



Leading Through Innovation



**HSS-E & HSS-PM**

# YG TAP FORMING

## YG TAP FORMING

- Tapping by Forming Soft Materials
- Gewindeherstellung durch Formen von weichen Materialien



HSS-E & HSS-PM YG TAP FORMING

Tapping by Forming Soft Materials

Please visit globalyg1.com/mat for material search. Recommended cutting conditions : P.285

Table with columns: ISO, VDI 3323, Material Description, Composition / Structure / Heat Treatment, HB, HRc, and MODEL. It lists various materials like Non-alloy steel, Low alloy steel, Stainless steel, Cast iron, Aluminum-wrought alloy, Heat Resistant Super Alloys, Titanium Alloys, and Hardened steel.

Table with columns: HOLE TYPE, TOOL MATERIAL, CHAMFER LEAD ACC. TO DIN2197, FLUTE TYPE, SPIRAL FLUTE ANGLE, SERIES, and SURFACE TREATMENT / COATING. It details specifications for HSS-E and HSS-PM tool materials.

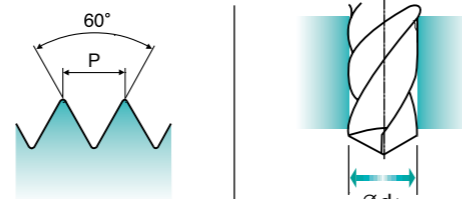
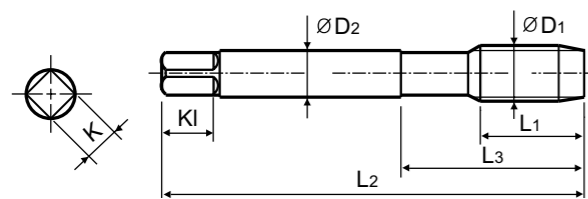
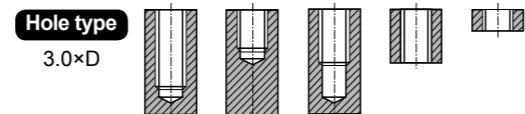
Table with columns: HSS-E, HSS-PM, HSS-E, HSS-PM, HSS-E, HSS-PM, HSS-E, HSS-PM. It lists specific tool models like TY703, TQ703, TD713, TE713, TQ723, TE723, and TD723.

**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** HSS-E DIN 371/376 6HX 60° C TIN

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TD703136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TD703156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TD703196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TD703176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TD703496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TD703206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TD703226	12	56	20	4	3	6	3.25
M4 × 0.7		TD703246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TD703266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TD703286	15	70	25	6	4.9	8	4.65
M6 × 1		TD703316	17	80	30	6	4.9	8	5.55
M7 × 1		TD703346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TD703366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TD703396	20	90	35	9	7	10	8.4
M10 × 1.5		TD703426	22	100	39	10	8	11	9.3
M11 × 1.5		TD703466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TD703506	24	110	44	9	7	10	11.2
M14 × 2		TD703546	26	110	44	11	9	12	13
M16 × 2		TD703606	27	110	44	12	9	12	15
M18 × 2.5		TD703656	30	125	50	14	11	14	16.8
M20 × 2.5		TD703706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎		◎	◎				○	○	○								

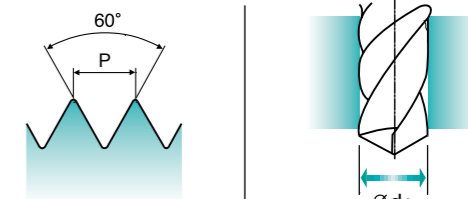
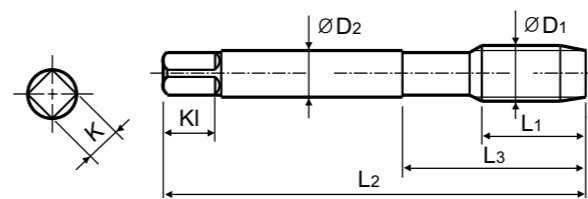
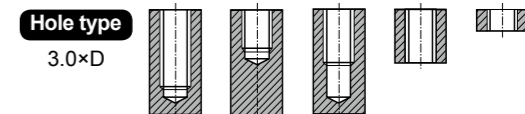
ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○		○															

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Material groups: **GV** HSS-E DIN 371/376 6HX 60° C NI

