

Specification for

Milling cutters —

**Part 4: Screwed shank end mills and slot
drills**

Confirmed December 2009

Cooperating organizations

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

Associated Offices Technical Committee	Department of Trade (Marine Division)
Association of Consulting Engineers	Department of Transport
Association of Hydraulic Equipment Manufacturers	Electricity Supply Industry in England and Wales
Association of Mining Electrical and Mechanical Engineers	Engineering Equipment Users' Association
British Compressed Air Society	Federation of Manufacturers of Construction Equipment and Cranes
British Electrical and Allied Manufacturers' Association (BEAMA)	Health and Safety Executive
British Gas Corporation	Institution of Gas Engineers
British Gear Manufacturers' Association	Institution of Mechanical Engineers
British Internal Combustion Engine Manufacturers' Association	Institution of Plant Engineers
British Pump Manufacturers' Association	Institution of Production Engineers*
British Steel Corporation	Lloyd's Register of Shipping
British Steel Industry	London Transport Executive
British Valve Manufacturers' Association Ltd	Machine Tool Industry Research Association*
Cbmpe	Ministry of Defence*
Chartered Institution of Building Services	National Coal Board
Crown Agents for Oversea Governments and Administrations	Oil Companies Materials Association
Department of the Environment (PSA)	Process Plant Association
Department of Industry (Mechanical Engineering)	Society of Motor Manufacturers and Traders Limited
Department of Industry (National Engineering Laboratory)	Telecommunication Engineering and Manufacturing Association (TEMA)
	Water-tube Boilermakers' Association

The 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:

Gauge and Tool Makers' Association	Society of British Aerospace Companies Limited
Milling Cutter Association	

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 26 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 Part of BS 122 specifies the dimensions and tolerances for screwed shank end mills and slot drills.

2 Dimensions and tolerances¹⁾

The dimensions and tolerances of screwed shank end mills, normal and long series and screwed shank slot drills, normal and long series, shall be as given in Table 1 to Table 7 and as illustrated in Figure 1 to Figure 7 respectively.

The dimensions and tolerances of screwed shank end mills, normal and long series, in imperial (inch) units and screwed shank slot drills, normal and long series, in imperial (inch) units are given in Appendix A, Table 8 to Table 15 and illustrated in Appendix A, Figure 8 to Figure 15, respectively.

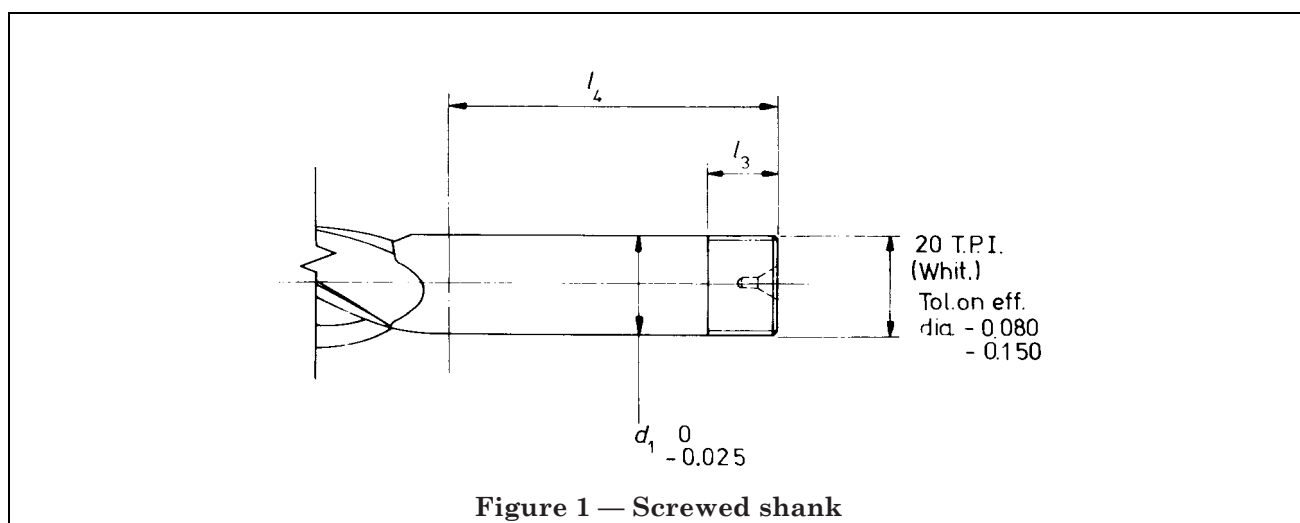
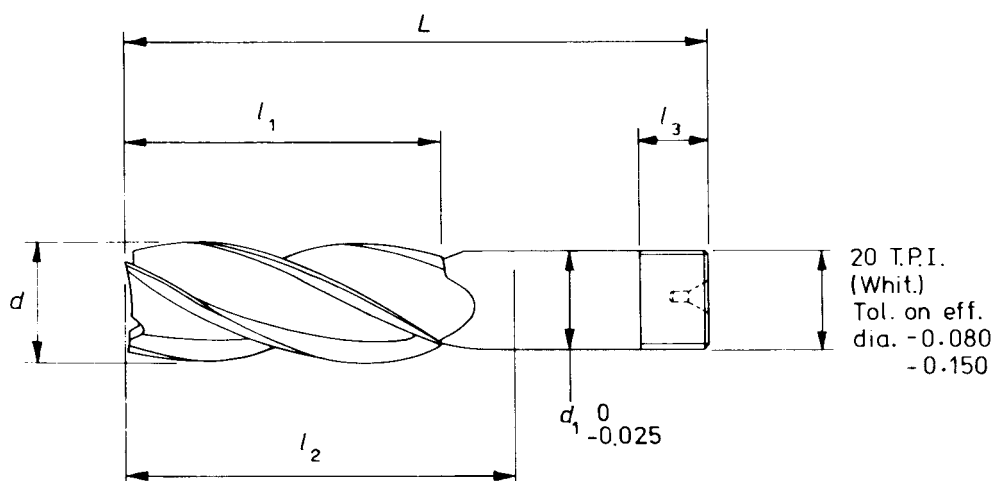


