
INTERNATIONAL STANDARD



2568

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

**Hand- and machine-operated circular screwing dies and
hand-operated die stocks**

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ISO 2568:1973

<https://standards.iteh.ai/catalog/standards/sist/5250c515-f98f-4ebd-9e43-6fcd3d67698e/iso-2568-1973>

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Descriptors : tools, screwing dies, dimensions.

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2568 was drawn up by Technical Committee ISO/TC 29, *Small tools*.

It was approved in July 1972 by the Member Bodies of the following countries :

Austria	Israel	Spain
Belgium	Italy	Sweden
Czechoslovakia	Korea, Rep. of	Thailand
Egypt, Arab Rep. of	Netherlands	Turkey
France	New Zealand	United Kingdom
Hungary	Poland	U.S.A.
India	Romania	U.S.S.R.
Ireland	South Africa, Rep. of	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Australia
Japan
Switzerland

Hand- and machine-operated circular screwing dies and hand-operated die stocks

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the general dimensions of hand-operated and machine-operated screwing dies. These dimensions, established as a function of the thread diameter and pitch, are the following:

- outside diameter;
- thickness;
- cutting portion length : [ISO 2568:1973](https://standards.iteh.ai/catalog/standards/sist/5250c515-f98f-4ebd-9e43-6fd3d67698e/iso-2568-1973)
- general dimensions of attachment. <https://standards.iteh.ai/catalog/standards/sist/5250c515-f98f-4ebd-9e43-6fd3d67698e/iso-2568-1973>

It also gives the interchangeability dimensions of hand-operated die stocks.

This International Standard is applicable to screwing dies intended for the manufacture of the following threads :

- ISO metric threads :
 - coarse thread, from M 1 to M 68;
 - fine thread, from M 1 to M 56.
- ISO inch threads :
 - “Unified coarse” series (UNC), from No. 1–64 to 2 3/4;
 - “Unified fine” series (UNF), from No. 0–80 to 1 1/2.

It also includes an Annex giving the dimensional characteristics of circular screwing dies as a function of thread diameters and pitches.

The general dimensions of screwing dies for threads which are not dealt with in this International Standard, and therefore are not recommended, are given for guidance only in an Appendix. This Appendix is applicable to screwing dies for inch threads of the following types :

- Z.1 – “British Standard Whitworth” (BSW).
- Z.2 – “British Standard Fine” (BSF).
- Z.3 – “British Association” (BA).

All screwing dies are available in two classes namely

- non-precision screwing dies;
- precision screwing dies.

2 ISO METRIC THREADS

2.1 Coarse thread

Screwing dies with :

