THREAD TECHNOLOGY MADE IN GERMANY.
SINCE 1905.

CATALOGUE 2.0

NeobOss

»The strength is in the quality.«

Friedrich Nietzsche (German philosopher, 1844–1900)

Neoboss is producing high-quality tools for more than 100 years now.

Our philosophy is simple and convincing: we constantly work on improving the quality of your goods and help to increase the profitability of your production.

Our way: with selected materials from internationally renowned suppliers, our own heat treatment technology, various cutting edge preparations, and our 100 years of experience in product engineering, we are producing tools which are successfully used all over the world. Together with our partners, we offer state-of-the-art coating technologies to provide a reproducible manufacturing process for top level quality.

Our success is our best reference – we serve well-known and demanding international business partners:

- the automotive industry and their subcontractors
- the fastener industry
- the engineering industry
- the aerospace industry
- the mold and die production industry
- the electrical engineering industry

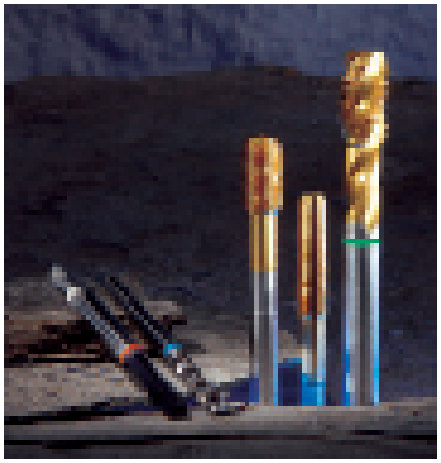
The technological progress, marked by the accelerated development of materials, and the demand for increased productivity, is the motivation in our daily work of research, engineering and production. We are continuously investing to advance our products.

The result: skilled employees are producing millions of innovative tools each year in our factories in Germany and abroad. Established products are improved continuously by Neoboss, for future generations of applications.

New parts are designed based on your individual requirements. Coatings of our tools are constantly updated and added to your product portfolio.

To find out more about our tools and our service please contact us. Our sales experts and our application engineers are happy to assist you.

Neoboss Taps
Catalogue 2.0



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Changes of any kind or printing errors regarding technical details do not justify any claims.

Orientation Guide

In order to find the best type of tap quickly, please, use the orientation guide below.

3 steps to find the best tool for your application

1. Possibility
Machining 42CrMo 4; 900 N/mm² / material-no. 1.7225 / DIN 371 M6 6H through hole

First Step	Second Step	Third Step
1.	2.	3.
Look at the chart: **Example of Materials** page 6-9	Move on to the **Recommendation table** page 10-17 You will find the right tools in line 1.2	Move on to the according page in the Catalogue
The a.m. material 42CrMo 4 (heat treatable steel), 900 N/mm² is line 1.2	Depending on hole type, chamfer type and thread type you will find the catalogue-no. and the corresponding page.	Here you find all necessary information concerning your tool.

2. Possibility
You already know the Neoboss-Catalogue-No.

See page 4-5 of the Chart of Catalogue-No.s and look for the appropriate page.

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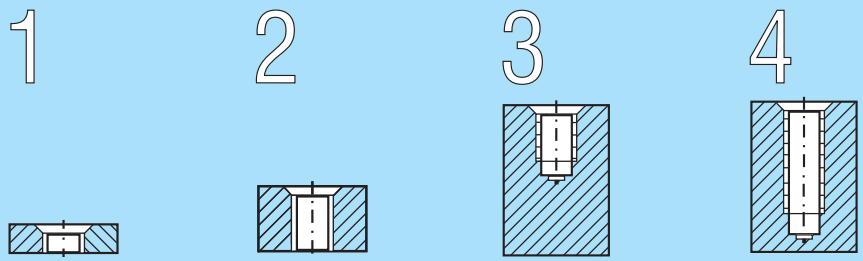
Material Main Group	Material Sub Group	Designation	Standard Designation	DIN-Number	Tensile Strength (N/mm²)	Hardness (HB)	AISI/ SAE/ ASTM
1. Steel	1.1. Unalloyed Steels; Tensile Strength ≤800 N/mm²	Structural Steels	St37-3	1.0116	370 - 450	110 -130	A 264
			St52-3	1.0570	450 - 680	140 - 210	
			St60-2	1.0060	600 - 720	180 - 210	A 572
		Carbon Steels	C10	1.0301	490 - 780	150 - 230	M 1010
			C22	1.0402	470 - 650	140 - 190	1020
			C35	1.0501	550 - 780	170 - 230	1035
			C40	1.0511	600 - 800	180 - 240	1040
		Cast Steels	GS-38 (GE200)	1.0420	380	114	
			GS-45 (GE240)	1.0446	450	133	
			GS-52 (GE260)	1.0552	520	155	
			GS-60 (GE300)	1.0558	600	178	
		Free Cutting Steels	35S 20	1.0726	510 - 880	150 - 260	1140
			9S 20	1.0711	370 - 450	110 - 130	
			9SMn 28	1.0715	390 - 580	110 - 170	1213
			9SMn 36	1.0736	390 - 800	110 - 240	1215
			9SMnPb 28	1.0718	380 - 810	110 - 240	12L13
			9SMnPb 36	1.0737	390 - 800	110 - 240	12L14
		Fine Grain Structural	StE 255 (S255N)	1.0461	310 - 480	90 - 143	
		Steels	StE 460 (P460N)	1.8905	520 - 720	152 - 214	
			StE 500 (S500N)	1.8907	560 - 800	166 - 238	
		Cementation Steels	13Cr 3	1.7012	500 - 800	160 - 240	
			16MnCr 5	1.7131	500 - 700	160 - 210	5115
		Heat Treatable Steels	C15	1.0401	600 - 900	180 - 270	1015
	1.2. Unalloyed and Alloyed Steels; Tensile Strength ≤1000 N/mm²	Structural Steels	Cf53	1.1213	650 - 800	190 - 240	1050
			Ck45	1.1191	650 - 850	190 - 250	1045
			Ck55	1.1203	700 - 950	210 - 280	1055
			Ck60	1.1221	750 - 1000	220 - 300	1060
		Heat Treatable Steels	15Cr 3	1.7015	690 - 1000	200 - 300	5015
			15CrMo 5	1.7262			
			25CrMo 4	1.7218	800 - 1000	240 - 300	4130
			32CrMo 12	1.7361	690 - 1000	200 - 300	
			34Cr 4	1.7033	700 - 1000	210 - 300	5132
			35CrMo 4	1.2330		4135	
			35CrNiMo 6	1.6582	800 - 1000	240 - 300	4340
			40Mn 4	1.1157	800 - 1000	240 - 300	1039
			41Cr 4	1.7035	800 - 1000	240 - 300	5140
			42CrMo 4	1.7225	800 - 1000	240 - 300	4140
			47CrMo 4	1.2332		4142	
			C35 E	1.1181	550 - 780	170 - 240	1035
			C45	1.0503	650 - 850	190 - 250	1045
			C55	1.0535	700 - 950	210 - 280	1055
			C60	1.0601	750 - 1000	220 - 300	1060
			Cf35	1.1183	540 - 780	160 - 230	1035
			Ck22	1.1151	470 - 650	150 - 200	1020
			Ck25	1.1158	500 - 700	150 - 210	1025
		Cementation Steels	14NiCr 14	1.5752	880 -1000	260 - 300	3310
			16MnCr 5	1.7131	780 -1000	230 - 300	5116
			Ck15	1.1141	590 - 880	180 - 260	1015
	1.3.1. Unalloyed and Alloyed Steels; Tensile Strength ≤1200 N/mm²	Cementation Steels	14NiCr 14	1.5752	1000 - 1280	300 - 380	3310
			16MnCr 5 V	1.7131	1000 - 1200	300 - 360	5117
			17CrNiMo 6	1.6587	1080 - 1200	320 - 360	
			17CrNiMo 6	1.6587	1200 - 1400	320 - 410	
		Nitriding Steels	31CrMo V 9	1.8519	1000 - 1250	300 - 370	
			34CnAlNi 7	1.8550			
			35CrNiMo 6	1.6582	1000 - 1200	300 - 360	4340
			39CrMoV 13 9	1.8523	1000 - 1200	300 - 380	
		Heat Treatable Steels	100Cr 6	1.3505		52100	
			25CrMo 4	1.7218	1000 - 1100	300 - 330	4130
			30CrNiMo 8	1.6580	1000 - 1200	300 - 360	
			32CrMo12	1.7361	1000 - 1100	300 - 330	
			34Cr 4	1.7033	1000 - 1100	300 - 330	5132
			40Mn4	1.1157	1000 - 1100	300 - 330	1039
			41CrMo 4	1.7223	1000 - 1200	300 - 360	4140
			42CrMo 4 V	1.7225	1000 - 1200	300 - 380	4141
		Fine Grain Structural	StE690 V	1.8931			
		Steels	StE960 V	1.8941			
		Wear-resistant Steels	HARDOX400				

Material Main Group	Material Sub Group	Designation	Standard Designation	DIN-Number	Tensile Strength (N/mm²)	Hardness (HB)	AISI/ SAE/ ASTM
1. Steel	1.3.1. Unalloyed and Alloyed Steels; Tensile Strength ≤1200 N/mm²	Tool Steels for Cold Work	100Cr 6	1.2067			L3
			100MnCrW 4	1.2510			O1
			100V 1	1.2833			W210
			115CrV 3	1.2210			L2
			50CrV 4	1.8159	1000 - 1200	300 - 360	6150
			58CrV 4	1.8161			
			60WCrV 7	1.2550			S1
			90MnCrV 8	1.2842			O2
			S10-4-3-10	1.3207			
			X100 CrMoV 5 1	1.2363			A2
			X165 CrMoV 12	1.2601			
			X210 Cr 12	1.2080			D3
			X210 CrW 12	1.2436			
			X50 CrMoW 9 11	1.2631			
		Tool Steels for Hot Work	35NiCrMo 16	1.2766			
			40CrMnMo 7	1.2311			
			45WCrV 7	1.2542			S1
			55NiCrMoV 6	1.2713			L6
			60NiCrMoV 12 4	1.2743			
			X30WCrV 5 3	1.2567			
			X30WCrV 9 3	1.2581			H21
			X32CrMoV 3 3	1.2365			H10
			X36CrMo 17	1.2316			
			X38CrMoV 5 1	1.2343			H11
			X40CrMoV 5 1	1.2344			H13
			X42Cr 13	1.2083			420
	1.3.2. Unalloyed and Alloyed Steels; Tensile Strength ≥1200 N/mm²	Heat Proof Steels	35CrNiMo 6	1.6582	1200 -1400	380 - 410	4340
			NiCr19 CoMo	2.4973	1200 -1320	360 - 380	
			X5NiCrTi 26 15	1.4980	930 -1180	280 - 360	
		Tool Steels	50CrV 4	1.8159	1200 -1300	360 - 80	6150
			56NiCrMoV 7	1.2714	1200 -1400	360 - 410	
			X155CrVMo 12 1	1.2379	1200 -1400	360 - 410	D2
	1.3.3. Hardened Steels; 42-50 HRC	Tool Steels	X155CrVMo 12 1	1.2379			D2
			X210CrW 12	1.2436			
			90MnCrV 8	1.2842			O2
		High Speed Steels	S6-5-2	1.3343			M2
			S6-5-3	1.3344			M3 Class 2
		Wear-resistant Steels	HARDOX500				
			TOOLOX 44				
			HARDOX 400				
	1.4. Stainless Steels (V2A-Steels)	Normal Alloyed	GX10CrNi 18 8	1.4312			
			GX20Cr 14	1.4027	590 - 700	180 - 210	
			GX5CrNi 19 10	1.4308	460 - 640	140 - 190	CF-8
			GX8CrNi 13	1.4008	590 - 790	180 - 230	
			X10Cr 13	1.4006	450 - 650	130 - 190	410
			X10CrNiS 18 9	1.4305	500 - 750	160 - 220	303
			X105CrMo 17	1.4125	900	270	440C
			X12CrMoS 17	1.4104	540 - 840	160 - 250	430F
			X12CrNi 17 7	1.4310	700 - 950	210 - 280	301
			X12CrS 13	1.4005			416
			X15Cr 13	1.4024	650 - 800	190 - 240	
			X2CrNi 18 9	1.4306	460 - 850	140 - 250	304L
			X2CrNiN 18 10	1.4311	550 - 760	160 - 220	304LN
			X20Cr 13	1.4021	650 - 950	190 - 280	420
			X20CrNi 17 2	1.4057	800 - 950	240 - 280	431
			X22CrNi 17	1.4057	750 - 950	220 - 280	431
			X3CrNiN 17 8	1.4319			302
			X30Cr 13	1.4028	600 - 780	180 - 230	420F
			X39Cr 13	1.4031	560 - 800	170 - 240	
			X46Cr 13	1.4034	580 - 800	170 - 240	
			X5CrNi 18 12	1.4303	490 - 690	150 - 210	305
			X5CrNi 18 9	1.4301	500 - 700	160 - 210	304
			X5CrNi 18 9	1.4350			304
			X6CrAl 13	1.4002	400 - 700	120 - 210	405
			X6CrMo 17	1.4113	450 - 650	130 - 190	434
			X7Cr 13	1.4000	400 - 700	120 - 210	403
			X8Cr 17	1.4016	450 - 600	130 - 180	430

Material Main Group	Material Sub Group	Designation	Standard Designation	DIN-Number	Tensile Strength (N/mm²)	Hardness (HB)	AISI/ SAE/ ASTM
1. Steel	1.5. Stainless Steels with high Chromium-Nickel-Content (V4A-Steels)	High Alloyed	GX5CrNiMo 19 11	1.4408	460 - 640	140 - 190	CF-8M
			GX5CrNiNb 19 10	1.4552	440 - 640	130 - 190	
			X1NiCrMoCuN 25 20 5	1.4539	520 - 720	150 - 210	UNSN08904
			X6CrNiTi 18-10	1.4541	500 - 700	150 - 210	321
			X2CrMoTi 18 2	1.4521	450 - 650	130 - 190	443
			X2CrNiMo 17 13 2	1.4404	490 - 850	150 - 250	316L
			X2CrNiMo 18 12	1.4435	490 - 690	150 - 210	316L
			X2CrNiMo 18 16	1.4438	490 - 690	150 - 210	317L
			X2CrNiMoN 17 12 2	1.4406	580 - 800	170 - 240	316LN
			X2CrNiMoN 17 13 3	1.4429	580 - 800	170 - 240	316LN
			X2CrNiMoN 22 5 3	1.4462	680 - 880	200 - 260	
			X3NiCrCuMoTi 27 23	1.4503	500 - 700	160 - 210	
			X4CrNiMoN 27 5 2	1.4460	600 - 800	180 - 240	329
			X5CrNiCuNb 17 4	1.4542			630
			X5CrNiMo 17 1	1.4401	510 - 710	150 - 210	316
			X5CrNiMo 17 13	1.4449			317
			X5CrNiMo 17 13 3	1.4436	510 - 710	150 - 210	316
			X5CrNiNb 18 10	1.4546	410 - 610	130 - 190	348
			X5NiCrMoCuNb 20 18	1.4505	490 - 740	160 - 220	
			X6CrNb 17	1.4511	450 - 600	130 - 180	
			X6CrNiMoTi 17 12 2	1.4571	500 - 730	160 - 220	316Ti
			X6CrNiNb 18 10	1.4550	550 - 750	160 - 220	347
			X6CrTi 12	1.4512	330 - 560	100 - 170	409
			X6CrTi 17	1.4510	450 - 600	130 - 180	439
	1.6. High Temperature Stainless Steels (V2A- and V4A-Steels)	High Temperature	X12CrNiMo12	1.4939	950 - 1150	280 - 340	S 64152
			X5NiCrTi26-15	1.4980	930 - 1180	275 - 348	660
			X5CrNi 13 4	1.4313	1000 - 1200	295 - 354	S 41500
			GX30CrSi6	1.4710	1190 - 1550	350 - 450	
			X50CrMnNiNbN21-9	1.4882	950 - 1150	280 - 340	S 63019
			X55CrMnNiN20-8	1.4875	900 - 1150	266 - 340	S 63012
			X19CrMoNbVN11-1	1.4913	950 - 1150	280 - 340	
			X14CrMoS17	1.4104	~ 930	275	430 F
			X4CrNiMo16-5-1	1.4418	~1250	370	
			X5CrNiCuNb16-4	1.4542	800 - 1270	238 - 375	630
			GXZ5CrNi13-4	1.4317	900 - 1100	266 - 325	
			X20CrMo13	1.4120	880 - 1470	260 - 435	
	1.7. High Speed Steels	High Speed Steels	S12-1-4-5	1.3202			T15
			S18-0-1	1.3355			T1
			S18-1-2-10	1.3265			T5
			S18-1-2-5	1.3255			T4
			S2-10-1-8	1.3247			M42
			S2-9-1	1.3346			M1
			S2-9-2	1.3348			M7
			S2-9-2-8	1.3249			M34
			S5-5-3	1.3344			M3 Class2
			S6-5-2	1.3343			M2
			S6-5-2-5	1.3243			
			S7-4-2-5	1.3246			M41
			SC6-5-2	1.3342			M3
2. Cast Iron	2.1. Grey Cast Iron (GG)	Grey Cast Iron	GG10 (EN-GJL-100)	0.6010			A48-20 B
			GG15 (EN-GJL-150)	0.6015	110 - 150	35 - 50	A48-25 B
			GG20 (EN-GJL-200)	0.6020	150 - 200	50 - 60	A48-30 B
			GG25 (EN-GJL-250)	0.6025	200 - 250	60 - 80	A48-35 B
			GG30 (EN-GJL-300)	0.6030	240 - 270	75 - 85	A48-45 B
			GG35 (EN-GJL-350)	0.6035	280 - 320	90 - 100	A48-50 B
			GG40 (EN-GJL-400)	0.6040	350 - 450	110 - 130	A48-55 B
	2.2. Nodular and Malleable Cast Iron (GGG, GT)	Nodular Cast Iron	GGG40 (EN-GJS-400-25)	0.7040	400	120	60-40-18
			GGG50 (EN-GJS-500-7)	0.7050	500	160	80-55-06
			GGG60 (EN-GJS-600-3)	0.7060	600	190	80-55-06
			GGG70 (EN-GJS-700-2)	0.7070	700	210	100-70-03
			GGG80 (EN-GJS-800-2)	0.7080	800	238	120-90-02
		Malleable Cast Iron	GTS55-05	0.8055	550	170	50005
			GTW35-04	0.8035	350	110	
	2.3. Vermicular Cast Iron (GGV, GJV, CGI)	Vermicular Cast Iron	GJV-300				
			GJV-400				
			GGV-30				
			GGV-40				

