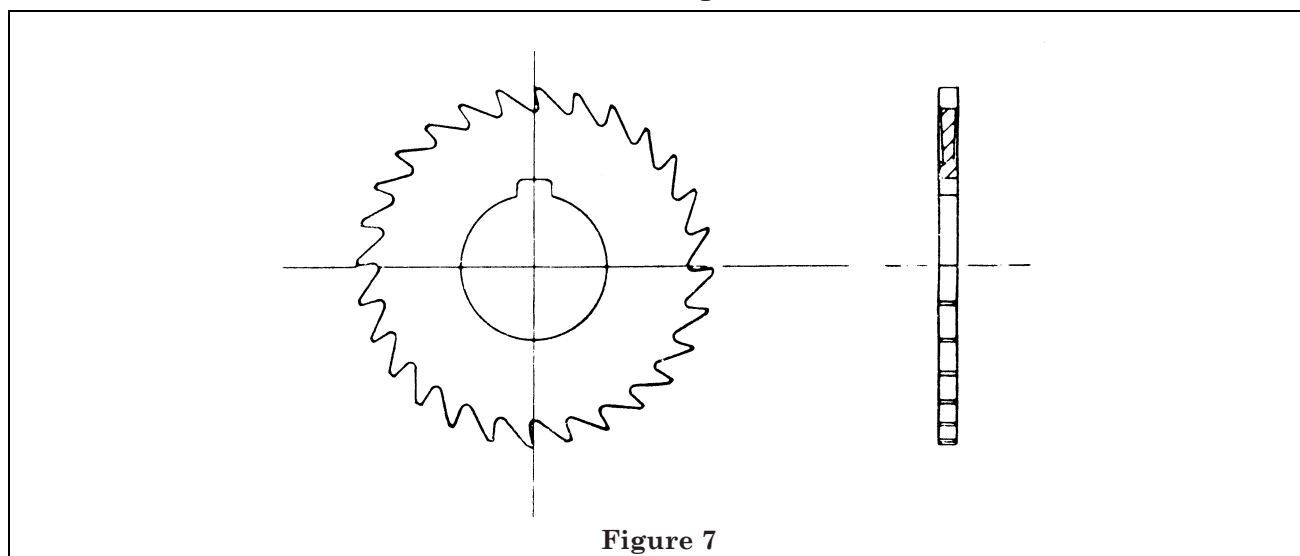


Figure 7

## 8 Metal slitting saws

- Definition.* A cutter with teeth on the periphery only, not exceeding ¼ in. in width and having side clearance. (See Figure 7 above.)
- Side clearance.* The amount of clearance which can be given to the sides of a metal slitting saw is dependent on the width and diameter, and therefore no standard practice can be laid down.
- Keyways.* The dimensions of the keyways shall be as given in Table 3.

Table 9 — Metal slitting saws

| 1                                     | 2                                           | 3                                     |
|---------------------------------------|---------------------------------------------|---------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Width                                 |
| Tolerance<br>+0.045 in.<br>−0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>+0.001 in.<br>−0.001 in. |
| in.                                   | in.                                         | in.                                   |
| 2½                                    | 1 }<br>1 }                                  | 1/32 3/64 1/16 3/32 1/8 5/32          |
| 3                                     |                                             |                                       |
| 4                                     | 1                                           | 1/32 3/64 1/16 3/32 1/8 5/32 3/16     |
| 5                                     | 1                                           | 1/16 3/32 1/8 5/32 3/16               |
| 6                                     | 1                                           | 3/32 1/8 5/32 3/16 1/4                |
| 7                                     | 1                                           | 3/32 1/8 3/16 1/4                     |
| 8                                     | 1                                           | 1/8 3/16 1/4                          |

NOTE The use of these cutters for cutting keyways is not recommended as the width of the slot produced cannot be guaranteed. If, however, the cutters are required for cutting keyways to BS 46-1, the special tolerance of −0.0005 in  
−0.001 in  
on the width of the cutter should be stated in the order.

Metal slitting saws with side chip clearance. Type A (staggered teeth)