**Table 1 — Interchangeability dimensions
for screwed shanks**

All dimensions are in millimetres.

Shank diameter d_1	Minimum shank length l_4	Minimum thread length l_3
6	37.5	9.5
10	38	9.5
12	38	9.5
16	39	9.5
25	52.5	15
32	54	15

¹⁾ The cutter diameter tolerances in this Part of BS 122 are not identical with those in Part 3 of BS 122.



NOTE 1 Tolerances on d :
up to 38 mm $+0.063$
 -0.013
over 38 mm $+0.125$
 -0

Figure 2 — Screwed shank end mill: normal series

Table 2 — Dimensions of screwed shank end mills: normal series

All dimensions are in millimetres.

Cutter diameter	Cut length	Shank diameter	Nominal length below chuck	Overall length	Thread length	Cutter diameter	Cut length	Shank diameter	Nominal length below chuck	Overall length	Thread length
d	l_1	d_1	l_2	L	l_3	d	l_1	d_1	l_2	L	l_3
2.5	6.5	6	13.5	51	9.5	21	38	25	42.5	95	15
3	9.5	6	16.5	54		22	41.5	25	46	98.5	
3.5	12.5	6	19.5	57		23					
4						24					
4.5						25	44.5	25	49	101.5	
5	16	6	23	60.5		26	43				
5.5						28	46	25	52	104.5	
6						30					
6.5	16	10	22.5	60.5		32	49	25	55.5	108	
7	15					34					
7.5	18	10	25.5	63.5		35	52.5	25	58.5	111	
8						36					
8.5	21	10	28.5	66.5		38	55.5	25	62	114.5	
9						40	58.5				
9.5						42	60.5				
10	19	12	28.5	66.5		44	63.5	25	68	120.5	
10.5						45					
11	22.5	12	32	70		32	51	32	58.5	112.5	
11.5						33					
12	24					34					
13	24.5	12	35	73		35	54	32	62	116	
14	28.5					36					
15	26.5	16	38	77		38					
16						40	55.5	32	63.5	117.5	
17	32	16	41	80		42	54				
18	35					44	57	32	65	119	
19	38	16	44.5	83.5		45					
20						50	65	32	73	127	