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	Ni	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TE703136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TE703156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TE703196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TE703176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TE703496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TE703206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TE703226	12	56	20	4	3	6	3.25
M4 × 0.7		TE703246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TE703266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TE703286	15	70	25	6	4.9	8	4.65
M6 × 1		TE703316	17	80	30	6	4.9	8	5.55
M7 × 1		TE703346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TE703366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TE703396	20	90	35	9	7	10	8.4
M10 × 1.5		TE703426	22	100	39	10	8	11	9.3
M11 × 1.5		TE703466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TE703506	24	110	44	9	7	10	11.2
M14 × 2		TE703546	26	110	44	11	9	12	13
M16 × 2		TE703606	27	110	44	12	9	12	15
M18 × 2.5		TE703656	30	125	50	14	11	14	16.8
M20 × 2.5		TE703706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎		◎	◎				○	○	○								

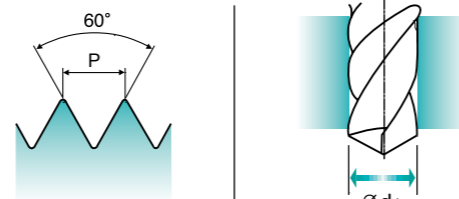
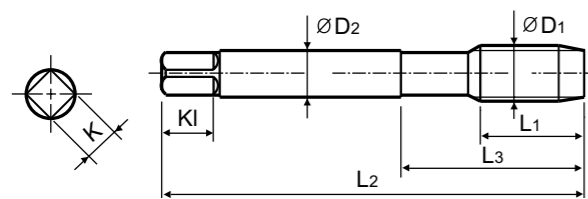
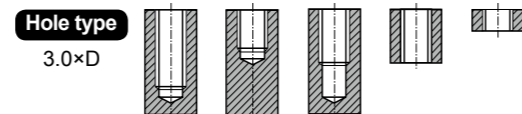
ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○		○															

**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** HSS-E DIN 371/376 6HX 60° C TiAlN

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	TiAlN	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TY703136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TY703156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TY703196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TY703176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TY703496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TY703206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TY703226	12	56	20	4	3	6	3.25
M4 × 0.7		TY703246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TY703266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TY703286	15	70	25	6	4.9	8	4.65
M6 × 1		TY703316	17	80	30	6	4.9	8	5.55
M7 × 1		TY703346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TY703366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TY703396	20	90	35	9	7	10	8.4
M10 × 1.5		TY703426	22	100	39	10	8	11	9.3
M11 × 1.5		TY703466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TY703506	24	110	44	9	7	10	11.2
M14 × 2		TY703546	26	110	44	11	9	12	13
M16 × 2		TY703606	27	110	44	12	9	12	15
M18 × 2.5		TY703656	30	125	50	14	11	14	16.8
M20 × 2.5		TY703706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎		◎					○	○	○								

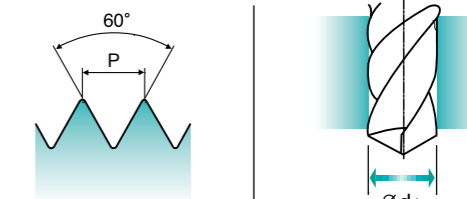
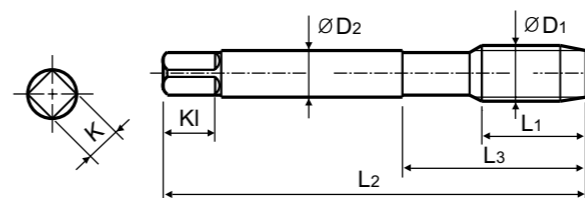
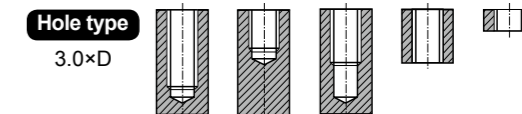
ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34	55	60	42	55	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○		○		◎													

**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- Suitable for threading soft materials with at least 8-10% elongation in the best substrate.
- The pre-drilling holes are bigger than normal sized holes.