Material Main Group	Material Sub Group	Designation	Standard Designation	DIN-Number	Tensile Strength (N/mm²)	Hardness (HB)	AISI/ SAE/ ASTM
3. Nonferrous Metals	3.1. Aluminium, Copper, Copper Alloys	Unalloyed Aluminium	Al99	3.0205	75 - 140	20 - 50	
			Al99.9	3.0305	100 - 120	30 - 40	
			Al99.9 R	3.0400	60 - 120	20 - 40	
			E-Al	3.0257			
		Unalloyed Copper	SF-Cu	2.0090	300 - 350	90 - 110	
		Longchipping Brass	CuZn20 (Ms80)	2.0250			
			CuZn30 (Ms70)	2.0265			
			CuZn37	2.0321	300 - 400	90 - 110	
		Bronze	G-CuSn 6 ZnNi	2.1093	400 - 450	120 - 130	
		Red Brass	G-CuSn 5 ZnPb	2.1096	200 - 250	60 - 80	
	3.2.1. Aluminium Alloys, Copper Alloys	Aluminium Alloys	G-AlSi 12	3.2581	160 - 210	50 - 70	A413.2
			G-AlSi 10 Mg	3.2383	170 - 220	50 - 70	
			G-AlSi 12 (Cu)	3.2583	150 - 220	50 - 70	
			G-AlSi 5 Mg	3.2341	140 - 300	50 - 90	
			G-AlSi 6 Cu	3.2151	160 - 200	50 - 90	
			G-AlSi 7 Mg	3.2371	170 - 300	50 - 90	
			G-AlSi 8 Cu 3	3.2161	160 - 200	50 - 60	
			G-AlSi 9 Mg	3.2373	250 - 300	80 - 90	
			G-CuAl 10 Ni	2.0975	650 - 750	190 - 220	
			GD-AlSi 12 (Cu)	3.2982	450 - 550	130 - 170	
		Bronze, Hard	CuSn 6 Zn 6	2.1080	550 - 700	170 - 210	
	3.2.2. Special Aluminium Alloys	Special Aluminium Alloys	AlCuMg 1	3.1325	215 - 395	70 - 120	
			AlMg 1	3.3315	105 - 210	30 - 70	
			AlMg 1,5	3.3316	130 - 240	40 - 75	
			AlMg 1 SiCu	3.3211	150 - 290	50 - 90	
			AlMg 2,5	3.3523	170 - 290	50 - 90	
			AlMg 3	3.3535	190 - 305	60 - 100	
			AlMg 5	3.3555	250 - 280	80 - 90	
			AlMgSi 0,5	3.3206	140 - 200	40 - 60	
			AlMgSi 1	3.2315	150 - 315	50 - 100	
			AlMn 1 Mg 0,5	3.0525	125 - 20	40 - 70	
			AlMnCu	3.0517	125 - 210	40 - 70	
			AlZnMgCu 0,5	3.4345	400 - 460	120 - 180	
			AlZnMgCu 1,5	3.4365	480 - 530	150 - 170	
			G-AlMg 5	3.3561	160 - 220	50 - 70	
			G-AlMg 5Si	3.3261	160 - 200	50 - 60	
	3.3. Copper Alloys, Short Chipping	Short Chipping Brass	CuZn39Pb 2 (Ms58)	2.0380	~630	190	
			CuZn40 (Ms60)	2.0360			
			CuZn40MnPb	2.0580	400	120	
			CuZn44Pb 2	2.0410	630	190	
4. Special Alloys	4.1. Nickel Alloys	Nickel Alloys	NiCr17Mo17FeW (Hastelloy C)		DIN-Nr. 2.4602		
			NiCR19Fe19NbMo (Inconel 718)		DIN-Nr. 2.4668		
			Ni-Cr20Ti (Nimonic 75)		DIN-Nr. 2.4630		
			NiCr20TiAl (Nimonic 80/80A)		DIN-Nr. 2.4631		
			NiCr20Co14MoTi (Waspaloy)		DIN-Nr. 2.4654		
			NiCr21Mo (Incoloy 825)		DIN-Nr. 2.4858		
			NiCu30Fe (Monel 400)		DIN-Nr. 2.4360		
			NiCo15Cr10MoAlTi (Nimocast PK24)		DIN-Nr. 2.4674		
	4.2. Titanium Alloys	Titanium Alloys	TiAl 5 Sn 2	3.7115	790 - 980	230 - 290	
			TiAl 6 V 4	3.7165	980 - 1140	290 - 340	
	4.3. Cu-Al-Fe-Alloys	Chilled Cast Iron	Ampco 21		965 - 1060	285 - 311	
			Ampco 22		1090 - 1130	321 - 352	
			Ampco 25		1140 - 1280	356 - 394	
			Ampco 26		1290 - 1450	395 - 450	
5. Plastics	5.1. Thermoplastics	Thermoplastics	Polyamid				
			Polystyrol				
			Polyvinylchloride				
			Ultramid				
	5.2. Thermosetting Plastics and Fibre Reinforced Plastics	Thermosetting Plastics	Bakelit				
			Ferrozell				
			Pertinax				
			Fibre Reinforced Plastics	CFK	190 - 210	60 - 70	
				GFK			

Type of Hole



1. Through Hole Depth of Thread up to 2 x d_1
2. Through Hole Depth of Thread up to 3 x d_1
3. Blind Hole Depth of Thread up to 2 x d_1
4. Blind Hole Depth of Thread up to 3 x d_1

Chamfer

Form A	Form B	Form C	Form D	Form E	Form F
5 - 6 Threads	4 - 5 Threads	2 - 3 Threads	3,5 - 5 Threads	1,5 - 2 Threads	1-1,5 Threads

Type of Hole
Chamfer
M
MF
BSW
G
Rp
Rc
NPT
NPTF
NPSM
UNC
UNF
UNEF
UN
Pg
Tr
Rd
EG-M
EG-UNC

KA*) Axial Internal Cooling
KR*) Radial Internal Cooling

Coolant
Ö = Cutting Oil
E = Emulsion
S = Special Cutting Oil
T = Dry, Air

Material Main Groups	Material Sub Groups		Cutting Speed v_c = m/min Uncoated	Cutting Speed v_c = m/min Coated	Coolant	Cat.-No. DIN 371 / DIN 376/374
1. Steels	1.1.	Unalloyed Steels; RM ≤ 800 N/mm²	10 - 20	20 - 50	Ö/E	
	1.2.	Unalloyed and Alloyed Steels; RM ≤1000 N/mm²	10 - 20	20 - 50	Ö/E	
	1.3.1	Unalloyed and Alloyed Steels; RM ≤ 1200 N/mm²	3 - 10	5 - 20	Ö/E	
	1.3.2.	Unalloyed and Alloyed Steels; RM ≥ 1200 N/mm²	2 - 5	3 - 10	Ö/S	
	1.3.3.	Hardened Steels; 42 - 50 HRC		2 - 5	Ö/S	
	1.4.	Stainless Steels (V2A-Steels)	6 - 10	10 - 20	Ö/E	
	1.5	Stainless Steels with high Chromium-Nickel-Content (V4A-Steels)	6 - 10	10 - 20	Ö/E	
	1.6.	High Temperature Stainless Steels (V2A- and V4A-Steels)	3 - 10	5 - 20	Ö/E	
	1.7.	High Speed Steels	6 - 10	10 - 20	Ö/E	
2. Cast Iron	2.1.	Grey Cast Iron (GG)	10 - 20	20 - 50	T/E	
	2.2.	Nodular and Malleable Cast Iron (GGG, GT)	10 - 20	20 - 50	T/E	
	2.3.	Vermicular Cast Iron (GGV, GJV, CGI)	10 - 20	20 - 50	T/E	
3. Nonferrous Metalls	3.1.	Aluminium, Copper, Copper Alloys	20 - 40	30 - 50	Ö/E	
	3.2.1.	Aluminium Alloys, Copper Alloys	10 - 30	30 - 50	Ö/E	
	3.2.2.	Special Aluminium Alloys	20 - 30	30 - 50	Ö/E	
	3.3	Copper Alloys, Short Chipping	10 - 30		Ö/E	
4. Special Alloys	4.1.	Nickel Alloys		2 - 4	S	
	4.2.	Titanium Alloys	4 - 6		S	
	4.3.	Cu-Al-Fe-Alloys		3 - 10	Ö/E	
5. Plastics	5.1.	Thermoplastics	20 - 30	20 - 30	T	
	5.2.	Thermosetting Plastics and Fibre Reinforced Plastics	10 - 15	15 - 20	T	

Type of Thread and Catalogue Page

	2	2	3/4	3/4	2	2	3/4	3/4	1/3	3	2	2	3/4	3/4	2/4	2/4	2/4	2/4
	B	B	C	C	B	B	C	C	C	C	B	B	C	C	C	C	E	C
	22/23	22/23	24/25	24/25	26/27	26/27	28/29	28/29	66/67	68	63	63	64	64	48/65	48/65	48	48/49
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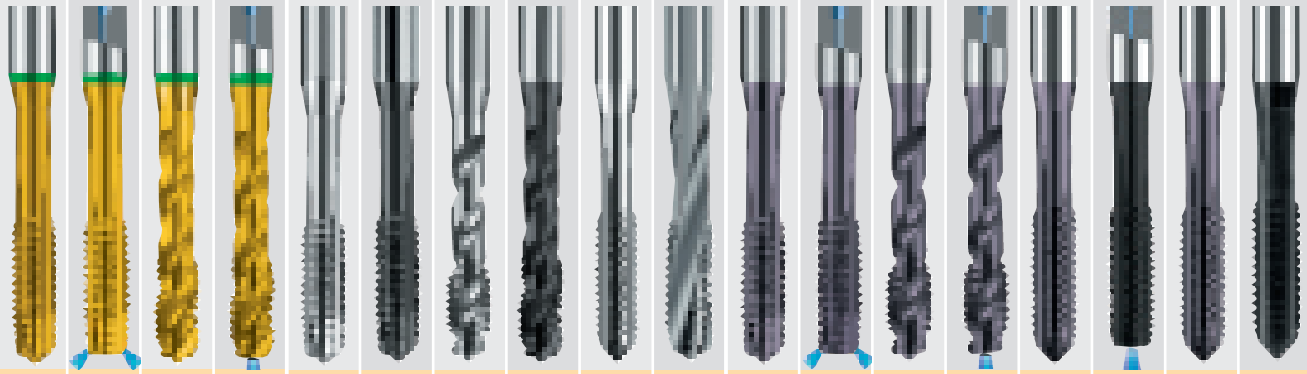
	120/121		120/121		122/123		122/123		128/129									126/127
	131/132		131/132		133/134		133/134		139/140									137/138
					146				146	146								
	Rapid-UNI TiN	Rapid-UNI KR*) TiN	Grulo-UNI TiN	Grulo-UNI KA*) TiN	Rapid	Rapid vap.	Grulo	Grulo vap.	C	RSP	Rapid TM TiAlN	Rapid TM KR*) TiAlN	Grulo TM TiAlN	Grulo TM KA*) TiAlN	C-GG TM TiAlN	C-GG TM KA*) TiAlN	C-GG TM TiAlN	C-GG nit.
																		
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→	7275/80	B7275/80	6345/80	B6345/80	7011	7011/78	6040	6040/78	6002	6030	7271/70	B7271/70	6340/70	B6340/70	6308/70	B6308/70	6309/70	6008/06
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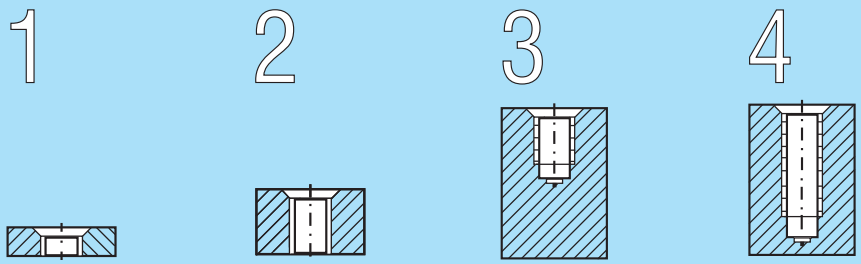
Application: ● recommended ❍ suitable ■ also recommended for dry cutting / MKS □ suitable

Type of Hole



1. Through Hole Depth of Thread up to 2 x d_1
2. Through Hole Depth of Thread up to 3 x d_1
3. Blind Hole Depth of Thread up to 2 x d_1
4. Blind Hole Depth of Thread up to 3 x d_1

Chamfer

Form A	Form B	Form C	Form D	Form E	Form F
5 - 6 Threads	4 - 5 Threads	2 - 3 Threads	3,5 - 5 Threads	1,5 - 2 Threads	1 - 1,5 Threads

Type of Hole

Chamfer

- **M**
- **MF**
- **BSW**
- **G**
- **Rp**
- **Rc**
- **NPT**
- **NPTF**
- **NPSM**
- **UNC**
- **UNF**
- **UNEF**
- **UN**
- **Pg**
- **Tr**
- **Rd**
- **EG-M**
- **EG-UNC**

KA*) Axial Internal Cooling
KR*) Radial Internal Cooling

Coolant

Ö = Cutting Oil
E = Emulsion
S = Special Cutting Oil
T = Dry, Air

Material Main Groups	Material Sub Groups		Cutting Speed v_c = m/min Uncotaetd	Cutting Speed v_c = m/min Coated	Coolant	Cat.-No. DIN 371 / DIN 376/374
1. Steels	1.1.	Unalloyed Steels; RM ≤ 800 N/mm²	10 - 20	20 - 50	Ö/E	
	1.2.	Unalloyed and Alloyed Steels; RM ≤ 1000 N/mm²	10 - 20	20 - 50	Ö/E	
	1.3.1	Unalloyed and Alloyed Steels; RM ≤ 1200 N/mm²	3 - 10	5 - 20	Ö/E	
	1.3.2.	Unalloyed and Alloyed Steels; RM ≥ 1200 N/mm²	2 - 5	3 - 10	Ö/S	
	1.3.3.	Hardened Steels; 42 - 50 HRC		2 - 5	Ö/S	
	1.4.	Stainless Steels (V2A-Steels)	6 - 10	10 - 20	Ö/E	
	1.5	Stainless Steels with high Chromium-Nickel-Content (V4A-Steels)	6 - 10	10 - 20	Ö/E	
	1.6.	High Temperature Stainless Steels (V2A- and V4A-Steels)	3 - 10	5 - 20	Ö/E	
	1.7.	High Speed Steels	6 - 10	10 - 20	Ö/E	
2. Cast Iron	2.1.	Grey Cast Iron (GG)	10 - 20	20 - 50	T/E	
	2.2.	Nodular and Malleable Cast Iron (GGG, GT)	10 - 20	20 - 50	T/E	
	2.3.	Vermicular Cast Iron (GGV, GJV, CGI)	10 - 20	20 - 50	T/E	
3. Nonferrous Metals	3.1.	Aluminium, Copper, Copper Alloys	20 - 40	30 - 50	Ö/E	
	3.2.1.	Aluminium Alloys, Copper Alloys	10 - 30	30 - 50	Ö/E	
	3.2.2.	Aluminium Special Alloys	20 - 30	30 - 50	Ö/E	
	3.3	Copper Alloys, Short Chipping	10 - 30		Ö/E	
4. Special Alloys	4.1.	Nickel Alloys		2 - 4	S	
	4.2.	Titanium Alloys	4 - 6		S	
	4.3.	Cu-Al-Fe-Alloys		3 - 10	Ö/E	
5. Plastics	5.1.	Thermoplastics	20 - 30	20 - 30	T	
	5.2.	Thermosetting Plastics and Fibre Reinforced Plastics	10 - 15	15 - 20	T	

Type of Thread and Catalogue Page

	2	2	3	3/4	2	2	3/4	3/4	2	3/5	2/3	2	2	3/4	3/4	2	2	3/4	3/4
	B	C	C	E	B	B	C	C	B	C	D	B	B	C	C	B	B	C	C
	30/31	32/33	32/33	32/33	38/39	40/41	40/41	38/39	42/43	42/43	42/43	44/45	44/45	46/47	46/47	44/45	44/45	46/47	46/47
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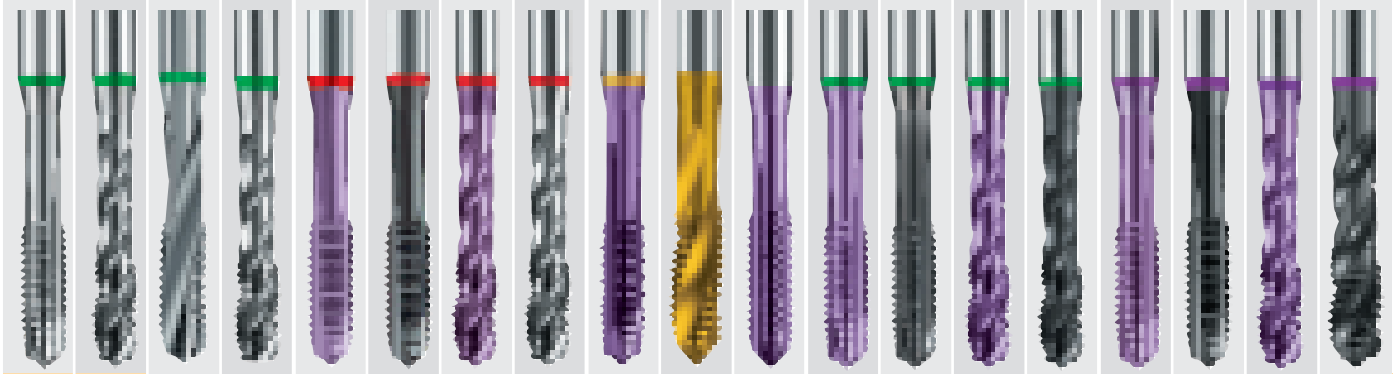
	105	105															106		106
	122/123	122/123					124/125	124/125									126/127		126/127
	133/134	133/134					135/136	135/136									137/138		137/138
																			143
	Rapid-VA-G	Grulo Spez-G	RSP-Spez-G	Grulo-Spez-G	Rapid-Spez-R TiCN	Rapid-Spez-R nit.	Grulo-Spez-R TiCN	Grulo-Spez-R	Rapid-S TiCN	RSP-Spez-S TiN	D-PM TiCN	Rapid VA-G TiCN	Rapid VA-G vap.	Grulo-VA-G TiCN	Grulo-Spez-G vap.	Rapid-V4A TiCN	Rapid-V4A vap.	Grulo-V4A TiCN	Grulo-V4A vap.
																			
