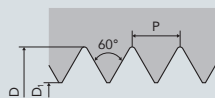


# DRILL SIZE CUTTING TAPS

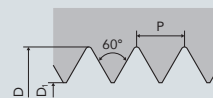
**M**



## ISO Metric coarse thread DIN 13

M	Pitch [mm]	Maximum core diam. (tol. 6H) [mm] D <sub>1</sub>	Drill size* [mm]
M 1	0,25	0,785 <sup>(1)</sup>	0,75
1,1	0,25	0,885 <sup>(1)</sup>	0,85
1,2	0,25	0,985 <sup>(1)</sup>	0,95
1,4	0,3	1,142 <sup>(1)</sup>	1,1
1,6	0,35	1,321	1,25
1,7 <sup>(3)</sup>	0,35	1,421	1,35
1,8	0,35	1,521	1,45
2	0,4	1,679	1,6
2,2	0,45	1,838	1,75
2,3 <sup>(3)</sup>	0,4	1,938	1,9
2,5	0,45	2,138	2,05
2,6 <sup>(3)</sup>	0,45	2,238	2,1
3	0,5	2,599	2,5
3,5	0,6	3,010	2,9
4	0,7	3,422	3,3
4,5	0,75	3,878	3,7
5	0,8	4,334	4,2
6	1	5,153	5
7	1	6,153	6
8	1,25	6,912	6,8
9	1,25	7,912	7,8
10	1,5	8,676	8,5
11	1,5	9,676	9,5
12	1,75	10,441	10,2
14	2	12,210	12
16	2	14,210	14
18	2,5	15,744	15,5
20	2,5	17,744	17,5
22	2,5	19,744	19,5
24	3	21,252	21
27	3	24,252	24
30	3,5	26,771	26,5
33	3,5	29,771	29,5
36	4	32,270	32
39	4	35,270	35
42	4,5	37,799	37,5
45	4,5	40,799	40,5
48	5	43,297	43
52	5	47,297	47
56	5,5	50,796	50,5
60 <sup>(3)</sup>	5,5	54,796	54,5
64 <sup>(3)</sup>	6	58,305	58
68 <sup>(3)</sup>	6	62,305	62

**MF**



## ISO Metric fine thread DIN 13

M	Pitch [mm]	Maximum core diam. (tol. 6H) [mm] D <sub>1</sub>	Drill size* [mm]	M	Pitch [mm]	Maximum core diam. (tol. 6H) [mm] D <sub>1</sub>	Drill size* [mm]
M 2 <sup>(3)</sup>	0,25	1,774 <sup>(2)</sup>	1,75	M 25	1	24,153	24
2,3 <sup>(3)</sup>	0,25	2,085	2,05	25	1,5	23,676	23,5
2,5	0,35	2,221	2,15	25	2	23,210	23
3	0,35	2,721	2,65	26	1,5	24,676	24,5
3,5	0,35	3,221	3,15	27	1	26,153	26
4	0,5	3,599	3,5	27	1,5	25,676	25,5
4,5	0,5	4,099	4	27	2	25,210	25
5	0,5	4,599	4,5	28	1	27,153	27
5,5	0,5	5,099	5	28	1,5	26,676	26,5
6	0,75	5,378	5,2	28	2	26,210	26
7	0,75	6,378	6,2	30	1	29,153	29
8	0,75	7,378	7,2	30	1,5	28,676	28,5
8	1	7,153	7	30	2	28,210	28
9	0,75	8,378	8,2	30	3	27,252	27
9	1	8,153	8	32	1,5	30,676	30,5
10	0,75	9,378	9,2	32	2	30,210	30
10	1	9,153	9	33	1,5	31,676	31,5
10	1,25	8,912	8,8	33	2	31,210	31
11	0,75	10,378	10,2	33	3	30,252	30
11	1	10,153	10	35	1,5	33,676	33,5
12 <sup>(3)</sup>	0,75	11,378	11,2	36	1,5	34,676	34,5
12	1	11,153	11	36	2	34,210	34
12	1,25	10,912	10,8	36	3	33,252	33
12	1,5	10,676	10,5	38	1,5	36,676	36,5
14	1	13,153	13	39	1,5	37,676	37,5
14	1,25	12,912	12,8	39	2	37,210	37
14	1,5	12,676	12,5	39	3	36,252	36
15	1	14,153	14	40	1,5	38,676	38,5
15	1,5	13,676	13,5	40	2	38,210	38
16	1	15,153	15	40	3	37,252	37
16	1,5	14,676	14,5	42	1,5	40,676	40,5
17	1	16,153	16	42	2	40,210	40
17	1,5	15,676	15,5	42	3	39,252	39
18	1	17,153	17	45	1,5	43,676	43,5
18	1,5	16,676	16,5	45	2	43,210	43
18	2	16,210	16	45	3	42,252	42
20	1	19,153	19	48	1,5	46,676	46,5
20	1,5	18,676	18,5	48	2	46,210	46
20	2	18,210	18	48	3	45,252	45
22	1	21,153	21	50	1,5	48,676	48,5
22	1,5	20,676	20,5	50	2	48,210	48
22	2	20,210	20	50	3	47,252	47
24	1	23,153	23	52	1,5	50,676	50,5
24	1,5	22,676	22,5	52	2	50,210	50
24	2	22,210	22	52	3	49,252	49