- Aus bestem Werkstoff geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** HSS-PM DIN 371/376 6HX 60° C Vap

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TQ703136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TQ703156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TQ703196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TQ703176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TQ703496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TQ703206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TQ703226	12	56	20	4	3	6	3.25
M4 × 0.7		TQ703246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TQ703266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TQ703286	15	70	25	6	4.9	8	4.65
M6 × 1		TQ703316	17	80	30	6	4.9	8	5.55
M7 × 1		TQ703346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TQ703366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TQ703396	20	90	35	9	7	10	8.4
M10 × 1.5		TQ703426	22	100	39	10	8	11	9.3
M11 × 1.5		TQ703466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TQ703506	24	110	44	9	7	10	11.2
M14 × 2		TQ703546	26	110	44	11	9	12	13
M16 × 2		TQ703606	27	110	44	12	9	12	15
M18 × 2.5		TQ703656	30	125	50	14	11	14	16.8
M20 × 2.5		TQ703706	32	140	54	16	12	15	18.8

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	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎		◎					○	○	○								

ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34	55	60	42	55	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○		○		◎													

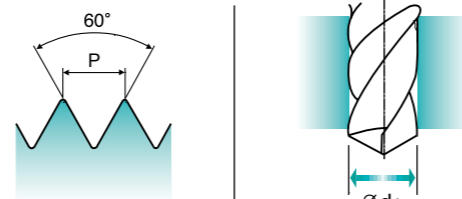
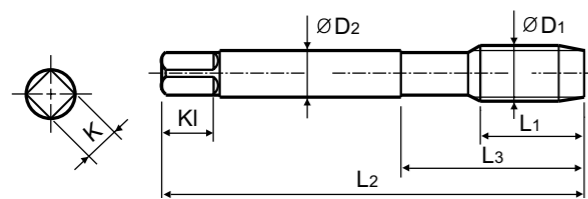
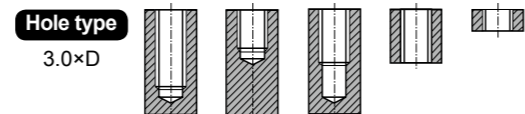


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Material groups: **GV** **HSS-E** **DIN 371/376** **6GX** **60°** **C** **TiN**

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

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M2.2 × 0.45		TD713156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TD713196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TD713176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TD713496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TD713206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TD713226	12	56	20	4	3	6	3.25
M4 × 0.7		TD713246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TD713266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TD713286	15	70	25	6	4.9	8	4.65
M6 × 1		TD713316	17	80	30	6	4.9	8	5.55
M7 × 1		TD713346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TD713366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TD713396	20	90	35	9	7	10	8.4
M10 × 1.5		TD713426	22	100	39	10	8	11	9.3
M11 × 1.5		TD713466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TD713506	24	110	44	9	7	10	11.2
M14 × 2		TD713546	26	110	44	11	9	12	13
M16 × 2		TD713606	27	110	44	12	9	12	15
M18 × 2.5		TD713656	30	125	50	14	11	14	16.8
M20 × 2.5		TD713706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

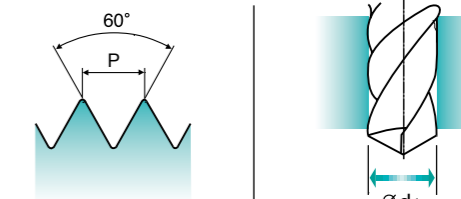
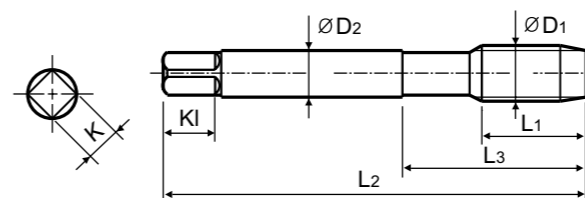
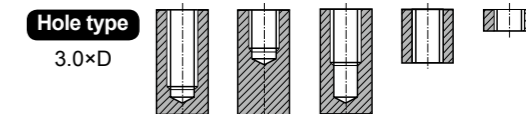
ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Aus bestem Werkstoff geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** **HSS-E** **DIN 371/376** **6GX** **60°** **C** **NI**

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	Ni	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TE713136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TE713156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TE713196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TE713176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TE713496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TE713206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TE713226	12	56	20	4	3	6	3.25
M4 × 0.7		TE713246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TE713266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TE713286	15	70	25	6	4.9	8	4.65
M6 × 1		TE713316	17	80	30	6	4.9	8	5.55
M7 × 1		TE713346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TE713366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TE713396	20	90	35	9	7	10	8.4
M10 × 1.5		TE713426	22	100	39	10	8	11	9.3
M11 × 1.5		TE713466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TE713506	24	110	44	9	7	10	11.2
M14 × 2		TE713546	26	110	44	11	9	12	13
M16 × 2		TE713606	27	110	44	12	9	12	15
M18 × 2.5		TE713656	30	125	50	14	11	14	16.8
M20 × 2.5		TE713706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