$D = 16$ and 20 mm

$D \geq 25$ mm

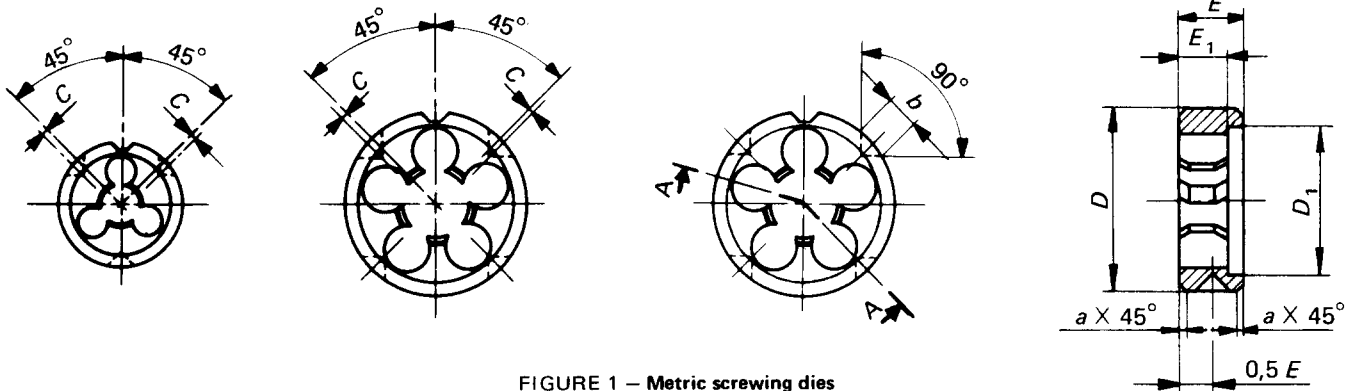


FIGURE 1 – Metric screwing dies

TABLE 1

Dimensions in millimetres

Designation	d nominal	Pitch	D	D_1	E	E_1	C	b	a														
M 1	1	0,25	16	11	5	2,5	0,5	0,2	0,2														
M 1,1	1,1																						
M 1,2	1,2																						
M 1,4	1,4	0,35																					
M 1,6	1,6																						
M 1,8	1,8																						
M 2	2	0,45								20	15	6	3	0,5	0,5	0,5							
M 2,2	2,2																						
M 2,5	2,5																						
M 3	3	0,6															25	20	8	0,6	0,5	0,5	0,5
M 3,5	3,5																						
M 4	4																						
M 4,5	4,5	0,75	30	25	10	0,8	0,5	0,5	0,5														
M 5	5																						
M 6	6																						
M 7	7	1																					
M 8	8																						
M 9	9																						
M 10	10	1,25								40	35	15	1,0	0,5	0,5	0,5							
M 11	11																						
M 12	12																						
M 14	14	2															45	40	18	1,2	6	1	1
M 16	16																						
M 18	18																						
M 20	20	2,5	50	45	20	1,5	8	2	2														
M 22	22																						
M 24	24																						
M 27	27	3																					
M 30	30																						
M 33	33																						
M 36	36	4								60	55	25	1,8	8	2	2							
M 39	39																						
M 42	42																						
M 45	45	4,5															65	60	30	2,0	8	2	2
M 48	48																						
M 52	52																						
M 56	56	5	70	65	36	2,0	8	2	2														
M 60	60																						
M 64	64																						
M 68	68	6																					
M 72	72																						
M 76	76																						
M 80	80	5,5								80	75	36	2,5	10	2	2							
M 84	84																						
M 88	88																						
M 92	92	6															85	80	36	2,5	10	2	2
M 96	96																						
M 100	100																						
M 105	105	6	90	85	36	2,5	10	2	2														
M 110	110																						
M 115	115																						
M 120	120	6																					
M 125	125																						
M 130	130																						
M 135	135	6								100	95	36	2,5	10	2	2							
M 140	140																						
M 145	145																						
M 150	150	6															105	100	36	2,5	10	2	2
M 155	155																						
M 160	160																						
M 165	165	6	110	105	36	2,5	10	2	2														
M 170	170																						
M 175	175																						
M 180	180	6																					
M 185	185																						
M 190	190																						
M 195	195	6								120	115	36	2,5	10	2	2							
M 200	200																						
M 205	205																						
M 210	210	6															125	120	36	2,5	10	2	2
M 215	215																						
M 220	220																						
M 225	225	6	130	125	36	2,5	10	2	2														
M 230	230																						
M 235	235																						
M 240	240	6																					
M 245	245																						
M 250	250																						
M 255	255	6								140	135	36	2,5	10	2	2							
M 260	260																						
M 265	265																						
M 270	270	6															145	140	36	2,5	10	2	2
M 275	275																						
M 280	280																						
M 285	285	6	150	145	36	2,5	10	2	2														
M 290	290																						
M 295	295																						
M 300	300	6																					
M 305	305																						
M 310	310																						
M 315	315	6								160	155	36	2,5	10	2	2							
M 320	320																						
M 325	325																						
M 330	330	6															165	160	36	2,5	10	2	2
M 335	335																						
M 340	340																						
M 345	345	6	170	165	36	2,5	10	2	2														
M 350	350																						
M 355	355																						
M 360	360	6																					
M 365	365																						
M 370	370																						
M 375	375	6								180	175	36	2,5	10	2	2							
M 380	380																						
M 385	385																						
M 390	390	6															185	180	36	2,5	10	2	2
M 395	395																						
M 400	400																						
M 405	405	6	190	185	36	2,5	10	2	2														
M 410	410																						
M 415	415																						
M 420	420	6																					
M 425	425																						
M 430	430																						
M 435	435	6								200	195	36	2,5	10	2	2							
M 440	440																						
M 445	445																						
M 450	450	6															205	200	36	2,5	10	2	2
M 455	455																						
M 460	460																						
M 465	465	6	210	205	36	2,5	10	2	2														
M 470	470																						
M 475	475																						
M 480	480	6																					
M 485	485																						
M 490	490																						
M 495	495	6								220	215	36	2,5	10	2	2							
M 500	500																						
M 505	505																						
M 510	510	6															225	220	36	2,5	10	2	2
M 515	515																						
M 520	520																						
M 525	525	6	230	225	36	2,5	10	2	2														
M 530	530																						
M 535	535																						
M 540	540	6																					
M 545	545																						
M 550	550																						
M 555	555	6								240	235	36	2,5	10	2	2							
M 560	560																						
M 565	565																						
M 570	570	6															245	240	36	2,5	10	2	2
M 575	575																						
M 580	580																						
M 585	585	6	250	245	36	2,5	10	2	2														
M 590	590																						
M 595	595																						
M 600	600	6																					
M 605	605																						
M 610	610																						
M 615	615	6								260	255	36	2,5	10	2	2							
M 620	620																						
M 625	625																						
M 630	630	6															265	260	36	2,5	10	2	2
M 635	635																						
M 640	640																						
M 645	645	6	270	265	36	2,5	10	2	2														
M 650	650																						
M 655	655																						
M 660	660	6																					
M 665	665																						
M 670	670																						
M 675	675	6								280	275	36	2,5	10	2	2							
M 680	680																						
M 685	685																						
M 690	690	6															285	280	36	2,5	10	2	2
M 695	695																						
M 700	700																						
M 705	705	6	290	285	36	2,5	10	2	2														
M 710	710																						
M 715	715																						
M 720	720	6																					
M 725	725																						
M 730	730																						
M 735	735	6								300	295	36	2,5	10	2	2							
M 740	740																						
M 745	745																						
M 750	750	6															305	300	36	2,5	10	2	2
M 755	755																						
M 760	760																						
M 765	765	6	310	305	36	2,5	10	2	2														
M 770	770																						
M 775	775																						
M 780	780	6																					
M 785	785																						
M 790	790																						
M 795	795	6								320	315	36	2,5	10	2	2							
M 800	800																						
M 805	805																						
M 810	810	6															325	320	36	2,5	10	2	2
M 815	815																						
M 820	820																						
M 825	825	6	330	325	36	2,5	10	2	2														
M 830	830																						
M 835	835																						
M 840	840	6																					
M 845	845																						
M 850	850																						
M 855	855	6								340	335	36	2,5	10	2	2							
M 860	860																						
M 865	865																						
M 870	870	6															345	340	36	2,5	10	2	2
M 875	875																						
M 880	880																						
M 885	885	6	350	345	36	2,5	10																

