

Specification for

Hand and breast drills

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British Electrical and Allied Manufacturers' Association*	Institution of Mechanical Engineers*
British Gear Manufacturers' Association	Institution of Mechanical Engineers (Automobile Division)
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The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard.

British Railways Board	Ministry of Defence, Navy Department
Engineers' and Allied Hand Tool Makers' Association	National Association of Tool Dealers
Federation of British Hand Tool Manufacturers	Post Office
Furniture Timber and Allied Trades Union	Saw Manufacturers Association
Light Trades Tool Association	Society of British Aerospace Companies Ltd
	Society of Motor Manufacturers and Traders

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Foreword

This revision of BS 2556 has been undertaken on the authority of the Mechanical Engineering Industry Standards Committee in order to metricate the 1954 edition. At the same time special attention has been given to the component parts so as to bring the standard in line with the latest developments within the industry.

NOTE Attention is drawn to the certification facilities offered by BSI; see the inside back cover of this British Standard.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 14, 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.

Section 1. General

1 Scope

This British Standard specifies the dimensions, materials, assembly and quality of hand drills and breast drills.

It relates to hand drills with a capacity up to 8 mm and breast drills with a capacity up to 12.5 mm.

NOTE The titles of the British Standards referred to in this standard are listed on page 14.

2 Classifications and terms

For the purposes of this British Standard the following classifications and terms apply.

2.1 Hand drill (Figure 1). A tool having a chuck at one end designed for rotating straight shank twist drills and similar tools. It is operated manually through simple gearing and the necessary pressure is applied through the pressure handle.

2.2 Breast drill (Figure 2). A tool intended for similar purposes as a hand drill, but of larger capacity. The tool is operated manually and has two speed ratios, while the necessary pressure is applied through a pressure pad.

2.3 Components common to both types

- a) *Frame*. The component forming the foundation and bearings for the spindle, pinions and handle.
- b) *Open type frame*. A frame which allows full access to the pinions (Figure 3, Figure 4 and Figure 6).
- c) *Semi-closed frame*. A frame which is formed to act as a guard to the pinions and gear teeth, which are thus partially enclosed (Figure 5 and Figure 7).
- d) *Gear wheel*. The bevel gear for driving the tool through the pinion (E in Figure 1 and 5 in Figure 2).
- e) *Gear spindle*. The spindle on which the gear wheel is mounted (F in Figure 1 and 22 in Figure 2).
- f) *Driving arm*. The strip carrying the driving handle and mounted on the gear and spindle (S in Figure 1 and 20 in Figure 2).
- g) *Driving arm screw* (T in Figure 1 and 21 in Figure 2).
- h) *Driving handle*. The handle attached to the driving arm by which the spindle and chuck are rotated (P in Figure 1 and 17 in Figure 2).
- Driving handle spindle (Q in Figure 1 and 18 in Figure 2).
- Driving handle ferrule (R in Figure 1 and 11 in Figure 2).
- j) *Steady handle*. The small handle fitted to the frame on the opposite side from the driving handle, for the purposes of steadying and assisting the action of the tool when in use (G in Figure 1 and 10 in Figure 2).
- Steady handle ferrule (H in Figure 1 and 11 in Figure 2).
- Steady handle insert (J in Figure 1 and 12 in Figure 2).
- k) *Driving pinion*. The pinion which is attached to the chuck spindle and which takes the drive from the gear wheel (L in Figure 1 and 9 in Figure 2).
- l) *Pinion pin* (M in Figure 1 and 24 in Figure 2).
- m) *Chuck*. The normal unguided three jaw chuck for holding the drills and similar tools (U–Z in Figure 1 and 25–29 in Figure 2).
- Chuck spindle (N in Figure 1 and 16 in Figure 2).
- Chuck adaptor (U in Figure 1 and 25 in Figure 2).
- Chuck cap (V in Figure 1 and 26 in Figure 2).
- Chuck pad (W in Figure 1 and 27 in Figure 2).
- Jaw spring (Y in Figure 1 and 28 in Figure 2).
- Chuck jaws (Z in Figure 1 and 29 in Figure 2).

2.4 Components peculiar to hand drills

- a) *Idle pinion*. The pinion at the handle end of a hand drill which acts as a guide and extra support to the gear wheel (D in Figure 1).
- b) *Pressure handle*. The handle (A in Figure 1) at the end of the frame opposite the chuck, through which pressure is applied when the tool is in use.

Pressure handle insert (B in Figure 1).

Pressure handle ferrule (O in Figure 1).

Body pin (I in Figure 1).

Thrust pad (X in Figure 1).

c) *Thrust ball*. The hardened steel ball through which the pressure from the pressure handle and frame is conveyed to the spindle and chuck (K in Figure 1).

2.5 Components peculiar to breast drills

a) *Pressure pad*. The curved plate at the end of the stem opposite to the chuck through which pressure is applied when the tool is in use. (1 in Figure 2.)

Pad screw (2 in Figure 2).

Stem: the bar connecting the pressure pad to the frame (3 in Figure 2).

Stem screw (4 in Figure 2).

b) *Gear lock assembly*. The pin and other components which form the mechanism for locking the gearing in the fast or slow position (7, 8 and 23 in Figure 2).

c) *Thrust bearing*. The ball, washer and cone which form the thrust assembly (13, 14, 15 and 19 in Figure 2).

3 Threads

The threads used for the chucks and spindles shall be manufactured to the tolerances for the medium fit in BS 3643, or any which are equivalent.