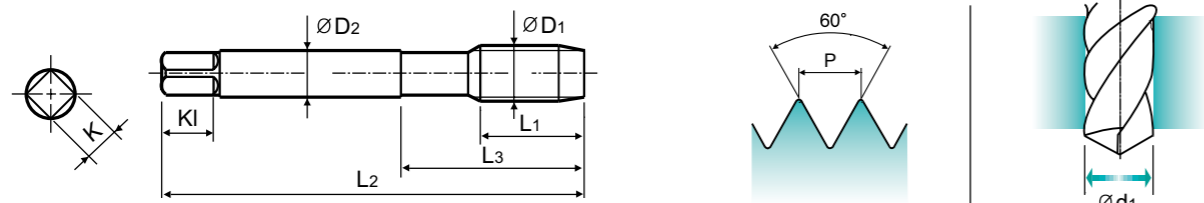
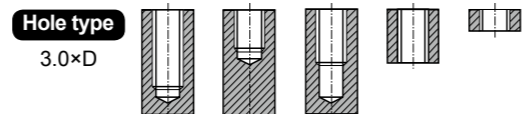
ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- Suitable for threading soft materials with at least 8-10% elongation in the best substrate.
- The pre-drilling holes are bigger than normal sized holes.

- Aus bestem Werkstoff geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** HSS-PM DIN 371/376 6HX 60° C Vap

Cold forming taps Gewindeformer

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	Vap	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TQ723136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TQ723156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TQ723196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TQ723176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TQ723496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TQ723206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TQ723226	12	56	20	4	3	6	3.25
M4 × 0.7		TQ723246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TQ723266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TQ723286	15	70	25	6	4.9	8	4.65
M6 × 1		TQ723316	17	80	30	6	4.9	8	5.55
M7 × 1		TQ723346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TQ723366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TQ723396	20	90	35	9	7	10	8.4
M10 × 1.5		TQ723426	22	100	39	10	8	11	9.3
M11 × 1.5		TQ723466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TQ723506	24	110	44	9	7	10	11.2
M14 × 2		TQ723546	26	110	44	11	9	12	13
M16 × 2		TQ723606	27	110	44	12	9	12	15
M18 × 2.5		TQ723656	30	125	50	14	11	14	16.8
M20 × 2.5		TQ723706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	240	180	180	260	180	160	250	130	230	
Recommended	◎	◎	◎		◎					○	○	○								

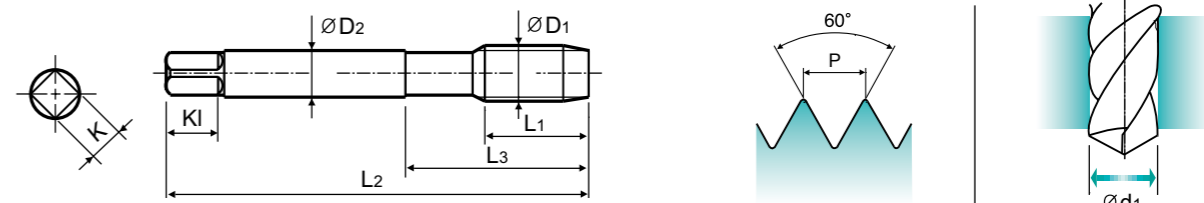
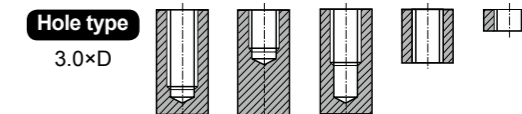
ISO Material Description	N										S					H						
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc											15	30	25	38	34	55	60	42	42	55	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	
Recommended	◎	◎	○	○		○																

**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** HSS-E DIN 371/376 6HX 60° C NI

Cold forming taps Gewindeformer

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	Ni	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TE723136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TE723156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TE723196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TE723176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TE723496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TE723206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TE723226	12	56	20	4	3	6	3.25
M4 × 0.7		TE723246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TE723266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TE723286	15	70	25	6	4.9	8	4.65
M6 × 1		TE723316	17	80	30	6	4.9	8	5.55
M7 × 1		TE723346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TE723366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TE723396	20	90	35	9	7	10	8.4
M10 × 1.5		TE723426	22	100	39	10	8	11	9.3
M11 × 1.5		TE723466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TE723506	24	110	44	9	7	10	11.2
M14 × 2		TE723546	26	110	44	11	9	12	13
M16 × 2		TE723606	27	110	44	12	9	12	15
M18 × 2.5		TE723656	30	125	50	14	11	14	16.8
M20 × 2.5		TE723706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	240	180	180	260	180	160	250	130	230	
Recommended	◎	◎	◎		◎					○	○	○								