2.2 Fine thread

TABLE 2

Dimensions in millimetres

Designation	<i>d</i> nominal	Pitch	<i>D</i>	<i>D</i> ₁	<i>E</i>	<i>E</i> ₁	<i>C</i>	<i>b</i>	<i>a</i>
M 1 × 0,2	1	0,2	16	11	5	2	3	0,2	
M 1,1 × 0,2	1,1								
M 1,2 × 0,2	1,2								
M 1,4 × 0,2	1,4								
M 1,6 × 0,2	1,6								
M 1,8 × 0,2	1,8								
M 2 × 0,25	2	0,25							
M 2,2 × 0,25	2,2								
M 2,5 × 0,35	2,5	0,35			2,5	0,5	0,2		
M 3 × 0,35	3								
M 3,5 × 0,35	3,5								
M 4 × 0,5	4	0,5	20	15	5	3	4		
M 4,5 × 0,5	4,5								
M 5 × 0,5	5								
M 5,5 × 0,5	5,5								
M 6 × 0,75	6	0,75			7	0,6	0,5		
M 7 × 0,75	7								
M 8 × 1	8	1	25	9		0,8	5		
M 9 × 1	9								
M 10 × 1	10								
M 10 × 1,25	10	1,25	30	11		1,0			
M 12 × 1,25	12								
M 12 × 1,5	12	1,25	38	10					
M 14 × 1,25	14								
M 14 × 1,5	14								
M 15 × 1,5	15	1,5				1,2	6		
M 16 × 1,5	16								
M 17 × 1,5	17	1,5	45	14					
M 18 × 1,5	18								
M 18 × 2	18								
M 20 × 1,5	20	1,5						1,0	
M 20 × 2	20								
M 22 × 1,5	22	1,5							
M 22 × 2	22								
M 24 × 1,5	24	1,5	55	16		1,5			
M 24 × 2	24								
M 25 × 1,5	25	1,5						8	
M 25 × 2	25								
M 27 × 1,5	27	1,5	65	18		1,8			
M 27 × 2	27								
M 28 × 1,5	28	1,5							
M 28 × 2	28								