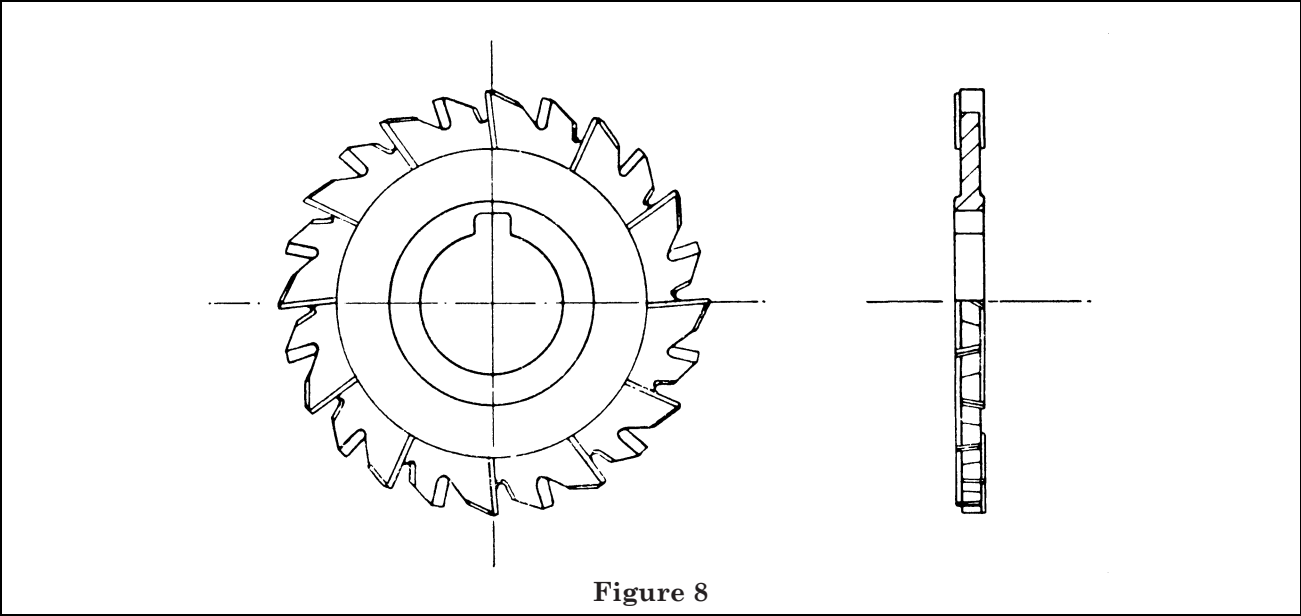


Figure 8

9 Metal slitting saws with side chip clearance. Type A (staggered teeth)

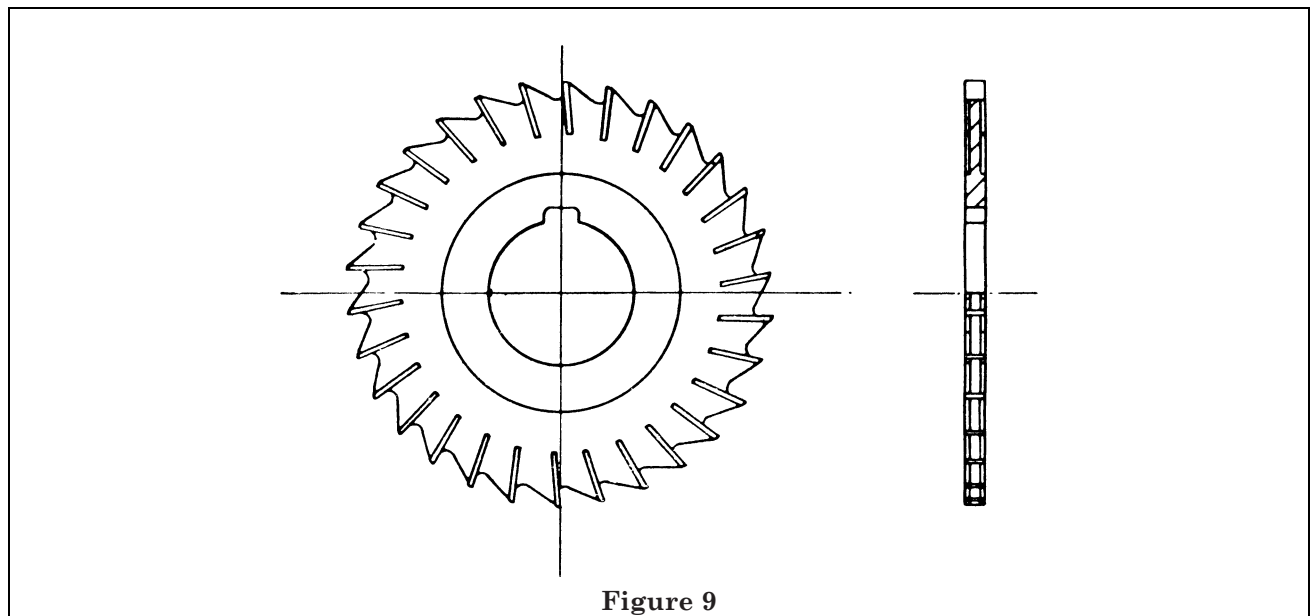
- a) *Definition.* A cutter having teeth on the periphery and both sides; the teeth are alternately right-hand and left-hand angled. On the sides alternate teeth are removed. (See Figure 8 above.)
- b) *Side clearance.* The amount of clearance which can be given to the sides of a metal slitting saw is dependent on the width and diameter, and therefore no standard practice can be laid down.
- c) *Keyways.* The dimensions of the keyways shall be as given in Table 3.