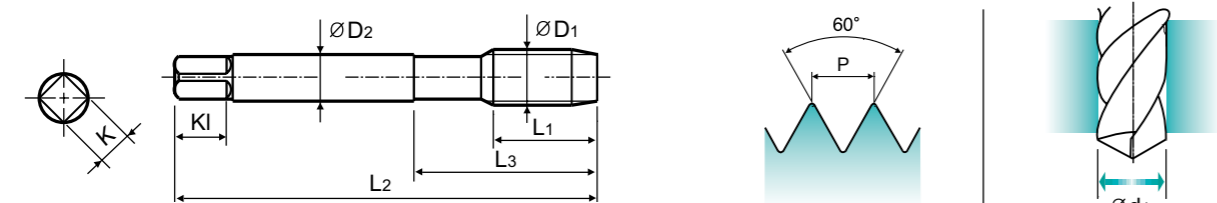
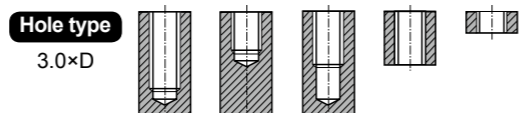
ISO Material Description	N										S					H						
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc											15	30	25	38	34	55	60	42	42	55	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	
Recommended	◎	◎	○	○		○																

**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** **HSS-E** **DIN 371/376** **6HX** **60°** **C** **TiN**

Cold forming taps  
Gewindeformer

Recommended Cutting Page : P.285 Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Ød1
M2 × 0.4		TD723136	8	45	13	2.8	2.1	5	1.83
M2.2 × 0.45		TD723156	8	45	13	2.8	2.1	5	2
*M2.3 × 0.4		TD723196	8	45	13	2.8	2.1	5	2.1
M2.5 × 0.45		TD723176	9	50	15	2.8	2.1	5	2.3
*M2.6 × 0.45		TD723496	9	50	15	2.8	2.1	5	2.4
M3 × 0.5		TD723206	11	56	18	3.5	2.7	6	2.8
M3.5 × 0.6		TD723226	12	56	20	4	3	6	3.25
M4 × 0.7		TD723246	13	63	21	4.5	3.4	6	3.7
M4.5 × 0.75		TD723266	14	70	25	6	4.9	8	4.15
M5 × 0.8		TD723286	15	70	25	6	4.9	8	4.65
M6 × 1		TD723316	17	80	30	6	4.9	8	5.55
M7 × 1		TD723346	17	80	30	7	5.5	8	6.55
M8 × 1.25		TD723366	20	90	35	8	6.2	9	7.4
M9 × 1.25		TD723396	20	90	35	9	7	10	8.4
M10 × 1.5		TD723426	22	100	39	10	8	11	9.3
M11 × 1.5		TD723466	22	100	40	8	6.2	9	10.3
M12 × 1.75		TD723506	24	110	44	9	7	10	11.2
M14 × 2		TD723546	26	110	44	11	9	12	13
M16 × 2		TD723606	27	110	44	12	9	12	15
M18 × 2.5		TD723656	30	125	50	14	11	14	16.8
M20 × 2.5		TD723706	32	140	54	16	12	15	18.8

- DIN 371(M2~M10) and DIN 376(M11~M20)
- \* DIN profile not ISO

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎		◎					○	○	○								

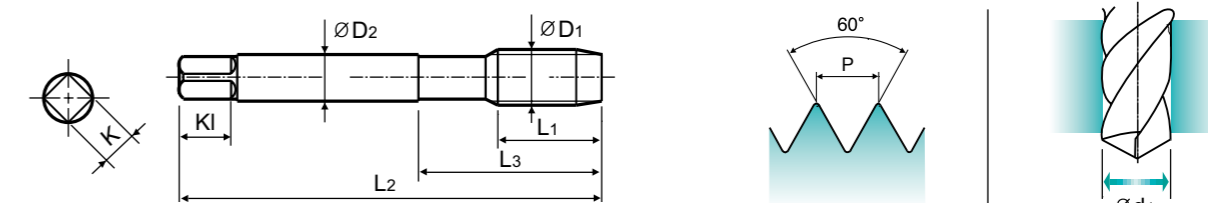
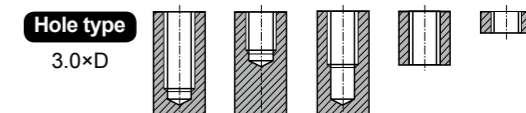
ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34	55	60	42	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○		○		◎													