Designation	<i>d</i> nominal	Pitch	<i>D</i>	<i>E</i>	<i>C</i>	<i>b</i>	<i>a</i>
M 30 × 1,5	30	1,5	18				1,0
M 30 × 2		2					
M 30 × 3		3					
M 32 × 1,5	32	1,5	18				
M 32 × 2		2					
M 33 × 1,5	33	1,5	65	18			
M 33 × 2		2					
M 33 × 3		3					
M 35 × 1,5	35	1,5					
M 36 × 1,5	36	1,5					
M 36 × 2		2					
M 36 × 3		3					
M 39 × 1,5	39	1,5	20				
M 39 × 2		2					
M 39 × 3	39	3	30				
M 40 × 1,5	40	1,5	75	20			
M 40 × 2		2					
M 40 × 3		3					
M 42 × 1,5	42	1,5	20				8
M 42 × 2		2					
M 42 × 3	42	3	30				
M 42 × 4	42	4					
M 45 × 1,5	45	1,5	22				2,0
M 45 × 2		2					
M 45 × 3		3					
M 45 × 4	45	4	36				
M 48 × 1,5	48	1,5	22				
M 48 × 2		2					
M 48 × 3		3					
M 48 × 4	48	4	36				
M 50 × 1,5	50	1,5	90	22			2,0
M 50 × 2		2					
M 50 × 3		3					
M 52 × 1,5	52	1,5	22				
M 52 × 2		2					
M 52 × 3		3					
M 52 × 4		4					
M 55 × 1,5	55	1,5	90	22			
M 55 × 2		2					
M 55 × 3		3					
M 55 × 4		4					
M 56 × 1,5	56	1,5	105	22	2,5	10	
M 56 × 2		2					
M 56 × 3		3					
M 56 × 4		4					

For tolerances and note, see 2.1.

3 ISO INCH THREADS

3.1 "Unified coarse" series (UNC)

Screwing dies with :