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→	7275	6345	6055	6341	7255/81	7255/06	6245/81	6245	7880/81	6890/80	6853/81	7375/81	7375/78	6445/81	6445/78	7235/81	7235/78	6365/81	6365/78
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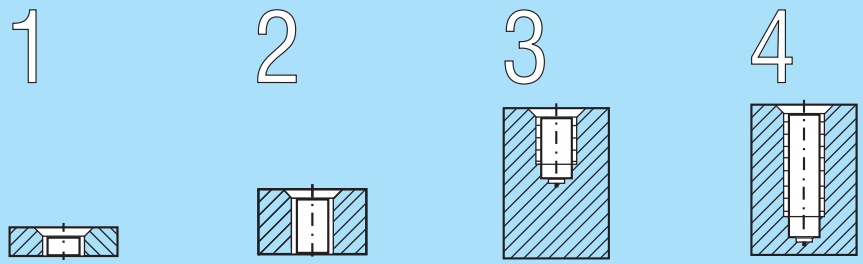
Application: ● recommended ❍ suitable ■ also recommended for dry cutting / MKS □ suitable

Type of Hole



1. Through Hole Depth of Thread up to 2 x d_1
2. Through Hole Depth of Thread up to 3 x d_1
3. Blind Hole Depth of Thread up to 2 x d_1
4. Blind Hole Depth of Thread up to 3 x d_1

Chamfer

Form A	Form B	Form C	Form D	Form E	Form F
5 - 6 Threads	4 - 5 Threads	2 - 3 Threads	3,5 - 5 Threads	1,5 - 2 Threads	1 - 1,5 Threads

Type of Hole

Chamfer

- **M**
- **MF**
- **BSW**
- **G**
- **Rp**
- **Rc**
- **NPT**
- **NPTF**
- **NPSM**
- **UNC**
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KA*) Axial Internal Cooling
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Coolant

Ö = Cutting Oil
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S = Special Cutting Oil
T = Dry, Air

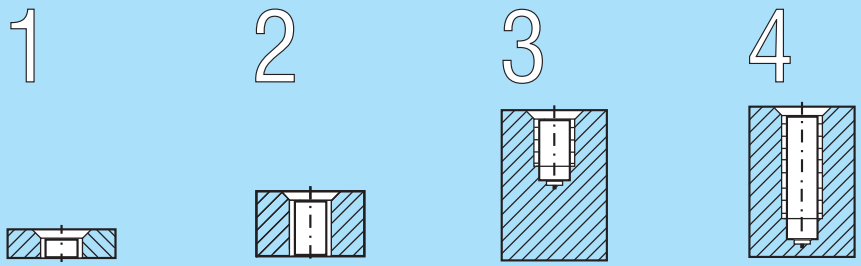
Material Main Groups	Material Sub Groups		Cutting Speed v_c = m/min Uncoated	Cutting Speed v_c = m/min Coated	Coolant	Cat.-No. DIN 371 / DIN 376/374
1. Steels	1.1.	Unalloyed Steels; RM ≤ 800 N/mm²	10 - 20	20 - 50	Ö/E	
	1.2.	Unalloyed and Alloyed Steels; RM ≤ 1000 N/mm²	10 - 20	20 - 50	Ö/E	
	1.3.1	Unalloyed and Alloyed Steels; RM ≤ 1200 N/mm²	3 - 10	5 - 20	Ö/E	
	1.3.2.	Unalloyed and Alloyed Steels; RM ≥ 1200 N/mm²	2 - 5	3 - 10	Ö/S	
	1.3.3.	Hardened Steels; 42 - 50 HRC		2 - 5	Ö/S	
	1.4.	Stainless Steels (V2A-Steels)	6 - 10	10 - 20	Ö/E	
	1.5	Stainless Steels with high Chromium-Nickel-Content (V4A-Steels)	6 - 10	10 - 20	Ö/E	
	1.6.	High Temperature Stainless Steels (V2A- and V4A-Steels)	3 - 10	5 - 20	Ö/E	
	1.7.	High Speed Steels	6 - 10	10 - 20	Ö/E	
2. Cast Iron	2.1.	Grey Cast Iron (GG)	10 - 20	20 - 50	T/E	
	2.2.	Nodular and Malleable Cast Iron (GGG, GT)	10 - 20	20 - 50	T/E	
	2.3.	Vermicular Cast Iron (GGV, GJV, CGI)	10 - 20	20 - 50	T/E	
3. Nonferrous Metals	3.1.	Aluminium, Copper, Copper Alloys	20 - 40	30 - 50	Ö/E	
	3.2.1.	Aluminium Alloys, Copper Alloys	10 - 30	30 - 50	Ö/E	
	3.2.2.	Special Aluminium Alloys	20 - 30	30 - 50	Ö/E	
	3.3	Copper Alloys, Short Chipping	10 - 30		Ö/E	
4. Special Alloys	4.1.	Nickel Alloys		2 - 4	S	
	4.2.	Titanium Alloys	4 - 6		S	
	4.3.	Cu-Al-Fe-Alloys		3 - 10	Ö/E	
5. Plastics	5.1.	Thermoplastics	20 - 30	20 - 30	T	
	5.2.	Thermosetting Plastics and Fibre Reinforced Plastics	10 - 15	15 - 20	T	

Type of Thread and Catalogue Page

2	2	3/4	3/4	3/4	2	2	3/4	3/4	3/4	3/4	2	3/4	2/4	2/4	2/4	2/4
B	B	C	C	C	B	B	C	C	E	E	B	C	C	C	C	C
34/35	34/35	36/37	36/37	36/37	54/55	54/55	56/57	56/57	56/57	56	50/51	52/53	58	58	59	59
85		85														
106		106														
124/125		124/125														
135/136		135/136														
			142													
Rapid-Spez nit.	Rapid-Spez TiN	Grulo-Spez	Grulo-Spez vap.	Grulo-Spez TiN	Rapid-Alutop DLC	Rapid-Alu-top KR*) DLC	Grulo-Alutop DLC	Grulo-Alu-top KA*) DLC	Grulo-Alutop DLC	Grulo-Alu-top KA*) DLC	Rapid-Al	Grulo-Al	C-Ms	C-Ms	C-VA-S-Ti vap.	C-Bak nit.
7045/06 7055/06	7045/80 7055/80	4045 6045	4045/78 6045/78	4045/80 6045/80	7450/77 7451/77	B7450/77 B7451/77	4350/77 6350/77	B4350/77 B6350/77	4351/77 6351/77	B4351/77 B6351/77	7410 7411	4044 6044	4057	4057/92	4880/78 6880/78	4056/06
●	●	●	●	●												
●	●	●	●	●												
❍	●		❍	●												
❍	❍		❍	❍												
❍	❍		❍	❍												
					●	●	●	●	●	●	●	●				
					●	●	●	●	●	●						
					●	●	●	●	●	●						
													●	●		
															●	
												❍				
																●

Application: ● recommended ❍ suitable ■ also recommended for dry cutting / MKS □ suitable

Type of Hole



1. Through Hole Depth of Thread up to 2 x d_1
2. Through Hole Depth of Thread up to 3 x d_1
3. Blind Hole Depth of Thread up to 2 x d_1
4. Blind Hole Depth of Thread up to 3 x d_1

Chamfer

Form A	Form B	Form C	Form D	Form E	Form F
5 - 6 Threads	4 - 5 Threads	2 - 3 Threads	3,5 - 5 Threads	1,5 - 2 Threads	1 - 1,5 Threads

Type of Hole

Chamfer

- **M**
- **MF**
- **BSW**
- **G**
- **Rp**
- **Rc**
- **NPT**
- **NPTF**
- **NPSM**
- **UNC**
- **UNF**
- **UNEF**
- **UN**
- **Pg**
- **Tr**
- **Rd**
- **EG-M**
- **EG-UNC**

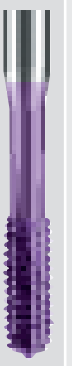
KA*) Axial Internal Cooling
KR*) Radial Internal Cooling

Coolant

Ö = Cutting Oil
E = Emulsion
S = Special Cutting Oil
T = Dry, Air

Material Main Groups	Material Sub Groups		Cutting Speed v_c = m/min	Coated	Coolant	Cat.-No. DIN 371 / DIN 376/374
1. Steels	1.1.	Unalloyed Steels; RM ≤ 800 N/mm²		20 - 30	Ö/E	Roll Taps
	1.2.	Unalloyed and Alloyed Steels; RM ≤ 1000 N/mm²		20 - 30	Ö/E	
	1.3.1	Unalloyed and Alloyed Steels; RM ≤ 1200 N/mm²			Ö/E	
	1.3.2.	Unalloyed and Alloyed Steels; RM ≥ 1200 N/mm²				
	1.3.3.	Hardened Steels; 42 - 50 HRC				
	1.4.	Stainless Steels (V2A-Steels)		10 - 20	Ö/E	
	1.5	Stainless Steels with high Chromium-Nickel-Content (V4A-Steels)		10 - 20	Ö/E	
	1.6.	High Temperature Stainless Steels (V2A- and V4A-Steels)		10 - 20	Ö/E	
	1.7.	High Speed Steels				
2. Cast Iron	2.2.	Grey Cast Iron (GG)				
	2.3.	Nodular and Malleable Cast Iron (GGG, GT)		20 - 30	Ö/E	
	2.4.	Vermicular Cast Iron (GGV, GJV, CGI)				
3. Nonferrous Metalls	3.1.	Aluminium, Copper, Copper Alloys		30 - 40	Ö/E	
	3.2.1.	Aluminium Alloys, Copper Alloys		30 - 40	Ö/E	
	3.2.2.	Special Aluminium Alloys		30 - 40	Ö/E	
	3.3	Copper Alloys, Short Chipping				
4. Special Alloys	4.1.	Nickel Alloys				
	4.2.	Titanium Alloys				
	4.3.	Cu-Al-Fe-Alloys				
5. Plastics	5.1.	Thermoplastics				
	5.2.	Thermosetting Plastics and Fibre Reinforced Plastics				

Type of Thread and Catalogue Page

2/4	2	2/4	2/4	2/4	2/4	2/4	2/4				2/4	2/4	2/4	2/4	2/4			
60/62	60	61	61	61	61	61	60/62											
90							90											
108																		
											112							
											114	114	114					
											116							
														149	148			
Formex TiN	Formex TiN	Formex TiN	Formex TiN	Formex TiN	Formex TiCN	Formex TiCN	Formex CrN											
																		
4060/80	4063/80	4076/80	4065/80	4067/80	4069/81	4072/81	4064/79			Coolant	2700/78	2750/78	6700/78	6750/80	6750/78	3000	3010	
6060/80	6063/80	6076/80	6065/80	6067/80	6069/81	6072/81	6064/79											
●	●	●	●	●	❍	❍		Cutting Speed valid for Roll Taps only		Ö/E	●	●	●	●	●	●	●	
❍	❍	●	●	●	❍	❍				Ö/E	❍	●	❍	●	●	●	●	
		●	●	●	❍	❍				Ö/E								
										Ö/S								
										Ö/S								
					●	●				Ö/E		●		●	●		●	
					●	●				Ö/E		●		●	●		●	
					●	●				Ö/E								
		❍	❍	❍	❍	❍				T/E				●			●	
										T/E				●			●	
❍	❍	❍	❍	❍	●	●				Ö/E		●			●			
										Ö/E	●	●	●	●	●		●	
❍	❍	❍	❍	❍	❍	❍	●			Ö/E	●	●	●	●	●		●	
❍	❍	❍	❍	❍	❍	❍	●			T/Ö								
❍	❍	❍	❍	❍	❍	❍	●			S								

Application: ● recommended ❍ suitable

Neoboss Coatings

Advantages: • improved thread quality • precise accuracy to gauge • increased cutting speed • extended tool life	**TiN** TiN-coated Neoboss taps can be used universally.	**TiCN** Due to its high hardness and favourable viscosity TiCN-coating is recommended for difficult chipping and hard materials.	**TiAlN** Its extreme hardness and gliding quality guarantees high wear resistance against abrasive materials such as cast iron and Aluminium alloys. Its high ductility as well as thermal and chemical stability is extremly well suited for dry cutting and high speed cutting.	**CrN** This chrome nitride-coating with its high adhesive strength and excellent chemical durability is extremely well suited for thread rolling in Aluminium.	**DLC** With its high wear resistance and slight adhesion on nonferrous metals DLC-coating is perfectly recom-mended for cutting Aluminium and Aluminium alloys.
Micro Hard. (HV 0,05)	**2300**	**3000**	**3300**	**1750**	**2800**
Colour of Coating	**gold**	**blue-grey**	**purple - dark grey**	**silver-grey**	**black**
Application	universal	difficult chipping materials	abrasive material; dry cutting / MKS	Rolling of Aluminium	Aluminium, Aluminium alloys

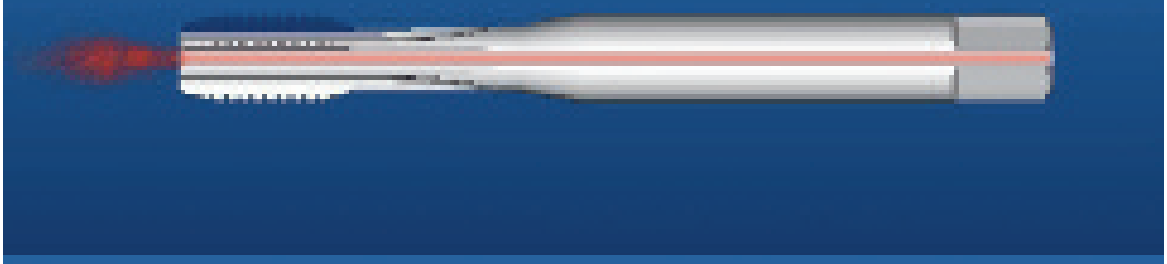
Recommendation of Tools with Internal Cooling System (KSS)

Taps with Internal Cooling:
All machine taps size M5 and above are available with Internal Cooling System (KSS)

Advantages of KSS:
- excellent cooling and lubrication
- improved removal of chips
- high quality of thread surface
- increased cutting speed
- higher tool life

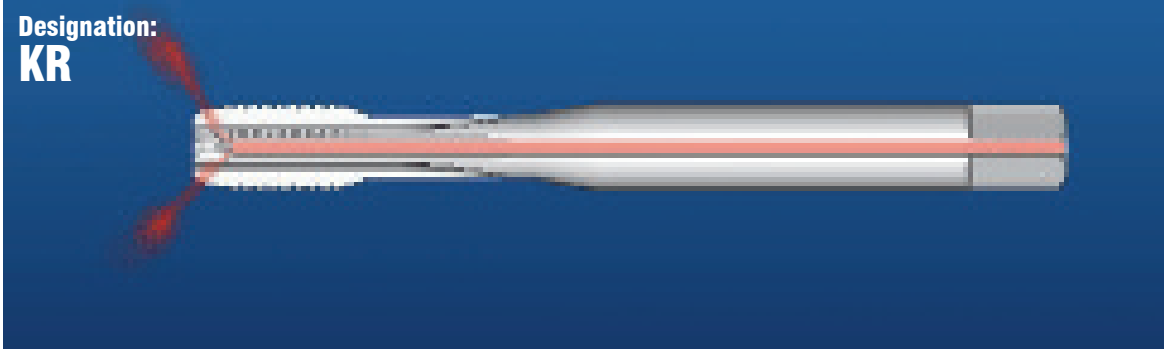
Blind Holes: KSS axial

Designation:
KA



Through Holes: KSS radial

Designation:
KR



Contents

	Page
Metric ISO Standard Thread DIN 13	
Machine Taps DIN 371 / 376	20 - 70
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Roll Taps with Internal Cooling	60 - 62
Machine Taps for Dry Cutting / MKS	63 - 65
Machine Taps for Dry Cutting / MKS with Internal Cooling	63 - 65
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Hand Taps HSS DIN 352	71
Hand Taps HSSE DIN 352	72
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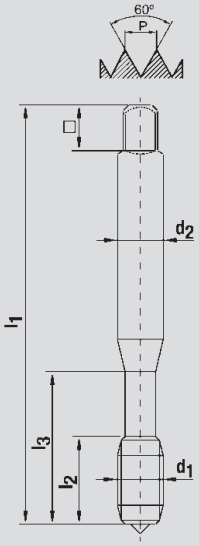
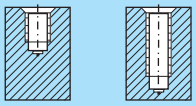
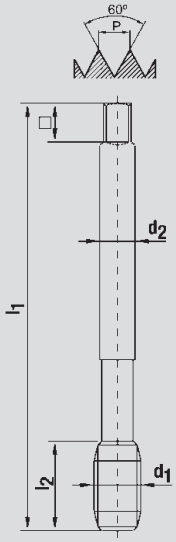
Nut Taps DIN 357	76

HSSE DIN 371/376 **M**

Version	Straight Flute, Form B, with spiral point, 4 - 5 threads chamfer Available as Set in a plastic box. Content M3 - M12 Single taps also available	
Type of Hole		
Surface Treatment	TiN-Coating	
Catalogue-No.	3070	
Tolerance	ISO 2-6H	
		
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

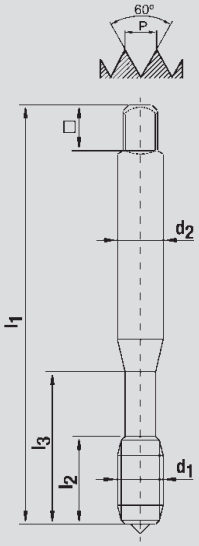
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3	0,5	56	10	18	3,5	2,7	2,50
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1,0	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50
M 12	1,75	110	22		9	7	10,20

HSSE DIN 371/376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer Available as Set in a plastic box. Content M3 - M12 Single taps also available	
Type of Hole		
Surface Treatment	TiN-Coating	
Catalogue-No.	3080	
Tolerance	ISO 2-6H	
		
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

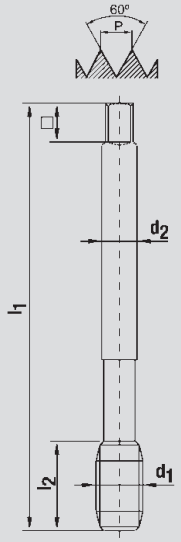
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀Di
M 3	0,5	56	7	18	3,5	2,7	2,50
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1,0	80	12	30	6	4,9	5,00
M 8	1,25	90	15	35	8	6,2	6,80
M 10	1,5	100	18	39	10	8	8,50
M 12	1,75	110	18		9	7	10,20

HSSE DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, KR = Radial Internal Cooling · Size M8 and up
Type of Hole				
Surface Treatment	TiN-Coating	TiN-Coating	TiN-Coating	TiN-Coating
Catalogue-No.	7265/80	7265/80	7265/80	B7265/80
Tolerance	ISO 2-6H	ISO 3-6G	7G	ISO 2-6H
	Rapid-UNI	Rapid-UNI	Rapid-UNI	Rapid-UNI with KR
Application add. see Page 10, 11	UNIversal Use for a Broad Material Range			
Coolant	see Page 10			
Cutting Speed v_c	see Page 10			

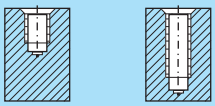
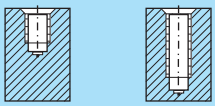
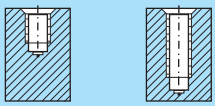
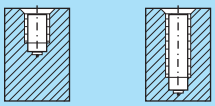
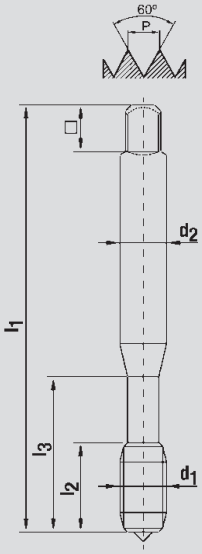
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀Di
M 2	0,4	45	8		2,8	2,1	1,60
M 2,5	0,45	50	9		2,8	2,1	2,05
M 3	0,5	56	10	18	3,5	2,7	2,50
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

HSSE DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4-5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4-5 Threads Chamfer, KR = Radial Internal Cooling Size M8 and up
Type of Hole		
Surface Treatment	TiN-Coating	TiN-Coating
Catalogue-No.	7275/80	B7275/80
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid-UNI 	Rapid-UNI with KR
Application add. see Page 10, 11	UNIversal Use for a Broad Range of Materials	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

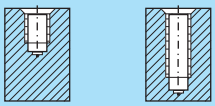
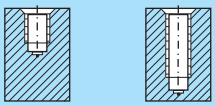
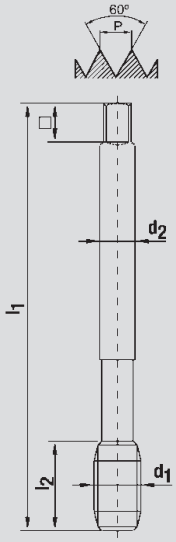
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 20	2,5	140	30	16	12	17,50
M 24	3	160	36	18	14,5	21,00
M 27	3	160	36	20	16	24,00
M 30	3,5	180	40	22	18	26,50