(\*) Drill size according to DIN 336

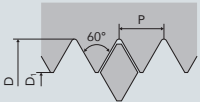
(<sup>1</sup>) Tolerance 5H

(<sup>2</sup>) Tolerance 4H

(<sup>3</sup>) Size not included in DIN 336

# DRILL SIZE CUTTING TAPS

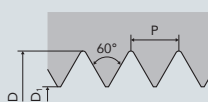
**EG-M**



**ISO Metric coarse thread  
DIN 8140 Part 2**

EG-M	Drill size* [mm]
EG-M 3	3,15
4	4,2
5	5,25
6	6,3
8	8,4
10	10,5
12	12,5
14	14,5
16	16,5

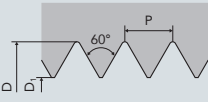
**8-UN**



**8-UN thread  
ASME B1.1**

8-UN	Pitch [TPI]	Maximum core diam. (tol. 3B) [mm] D <sub>1</sub>	Drill size* [mm]
1 1/8"	8	25,519	25,4
1 1/4"	8	28,694	28,6
1 3/8"	8	31,869	31,8
1 1/2"	8	35,044	35,0
1 5/8"	8	38,219	38,1
1 3/4"	8	41,394	41,3
1 7/8"	8	44,569	44,5
2"	8	47,744	47,7

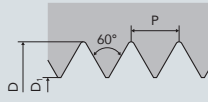
**UNC**



**Unified coarse thread  
UNC ASME - B1.1**

UNC	Pitch [TPI]	Maximum core diam. (tol. 3B) [mm] D <sub>1</sub>	Drill size* [mm]
Nr. 1	64	1,582	1,55
Nr. 2	56	1,872	1,85
Nr. 3	48	2,146	2,1
Nr. 4	40	2,385	2,35
Nr. 5	40	2,697	2,65
Nr. 6	32	2,896	2,85
Nr. 8	32	3,528	3,5
Nr. 10	24	3,950	3,9
Nr. 12	24	4,590	4,5
1/4"	20	5,250	5,1
5/16"	18	6,680	6,6
3/8"	16	8,082	8
7/16"	14	9,441	9,4
1/2"	13	10,881	10,8
9/16"	12	12,301	12,2
5/8"	11	13,693	13,5
3/4"	10	16,624	16,5
7/8"	9	19,520	19,5
1"	8	22,344	22,25
1 1/8"	7	25,082	25
1 1/4"	7	28,258	28
1 3/8"	6	30,851	30,75
1 1/2"	6	34,026	34
1 3/4"	5	39,560	39,5
2"	4,5	45,367	45

**UNF**



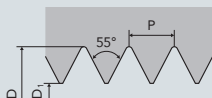
**Unified fine thread  
UNF ASME - B1.1**