$D = 16$ and 20 mm

$D \geq 25$ mm

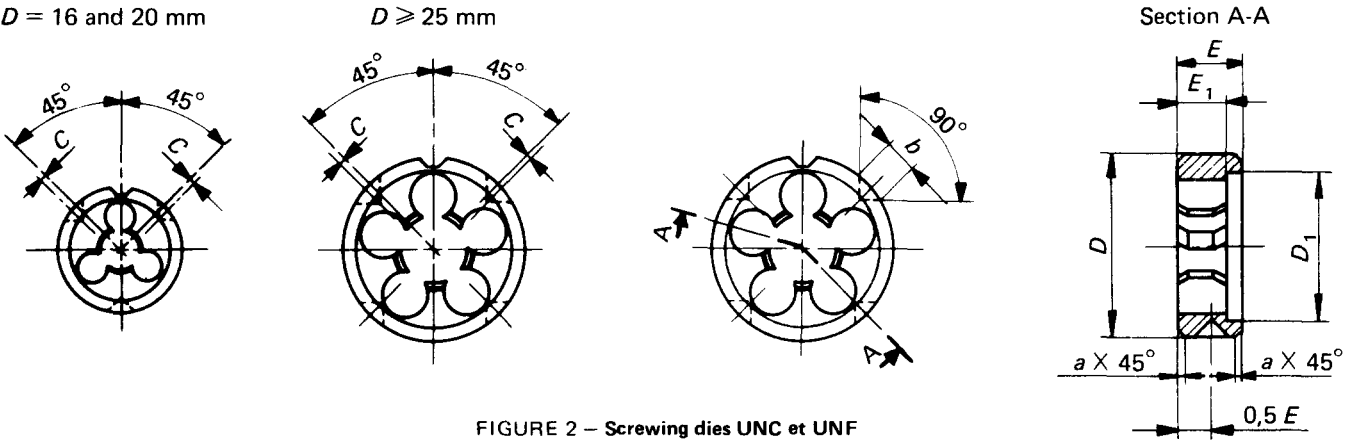


FIGURE 2 – Screwing dies UNC et UNF

TABLE 3

Dimensions in millimetres

Designation	d nominal	Approximate pitch	D	D_1	E	E_1	C	b	a
No. 1 - 64 - UNC	1,854	0,397	16	11	5	3	0,5	3	0,2
No. 2 - 56 - UNC	2,184	0,454							
No. 3 - 48 - UNC	2,515	0,529							
No. 4 - 40 - UNC	2,845	0,635	20		7	0,6	4	0,5	
No. 5 - 40 - UNC	3,175	0,794							
No. 6 - 32 - UNC	3,505								
No. 8 - 32 - UNC	4,166								
No.10 - 24 - UNC	4,826	1,058							
No.12 - 24 - UNC	5,486								
$1/4$ - 20 - UNC	6,350	1,270	25		9	0,8	5	1,0	
$5/16$ - 18 - UNC	7,938	1,411	30		11	1,0			
$3/8$ - 16 - UNC	9,525	1,588							
$7/16$ - 14 - UNC	11,112	1,814	38		14	1,2	6	1,0	
$1/2$ - 13 - UNC	12,700	1,954							
$9/16$ - 12 - UNC	14,288	2,117							
$5/8$ - 11 - UNC	15,875	2,309	45		18	1,5	8	2,0	
$3/4$ - 10 - UNC	19,050	2,540							
$7/8$ - 9 - UNC	22,225	2,822	55		22	2,0	10		
1 - 8 - UNC	25,400	3,175	65		25	1,8			
$1 1/8$ - 7 - UNC	28,575	3,629							
$1 1/4$ - 7 - UNC	31,750								
$1 3/8$ - 6 - UNC	34,925	4,233	75		30	2,0	10		
$1 1/2$ - 6 - UNC	38,100								
$1 3/4$ - 5 - UNC	44,450	5,080	90		36	2,5			
2 - 4 1/2 - UNC	50,800	5,644	105		36	2,5			
$2 1/4$ - 4 1/2 - UNC	57,150								
$2 1/2$ - 4 - UNC	63,500	6,350	120		36	2,5			
$2 3/4$ - 4 - UNC	69,850								

3.2 "Unified fine" series (UNF)

TABLE 4

Dimensions in millimetres

Designation	<i>d</i> nominal	Approximate pitch	<i>D</i>	<i>D</i> ₁	<i>E</i>	<i>E</i> ₁	<i>C</i>	<i>b</i>	<i>a</i>	
No. 0 - 80 - UNF	1,524	0,318	16	11	5	2,5	0,5	3	0,2	
No. 1 - 72 - UNF	1,854	0,353				3				
No. 2 - 64 - UNF	2,184	0,397				3				
No. 3 - 56 - UNF	2,515	0,454	20		5		0,6	4	0,5	
No. 4 - 48 - UNF	2,845	0,529								
No. 5 - 44 - UNF	3,175	0,577								
No. 6 - 40 - UNF	3,505	0,635								
No. 8 - 36 - UNF	4,166	0,706								
No. 10 - 32 - UNF	4,826	0,794								
No. 12 - 28 - UNF	5,486	0,907								
1/4 - 28 - UNF	6,350	1,058								25
5/16 - 24 - UNF	7,938									
3/8 - 24 - UNF	9,525	1,270								30
7/16 - 20 - UNF	11,112									
1/2 - 20 - UNF	12,700	1,411	38							
9/16 - 18 - UNF	14,288									
5/8 - 18 - UNF	15,875									
3/4 - 16 - UNF	19,050	1,588	45							
7/8 - 14 - UNF	22,225									
1 - 12 - UNF	25,400	2,117	55							
1 1/8 - 12 - UNF	28,575									
1 1/4 - 12 - UNF	31,750									
1 3/8 - 12 - UNF	34,925									
1 1/2 - 12 - UNF	38,100									
			65	18	1,2	6	1,0			
			75	20	1,5	8	2,0			

Tolerances :

- for precision screwing dies :
 - on *D* : f10
 - on *E* : j₅12
- for non-precision screwing dies :
 - on *D* and *E* : the tolerances are left to the discretion of the manufacturer.