HSSE DIN 371 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, KA = Axial Internal Coolant · Size M6 and up
Type of Hole				
Surface Treatment	TiN-Coating	TiN-Coating	TiN-Coating	TiN-Coating
Catalogue-No.	4345/80	4345/80	4345/80	B4345/80
Tolerance	ISO 2-6H	ISO 3-6G	7G	ISO 2-6H
	Grulo-UNI 	Grulo-UNI 	Grulo-UNI 	Grulo-UNI with KA
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range			
Coolant	see Page 10			
Cutting Speed v_c	see Page 10			

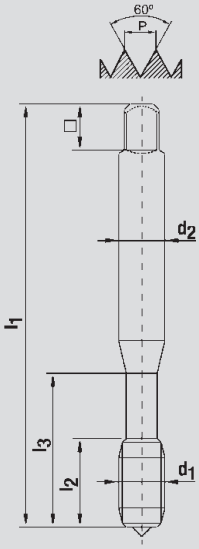
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀Di
M 2	0,4	45	6	10	2,8	2,1	1,60
M 2,5	0,45	50	6	12	2,8	2,1	2,05
M 3	0,5	56	7	18	3,5	2,7	2,50
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 8	1,25	90	15	35	8	6,2	6,80
M 10	1,5	100	18	39	10	8	8,50

HSSE DIN 376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, KA = Axial Internal Cooling Size M6 and up
Type of Hole		
Surface Treatment	TiN-Coating	TiN-Coating
Catalogue-No.	6345/80	B6345/80
Tolerance	ISO 2-6H	ISO 2-6H
	Grulo-UNI 	Grulo-UNI with KA
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

d_1	P (mm)	l_1	l_2	d_2	□	⌀D1
M 6	1	80	12	4,5	3,4	5,00
M 8	1,25	90	15	6	4,9	6,80
M 10	1,5	100	18	7	5,5	8,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00
M 16	2	110	20	12	9	14,00
M 20	2,5	140	25	16	12	17,50
M 24	3	160	30	18	14,5	21,00
M 27	3	160	30	20	16	24,00
M 30	3,5	180	35	22	18	26,50

HSSE DIN 371 **M**

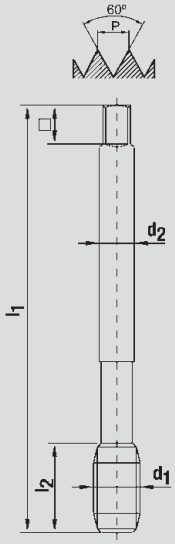
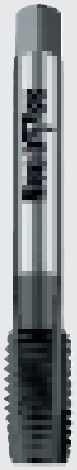
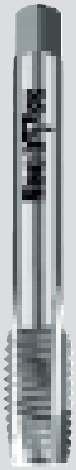
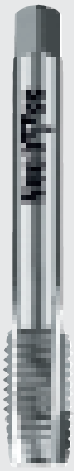
Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, Left Hand Version
Type of Hole				
Surface Treatment	Steam Tempered			
Catalogue-No.	7010/78	7010	7010	7010/LH Left
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G	ISO 2-6H-LH
	Rapid Vap.	Rapid	Rapid	Rapid-LH
Application add. see Page 10, 11	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			
Coolant	Cutting Oil or Emulsion			
Cutting Speed v_c	10 - 20 m/min			

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 2	0,4	45	8		2,8	2,1	1,60
M 2,2	0,45	45	9		2,8	2,1	1,75
(M 2,3)	0,4	45	9		2,8	2,1	1,90
M 2,5	0,45	50	9		2,8	2,1	2,05
(M 2,6)	0,45	50	9		2,8	2,1	2,15
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 4,5	0,75	70	14	25	6	4,9	3,70
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 7	1	80	16	30	7	5,5	6,00
M 8	1,25	90	18	35	8	6,2	6,80
M 9	1,25	90	18	35	9	7	7,80
M 10	1,5	100	20	39	10	8	8,50

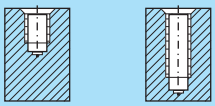
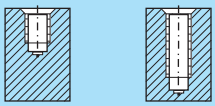
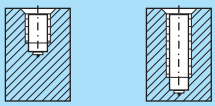
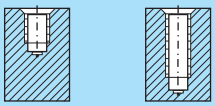
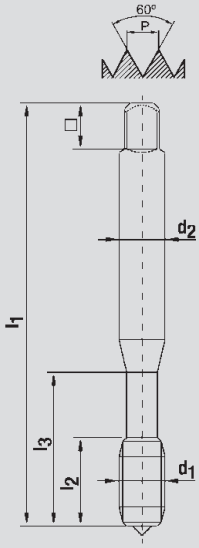
( ) DIN Profile not ISO

HSSE DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer
Type of Hole			
Surface Treatment	Steam Tempered		
Catalogue-No.	7011/78	7011	7011
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G
	Rapid Vap. 	Rapid 	Rapid 
Application add. see Page 10, 11	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 20 m/min		

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 3	0,5	56	10	2,2		2,50
M 3,5	0,6	56	11	2,5	2,1	2,90
M 4	0,7	63	12	2,8	2,1	3,30
M 5	0,8	70	14	3,5	2,7	4,20
M 6	1	80	16	4,5	3,4	5,00
M 7	1	80	16	5,5	4,3	6,00
M 8	1,25	90	18	6	4,9	6,80
M 9	1,25	90	18	7	5,5	7,80
M 10	1,5	100	20	7	5,5	8,50
M 11	1,5	100	20	8	6,2	9,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50
M 20	2,5	140	30	16	12	17,50
M 22	2,5	140	30	18	14,5	19,50
M 24	3	160	36	18	14,5	21,00
M 27	3	160	36	20	16	24,00
M 30	3,5	180	40	22	18	26,50
M 33	3,5	180	40	25	20	29,50
M 36	4	200	45	28	22	32,00

HSSE DIN 371 **M**

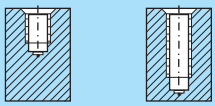
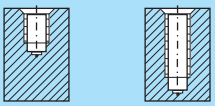
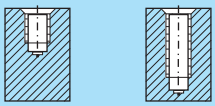
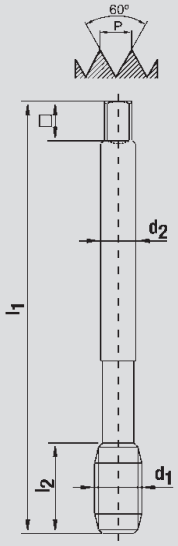
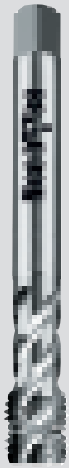
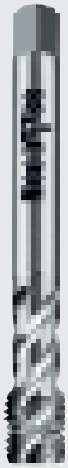
Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Left Hand Spiral, Form C, 2 - 3 Threads Chamfer Left Hand Version
Type of Hole				
Surface Treatment	Steam Tempered			
Catalogue-No.	4040/78	4040	4040	4040/LH Left
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G	ISO 2-6H-LH
	Grulo Vap. 	Grulo 	Grulo 	Grulo-LH
Application add. see Page 10, 11	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			
Coolant	Cutting Oil or Emulsion			
Cutting Speed v_c	10 - 20 m/min			

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 1,4	0,3	40	7		2,5	2,1	1,10
M 1,6	0,35	40	8		2,5	2,1	1,25
(M 1,7)	0,35	40	8		2,5	2,1	1,35
M 2	0,4	45	6	10	2,8	2,1	1,60
M 2,2	0,45	45	6	10	2,8	2,1	1,75
(M 2,3)	0,4	45	6	10	2,8	2,1	1,90
M 2,5	0,45	50	6	12	2,8	2,1	2,05
(M 2,6)	0,45	50	6	12	2,8	2,1	2,15
M 3	0,5	56	7	18	3,5	2,7	2,50

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3,5	0,6	56	7	20	4	3	2,90
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 7	1	80	12	30	7	5:5	6:00
M 8	1,25	90	15	35	8	6,2	6,80
M 9	1,25	90	15	35	9	7	7,80
M 10	1,5	100	18	39	10	8	8,50

( ) DIN Profile not ISO

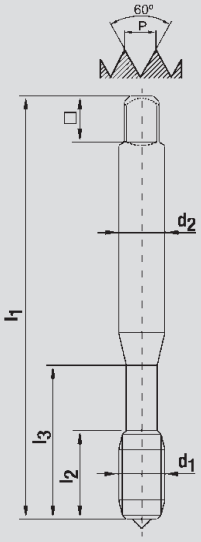
HSSE DIN 376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment	Steam Tempered		
Catalogue-No.	6040/78	6040	6040
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G
	Grulo Vap. 	Grulo 	Grulo 
Application add. see Page 10, 11	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 20 m/min		

d_1	P (mm)	l_1	l_2	d_2	□	øD
M 3	0,5	56	7	2,2		2,50
M 4	0,7	63	8	2,8	2,1	3,30
M 5	0,8	70	10	3,5	2,7	4,20
M 6	1	80	12	4,5	3,4	5,00
M 7	1	80	12	5,5	4,3	6,00
M 8	1,25	90	15	6	4,9	6,80
M 9	1,25	90	15	7	5,5	7,80
M 10	1,5	100	18	7	5,5	8,50
M 11	1,5	100	18	8	6,2	9,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00
M 16	2	110	20	12	9	14,00
M 18	2,5	125	25	14	11	15,50
M 20	2,5	140	25	16	12	17,50

d_1	P (mm)	l_1	l_2	d_2	□	øD
M 22	2,5	140	25	18	14,5	19,50
M 24	3	160	30	18	14,5	21,00
M 27	3	160	30	20	16	24,00
M 30	3,5	180	35	22	18	26,50
M 33	3,5	180	40	25	20	29,50
M 36	4	200	45	28	22	32,00

HSSE DIN 371 **M**

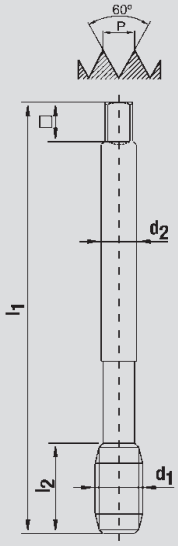
Version	Straight Flute, Form B, with Spiral Point, 4-5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer
Type of Hole		
Surface Treatment		
Catalogue-No.	7265	7265
Tolerance	ISO 2-6H	ISO 3-6G
	Rapid-VA-G	Rapid-VA-G
Application add. see Page 12, 13	Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 30 m/min	

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 1	0,25	40	5,5		2,5	2,1	0,75
M 1,4	0,3	40	7		2,5	2,1	1,10
M 1,6	0,35	40	8		2,5	2,1	1,25
(M 1,7)	0,35	40	8		2,5	2,1	1,35
M 2	0,4	45	8		2,8	2,1	1,60
M 2,2	0,45	45	9		2,8	2,1	1,75
(M 2,3)	0,4	45	9		2,8	2,1	1,90
M 2,5	0,45	50	9		2,8	2,1	2,05
(M 2,6)	0,45	50	9		2,8	2,1	2,15

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 7	1	80	16	30	7	5,5	6,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

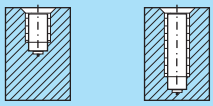
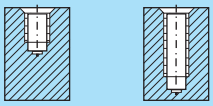
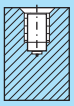
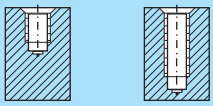
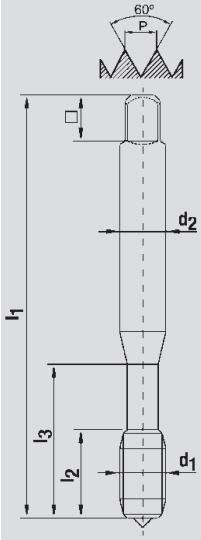
( ) DIN Profile not ISO

HSSE DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	7275	
Tolerance	ISO 2-6H	
	Rapid-VA-G 	
Application add. see Page 12, 13	Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 30 m/min	

d_1	P (mm)	l_1	l_2	d_2	□	øD
M 4	0,7	63	12	2,8	2,1	3,30
M 5	0,8	70	14	3,5	2,7	4,20
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50
M 20	2,5	140	30	16	12	17,50
M 22	2,5	140	30	18	14,5	19,50
M 24	3	160	36	18	14,5	21,00
M 27	3	160	36	20	16	24,00
M 30	3,5	180	40	22	18	26,50

HSSE DIN 371 **M**

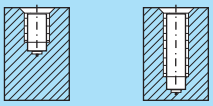
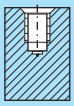
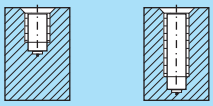
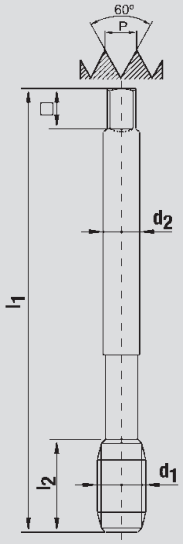
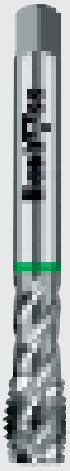
Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form E, 1,5 - 2 Threads Chamfer
Type of Hole				
Surface Treatment				
Catalogue-No.	4345	4345	4255	4341
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H	ISO 2-6H
	Grulo-Spez.-G 	Grulo-Spez.-G 	RSP-Spez.-G 	Grulo-Spez.-G
Application add. see Page 12, 13	Aluminium Alloys, Copper Alloys			
Coolant	Cutting Oil or Emulsion			
Cutting Speed. v_c	10 - 30 m/min			

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 1,4	0,3	40	7		2,5	2,1	1,10
M 1,6	0,35	40	8		2,5	2,1	1,25
(M 1,7)	0,35	40	8		2,5	2,1	1,35
M 1,8	0,35	40	8		2,5	2,1	1,45
M 2	0,4	45	6	10	2,8	2,1	1,60
M 2,5	0,45	50	6	12	2,8	2,1	2,05
(M 2,6)	0,45	50	6	12	2,8	2,1	2,15
M 3	0,5	56	7	18	3,5	2,7	2,50

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3,5	0,6	56	7	20	4	3	2,90
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 7	1	80	12	30	7	5,5	6,00
M 8	1,25	90	15	35	8	6,2	6,80
M 10	1,5	100	18	39	10	8	8,50

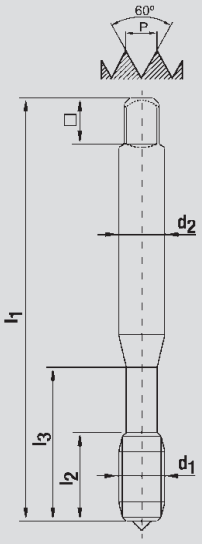
( ) DIN Profile not ISO

HSSE DIN 376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form E, 1,5 - 2 Threads Chamfer
Type of Hole			
Surface Treatment			
Catalogue-No.	6345	6055	6341
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H
	Grulo-Spez.-G 	RSP-Spez.-G 	Grulo-Spez.-G
Application add. see Page 12, 13	Aluminium Alloys, Copper Alloys		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 30 m/min		

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 4	0,7	63	8	2,8	2,1	3,30
M 5	0,8	70	10	3,5	2,7	4,20
M 6	1	80	12	4,5	3,4	5,00
M 8	1,25	90	15	6	4,9	6,80
M 10	1,5	100	18	7	5,5	8,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00
M 16	2	110	20	12	9	14,00
M 18	2,5	125	25	14	11	15,50
M 20	2,5	140	25	16	12	17,50
M 22	2,5	140	25	18	14,5	19,50
M 24	3	160	30	18	14,5	21,00
M 27	3	160	30	20	16	24,00
M 30	3,5	180	35	22	18	26,50

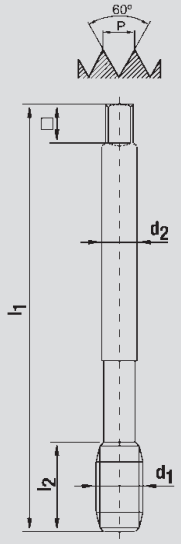
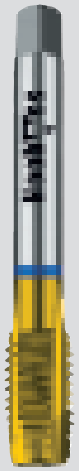
HSSE DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer
Type of Hole			
Surface Treatment	Nitrided	Nitrided	TiN-Coating
Catalogue-No.	7045/06	7045/06	7045/80
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H
	Rapid-Spez.	Rapid-Spez.	Rapid-Spez. TiN
Application add. see Page 14, 15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²		
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion
Cutting Speed v_c	10 - 20 m/min		20 - 50 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	ø D
M 2	0,4	45	8		2,8	2,1	1,60
M 2,5	0,45	50	9		2,8	2,1	2,05
(M 2,6)	0,45	50	9		2,8	2,1	2,15
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M10	1,5	100	20	39	10	8	8,50

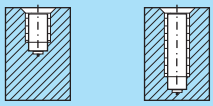
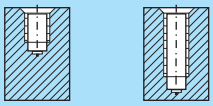
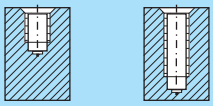
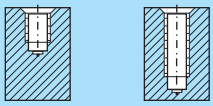
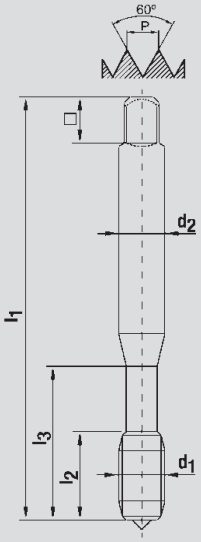
( ) DIN Profile not ISO

HSSE DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer
Type of Hole		
Surface Treatment	Nitrided	TiN-Coating
Catalogue-No.	7055/06	7055/80
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid-Spez.	Rapid-Spez. TiN 
Application add. see Page 14, 15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²	
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	10 - 20 m/min	20 - 50 m/min

d_1	P (mm)	l_1	l_2	d_2	□	⌀D1
M 4	0,7	63	12	2,8	2,1	3,30
M 5	0,8	70	14	3,5	2,7	4,20
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 20	2,5	140	30	16	12	17,50
M 24	3	160	36	18	14,5	21,00
M 30	3,5	180	40	22	18	26,50

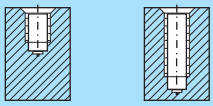
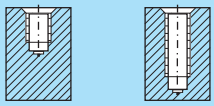
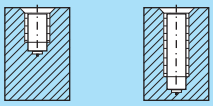
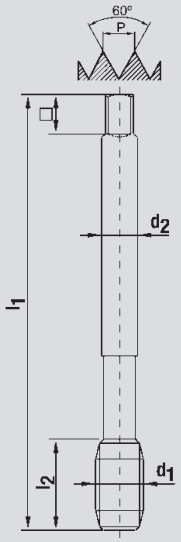
HSSE DIN 371 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment			Steam Tempered	TiN-Coating
Catalogue-No.	4045	4045	4045/78	4045/80
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H	ISO 2-6H
	Grulo-Spez.	Grulo-Spez.	Grulo-Spez. Vap.	Grulo-Spez. TiN
Application add. see Page 14, 15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²			
Coolant	Cutting Oil or Emulsion			Cutting Oil or Emulsion
Cutting Speed v_c	10 - 20 m/min			20 - 50 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	ø D
M 2	0,4	45	6	10	2,8	2,1	1,60
M 2,5	0,45	50	6	12	2,8	2,1	2,05
(M 2,6)	0,45	50	6	12	2,8	2,1	2,15
M 3	0,5	56	7	18	3,5	2,7	2,50
M 3,5	0,6	56	7	20	4	3	2,90
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 8	1,25	90	15	35	8	6,2	6,80
M10	1,5	100	18	39	10	8	8,50