**Table 10 — Metal slitting saws with side chip clearance. Type A (staggered teeth)**

| 1                                     | 2                                           | 3                                     |
|---------------------------------------|---------------------------------------------|---------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Width                                 |
| Tolerance<br>+0.045 in.<br>–0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>+0.001 in.<br>–0.001 in. |
| in.                                   | in.                                         | in.                                   |
| 2½                                    | 1                                           | 5/32 3/16                             |
| 3                                     | 1                                           |                                       |
| 4                                     | 1                                           |                                       |
| 5                                     | 1                                           |                                       |
| 6                                     | 1                                           | 7/32 1/4                              |
| 7                                     | 1                                           |                                       |
| 8                                     | 1                                           |                                       |
| 9                                     | 1                                           | 3/16 7/32                             |
| 10                                    | 1                                           | 1/4                                   |

NOTE The use of these cutters for cutting keyways is not recommended as the width of the slot produced cannot be guaranteed. If, however, the cutters are required for cutting keyways to BS 46-1, the special tolerance of –0.0005 in –0.001 in on the width of the cutter should be stated in the order.

**Metal slitting saws with side chip clearance. Type B (straight teeth)**



### 10 Metal slitting saws with side chip clearance. Type B (straight teeth)

- a) *Definition.* A cutter having as many teeth on each side as on the periphery; similar to side and face cutters. (See Figure 9 above.)
- b) *Side clearance.* The amount of clearance which can be given to the sides of a metal slitting saw is dependent on the width and diameter, and therefore no standard practice can be laid down.

c) *Key ways.* The dimensions of the keyways shall be as given in Table 3.

Table 11 — Metal slitting saws with side chip clearance. Type B (straight teeth)

| 1                                     | 2                                           | 3                                     |
|---------------------------------------|---------------------------------------------|---------------------------------------|
| Diameter of cutter                    | Diameter of bore                            | Width                                 |
| Tolerance<br>+0.045 in.<br>−0.000 in. | Tolerance<br>+0.000 75 in.<br>+0.000 25 in. | Tolerance<br>+0.001 in.<br>−0.001 in. |
| in.                                   | in.                                         | in.                                   |
| 2½                                    | 1                                           | 1/16    3/32    1/8                   |
| 3                                     | 1                                           |                                       |
| 4                                     | 1                                           |                                       |
| 5                                     | 1                                           |                                       |
| 6                                     | 1                                           | 3/32    1/8                           |
| 7                                     | 1                                           | 1/8                                   |
| 8                                     | 1                                           |                                       |
| 9                                     | 1                                           |                                       |

NOTE The use of these cutters for cutting keyways is not recommended as the width of the slot produced cannot be guaranteed. If, however, the cutters are required for cutting keyways to BS 46-1, the special tolerance of −0.0005 in −0.001 in on the width of the cutter should be stated in the order.

Screw slotting cutters

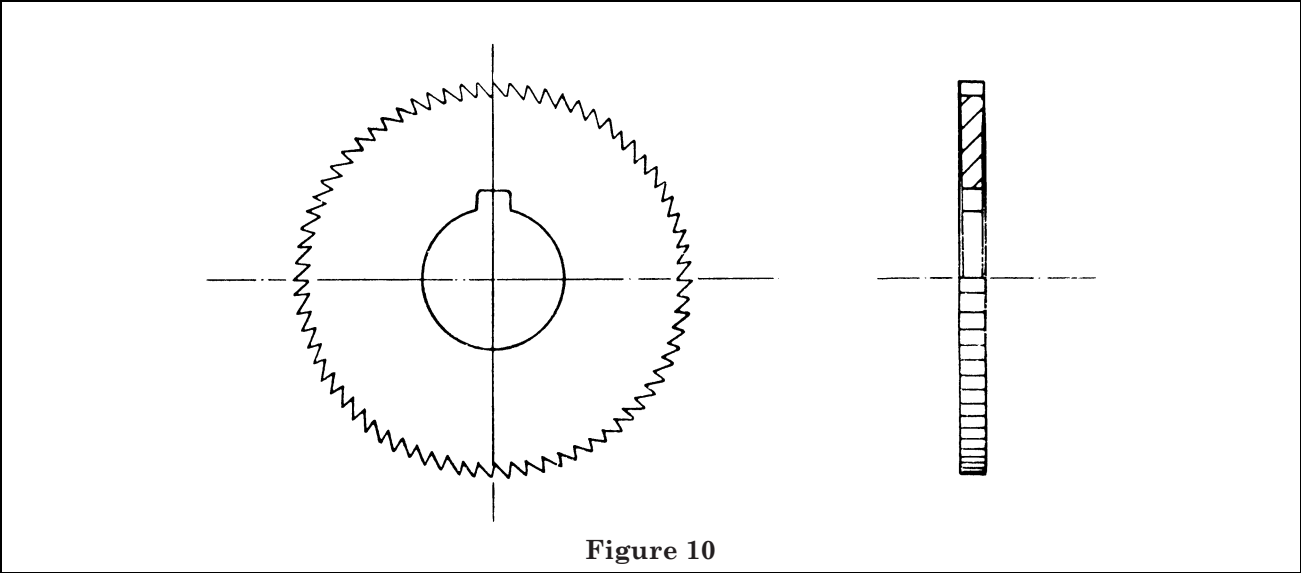


Figure 10

11 Screw slotting cutters

- a) *Definition.* A cutter not exceeding 3/16 in. in width primarily used for slotting screw heads, having teeth on the periphery only. (See Figure 10 above.)
- b) *Keyways.* The dimensions of the keyways shall be as given in Table 3.