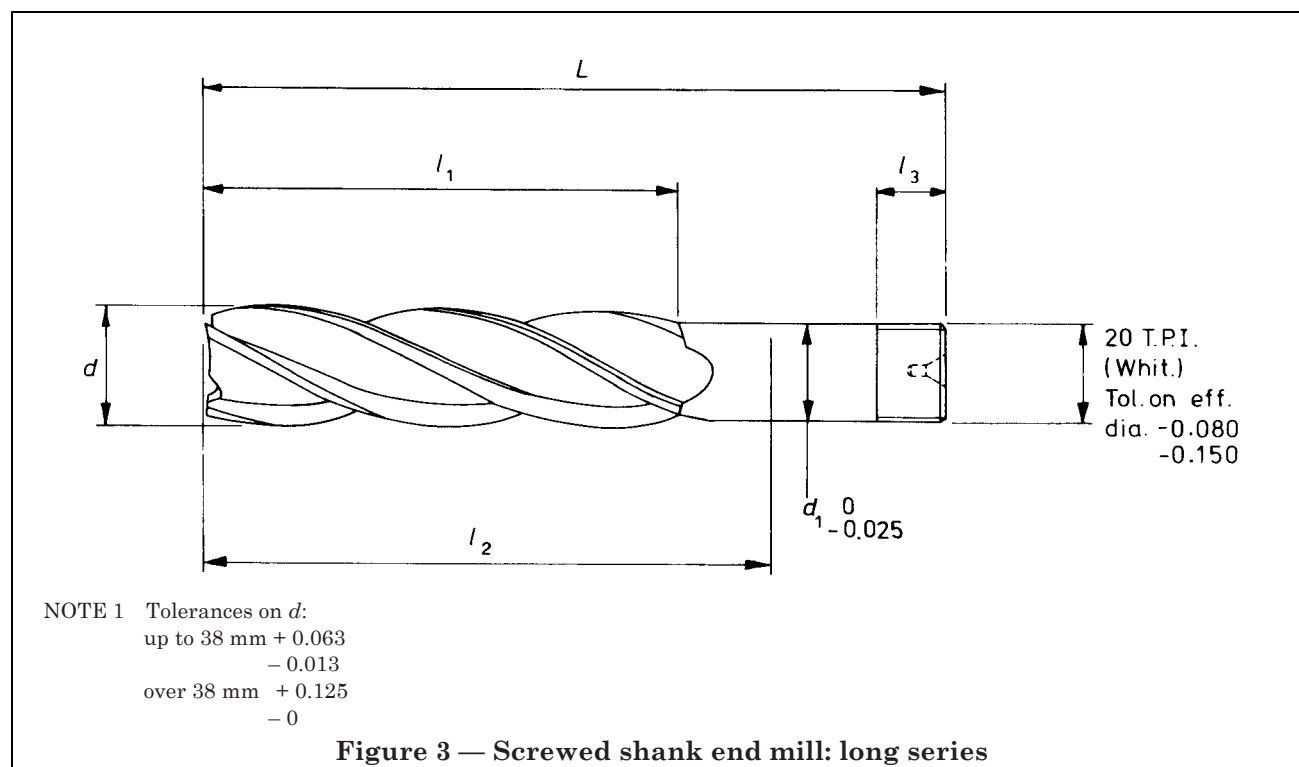
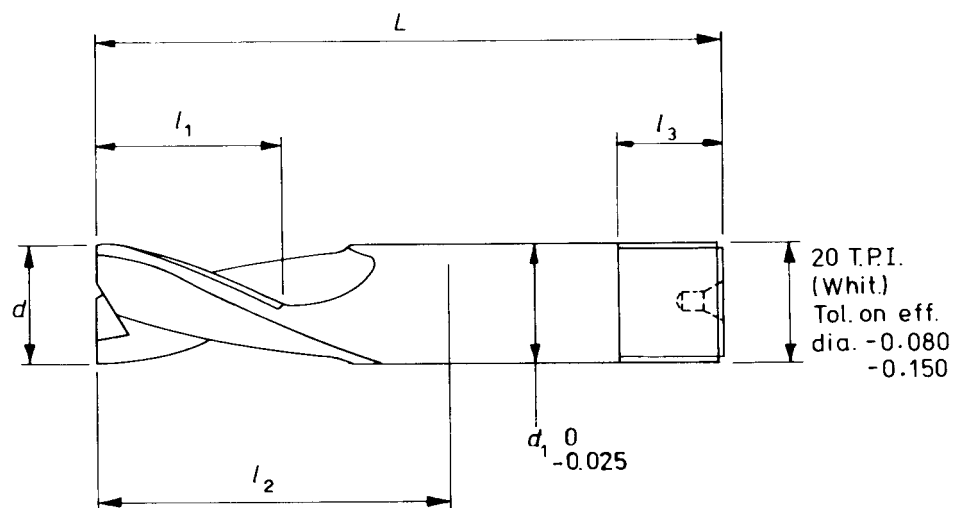


Table 3 — Dimensions of screwed shank end mills: long series

All dimensions are in millimetres.

Cutter diameter	Cut length	Shank diameter	Nominal length below chuck	Overall length	Thread length	Cutter diameter	Cut length	Shank diameter	Nominal length below chuck	Overall length	Thread length
d	l_1	d_1	l_2	L	l_3	d	l_1	d_1	l_2	L	l_3
3	19	6	26	63.5	9.5	22	85.5	25	90.5	143	15
3.5	25.5	6	32.5	70		24	92	25	96.5	149	
4						25	100	25	104.5	157	
4.5						98.5	25	104.5	157		
5	31.5	6	38.5	76							
5.5											
6											
6.5	35	10	41.5	79.5		32	100	25	106.5	159	
7	34										
7.5											
8											
8.5	37	10	44.5	82.5		34	101.5	25	106.5	159	
9											
10											
11	41.5	12	51	89		36	101.5	32	109.5	163.5	
12	49.5	12	57	95		38					
13	50					40					
14	57	12	63.5	101.5		42					
15	58.5	16	69.5	108.5		44					
16						45					
17	67	16	76	115		45					
18	70										
19	76	16	82.5	121.5		50					
20											



NOTE 1 Tolerances on d :

up to 3 mm	-0.013 -0.033
over 3 mm up to 6 mm	-0.020 -0.038
over 6 mm up to 10 mm	-0.025 -0.046
over 10 mm up to 18 mm	-0.033 -0.058
over 18 mm up to 30 mm	-0.041 -0.071
over 30 mm	-0.051 -0.089

Figure 4 — Screwed shank slot drill: normal series