( ) DIN Profile not ISO

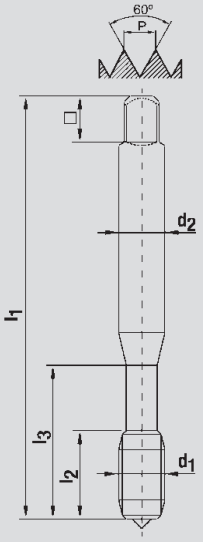
HSSE DIN 376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment		Steam Tempered	TiN-Coating
Catalogue-No.	6045	6045/78	6045/80
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H
	Grulo-Spez. 	Grulo-Spez. Vap. 	Grulo-Spez. TiN
Application add. see Page 14, 15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²		
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion
Cutting Speed v_c	10 - 20 m/min		20 - 50 m/min

d_1	P (mm)	l_1	l_2	d_2	□	ø D
M 3	0,5	56	7	2,2		2,50
M 4	0,7	63	8	2,8	2,1	3,30
M 5	0,8	70	10	3,5	2,7	4,20
M 6	1	80	12	4,5	3,4	5,00
M 8	1,25	90	15	6	4,9	6,80
M 10	1,5	100	18	7	5,5	8,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00

d_1	P (mm)	l_1	l_2	d_2	□	ø D
M 16	2	110	20	12	9	14,00
M 18	2,5	125	25	14	11	15,50
M 20	2,5	140	25	16	12	17,50
M 22	2,5	140	25	18	14,5	19,50
M 24	3	160	30	18	14,5	21,00
M 27	3	160	30	20	16	24,00
M 30	3,5	180	35	22	18	26,50

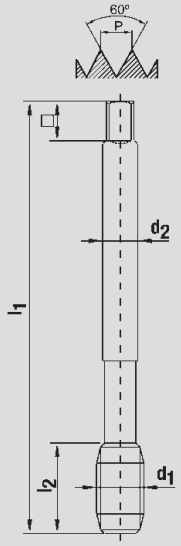
HSSE DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer
Type of Hole			
Surface Treatment	Nitrided	Nitrided	TiCN-Coating
Catalogue-No.	7245/06	7245/06	7245/81
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H
	Rapid-Spez.-R	Rapid-Spez.-R	Rapid-Spez.-R TiCN
Application add. see Page 12, 13	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1400 N/mm²
Coolant	Cutting Oil or Emulsion		Cutting Oil or Special Cutting Oil
Cutting Speed v_c	3 - 10 m/min		3 - 10 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀Di
M 2	0,4	45	8		2,8	2,1	1,60
M 2,2	0,45	45	9		2,8	2,1	1,75
(M 2,3)	0,4	45	9		2,8	2,1	1,90
M 2,5	0,45	50	9		2,8	2,1	2,05
(M 2,6)	0,45	50	9		2,8	2,1	2,15
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M10	1,5	100	20	39	10	8	8,50

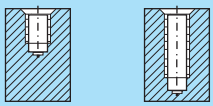
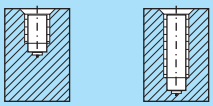
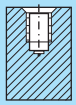
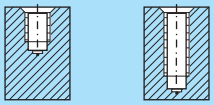
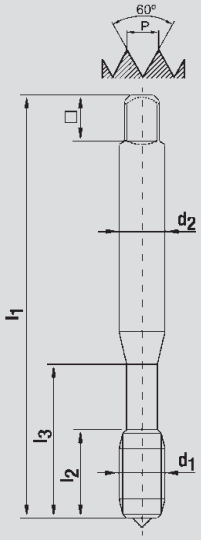
( ) DIN Profile not ISO

HSSE DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer
Type of Hole		
Surface Treatment	Nitrided	TiCN-Coating
Catalogue-No.	7255/06	7255/81
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid Spez.-R 	Rapid-Spez.-R TiCN
Application add. see Page 12, 13	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²	Unalloyed and Alloyed Steels; Tensile Strength ≤1400 N/mm²
Coolant	Cutting Oil or Emulsion	Cutting Oil or Special Cutting Oil
Cutting Speed v_c	3 - 10 m/min	5 - 20 m/min

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 4	0,7	63	12	2,8	2,1	3,30
M 5	0,8	70	14	3,5	2,7	4,20
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50
M 20	2,5	140	30	16	12	17,50
M 22	2,5	140	30	18	14,5	19,50
M 24	3	160	36	18	14,5	21,00
M 27	3	160	36	20	16	24,00
M 30	3,5	180	40	22	18	26,50

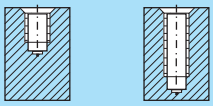
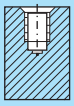
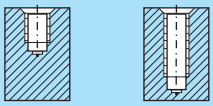
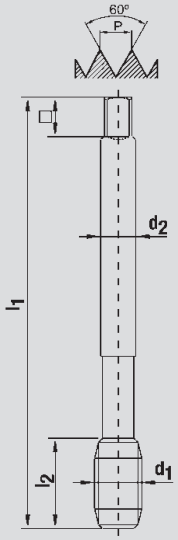
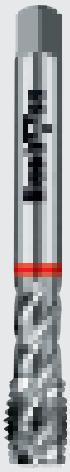
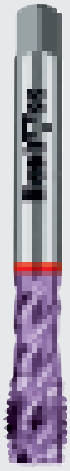
HSSE DIN 371 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment				TiCN-Coating
Catalogue-No.	4245	4245	4235	4245/81
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H	ISO 2-6H
	Grulo-Spez.-R 	Grulo-Spez.-R 	Rsp-Spez.-R 	Grulo-Spez.-R TiCN
Application add. see Page 12, 13	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²			Unalloyed and Alloyed Steels; Tensile Strength ≤ 1400 N/mm²
Coolant	Cutting Oil or Emulsion			Cutting Oil or Special Cutting Oil
Cutting Speed. v_c	3 - 10 m/min			5 - 20 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 2	0,4	45	6		2,8	2,1	1,60
M 2,5	0,45	50	6		2,8	2,1	2,05
(M 2,6)	0,45	50	6		2,8	2,1	2,15
M 3	0,5	56	7	18	3,5	2,7	2,50
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 8	1,25	90	15	35	8	6,2	6,80
M10	1,5	100	18	39	10	8	8,50

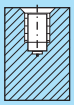
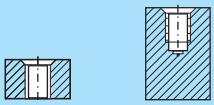
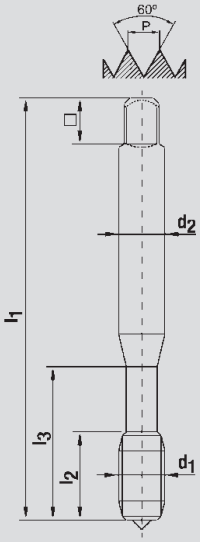
( ) DIN Profile not ISO

HSSE DIN 376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment			TiCN-Coating
Catalogue-No.	6245	6035	6245/81
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H
	Grulo-Spez.-R 	Rsp-Spez.-R 	Grulo-Spez.-R TiCN 
Application add. see Page 12, 13	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1400 N/mm²
Coolant	Cutting Oil or Emulsion		Cutting Oil or Special Cutting Oil
Cutting Speed v_c	3 - 10 m/min		5 - 20 m/min

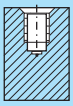
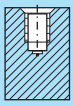
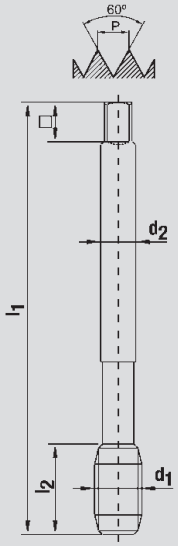
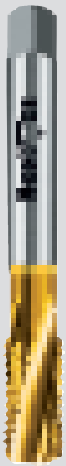
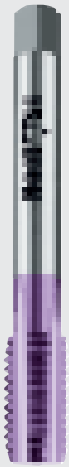
d_1	P (mm)	l_1	l_2	d_2	□	øDi
M 4	0,7	63	8	2,8	2,1	3,30
M 5	0,8	70	10	3,5	2,7	4,20
M 6	1	80	12	4,5	3,4	5,00
M 8	1,25	90	15	6	4,9	6,80
M 10	1,5	100	18	7	5,5	8,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00
M 16	2	110	20	12	9	14,00
M 18	2,5	125	25	14	11	15,50
M 20	2,5	140	25	16	12	17,50
M 22	2,5	140	25	18	14,5	19,50
M 24	3	160	30	18	14,5	21,00
M 27	3	160	30	20	16	24,00
M 30	3,5	180	35	22	18	26,50

PM DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer with Interrupted Threads	Ca. 25° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form D, 3,5 - 5 Threads Chamfer
Type of Hole			
Surface Treatment	TiCN-Coating	TiN-Coating	TiCN-Coating
Catalogue-No.	7850/81	4890/80	4853/81
Tolerance	6HX	6HX	6HX
	Rapid-S	Rsp-Spez.-S	D-PM
Application add. see Page 12, 13	Nickel Alloys, Heat-Treatable Steels ≤ 1600 N/mm²	Nickel Alloys, Heat-Treatable Steels ≤ 1400 N/mm²	Cu-Al-Fe-Alloys and Hardened Steels, 42 - 50 HRC 1300-1600 N/mm²
Coolant	Special Cutting Oil	Special Cutting Oil	Cutting Oil or Emulsion
Cutting Speed v_c	2 - 4 m/min	2 - 4 m/min	3 - 10 m/min

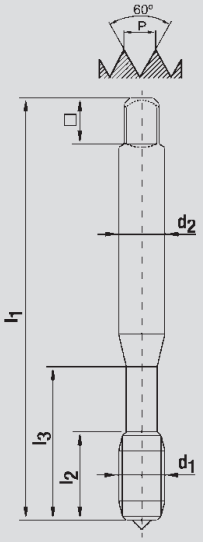
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 2	0,4	45	8		2,8	2,1	1,60
M 2,2	0,45	45	9		2,8	2,1	1,75
M 2,5	0,45	50	9		2,8	2,1	2,05
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

PM DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, with Interrupted Threads	Ca. 25° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form D, 3,5 - 5 Threads Chamfer
Type of Hole			
Surface Treatment	TiCN-Coating	TiN-Coating	TiCN-Coating
Catalogue-No.	7880/81	6890/80	6853/81
Tolerance	6HX	6HX	6HX
	Rapid-S	Rsp-Spez.-S 	D-PM 
Application add. see Page 12, 13	Nickel Alloys, Heat-Treatable Steels ≤ 1600 N/mm²	Nickel Alloys, Heat-Treatable Steels ≤ 1400 N/mm²	Cu-Al-Fe-Alloys, and Hardened Steels, 42 - 50 HRC 1300-1600 N/mm²
Coolant	Special Cutting Oil	Special Cutting Oil	Cutting Oil or Emulsion
Cutting Speed v_c	2 - 4 m/min	2 - 4 m/min	3 - 10 m/min

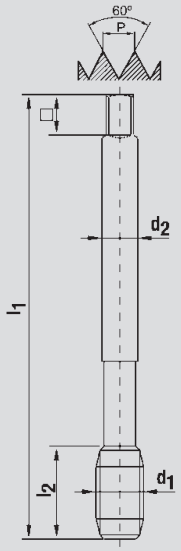
d_1	P (mm)	l_1	l_2	d_2	□	øD
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 20	2,5	140	30	16	12	17,50
M 24	3	160	36	18	14,5	21,00
M 30	3,5	180	40	22	18	26,50

HSSE / PM DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer
Type of Hole				
Surface Treatment	Steam Tempered	TiCN-Coating	Steam Tempered	TiCN-Coating
Catalogue-No.	7365/78	7365/81	7225/78	7225/81
Tolerance	6HX	6HX	6HX	6HX
	Rapid-VA-G	Rapid-VA-G TiCN	Rapid-V4A	Rapid-V4A TiCN
Application add. see Page 12, 13	Stainless Steels (V2A-Steels); High Temperature Stainless Steels (V2A- and V4A-Steels)		Stainless Steels with High Chromium-Nickel-Content (VA-Steels)	
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	6 - 10 m/min	10 - 20 m/min	6 - 10 m/min	10 - 20 m/min

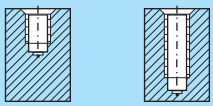
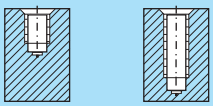
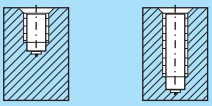
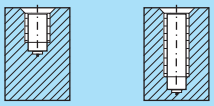
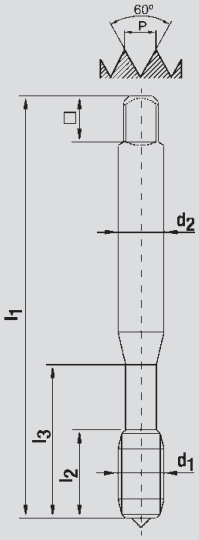
d_1	P (mm)	l_1	l_2	l_3	d_2	□	ø D
M 2	0,4	45	8		2,8	2,1	1,60
M 2,5	0,45	50	9		2,8	2,1	2,05
M 3	0,5	56	10	18	3,5	2,7	2,50
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

HSSE / PM DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point 4 - 5 Threads Chamfer
Type of Hole				
Surface Treatment	Steam Tempered	TiCN-Coating	Steam Tempered	TiCN-Coating
Catalogue-No.	7375/78	7375/81	7235/78	7235/81
Tolerance	6HX	6HX	6HX	6HX
	Rapid-VA-G	Rapid-VA-G TiCN	Rapid-V4A	Rapid-V4A TiCN
Application add. see Page 12, 13	Stainless Steels (V2A-Steels); High Temperature Stainless Steels (V2A- and V4A-Steels)		Stainless Steels with High Chromium-Nickel-Content (V4A-Steels)	
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	6 - 10 m/min	10 - 20 m/min	6 - 10 m/min	10 - 20 m/min

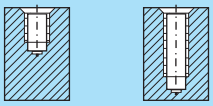
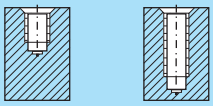
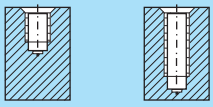
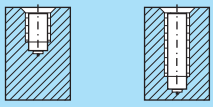
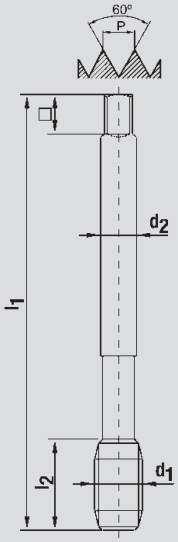
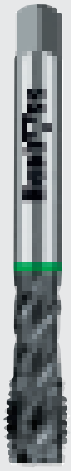
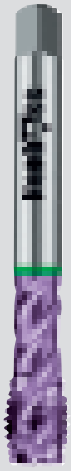
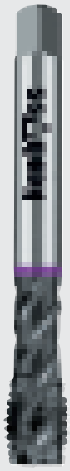
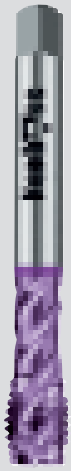
d_1	P (mm)	l_1	l_2	d_2	□	øD
M 4	0,7	63	12	2,8	2,1	3,30
M 5	0,8	70	14	3,5	2,7	4,20
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 20	2,5	140	30	16	12	17,50
M 24	3	160	36	18	14,5	21,00
M 30	3,5	180	40	22	18	26,50

HSSE / PM DIN 371 **M**

Version	Ca. 40° Right Hand Spiral Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Steam Tempered	TiCN-Coating	Steam Tempered	TiCN-Coating
Catalogue-No.	4445/78	4445/81	4365/78	4365/81
Tolerance	6HX	6HX	6HX	6HX
	Grulo-Spez.-G 	Grulo-Spez.-G TiCN 	Grulo-V4A 	Grulo-V4A TiCN
Application add. see Pages 12, 13	Stainless Steels (V2A-Steels); High Temperature Stainless Steels (V2A- und V4A-Steels)		Stainless Steels with High Chromium-Nickel-Content (VA-Steels)	
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	6 - 10 m/min	10 - 20 m/min	6 - 10 m/min	10 - 20 m/min

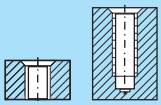
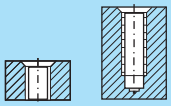
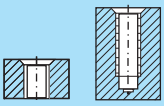
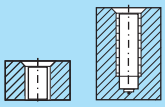
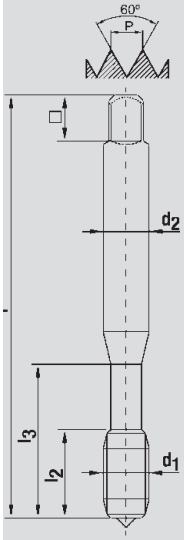
d_1	P (mm)	l_1	l_2	l_3	d_2	□	øD_1
M 2	0,4	45	6	10	2,8	2,1	1,60
M 2,5	0,45	50	6	12	2,8	2,1	2,05
M 3	0,5	56	7	18	3,5	2,7	2,50
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 8	1,25	90	15	35	8	6,2	6,80
M 10	1,5	100	18	39	10	8	8,50

HSSE / PM DIN 376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Steam Tempered	TiCN-Coating	Steam Tempered	TiCN-Coating
Catalogue-No.	6445/78	6445/81	6365/78	6365/81
Tolerance	6HX	6HX	6HX	6HX
	Grulo-Spez.-G 	Grulo-Spez.-G TiCN 	Grulo-V4A 	Grulo-V4A TiCN 
Application add. see Page 12, 13	Stainless Steels (V2A-Steels); High Temperature Stainless Steels (V2A- and V4A-Steels)		Stainless Steels with High Chromium-Nickel-Content (VA-Steels)	
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	6 - 10 m/min	10 - 20 m/min	6 - 10 m/min	10 - 20 m/min

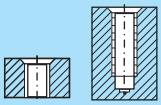
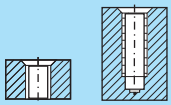
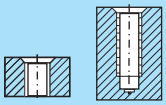
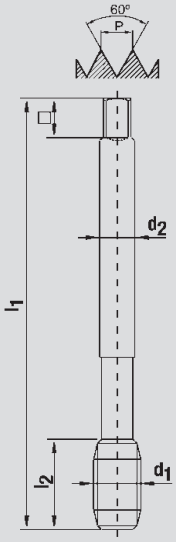
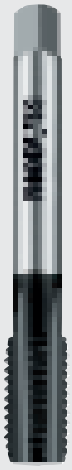
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 4	0,7	63	8	2,8	2,1	3,30
M 5	0,8	70	10	3,5	2,7	4,20
M 6	1	80	12	4,5	3,4	5,00
M 8	1,25	90	15	6	4,9	6,80
M 10	1,5	100	18	7	5,5	8,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00
M 16	2	110	20	12	9	14,00
M 20	2,5	140	25	16	12	17,50
M 24	3	160	30	18	14,5	21,00
M 30	3,5	180	35	22	18	26,50

HSSE / PM DIN 371 **M**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straigth Flute, Form C, 2 - 3 Threads Chamfer, KA = Axial Internal Cooling Size M6 and up	Straight Flute, Form E, 1,5 - 2 Threads Chamfer
Type of Hole				
Surface Treatment	Nitrided	TiAlN-Coating	TiAlN-Coating	TiAlN-Coating
Catalogue-No.	4058/06	4358/70	B4358/70	4359/70
Tolerance	6HX	6HX	6HX	6HX
	C-GG	C-GG TM	C-GG TM with KA	E-GG TM
Application add. see Page 10, 11	Grey Cast Iron	Grey Cast Iron; Nodular Cast Iron; Malleable Cast Iron; Vermicular Cast Iron		
Coolant	Cutting Oil	Dry, Air or Emulsion		
Cutting Speed v_c	10 - 20 m/min	20 - 50 m/min		