**MF ISO metric fine threads DIN 13**

- Metrisches ISO-Feingewinde DIN 13
- ISO MÉTRIQUE PAS FINS DIN13
- ISO Metrico passo fine DIN 13

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** **HSS-E** **DIN 374** **6HX** **60°** **C** **TiN**

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285 Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Ød1
M4 × 0.5		TD733256	10	63	21	2.8	2.1	5	3.75
M5 × 0.5		TD733296	11	70	25	3.5	2.7	6	4.75
M6 × 0.75		TD733326	13	80	30	4.5	3.4	6	5.65
M6 × 0.5		TD733336	13	80	30	4.5	3.4	6	5.75
M7 × 0.75		TD733356	14	80	30	5.5	4.3	7	6.65
M8 × 1		TD733376	17	90	36	6	4.9	8	7.5
M8 × 0.75		TD733386	14	80	30	6	4.9	8	7.65
M10 × 1.25		TD733436	22	100	40	7	5.5	8	9.4
M10 × 1		TD733446	18	90	36	7	5.5	8	9.5
M10 × 0.75		TD733456	18	90	36	7	5.5	8	9.65
M12 × 1.5		TD733516	22	100	40	9	7	10	11.25
M12 × 1.25		TD733526	22	100	40	9	7	10	11.4
M12 × 1		TD733536	18	100	40	9	7	10	11.5
M14 × 1.5		TD733556	22	100	40	11	9	12	13.25
M14 × 1.25		TD733566	22	100	40	11	9	12	13.4
M16 × 1.5		TD733616	22	100	40	12	9	12	15.25
M18 × 1.5		TD733676	25	110	44	14	11	14	17.25
M20 × 1.5		TD733726	25	125	50	16	12	15	19.25

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎		◎					○	○	○								

ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34	55	60	42	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○		○		◎													

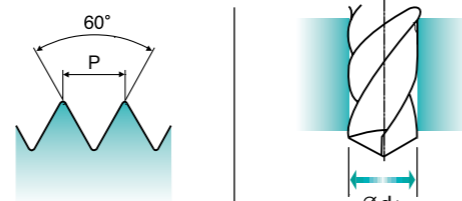
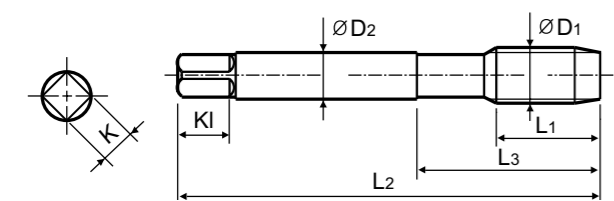
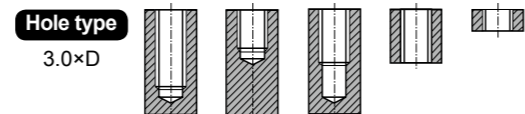


**MF ISO metric fine threads DIN 13**

- Metrisches ISO-Feingewinde DIN 13
- ISO MÉTRIQUE PAS FINS DIN13
- ISO Metrico passo fine DIN 13

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** **HSS-E** **DIN 374** **6HX** **60°** **C** **NI**

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1	P	NI	L1	L2	L3	ØD2	K	KI	Ød1
M4	× 0.5	TE733256	10	63	21	2.8	2.1	5	3.75
M5	× 0.5	TE733296	11	70	25	3.5	2.7	6	4.75
M6	× 0.75	TE733326	13	80	30	4.5	3.4	6	5.65
M6	× 0.5	TE733336	13	80	30	4.5	3.4	6	5.75
M7	× 0.75	TE733356	14	80	30	5.5	4.3	7	6.65
M8	× 1	TE733376	17	90	36	6	4.9	8	7.5
M8	× 0.75	TE733386	14	80	30	6	4.9	8	7.65
M10	× 1.25	TE733436	22	100	40	7	5.5	8	9.4
M10	× 1	TE733446	18	90	36	7	5.5	8	9.5
M10	× 0.75	TE733456	18	90	36	7	5.5	8	9.65
M12	× 1.5	TE733516	22	100	40	9	7	10	11.25
M12	× 1.25	TE733526	22	100	40	9	7	10	11.4
M12	× 1	TE733536	18	100	40	9	7	10	11.5
M14	× 1.5	TE733556	22	100	40	11	9	12	13.25
M14	× 1.25	TE733566	22	100	40	11	9	12	13.4
M16	× 1.5	TE733616	22	100	40	12	9	12	15.25
M18	× 1.5	TE733676	25	110	44	14	11	14	17.25
M20	× 1.5	TE733726	25	125	50	16	12	15	19.25