UNF	Pitch [TPI]	Maximum core diam. (tol. 3B) [mm] D <sub>1</sub>	Drill size* [mm]
Nr. 0	80	1,306	1,25
Nr. 1	72	1,613	1,55
Nr. 2	64	1,913	1,85
Nr. 3	56	2,197	2,15
Nr. 4	48	2,459	2,4
Nr. 5	44	2,741	2,7
Nr. 6	40	3,012	2,95
Nr. 8	36	3,597	3,5
Nr. 10	32	4,168	4,1
Nr. 12	28	4,717	4,6
1/4"	28	5,563	5,5
5/16"	24	6,995	6,9
3/8"	24	8,565	8,5
7/16"	20	9,947	9,9
1/2"	20	11,524	11,5
9/16"	18	12,969	12,9
5/8"	18	14,554	14,5
3/4"	16	17,546	17,5
7/8"	14	20,493	20,4
1"	12	23,363	23,25
1 1/8"	12	26,538	26,5
1 1/4"	12	29,713	29,5
1 3/8"	12	32,888	32,75
1 1/2"	12	36,063	36

(\* Drill size according to DIN 336

# DRILL SIZE CUTTING TAPS

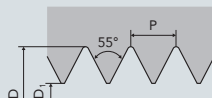
## BSW



### Whitworth thread BSW - BS 84

BSW	Pitch [TPI]	Maximum core diam. [mm] D <sub>1</sub>	Drill size [mm]
3/32"	48	1,912	1,9
1/8"	40	2,591	2,55
5/32"	32	3,214	3,2
3/16"	24	3,744	3,7
7/32"	24	4,539	4,5
1/4"	20	5,156	5,1
5/16"	18	6,589	6,5
3/8"	16	7,988	7,9
7/16"	14	9,332	9,25
1/2"	12	10,589	10,5
9/16"	12	12,177	12
5/8"	11	13,559	13,5
3/4"	10	16,485	16,4
7/8"	9	19,355	19,25
1"	8	22,149	22
1 1/8"	7	24,831	24,75
1 1/4"	7	28,006	27,75
1 3/8"	6	30,528	30,3
1 1/2"	6	33,703	33,5
1 5/8"	5	35,961	35,5
1 3/4"	5	39,136	39
1 7/8"	4,5	41,702	41,5
2"	4,5	44,877	44,5
2 1/4"	4	50,465	50
2 1/2"	4	56,815	56,3
2 3/4"	3,5	62,182	61,5
3"	3,5	68,532	68

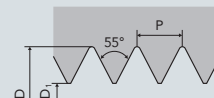
## G



### Whitworth pipe thread EN - ISO 228

G	Pitch [TPI]	Maximum core diam. [mm] D <sub>1</sub>	Drill size* [mm]
G 1/8"	28	8,848	8,8
1/4"	19	11,890	11,8
3/8"	19	15,395	15,25
1/2"	14	19,172	19
5/8"	14	21,128	21
3/4"	14	24,658	24,5
7/8"	14	28,418	28,25
1"	11	30,931	30,75
1 1/8"	11	35,579	35,5
1 1/4"	11	39,592	39,5
1 3/8"	11	42,005	41,9
1 1/2"	11	45,485	45,25
1 3/4"	11	51,428	51
2"	11	57,296	57
2 1/4"	11	63,392	63,3
2 3/8"	11	67,080	67
2 1/2"	11	72,866	72,8
2 3/4"	11	79,216	79,1
3"	11	85,566	85,5
3 1/4"	11	91,662	91,5
3 1/2"	11	98,012	98
3 3/4"	11	104,362	104
4"	11	110,712	110,5

## Rp (BSPP)

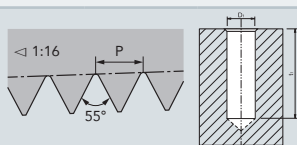


### Rp thread (BSPP) DIN EN 10226-1

Rp	Pitch [TPI]	Maximum core diam. [mm] D <sub>1</sub>	Drill size* [mm]
1/8"	28	8,637	8,6
1/4"	19	11,549	11,5
3/8"	19	15,054	15,0
1/2"	14	18,773	18,5
3/4"	14	24,259	24,0

(\* ) Drill size according to DIN 336

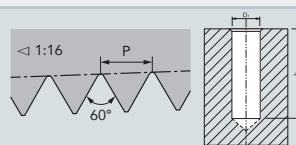
## Rc (BSPT)



### Conical gas thread Rc (BSPT) - DIN EN 10226-2

Rc	Pitch [TPI]	Drill size** [mm] D <sub>1</sub>	t1 [mm]
1/16"	28	6,2	11,9
1/8"	28	8,2	11,9
1/4"	19	11	17,7
3/8"	19	14,5	18,1
1/2"	14	18	24
3/4"	14	23,5	25,3
1"	11	29,5	30,6
1 1/4"	11	38	32,9
1 1/2"	11	44	32,9
2"	11	55,5	37,2