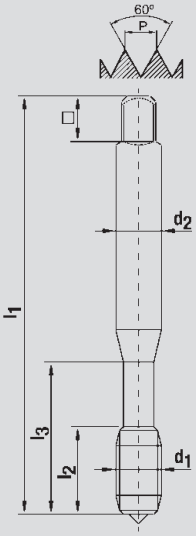
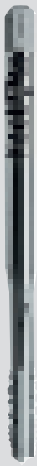
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D1
M 2	0,4	45	8		2,8	2,1	1,60
M 2,5	0,45	50	9		2,8	2,1	2,05
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 7	1	80	16	30	7	5,5	6,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

HSSE / PM DIN 376 **M**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2- 3 Threads Chamfer, KA = Axial Internal Cooling Size M8 and up
Type of Hole			
Surface Treatment	Nitrided	TiAlN-Coating	TiAlN-Coating
Catalogue-No.	6008/06	6308/70	B6308/70
Tolerance	6HX	6HX	6HX
	C-GG 	C-GG TM	C-GG TM with KA
Application add. see Page 10, 11	Grey Cast Iron	Grey Cast Iron; Nodular Cast Iron; Malleable Cast Iron, Vermicular Cast Iron	
Coolant	Cutting Oil	Dry, Air or Emulsion	
Cutting Speed v_c	10 - 20 m/min	20 - 50 m/min	

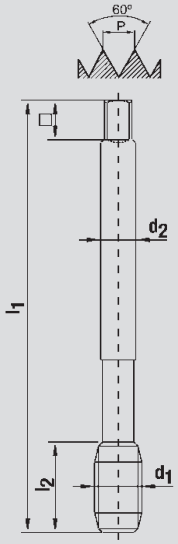
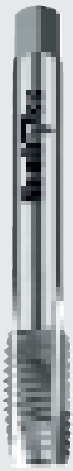
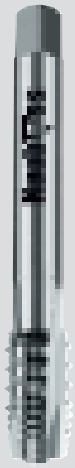
d_1	P (mm)	l_1	l_2	d_2	□	øD
M 4	0,7	63	12	2,8	2,1	3,30
M 5	0,8	70	14	3,5	2,7	4,20
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50
M 20	2,5	140	30	16	12	17,50
M 22	2,5	140	30	18	14,5	19,50
M 24	3	160	36	18	14,5	21,00
M 30	3,5	180	40	22	18	26,50

HSSE DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer with Interrrupted Threads
Type of Hole		
Surface Treatment		
Catalogue-No.	7410	7410/08
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid-Al 	Rapid-Al a. Z. 
Application add. see Page 14, 15	Aluminium, Copper, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 30 m/min	

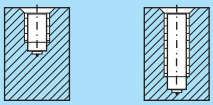
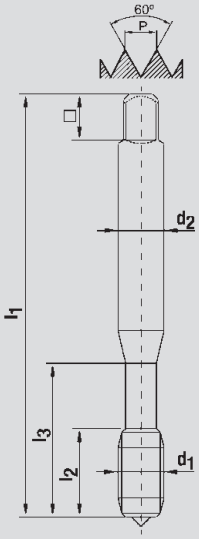
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 2	0,4	45	8		2,8	2,1	1,60
M 2,5	0,45	50	9		2,8	2,1	2,05
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

HSSE DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, with Interrupted Threads
Type of Hole		
Surface Treatment		
Catalogue-No.	7411	7411/08
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid-Al 	Rapid-Al a. Z. 
Application add. see Page 14, 15	Aluminium, Copper, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 30 m/min	

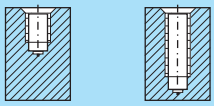
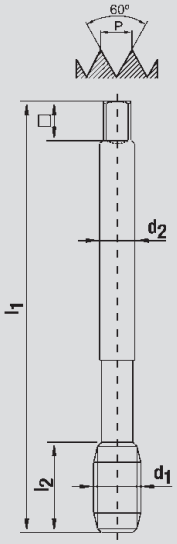
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50
M 20	2,5	140	30	16	12	17,50

HSSE DIN 371 **M**

Version	Ca. 45° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	4044	
Tolerance	ISO 2-6H	
	Grulo-Alu 	
Application add. see Page 14, 15	Aluminium, Copper, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 30 m/min	

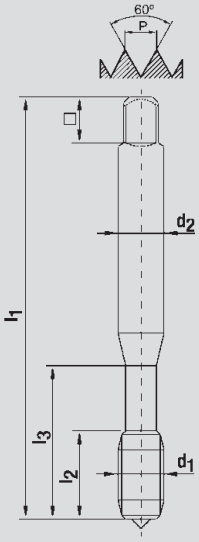
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 2	0,4	45	6	10	2,8	2,1	1,60
M 2,5	0,45	50	6	12	2,8	2,1	2,05
M 3	0,5	56	7	18	3,5	2,7	2,50
M 3,5	0,6	56	7	20	4	3	2,90
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 7	1	80	12	30	7	5,5	6,00
M 8	1,25	90	15	35	8	6,2	6,80
M 10	1,5	100	18	39	10	8	8,50

HSSE DIN 376 **M**

Version	Ca. 45° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	6044	
Tolerance	ISO 2-6H	
	Grulo-Alu 	
Application add. see Page 14, 15	Aluminium, Copper, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 30 m/min	

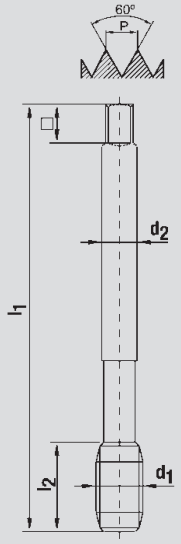
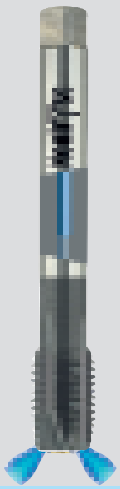
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 6	1	80	12	4,5	3,4	5,00
M 8	1,25	90	15	6	4,9	6,80
M 10	1,5	100	18	7	5,5	8,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00
M 16	2	110	20	12	9	14,00
M 20	2,5	140	25	16	12	17,50

HSSE DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, KR = Radial Internal Cooling Size M8 and up
Type of Hole		
Surface Treatment	DLC-Coating	DLC-Coating
Catalogue-No.	7450/77	B7450/77
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid-Alutop 	Rapid-Alutop with KR
Application add. see Page 14, 15	Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	20 - 50 m/min	

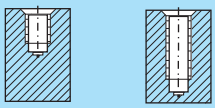
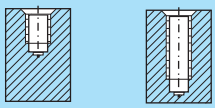
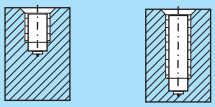
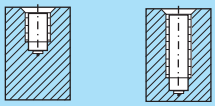
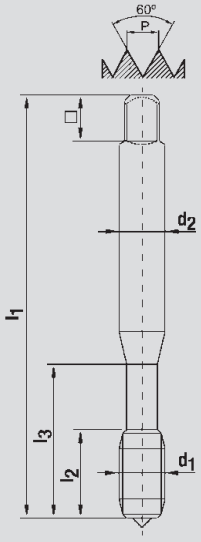
d_1	P (mm)	l_1	l_2	l_3	d_2	□	ø D
M 2	0,4	45	8		2,8	2,1	1,60
M 2,5	0,45	50	9		2,8	2,1	2,05
M 3	0,5	56	10	18	3,5	2,7	2,50
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

HSSE DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, KR = Radial Internal Cooling Size M8 and up
Type of Hole		
Surface Treatment	DLC-Coating	DLC-Coating
Catalogue-No.	7451/77	B7451/77
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid-Alutop 	Rapid-Alutop with KR 
Application add. see Page 14, 15	Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	20 - 50 m/min	

d_1	P (mm)	l_1	l_2	d_2	□	ØD1
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50
M 20	2,5	140	30	16	12	17,50

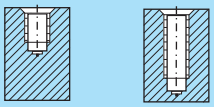
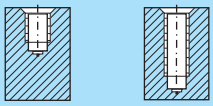
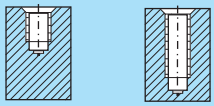
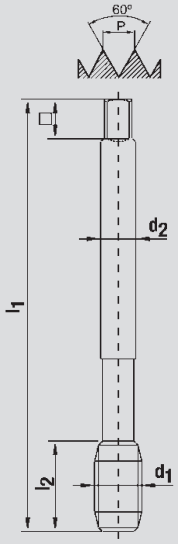
HSSE DIN 371 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, KA = Axial Internal Cooling · Size M6 and up	Ca. 40° Right Hand Spiral, Form E, 1,5 - 2 Threads Chamfer	Ca. 40° Right Hand Spiral, Form E, 1,5 - 2 Threads Chamfer, KA = Axial Internal Cooling · Size M6 and up
Type of Hole				
Surface Treatment	DLC-Coating	DLC-Coating	DLC-Coating	DLC-Coating
Catalogue-No.	4350/77	B4350/77	4351/77	B4351/77
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H	ISO 2-6H
	Grulo-Alutop 	Grulo-Alutop with KA 	Grulo-Alutop 	Grulo-Alutop with KA
Application add. see Page 14, 15	Aluminium Alloys, Copper Alloys			
Coolant	Cutting Oil or Emulsion			
Cutting Speed v_c	20 - 50 m/min			

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
(M 1,7)	0,35	40	8		2,5	2,1	1,35
M 2	0,4	45	6	10	2,8	2,1	1,60
M 2,5	0,45	50	6	12	2,8	2,1	2,05
(M 2,6)	0,45	50	6	12	2,8	2,1	2,15
M 3	0,5	56	7	18	3,5	2,7	2,50
M 3,5	0,6	56	7	20	4	3	2,90
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 8	1,25	90	15	35	8	6,2	6,80
M 10	1,5	100	18	39	10	8	8,50

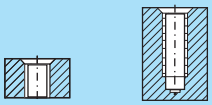
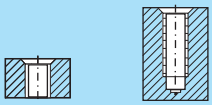
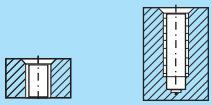
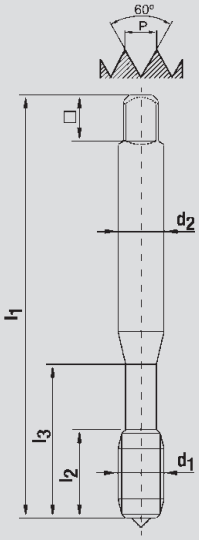
( ) DIN Profile not ISO

HSSE DIN 376 **M**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, KA = Axial Internal Cooling Size M6 and up	Ca. 40° Right Hand Spiral, Form E, 1,5 - 2 Threads Chamfer
Type of Hole			
Surface Treatment	DLC-Coating	DLC-Coating	DLC-Coating
Catalogue-No.	6350/77	B6350/77	6351/77
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H
	Grulo-Alutop 	Grulo-Alutop with KA 	Grulo-Alutop
Application add. see Page 14, 15	Aluminium Alloys, Copper Alloys		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	20 - 50 m/min		

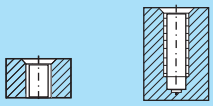
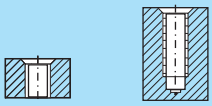
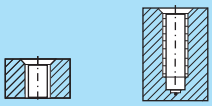
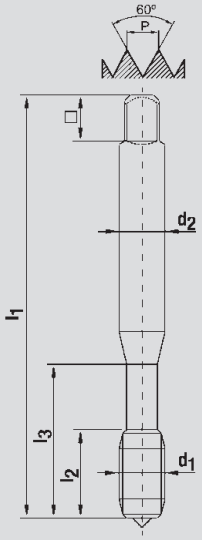
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 6	1	80	12	4,5	3,4	5,00
M 8	1,25	90	15	6	4,9	6,80
M 10	1,5	100	18	7	5,5	8,50
M 12	1,75	110	18	9	7	10,20
M 14	2	110	20	11	9	12,00
M 16	2	110	20	12	9	14,00
M 18	2,5	125	25	14	11	15,50
M 20	2,5	140	25	16	12	17,50

HSSE DIN 371 **M**

Version	3 Straight Flutes, Form C, 2 - 3 Threads Chamfer	2 Straight Flutes, Form C, 2 - 3 Threads Chamfer	2 Straight Flutes, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment			
Catalogue-No.	4057	4057/92	4057/92
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G
	C-Ms	C-Ms	C-Ms
Application	Copper Alloys, Short Chipping		
Coolant	Cutting Oill or Emulsion		
Cutting Speed v_c	10 - 30 m/min		

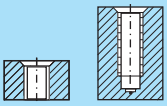
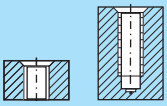
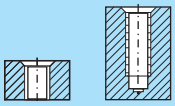
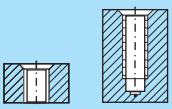
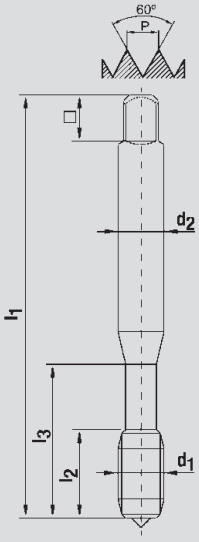
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 2	0,4	45	8		2,8	2,1	1,60
M 2,5	0,45	50	9		2,8	2,1	2,05
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50

HSSE / PM DIN 371/376 M

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer, with Interrupted Threads HSSE	Straight Flute, Form C, 2 - 3 Threads Chamfer, with Interrupted Threads PM	Straight Flute, Form C, 2 - 3 Threads Chamfer, with Interrupted Threads PM
Type of Hole			
Surface Treatment	Nitrided	Steam Tempered	Steam Tempered
Catalogue-No.	4056/06	4880/78	6880/78
Tolerance	6HX	6HX	6HX
	C-Bak	C-VA-S-Ti	C-VA-S-Ti
Application	Thermosetting Plastics and Fibre Reinforced Plastics	Titanium Alloys	
Coolant	Dry, Air	Special Cutting Oil	
Cutting Speed v_c	10 - 15 m/min	4 - 6 m/min	

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3	0,5	56	10	18	3,5	2,7	2,50
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50
M 12	1,75	110	22		9	7	10,20
M 16	2	110	26		12	9	14,00
M 20	2,5	140	30		16	12	17,50

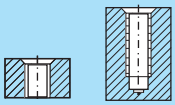
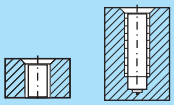
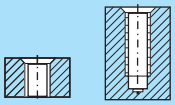
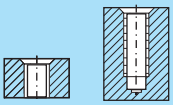
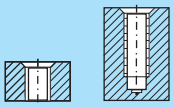
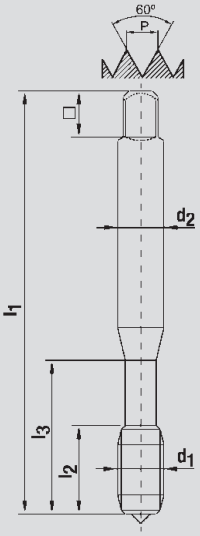
HSSE DIN 371 **M**

Version	Form C, 2-3 Threads Chamfer, from M 5 with Oil Flutes	Form C, 2-3 Threads Chamfer, from M 5 with Oil Flutes, KA = Axial Internal Cooling · Size M6 and up	Form C, 2-3 Threads Chamfer, from M 5 with Oil Flutes	Form D, 3,5-5 Threads Chamfer, from M 5 with Oil Flutes	Form C, 2-3 Threads Chamfer, from M 5 with Oil Flutes
Type of Hole					
Surface Treatment	TiN-Coating	TiN-Coating	TiN-Coating	TiN-Coating	CrN-Coating
Catalogue-No.	4060/80	B4060/80	4061/80	4063/80	4064/79
Tolerance	6HX	6HX	6GX	6HX	6HX
	Formex TiN	Formex TiN with KA	Formex TiN	Formex TiN	Formex CrN
Application add. see Page 16, 17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²				Aluminium Alloys, Copper Alloys
Coolant	Cutting Oil or Emulsion				Cutting Oil or Emulsion
Cutting Speed v_c	20 - 30 m/min				30 - 40 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	* øD_1
M 3	0,5	56	10	18	3,5	2,7	2,80
M 4	0,7	63	12	21	4,5	3,4	3,70
M 5	0,8	70	14	25	6	4,9	4,65
M 6	1	80	16	30	6	4,9	5,55
M 8	1,25	90	18	35	8	6,2	7,40
M 10	1,5	100	20	39	10	8	9,30

* The recommended core hole diameters are for reference purpose only.

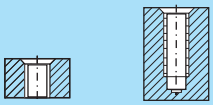
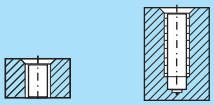
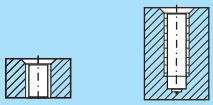
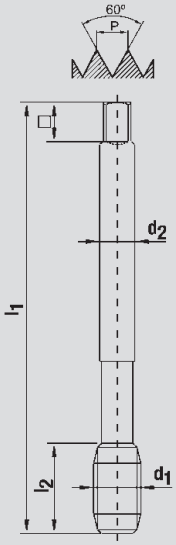
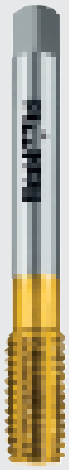
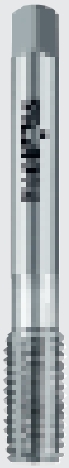
PM DIN 371 M

Version	Form E, 1,5-2 Threads Chamfer, from M 5 with Oil Flutes	Form F, 1-1,5 Threads Chamfer, from M 5 with Oil Flutes	Form C, 2-3 Threads Chamfer, from M 5 with Oil Flutes	Form C, 2-3 Threads Chamfer, from M 5 with Oil Flutes	Form E, 1,5-2 Threads Chamfer, from M 5 with Oil Flutes
Type of Hole					
Surface Treatment	TiN-Coating	TiN-Coating	TiN-Coating	TiCN-Coating	TiCN-Coating
Catalogue-No.	4065/80	4067/80	4076/80	4069/81	4072/81
Tolerance	6HX	6HX	6HX	6HX	6HX
	Formex TiN	Formex TiN	Formex TiN	Formex TiCN	Formex TiCN
Application add. see Page 16, 17	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²	Stainless Steels (V2A- and V4A-Steels)	
Coolant	Cutting Oil or Emulsion		Cutting Oil	Cutting Oil or Emulsion	
Cutting Speed v_c	20 - 30 m/min		20 - 30 m/min	10 - 20 m/min	

d_1	P (mm)	l_1	l_2	l_3	d_2	□	* ⌀D
M 3	0,5	56	10	18	3,5	2,7	2,80
M 4	0,7	63	12	21	4,5	3,4	3,70
M 5	0,8	70	14	25	6	4,9	4,65
M 6	1	80	16	30	6	4,9	5,55
M 8	1,25	90	18	35	8	6,2	7,40
M 10	1,5	100	20	39	10	8	9,30

* The recommended core hole diameters are for reference purpose only.