◎ : Excellent ○ : Good

ISO Material Description	P					M				K										
	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel	Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	○	○	○	○

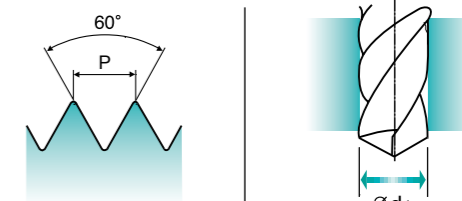
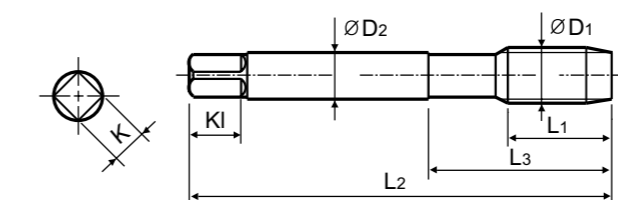
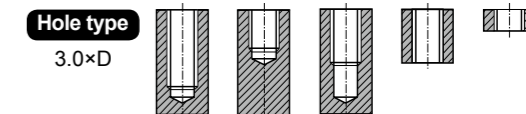
ISO Material Description	N				S						H										
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys	Hardened steel	Chilled Cast Iron	Hardened Cast Iron				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

**UNC Unified coarse threads**

- Unified Grobgewinde
- UNC
- Unificato passo grosso

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



Material groups: **GV** **HSS-E** **DIN 371/376** **2BX** **60°** **C** **TiN**

Cold forming taps with oil grooves  
Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1		TiN	L1	L2	L3	ØD2	K	KI	Ød1
#5	- 40 UNC	TD704202	11	56	18	3.5	2.7	6	2.87
#6	- 32 UNC	TD704242	12	56	20	4	3	6	3.1
#8	- 32 UNC	TD704282	13	63	21	4.5	3.4	6	3.8
#10	- 24 UNC	TD704322	15	70	25	6	4.9	8	4.3
#12	- 24 UNC	TD704362	16	80	30	6	4.9	8	4.95
1/4	- 20 UNC	TD704402	17	80	30	7	5.5	8	5.75
5/16	- 18 UNC	TD704442	20	90	35	8	6.2	9	7.25
3/8	- 16 UNC	TD704482	22	100	39	9	7	10	8.75
7/16	- 14 UNC	TD704522	22	100	40	8	6.2	9	10.2
1/2	- 13 UNC	TD704562	25	110	44	9	7	10	11.7
9/16	- 12 UNC	TD704602	26	110	40	11	9	12	13.2
5/8	- 11 UNC	TD704642	27	110	44	12	9	12	14.7
3/4	- 10 UNC	TD704702	30	125	50	14	11	14	17.8

►DIN 371(#4~3/8) and DIN 376(7/16~3/4)

◎ : Excellent ○ : Good

ISO Material Description	P					M				K										
	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel	Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○	○	○	○	○	○

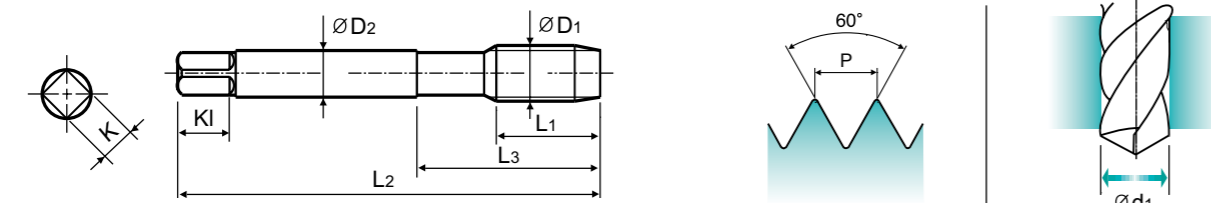
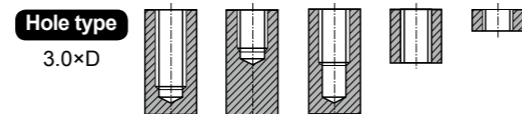
ISO Material Description	N				S						H										
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys	Hardened steel	Chilled Cast Iron	Hardened Cast Iron				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



**UNC Unified coarse threads**  
 Unified Grobgewinde  
 UNC  
 Unificato passo grosso

- Suitable for threading soft materials with at least 8-10% elongation.
- The pre-drilling holes are bigger than normal sized holes.

