

Specification for

Forks, shovels and spades

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Saw Manufacturers' Association	National Federation of Ironmongers
Society of Motor Manufacturers & Traders Limited	Royal Horticultural Society
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Federation of British Hand Tool Manufacturers	

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Foreword

This revision of BS 3388 has been undertaken in order to metricate the 1961 edition. At the same time opportunity has been taken to bring the standard into line with present usage.

The main difficulty in the standardization of forks, shovels and spades is caused by the very strong regional preferences for particular shapes of blade and handle, which have led to the development, over several centuries, of a number of variations of the basic designs. Many of these features have been omitted from the standard and it is hoped that as a result users will cease to demand their manufacture. Stronger preferences have been recognized and included in the standard and it is hoped that as the work of standardization proceeds, agreement will be reached on the further rationalization of types and sizes, thus leaving a reasonable range of tools covering all fields of general usage which can be manufactured with greater economy.

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

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 34, 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 specifies a preferred range of general purpose tools as illustrated in Figure 3 to Figure 16. The standard specifies dimensions, materials, construction, finish and testing.

It also permits certain variations to the preferred range. These tools are illustrated in Figure 17 to Figure 43. They shall be used only by agreement between the purchaser and supplier.

NOTE The titles of the British Standards referred to in this standard are listed on page 34.

2 Nomenclature

For the purpose of this British Standard the nomenclature of Figure 1 to Figure 43 applies.

3 Types and dimensions

The following shall be the British Standard preferred range of general purpose tools:

3.1 Forks

Garden	see Figure 3
Trenching	see Figure 4
Ballast	see Figure 5
Coke	see Figure 6

3.2 Shovels

General service, forged	see Figure 7
Round mouth, forged	see Figure 8
Round mouth, open socket	see Figure 9
Square mouth, forged	see Figure 10
Square mouth, taper blade, forged	see Figure 11
Square mouth, open socket	see Figure 12

3.3 Spades

Garden	see Figure 13
Draining	see Figure 14
Grafting	see Figure 15
Trenching	see Figure 16

4 Materials

Unless otherwise stated in 4.2.1 the materials used in the manufacture of forks, shovels and spades shall be as follows:

4.1 Blades and prongs. The blades of forged shovels and spades and the prongs of forged forks shall be manufactured from a suitable steel, the analysis of which shall conform to the following specification:

Carbon	not less than 0.35 %
Manganese	not less than 0.50 %
Silicon	not more than 0.40 %
Sulphur	not more than 0.06 %
Phosphorous	not more than 0.06 %

Carbon and manganese together shall be not less than 1 %.

4.2 Stamped or rolled open socket shovels. The blades shall be manufactured from steel conforming to BS 1449-1.

4.2.1 Alternative materials shall only be used provided that the finished tool complies with the requirements of Clauses 5 and 10.

4.3 Straps and sockets. Straps and sockets shall be manufactured from low carbon steel or other suitable material.

4.4 Rivets. The material used for rivets shall comply with the requirements of BS 1052.

4.5 Handles. The handles of forks, shovels and spades manufactured from ash shall be graded in accordance with the requirements of BS 3823.

4.5.1 Where handles are supplied in other materials by agreement between purchaser and supplier, the finished tool shall comply with the requirements of Clause 10.

5 Heat treatment and hardness

The blades of spades and shovels and the prongs of forks shall be hardened and tempered to produce a hardness reading within the range 380 HV 5 to 480 HV 5 as specified in BS 427, 39 to 47 HRC as Specified in BS 891 or 360 to 445 HB as specified in BS 240, when measured not less than 50 mm from the shoulder.

Where alloy steels are used it is permitted to increase the maximum hardness provided that the finished tool is capable of passing the test requirements of Clause 10.

6 Construction

6.1 Forks, shovels and spades. The blades of shovels and spades and the prongs of forks shall either be forged integrally with, or welded to, the straps or sockets. The thickness of the blade shall be greatest at the frog, decreasing towards the sides and mouth and shall be not less than 1.75 mm.

6.2 Open socket shovels. The blades and socket shall be formed from one piece of steel sheet of 1.75 mm minimum thickness.