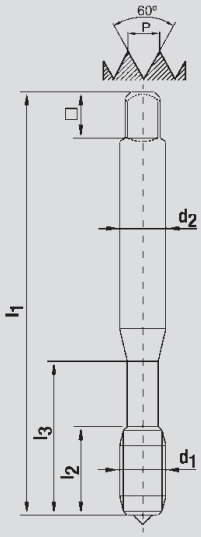
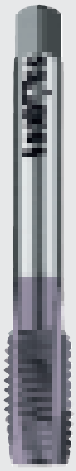
HSSE DIN 376 **M**

Version	Form C, 2 - 3 Threads Chamfer, with Oil Flutes	Form C, 2 - 3 Threads Chamfer, with Oil Flutes, KA = Axial Internal Cooling	Form C, 2 - 3 Threads Chamfer, with Oil Flutes
Type of Hole			
Surface Treatment	TiN-Coating	TiN-Coating	CrN-Coating
Catalogue-No.	6060/80	B6060/80	6064/79
Tolerance	6HX	6HX	6HX
	Formex TiN 	Formex TiN with KA 	Formex CrN 
Application add. see Page 16, 17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		Aluminium Alloys, Copper Alloys
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion
Cutting Speed v_c	20 - 30 m/min		30 - 40 m/min

d_1	P (mm)	l_1	l_2	d_2	□	* ⌀D
M 12	1,75	110	22	9	7	11,20
M 16	2	110	26	12	9	15,10
M 20	2,5	140	30	16	12	18,90

* The recommended core hole diameters are for reference purpose only.

HSSE DIN 371/376 **M**

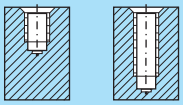
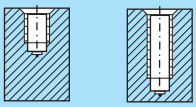
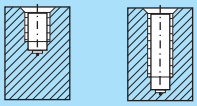
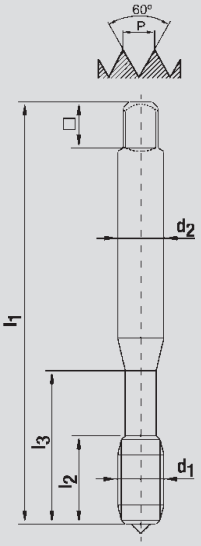
Version	Straight Flute Form B, 4 - 5 Threads Chamfer, MKS and Dry	Straight Flute Form B, 4 - 5 Threads Chamfer, MKS with KR = Radial Internal Cooling Size M8 and up	Straight Flute, Form B, 4 - 5 Threads Chamfer, MKS and Dry
Type of Hole			
Surface Treatment	TiAlN-Coating	TiAlN-Coating	TiAlN-Coating
Catalogue-No.	7270/70	B7270/70	7271/70
Tolerance	6HX	6HX	6HX
	Rapid TM 	Rapid TM with KR 	Rapid TM 

Application and Cutting Speed in Dry Cutting / MKS

Dry Cutting / MKS: **For further details refer to Page 158**		Dry	MKS = Minim. Lubrication Syst.
	Unalloyed Steels; Tensile Strength ≤ 1000 N/mm²	v_c = 10 - 20 m/min	v_c = 20 - 50 m/min
	Nodular- and Malleable Cast Iron	v_c = 15 - 30 m/min	v_c = 20 - 50 m/min
	add. see Page 10, 11		

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀Di
M 3	0,5	56	10	18	3,5	2,7	2,50
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50
M 12	1,75	110	22		9	7	10,20
M 16	2	110	26		12	9	14,00

HSSE DIN 371/376 **M**

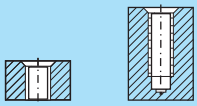
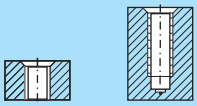
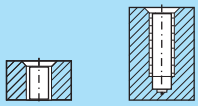
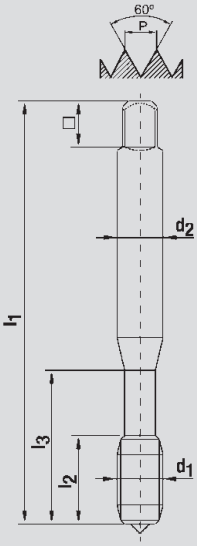
Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, MKS and Dry	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, MKS with KA = Axial Internal Cooling Size M6 and up	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, MKS and Dry
Type of Hole			
Surface Treatment	TiAlN-Coating	TiAlN-Coating	TiAlN-Coating
Catalogue-No.	4340/70	B4340/70	6340/70
Tolerance	6HX	6HX	6HX
	Grulo TM 	Grulo TM with KA 	Grulo TM

Application and Cutting Speed in Dry Cutting / MKS

Dry Cutting / MKS: **For further details refer to Page 158**		Dry	MKS = Minim. Lubrication Syst.
	Unalloyed Steels; Tensile Strength ≤ 1000 N/mm²	v_c = 10 - 20 m/min	v_c = 20 - 50 m/min
	Nodular- and Malleable Cast Iron	v_c = 15 - 30 m/min	v_c = 20 - 50 m/min
	add. see Page 10, 11		

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3	0,5	56	7	18	3,5	2,7	2,50
M 4	0,7	63	8	21	4,5	3,4	3,30
M 5	0,8	70	10	25	6	4,9	4,20
M 6	1	80	12	30	6	4,9	5,00
M 8	1,25	90	15	35	8	6,2	6,80
M 10	1,5	100	18	39	10	8	8,50
M 12	1,75	110	18		9	7	10,20
M 16	2	110	20		12	9	14,00

HSSE / PM DIN 371/376 **M**

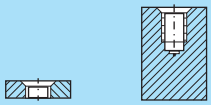
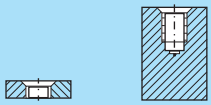
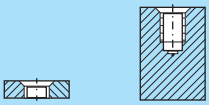
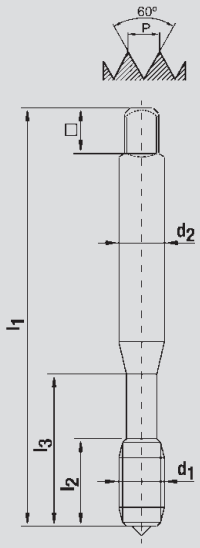
Version	Straight Flute, Form C, 2 - 3 Threads Chamfer, MKS and Dry	Straight Flute, Form C, 2 - 3 Threads Chamfer, MKS with KA = Axial Internal Cooling Size M6 and up	Straight Flute, Form C, 2 - 3 Threads Chamfer, MKS and Dry
Type of Hole			
Surface Treatment	TiAlN-Coating	TiAlN-Coating	TiAlN-Coating
Catalogue-No.	4358/70	B4358/70	6308/70
Tolerance	6HX	6HX	6HX
	C-GG TM	C-GG TM with KA	C-GG TM

Application and Cutting Speed in Dry Cutting / MKS

Dry Cutting / MKS:		Dry	MKS = Minim. Lubrication Syst.
For further details refer to Page 158	Grey-, Nodular- and Malleable Cast Iron	v_c = 15 - 30 m/min	v_c = 20 - 50 m/min
	add. see Page 10, 11		

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3	0,5	56	10	18	3,5	2,7	2,50
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 8	1,25	90	18	35	8	6,2	6,80
M 10	1,5	100	20	39	10	8	8,50
M 12	1,75	110	22		9	7	10,20
M 16	2	110	26		12	9	14,00

HSSE DIN 371 **M**

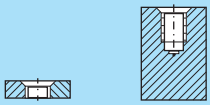
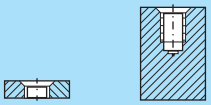
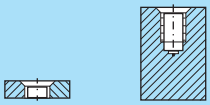
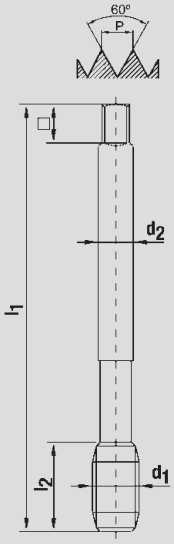
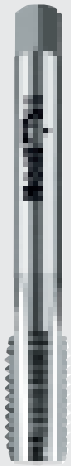
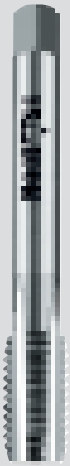
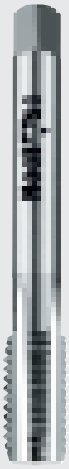
Version	Straight Flute, Form A, 5 - 6 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute Form C, 2 - 3 Threads Chamfer, Left Hand Version
Type of Hole				
Surface Treatment				
Catalogue-No.	4050	4052	4052	4052/LH Left
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G	ISO 2-6H-LH
		A	C	C	C-LH
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			
Coolant	Cutting Oil or Emulsion			
Cutting Speed v_c	15 - 20 m/min			

d_1	P (mm)	l_1	l_2	l_3	d_2	□	ø D
M 1	0,25	40	5,5		2,5	2,1	0,75
M 1,1	0,25	40	5,5		2,5	2,1	0,85
M 1,2	0,25	40	5,5		2,5	2,1	0,95
M 1,4	0,3	40	7		2,5	2,1	1,10
M 1,6	0,35	40	8		2,5	2,1	1,25
(M 1,7)	0,35	40	8		2,5	2,1	1,35
M 1,8	0,35	40	8		2,5	2,1	1,45
M 2	0,4	45	8		2,8	2,1	1,60
M 2,2	0,45	45	9		2,8	2,1	1,75
(M 2,3)	0,4	45	9		2,8	2,1	1,90
M 2,5	0,45	50	9		2,8	2,1	2,05
(M 2,6)	0,45	50	9		2,8	2,1	2,15
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90

d_1	P (mm)	l_1	l_2	l_3	d_2	□	ø D
M 4	0,7	63	12	21	4,5	3,4	3,30
M 4,5	0,75	70	14	25	6	4,9	3,70
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 7	1	80	16	30	7	5,5	6,00
M 8	1,25	90	18	35	8	6,2	6,80
M 9	1,25	90	18	35	9	7	7,80
M 10	1,5	100	20	39	10	8	8,50

( ) DIN Profile not ISO

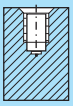
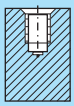
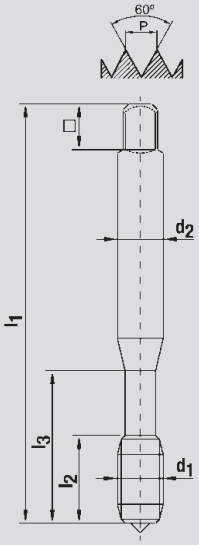
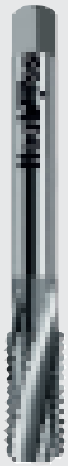
HSSE DIN 376 **M**

Version	Straight Flute, Form A, 5 - 6 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer, Left Hand Version
Type of Hole				
Surface Treatment				
Catalogue-No.	6000	6002	6002	6002/LH Left
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G	ISO 2-6H-LH
	A 	C 	C 	C-LH
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			
Coolant	Cutting Oil or Emulsion			
Cutting Speed v_c	15 - 20 m/min			

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 3	0,5	56	10	2,2		2,50
M 3,5	0,6	56	11	2,5	2,1	2,90
M 4	0,7	63	12	2,8	2,1	3,30
M 5	0,8	70	14	3,5	2,7	4,20
M 6	1	80	16	4,5	3,4	5,00
M 7	1	80	16	5,5	4,3	6,00
M 8	1,25	90	18	6	4,9	6,80
M 9	1,25	90	18	7	5,5	7,80
M 10	1,5	100	20	7	5,5	8,50
M 11	1,5	100	20	8	6,2	9,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 20	2,5	140	30	16	12	17,50
M 22	2,5	140	30	18	14,5	19,50
M 24	3	160	36	18	14,5	21,00
M 27	3	160	36	20	16	24,00
M 30	3,5	180	40	22	18	26,50
M 33	3,5	180	40	25	20	29,50
M 36	4	200	45	28	22	32,00
M 39	4	200	45	32	24	35,00
M 42	4,5	200	50	32	24	37,50
M 45	4,5	220	50	36	29	40,50
M 48	5	250	56	36	29	43,00
M 52	5	250	56	40	32	47,00

HSSE DIN 371/376 **M**

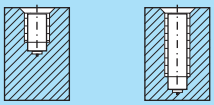
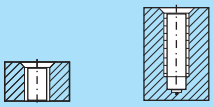
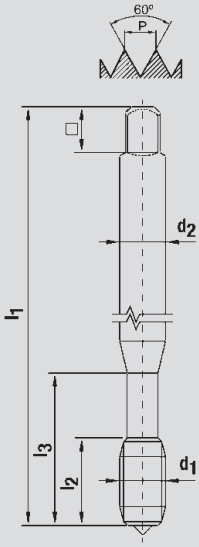
Version	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment		
Catalogue-No.	4230	6030
Tolerance	ISO 2-6H	ISO 2-6H
	Rsp 	Rsp 
Application add. see Page 10, 11	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3	0,5	56	10	18	3,5	2,7	2,50
M 3,5	0,6	56	10	20	4	3	2,90
M 4	0,7	63	12	21	4,5	3,4	3,30
M 5	0,8	70	14	25	6	4,9	4,20
M 6	1	80	16	30	6	4,9	5,00
M 7	1	80	16	30	7	5,5	6,00
M 8	1,25	90	18	35	8	6,2	6,80
M 9	1,25	90	18	35	9	7	7,80
M 10	1,5	100	20	39	10	8	7,80

( ) DIN Profile not ISO

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 6	1	80	16	4,5	3,4	5,00
M 8	1,25	90	18	6	4,9	6,80
M 10	1,5	100	20	7	5,5	8,50
M 12	1,75	110	22	9	7	10,20
M 14	2	110	24	11	9	12,00
M 16	2	110	26	12	9	14,00
M 18	2,5	125	30	14	11	15,50
M 20	2,5	140	30	16	12	17,50
M 22	2,5	140	30	18	14,5	19,50
M 24	3	160	36	18	14,5	21,00
M 27	3	160	36	20	16	24,00
M 30	3,5	180	40	22	18	26,50

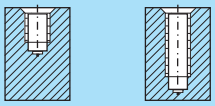
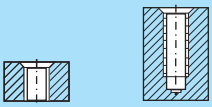
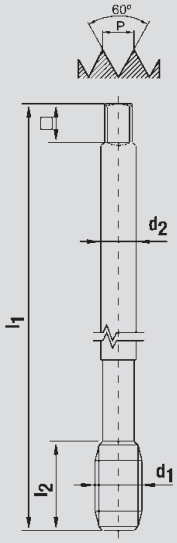
HSSE Neoboss specs. ≈ DIN 371 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, Total Length ≈ 2 x DIN 371	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, Total Length ≈ 2 x DIN 371	Straight Flute, Form C, 2 - 3 Threads Chamfer, Total Length ≈ 2 x DIN 371
Type of Hole			
Surface Treatment			Nitrided
Catalogue-No.	4071	4430	4158/06
Tolerance	ISO 2-6H	ISO 2-6H	6HX
	Rapid	Grulo	C-GG
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		Grey Cast Iron
Coolant	Cutting Oil or Emulsion		Cutting Oil
Cutting Speed v_c	10 - 20 m/min		10 - 20 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 4	0,7	125	12	21	4,5	3,4	3,30
M 5	0,8	140	14	25	6	4,9	4,20
M 6	1	160	16	30	6	4,9	5,00

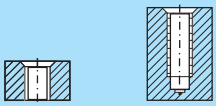
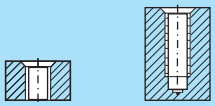
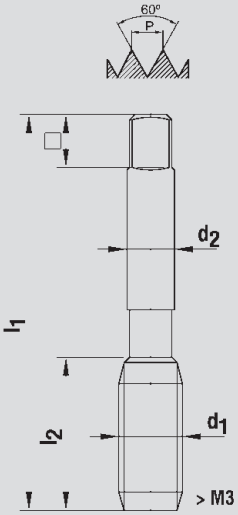
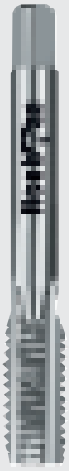
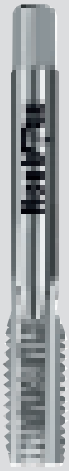
Machine Taps with extra long Shanks
Metric ISO Standard Thread DIN 13

HSSE Neoboss specs. ≈ DIN 376 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, Total Length ≈ 2 x DIN 376	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, Total Length ≈ 2 x DIN 376	Straight Flute, Form C, 2 - 3 Threads Chamfer Total Length ≈ 2 x DIN 376
Type of Hole			
Surface Treatment			Nitrided
Catalogue-No.	6071	6130	6108/06
Tolerance	ISO 2-6H	ISO 2-6H	6HX
	Rapid 	Grulo 	C-GG
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		Grey Cast Iron
Coolant	Cutting Oil or Emulsion		Cutting Oil
Cutting Speed v_c	10 - 20 m/min		10 - 20 m/min

d_1	P (mm)	l_1	l_2	d_2	□	øDi
M 8	1,25	180	18	6	4,9	6,80
M 10	1,5	200	20	7	5,5	8,50
M 12	1,75	220	22	9	7	10,20
M 14	2	220	24	11	9	12,00
M 16	2	220	26	12	9	14,00

HSS ≈ DIN 352 **M**

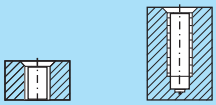
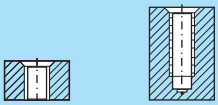
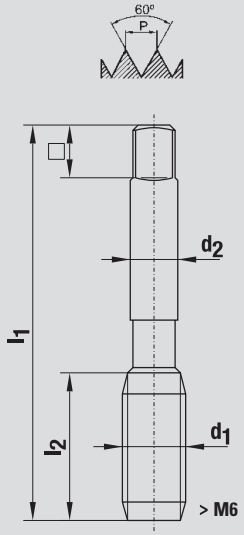
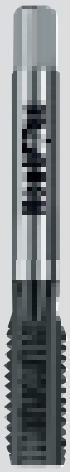
Version	Neoboss Graduation *No. 3 in ISO 2-6H		Neoboss Graduation *No. 3 in ISO 2-6H-LH Left Hand Version	
Type of Hole				
Surface Treatment				
Catalogue-No.	2000	2000	2000/LH Left	2000/LH Left
Tolerance	ISO 2-6H		ISO 2-6H-LH	
	Complete Set	V à3 M à3 F à3*	Complete Set 	V à3 M à3 F à3* 
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			

d_1	P (mm)	l_1	l_2	l_3	d_2	□	ø D
M 1	0,25	32	5,5		2,5	2,1	0,75
M 1,1	0,25	32	5,5		2,5	2,1	0,85
M 1,2	0,25	32	5,5		2,5	2,1	0,95
M 1,4	0,3	32	7		2,5	2,1	1,10
M 1,6	0,35	32	8		2,5	2,1	1,25
(M 1,7)	0,35	32	8		2,5	2,1	1,35
M 1,8	0,35	32	8		2,5	2,1	1,45
M 2	0,4	36	8		2,8	2,1	1,60
M 2,2	0,45	36	9		2,8	2,1	1,75
(M 2,3)	0,4	36	9		2,8	2,1	1,90
M 2,5	0,45	40	9		2,8	2,1	2,05
(M 2,6)	0,45	40	9		2,8	2,1	2,15
M 3	0,5	41,5	12,2		3,5	2,7	2,50
M 3,5	0,6	45	14		4	3	2,90
M 4	0,7	46,4	14		4,5	3,4	3,30
M 4,5	0,75	50	16		6	4,9	3,70
M 5	0,8	50	16		6	4,9	4,20
M 6	1	52,5	18		6	4,9	5,00
M 7	1	50	18		6	4,9	6,00
M 8	1,25	63	18		6	4,9	6,80
M 9	1,25	63	18		7	5,5	7,80

d_1	P (mm)	l_1	l_2	d_2	□	ø D
M 10	1,5	70	23	7	5,5	8,50
M 11	1,5	70	23	8	6,2	9,50
M 12	1,75	75	28	9	7	10,20
M 14	2	80	30	11	9	12,00
M 16	2	80	30	12	9	14,00
M 18	2,5	95	35	14	11	15,50
M 20	2,5	95	34	16	12	17,50
M 22	2,5	100	34	18	14,5	19,50
M 24	3	110	38	18	14,5	21,00
M 27	3	110	38	20	16	24,00
M 30	3,5	125	40	22	18	26,50
M 33	3,5	125	40	25	20	29,50
M 36	4	150	45	28	22	32,00
M 39	4	150	50	32	24	35,00
M 42	4,5	150	50	32	24	37,50
M 45	4,5	160	50	36	29	40,50
M 48	5	180	56	36	29	43,00
M 52	5	180	56	40	32	47,00