- Geeignet zum Gewindeformen weicher Werkstoffe mit mindestens 8-10% Dehnung.
- Die Kernlochbohrungen sind größer als normale Kernlöcher.



**Material groups**  
 GV HSS-E DIN 371/376 2BX 60° C NI

Cold forming taps with oil grooves  
 Gewindeformer mit Schmiernuten

Recommended Cutting Page : P.285

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Tapping Drill Diameter
ØD1		Ni	L1	L2	L3	ØD2	K	Kl	Ød1
#5 - 40 UNC		TE704202	11	56	18	3.5	2.7	6	2.87
#6 - 32 UNC		TE704242	12	56	20	4	3	6	3.1
#8 - 32 UNC		TE704282	13	63	21	4.5	3.4	6	3.8
#10 - 24 UNC		TE704322	15	70	25	6	4.9	8	4.3
#12 - 24 UNC		TE704362	16	80	30	6	4.9	8	4.95
1/4 - 20 UNC		TE704402	17	80	30	7	5.5	8	5.75
5/16 - 18 UNC		TE704442	20	90	35	8	6.2	9	7.25
3/8 - 16 UNC		TE704482	22	100	39	9	7	10	8.75
7/16 - 14 UNC		TE704522	22	100	40	8	6.2	9	10.2
1/2 - 13 UNC		TE704562	25	110	44	9	7	10	11.7
9/16 - 12 UNC		TE704602	26	110	40	11	9	12	13.2
5/8 - 11 UNC		TE704642	27	110	44	12	9	12	14.7
3/4 - 10 UNC		TE704702	30	125	50	14	11	14	17.8

►DIN 371(#4~3/8) and DIN 376(7/16~3/4)

◎ : Excellent ○ : Good

ISO	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323	1	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HRc	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N								S							H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys				Titanium Alloys			Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	VDI 3323	Material Description	HB	HRc	Vc (m/min)																	
					TD703 TD733 TD704	TE703 TE733 TE704	TY703	TQ703	TD713	TE713	TQ723	TE723	TD723									
P	1	Non-alloy steel	125		15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20								
	2		190	13	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20								
	3		250	25	12-18	12-18	12-18	12-18	12-18	12-18	12-18	12-18	12-18	12-18								
	4		270	28																		
	5		300	32																		
	6	Low alloy steel	180	10	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15								
	7		275	29																		
	8		300	32																		
	9		350	38																		
	10		High alloyed steel, and tool steel	200	15																	
	11	325		35																		
M	12	Stainless steel	200	15	10-13	7-10	10-13	7-10	10-13	7-10	7-10	7-10	7-10	10-13								
	13		240	23	8-11	5-8	8-11	5-8	8-11	5-8	5-8	5-8	8-11									
	14		180	10	6-8	4-6	6-8	4-6	6-8	4-6	4-6	4-6	4-6	6-8								
K	15	Grey cast iron	180	10																		
	16		260	26																		
	17	Nodular cast iron	160	3																		
	18		250	25																		
	19		130																			
20	Malleable cast iron	230	21																			
N	21	Aluminum-wrought alloy	60		10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	
	22		100		10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	
	23	Aluminum-cast, alloyed	75		15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	
	24		90		10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	
	25		130																			
	26	Copper and Copper Alloys (Bronze / Brass)	110		25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	
	27		90																			
	28		100		15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20	15-20
	29	Non Metallic Materials																				
	30																					
S	31	Heat Resistant Super Alloys	200	15																		
	32		280	30																		
	33		250	25																		
	34		350	38																		
	35		320	34																		
	36	Titanium Alloys	400 Rm																			
	37		1050 Rm																			
H	38	Hardened steel	550	55																		
	39		630	60																		
	40	Chilled Cast Iron	400	42																		
	41	Hardened Cast Iron	550	55																		