6.3 Forged and open socket tools

6.3.1 The blade or prongs shall be well formed and shall be free from cracks, seams, splits, laminations and other defects.

6.3.2 All sockets and straps shall be smooth and shall be positively and permanently secured to the handles. The sockets and straps shall be close fitting and finished flush with the handles. Rivets, where used, shall be given a smooth finish.

6.3.3 Handles shall be well shaped and lie true with the shoulders of the blade or prongs. Tee hilts shall be positively and permanently secured to the handles by any of the methods shown in Figure 24 and Figure 25 and shall be either crutch or barrel shaped as shown in Figure 17 and Figure 18.

6.3.4 Wooden Y-Dee hilts shall be securely riveted or pegged at the bottom of the split as shown in Figure 20.

6.3.5 The grips of all types of hilts shall be positively and permanently secured against rotation. The length of Y-Dee and metal Dee grips shall be not less than 95 mm.

6.3.6 Where handles of other materials suitably joined to the socket are used in place of wood handles, the socket and handle dimensions may, by agreement between the purchaser and the supplier, differ from those specified provided that the finished tool complies with the requirements of 10.2.

7 Dimensions

The dimensions of forks, shovels and spades shall be in accordance with Figure 3 to Figure 16 inclusive. Variations in the lengths of handles are permitted by agreement between purchaser and manufacturer.

8 Finish

The blades of all spades shall be given a sharp working edge.

Handles shall be finished smooth and all radii, rough edges and surfaces shall be blended to provide a smooth finish and to prevent injury to hands.

The sockets or straps of all forks, shovels and spades shall be polished smooth and shall be bright finished or painted. The remaining areas of metal shall be either bright finished, self coloured or paint finished.

Any exposed unpainted metal shall be given suitable anti-corrosion treatment in accordance with the requirements of BS 1133-6.

Alternative finishes to those specified above shall be as agreed between purchaser and manufacturer.

9 Marking

9.1 All forks, shovels and spades shall be clearly and indelibly marked on the metal portion of the tool with the following:

- 1) manufacturer's name or trade mark;
- 2) the number of this British Standard i.e. BS 3388:1973.

9.2 Any additional marking shall be as agreed between purchaser and manufacturer.

9.3 Tools which are marked on the blade or prongs shall be marked not more than 50 mm from the shoulder.

NOTE Attention is drawn to certification facilities offered by the BSI. See inside back cover of this standard.

10 Tests

10.1 Hardness. The blades or prongs of forks, shovels and spades shall satisfy the requirements of the hardness test given in Clause 5.

10.2 Mechanical test. Forks, shovels and spades shall satisfy the requirements of the following mechanical test.

10.2.1 With the tool clamped as shown in Figure 44 a load of 40 kg shall be gradually applied by suspension from the grip. The load shall be maintained in this manner for one minute and then removed.

The test load as given in Table 1 (see Figure 3 – Figure 16) shall then be applied and maintained for two minutes. On removal of the load the tool shall show no signs of damage or loosening of any component part, nor shall there be any permanent set in excess of 25 mm when measured at the centre of the hilt.