The shape of the adjusting vee is left to the discretion of the manufacturer. Screwing dies are generally supplied with two chamfers at the thread entrance according to the material to be threaded and at the discretion of the manufacturer.

4 DIE STOCKS – INTERCHANGEABILITY DIMENSIONS

(For metric and inch threads)

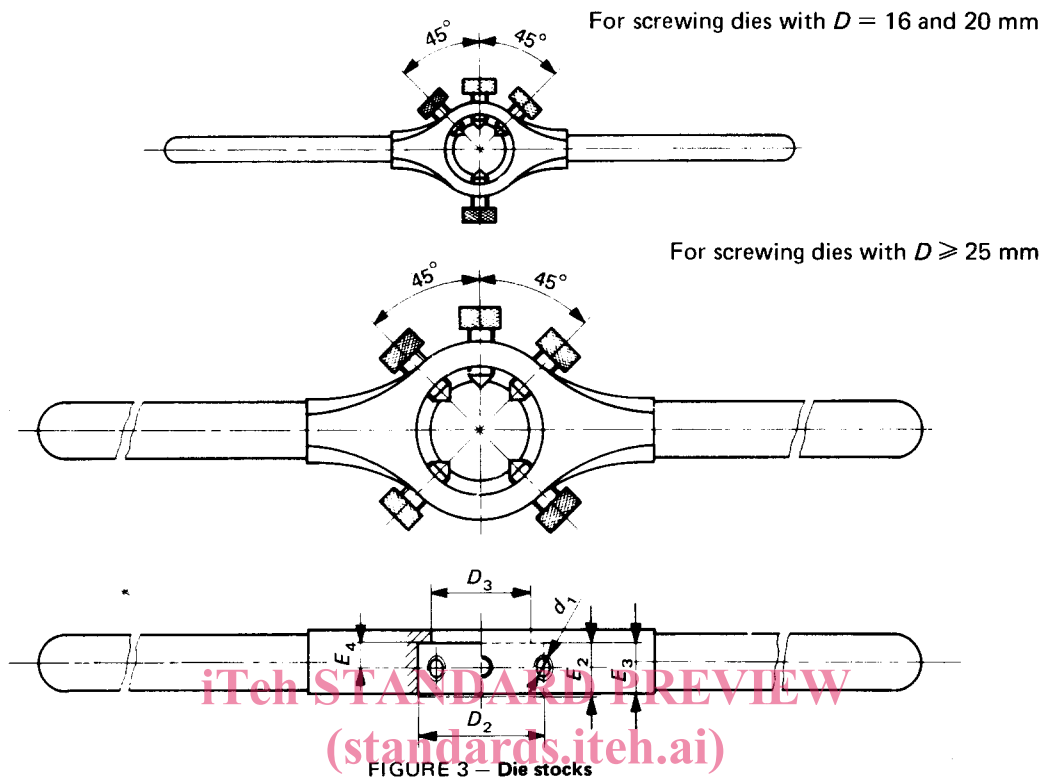


TABLE 58:1973

Dimensions in millimetres

D_2	E_2	E_3	E_4	D_3	d_1
D 10			$\begin{matrix} 0 \\ -0,2 \end{matrix}$		
16	5	4,8	2,4	11	M 3
20	5	4,8	2,4	15	M 4
	7	6,5	3,4		
25	9	8,5	4,4	20	M 5
30	11	10	5,3	25	
38	10	9	4,8	32	M 6
	14	13	6,8		
45	14	13	6,8	38	M 6
	18	17	8,8		
55	16	15	7,8	48	M 8
	22	20	10,7		
65	18	17	8,8	58	M 8
	25	23	12,2		
75	20	18	9,7	68	M 8
	30	28	14,7		
90	22	20	10,7	82	M 8
	36	34	17,7		
105	22	20	10,7	95	M 10
	36	34	17,7		
120	22	20	10,7	107	M 10
	36	34	17,7		