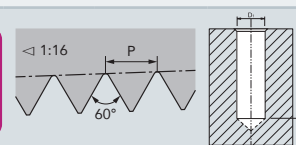
## NPT



### National pipe thread NPT - ANSI B1.20.1

NPT	Pitch [TPI]	Drill size** [mm] D <sub>1</sub>	t1 [mm]
1/16"	27	6,15	12
1/8"	27	8,5	12
1/4"	18	11	17,5
3/8"	18	14,5	17,6
1/2"	14	17,85	22,9
3/4"	14	23,2	23
1"	11,5	29	27,4
1 1/4"	11,5	37,8	28,1
1 1/2"	11,5	44	28,4
2"	11,5	56	28,4

## NPTF

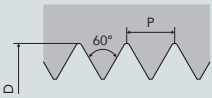
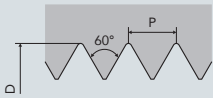
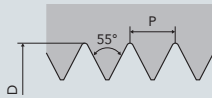


### Dryseal national pipe thread NPTF - ANSI B1.20.3

NPTF	Pitch [TPI]	Drill size** [mm] D <sub>1</sub>	t1 [mm]
1/16"	27	6,15	12
1/8"	27	8,5	12
1/4"	18	11	17,5
3/8"	18	14,5	17,6
1/2"	14	17,8	22,9
3/4"	14	23	23
1"	11,5	29	27,4
1 1/4"	11,5	37,8	28,1
1 1/2"	11,5	43,8	28,4
2"	11,5	56	28,4

\*\* For conical threads tapered drill holes are preferable.  
Please request specific tables.

## DRILL SIZE FORMING TAPS

								
ISO Metric coarse thread DIN 13			ISO Metric fine thread DIN 13			Whitworth pipe thread EN - ISO 228		
M	Pitch [mm]	Drill size [mm]	MF	Pitch [mm]	Drill size [mm]	G	Pitch [TPI]	Drill size [mm]
M 2	0,4	1,85 ± 0,03	M 3	0,35	2,85 ± 0,03	G 1/8"	28	9,25 ± 0,05
2,5	0,45	2,30 ± 0,03	4	0,5	3,80 ± 0,03	1/4"	19	12,50 ± 0,05
3	0,5	2,80 ± 0,03	5	0,5	4,80 ± 0,03	3/8"	19	16,00 ± 0,05
3,5	0,6	3,25 ± 0,03	6	0,75	5,65 ± 0,03	1/2"	14	20,00 ± 0,05
4	0,7	3,70 ± 0,03	8	1	7,55 ± 0,05	3/4"	14	25,50 ± 0,05
5	0,8	4,65 ± 0,03	10	1	9,55 ± 0,05	1"	11	32,00 ± 0,05
6	1	5,55 ± 0,05	10	1,25	9,40 ± 0,05			
8	1,25	7,40 ± 0,05	12	1	11,55 ± 0,05			
10	1,5	9,30 ± 0,05	12	1,25	11,40 ± 0,05			
12	1,75	11,20 ± 0,05	12	1,5	11,30 ± 0,05			
14	2	13,10 ± 0,05	14	1,25	13,40 ± 0,05			
16	2	15,10 ± 0,05	14	1,5	13,30 ± 0,05			
18	2,5	16,90 ± 0,05	16	1,5	15,30 ± 0,05			
20	2,5	18,90 ± 0,05	18	1,5	17,30 ± 0,05			
24	3	22,70 ± 0,05	20	1,5	19,30 ± 0,05			
27	3	25,70 ± 0,05						
30	3,5	28,45 ± 0,05						

Other drill sizes = theoretical flank diameter + pitch/5

In order to obtain the requested tolerance, the formation of a complete internal thread and guarantee the tap tool life, it is important to respect the drill hole diameters and their tight tolerances.

The core diameter of the internal thread obtained by forming is not only a function of the drill hole diameter but also depends on the workpiece material properties. For this reason the tolerance on the core diameter is 7H compared to 6H for cutting taps. For more detailed information see the DIN 13-50 standard.