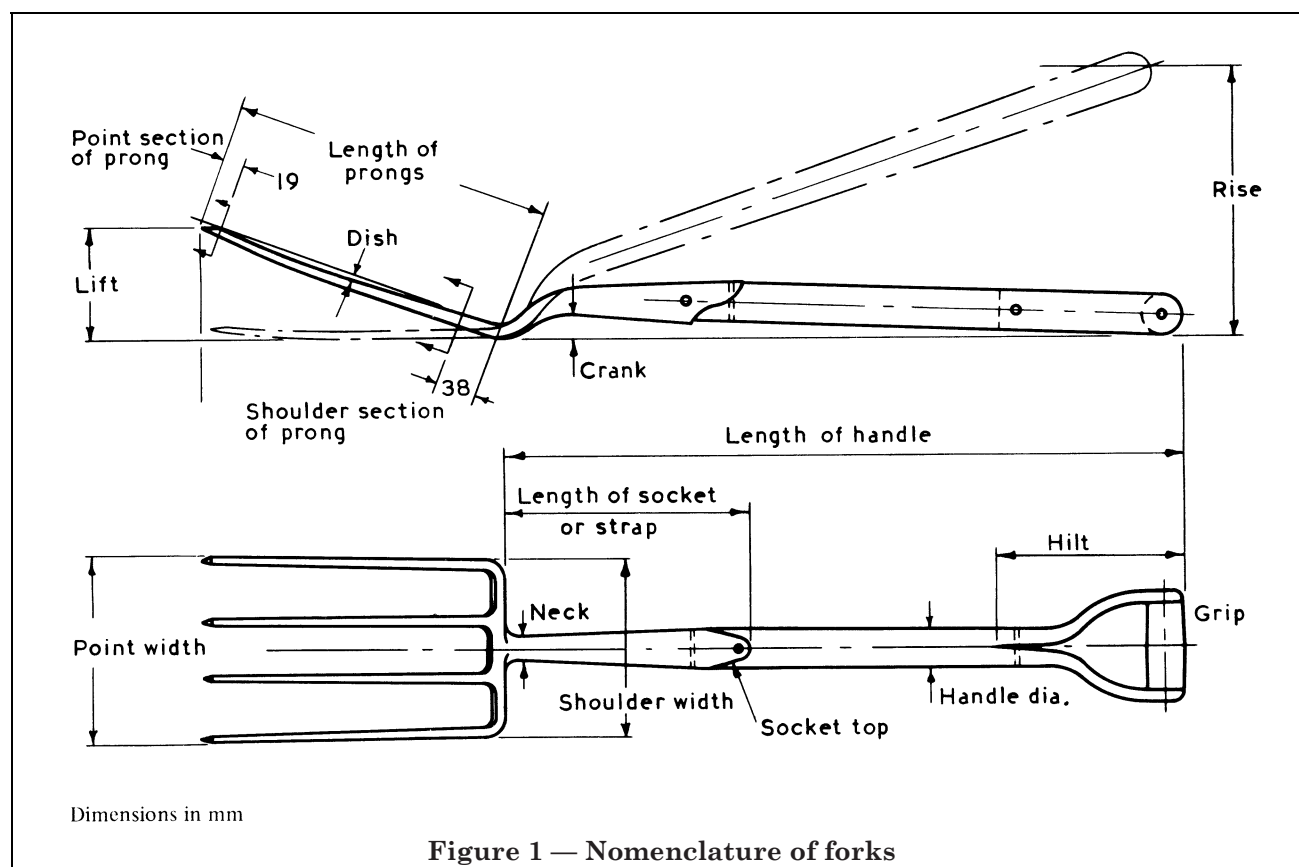
10.2.2 If modifications are introduced which affect the protruding length of the tool under test, i.e. from the shoulder of the blade to the hilt, the test load shall be adjusted so that the moment is equal to the moment applied to tools of the preferred dimensions.

Table 1 — Test load

Figure reference	Description	Test load
		kg
Figure 3	Garden fork	
	Digging	55
	Medium	40
	Border	40
Figure 4	Trenching fork	65
Figure 5	Ballast fork, 8 or 10 prong	65
Figure 6	Coke fork, 10 or 12 prong	65
Figure 7	General service forged shovel	40
Figure 8	Round mouth forged shovel	65
Figure 9	Round mouth open socket shovel	65
Figure 10	Square mouth forged shovel	65
Figure 11	Square mouth taper blade forged shovel	65
Figure 12	Square mouth open socket shovel	65
Figure 13	Garden spade	
	Digging	55
	Medium and border	40
Figure 14	Draining spade	65
Figure 15	Grafting spade	65
Figure 16	Trenching spade	65

10.3 Prong test. The prongs of digging and trenching forks (see Figure 3 and Figure 4) shall be tested by bringing the tips of any two adjacent prongs together, or in the case of ballast forks (see Figure 5) any four adjacent prongs, and coke forks (see Figure 6). any five adjacent prongs.

Following this test the prongs shall show no sign of permanent set or damage.



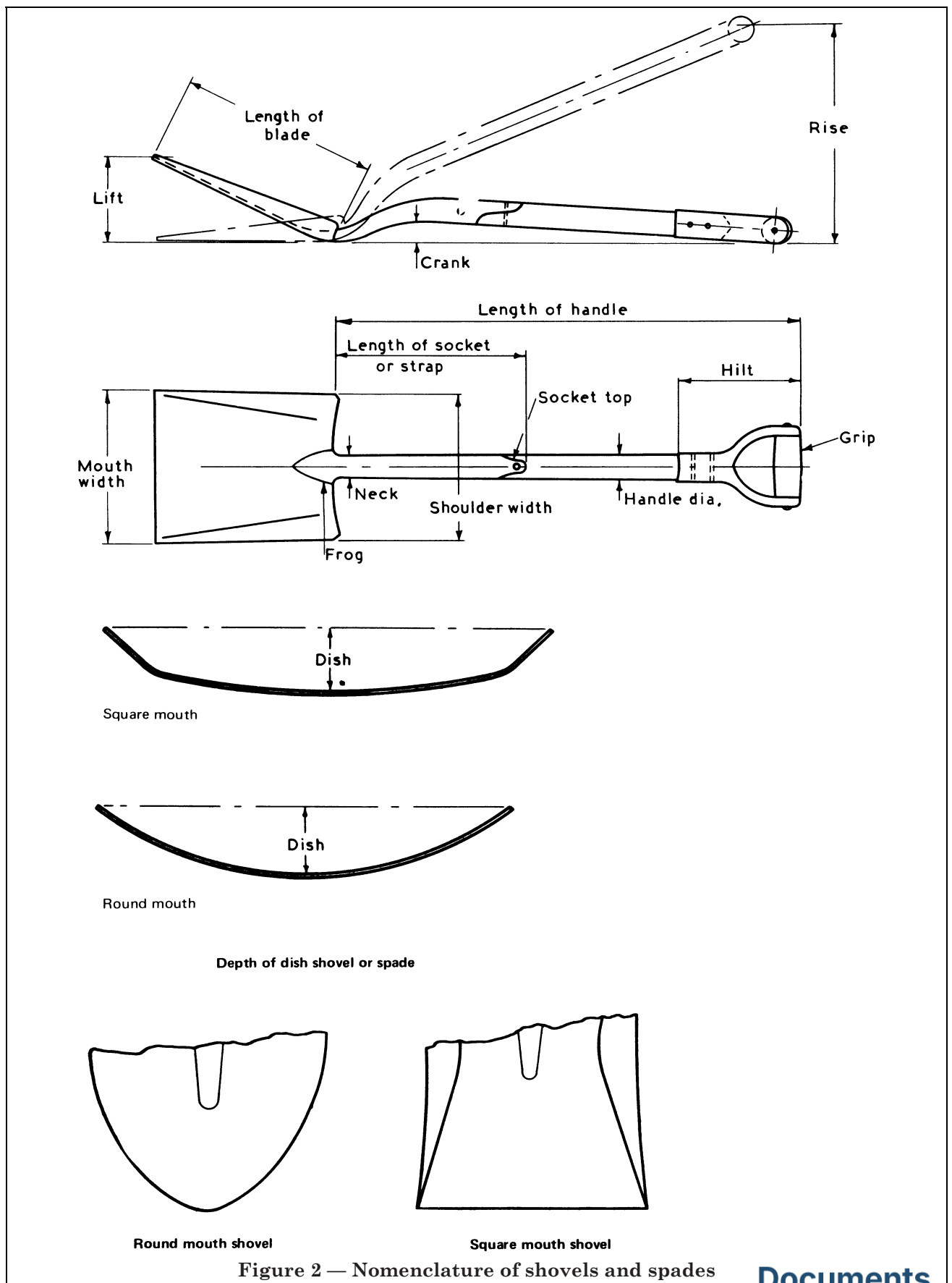
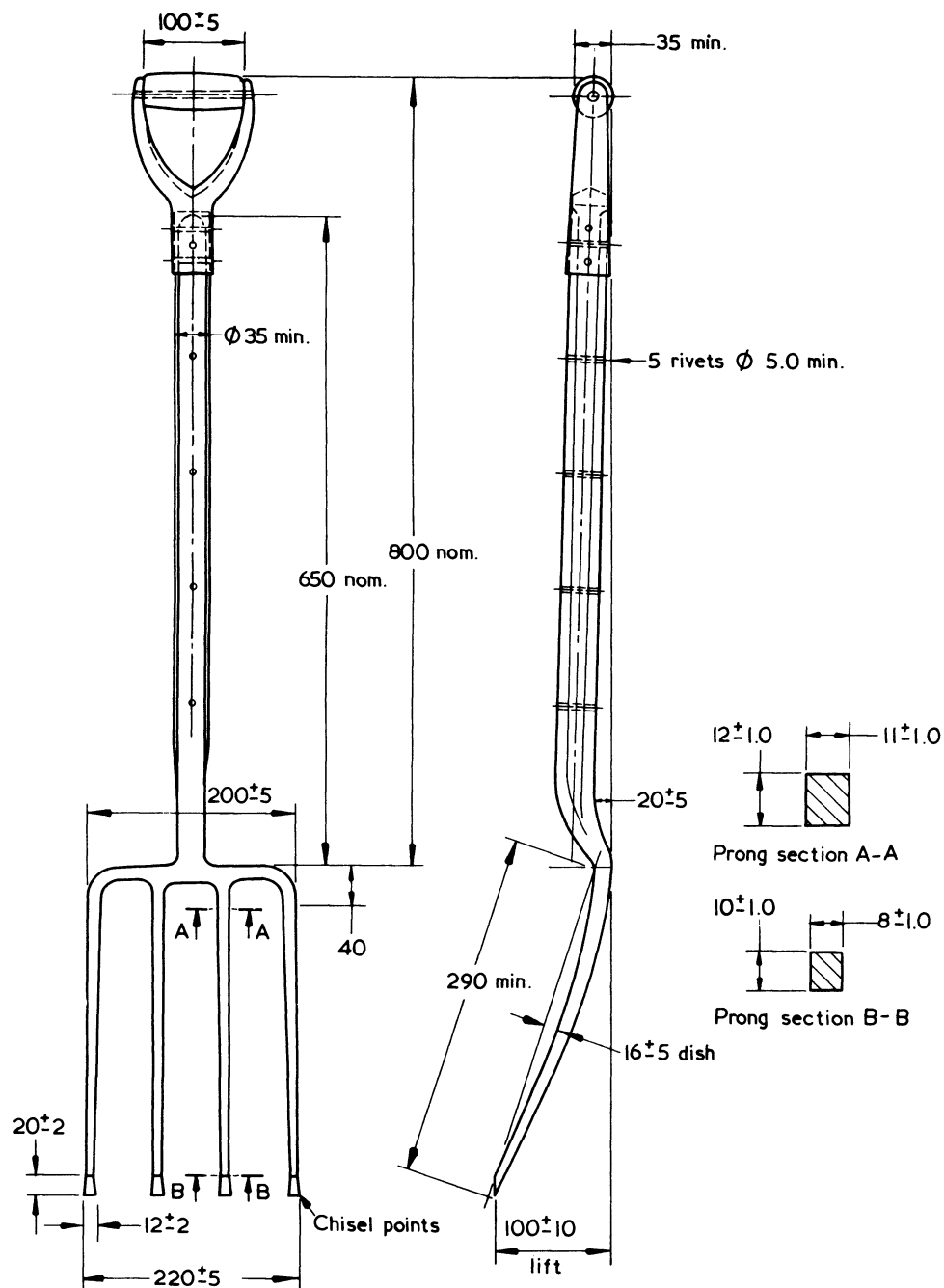


Figure 2 — Nomenclature of shovels and spades



Dimensions in mm

Note relating to Figure 4 Trenching fork

NOTE Preferred types of hilt are:

- 1) Metal Y-Dee (see Figure 21, Figure 22 or Figure 23)
- 2) Box Dee (see Figure 26)

Figure 4 — Trenching fork