( ) DIN Profile not ISO

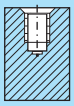
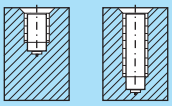
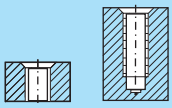
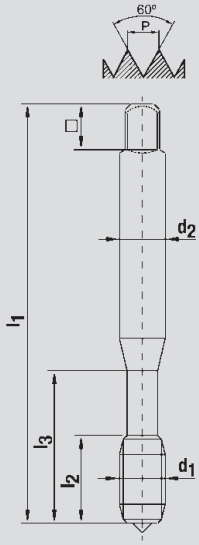
HSSE ≈ DIN 352 **M**

Version	Neoboss Graduation Taper with Pilot *No. 3 in ISO 2-6H		Neoboss Graduation Taper with Pilot *No. 3 in Tolerance 6HX	
Type of Hole				
Surface Treatment	Nitrided		Nitrided	
Catalogue-No.	2005/06	2005/06	2006/06	2006/06
Tolerance	ISO 2-6H		6HX	
	Complete Set	V à3 M à3 F à3*	Complete Set	V à3 M à3 F à3*
				
Application	Unalloyed Steels; Tensile Strength ≤ 1000 N/mm²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²	

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 3	0,5	41,5	12,2	3,5	2,7	2,50
M 4	0,7	46,4	14	4,5	3,4	3,30
M 5	0,8	50	16	6	4,9	4,20
M 6	1	52,5	18	6	4,9	5,00
M 8	1,25	63	18	6	4,9	6,80
M 10	1,5	70	23	7	5,5	8,50
M 12	1,75	75	28	9	7	10,20
M 14	2	80	30	11	9	12,00
M 16	2	80	30	12	9	14,00
M 20	2,5	95	34	16	12	17,50

Short Machine Taps
Metric ISO Standard Thread DIN 13

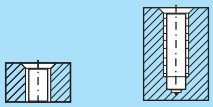
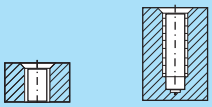
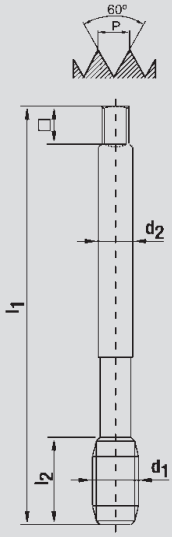
HSSE ≈ DIN 352 **M**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, with Interrupted Threads
Type of Hole					
Surface Treatment				Nitrided	
Catalogue-No.	2010	2030	2040	2008/06	2010/08
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H	6HX	ISO 2-6H
	B	Rsp	Grulo	C-GG	B-a.Z.
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			Grey Cast Iron	Aluminium, Copper, Copper Alloys
Coolant	Cutting Oil or Emulsion			Cutting Oil	Cutting Oil or Emulsion
Cutting Speed v_c	10 - 20 m/min			10 - 15 m/min	20 - 40 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
M 3	0,5	40	11	18	3,5	2,7	2,50
M 4	0,7	45	13	21	4,5	3,4	3,30
M 5	0,8	50	16	24	6	4,9	4,20
M 6	1	56	18	27	6	4,9	5,00
M 8	1,25	63	18		6	4,9	6,80
M 10	1,5	70	23		7	5,5	8,50
M 12	1,75	75	28		9	7	10,20

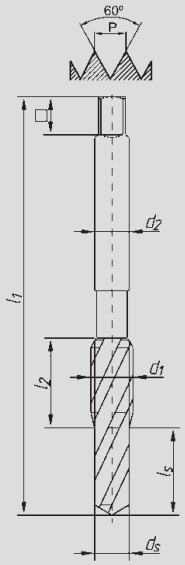
Short Machine Taps for Turning Centers
Metric ISO Standard Thread DIN 13

HSSE Neoboss specs. **M**

Version	2-Flutes, Form C, 2 - 3 Threads Chamfer	2-Flutes, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment		
Catalogue-No.	4920	4920
Tolerance	ISO 2-6H	ISO 3-6G
	C-Ms 	C-Ms
Application	Copper Alloys, Short Chipping	
Coolant	Dry, Air or Cutting Oil	
Cutting Speed v_c	20 - 30 m/min	

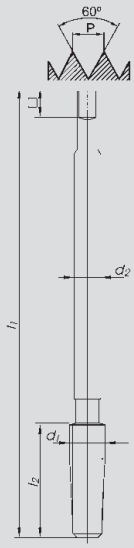
d_1	P (mm)	l_1	l_2	d_2	□	øD_1
M 2,5	0,45	41	8	2,8	1,8	2,05
(M 2,6)	0,45	41	8	2,8	1,8	2,15
M 3	0,5	41	9	3	2,1	2,50
M 3,5	0,6	49	10	3,5	2,4	2,90
M 4	0,7	49	12	4	2,7	3,30
M 5	0,8	56	15	5	3,4	4,20
M 6	1	62	17	6	4	5,00

( ) DIN Profile not ISO

Version	Neobosscom is a combined Spiral-Machine Tap, Core Hole and Thread are produced with Neobosscom in one Operation without Tool Change. Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	4659	
Tolerance	ISO 2-6H	
	Neobosscom	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	

d_1	P (mm)	l_1	l_2	l_s	d_2	d_s	□
M 3	0,5	62	12,5	9	3,5	2,55	2,7
M 3,5	0,6	66	16	10	4	2,95	3
M 4	0,7	66	16	10	4,5	3,36	3,4
M 5	0,8	76	18	12,5	6	4,26	4,9
M 6	1	81	20	14	6	5,05	4,9
M 8	1,25	93	12	20	6	6,80	4,9
M 10	1,5	99	14	22	7	8,55	5,5
M 12	1,75	106	16	25	9	10,30	7
M 14	2	114	18	28	11	12,10	9
M 16	2	123	20	32	12	14,10	9

HSSE DIN 357 **M**

Version	Straight Flute, Long Chamfer = 2/3 of Thread Length	
Type of Hole		
Surface Treatment		
Catalogue-No.	8000	
Tolerance	ISO 2-6H	
		
Application	Unalloyed and Alloyed Steels; Tensile Strength ≤ 900 N/mm²	

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 3	0,5	70	22	2,2		2,50
M 3,5	0,6	80	25	2,5	2,1	2,90
M 4	0,7	90	25	2,8	2,1	3,30
M 5	0,8	100	28	3,5	2,7	4,20
M 6	1	110	32	4,5	3,4	5,00
M 8	1,25	125	40	6	4,9	6,80
M 10	1,5	140	45	7	5,5	8,50
M 12	1,75	180	50	9	7	10,20
M 14	2	200	56	11	9	12,00
M 16	2	200	63	12	9	14,00
M 20	2,5	250	70	16	12	17,50

Contents

	Page
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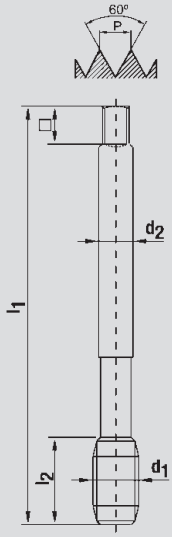
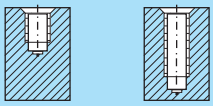
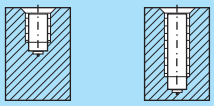
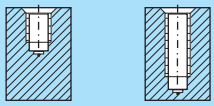
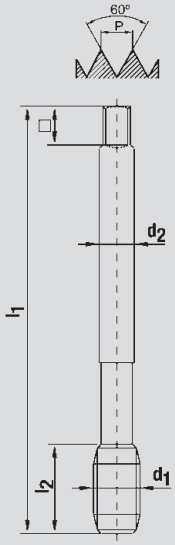
Roll Taps	90
Machine Taps for Dry Cutting / MKS	91
Hand Taps HSS DIN 2181	96 - 97
Nut Taps ≈ DIN 357	98

HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer, KR = Radial Internal Cooling
Type of Hole			
Surface Treatment	TiN-Coating	TiN-Coating	TiN-Coating
Catalogue-No.	7275/80	7275/80	B7275/80
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H
	Rapid-UNI	Rapid-UNI	Rapid-UNI with KR
Application add. see Page 10, 11	UNIversal Use in a Braod Material Range		
Coolant	see Page 10		
Cutting Speed v_c	see Page 10		

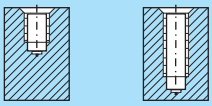
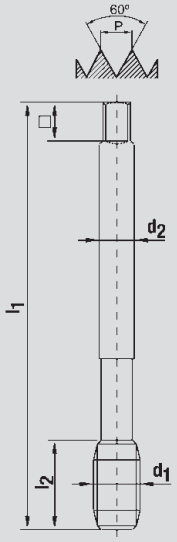
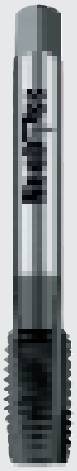
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 8 x	1	90	15	6	4,9	7,00
M 10 x	1	90	18	7	5,5	9,00
M 10 x	1,25	100	18	7	5,5	8,80
M 12 x	1	100	18	9	7	11,00
M 12 x	1,5	100	18	9	7	10,50
M 14 x	1,5	100	18	11	9	12,50
M 16 x	1,5	100	18	12	9	14,50
M 18 x	1,5	110	20	14	11	16,50
M 20 x	1,5	125	24	16	12	18,50

HSSE DIN 374 **MF**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer, KA = Axial Internal Cooling
Type of Hole			
Surface Treatment	TiN-Coating	TiN-Coating	TiN-Coating
Catalogue-No.	6345/80	6345/80	B6345/80
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H
	Grulo-UNI 	Grulo-UNI 	Grulo-UNI with KA
Application add. see Page 10, 11	UNIversal Use in a Braod Material Range		
Coolant	see Page 10		
Cutting Speed v_c	see Page 10		

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 12	x	1	100	18	9	7	11,00
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50

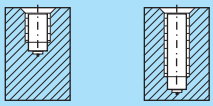
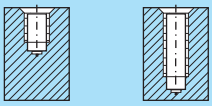
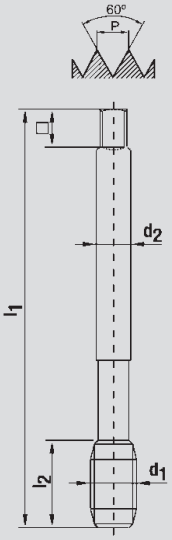
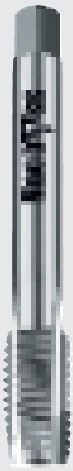
HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	Steam Tempered	Steam Tempered
Catalogue-No.	7011/78	6040/78
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid Vap. 	Grulo Vap.
Application add. see Page 10, 11	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1		P (mm)	l_1	l_2	d_2	□	ø D
M 6	x	0,75	80	12	4,5	3,4	5,20
M 8	x	0,75	80	15	6	4,9	7,20
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 12	x	1	100	18	9	7	11,00
M 12	x	1,25	100	18	9	7	10,80
M 12	x	1,5	100	18	9	7	10,50

d_1		P (mm)	l_1	l_2	d_2	□	ø D
M 14	x	1,25	100	18	11	9	12,80
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50
M 22	x	1,5	125	24	18	14,5	20,50
M 24	x	1,5	140	24	18	14,5	22,50

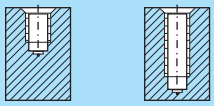
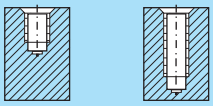
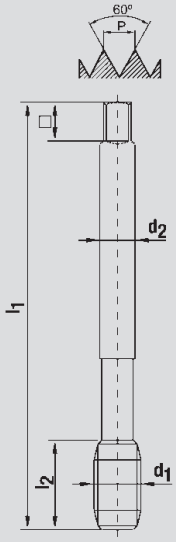
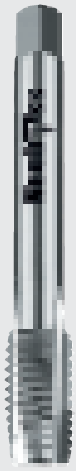
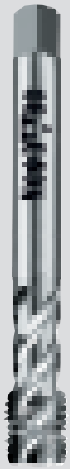
HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment			
Catalogue-No.	7011	6040	6040
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G
	Rapid 	Grulo	Grulo
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 20 m/min		

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 3	x	0,35	56	8	2,2		2,65
M 3,5	x	0,35	56	9	2,5	2,1	3,15
M 4	x	0,35	63	10	2,8	2,1	3,65
M 4	x	0,5	63	10	2,8	2,1	3,50
M 4,5	x	0,5	70	12	3,5	2,7	4,00
M 5	x	0,5	70	12	3,5	2,7	4,50
M 6	x	0,5	80	12	4,5	3,4	5,50
M 6	x	0,75	80	12	4,5	3,4	5,20
M 7	x	0,75	80	12	5,5	4,3	6,20
M 8	x	0,5	80	15	6	4,9	7,50
M 8	x	0,75	80	15	6	4,9	7,20
M 8	x	1	90	15	6	4,9	7,00
M 9	x	0,75	80	18	7	5,5	8,20
M 9	x	1	90	18	7	5,5	8,00

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 10	x	0,5	90	18	7	5,5	9,50
M 10	x	0,75	90	18	7	5,5	9,20
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 11	x	1	90	18	8	6,2	10,00
M 12	x	0,5	100	18	9	7	11,50
M 12	x	0,75	100	18	9	7	11,20
M 12	x	1	100	18	9	7	11,00
M 12	x	1,25	100	18	9	7	10,80
M 12	x	1,5	100	18	9	7	10,50
M 13	x	1	100	18	11	9	12,00
M 14	x	0,75	100	18	11	9	13,20
M 14	x	1	100	18	11	9	13,00
M 14	x	1,25	100	18	11	9	12,80

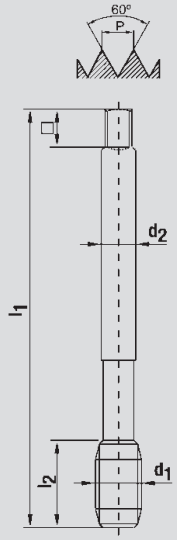
HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment			
Catalogue-No.	7011	6040	6040
Tolerance	ISO 2-6H	ISO 2-6H	ISO 3-6G
	Rapid 	Grulo 	Grulo
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 20 m/min		

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 14	x	1,5	100	18	11	9	12,50
M 15	x	1	100	18	12	9	14,00
M 15	x	1,5	100	18	12	9	13,50
M 16	x	1	100	18	12	9	15,00
M 16	x	1,5	100	18	12	9	14,50
M 17	x	1	100	18	12	9	16,00
M 18	x	1	110	20	14	11	17,00
M 18	x	1,5	110	20	14	11	16,50
M 18	x	2	125	20	14	11	16,00
M 20	x	1	125	24	16	12	19,00
M 20	x	1,5	125	24	16	12	18,50
M 20	x	2	140	24	16	12	18,00
M 22	x	1	125	24	18	14,5	21,00
M 22	x	1,5	125	24	18	14,5	20,50

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 22	x	2	140	24	18	14,5	20,00
M 24	x	1	140	24	18	14,5	23,00
M 24	x	1,5	140	24	18	14,5	22,50
M 24	x	2	140	24	18	14,5	22,00
M 25	x	1,5	140	24	18	14,5	23,50
M 26	x	1,5	140	24	18	14,5	24,50
M 27	x	1,5	140	28	20	16	25,50
M 27	x	2	140	28	20	16	25,00
M 28	x	1,5	140	28	20	16	26,50
M 30	x	1	150	28	22	18	29,00
M 30	x	1,5	150	28	22	18	28,50
M 30	x	2	150	28	22	18	28,00
M 32	x	1,5	150	28	22	18	30,50
M 33	x	1,5	160	28	25	20	31,50

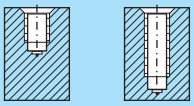
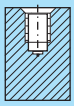
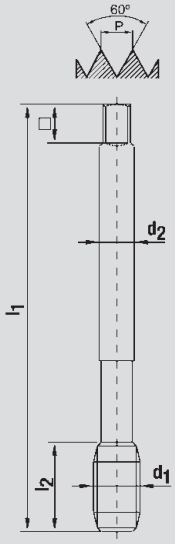
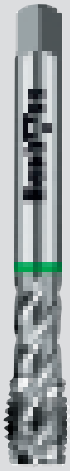
HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	7011	
Tolerance	ISO 2-6H	
	Rapid 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 33	x 2	160	28	25	20	31,00
M 34	x 1,5	170	28	28	22	32,50
M 35	x 1,5	170	28	28	22	33,50
M 36	x 1,5	170	28	28	22	34,50
M 36	x 2	170	28	28	22	34,00
M 36	x 3	200	36	28	22	33,00

d_1	P (mm)	l_1	l_2	d_2	□	⌀D

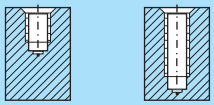
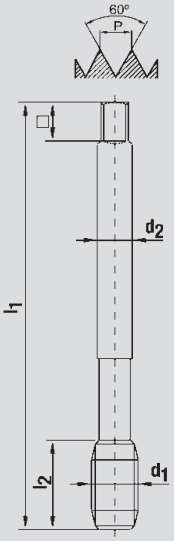
HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment			
Catalogue-No.	7275	6345	6055
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H
	Rapid-VA-G	Grulo-Spez.-G 	Rsp-Spez.-G
Application add. see Page 12, 13	Aluminium Alloys, Copper Alloys		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 30 m/min		

d_1		P (mm)	l_1	l_2	d_2	□	øD
M 5	x	0,5	70	12	3,5	2,7	4,50
M 6	x	0,5	80	12	4,5	3,4	5,50
M 6	x	0,75	80	12	4,5	3,4	5,20
M 7	x	0,75	80	12	5,5	4,3	6,20
M 8	x	0,75	80	15	6	4,9	7,20
M 8	x	1	90	15	6	4,9	7,00
M 10	x	0,75	90	18	7	5,5	9,20
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80

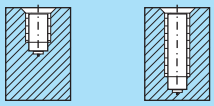
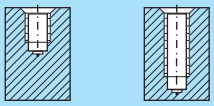
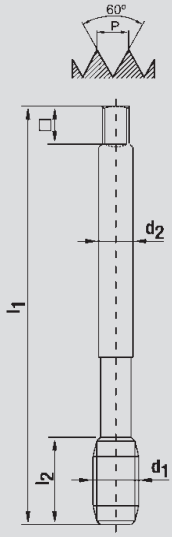
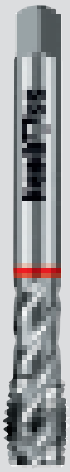
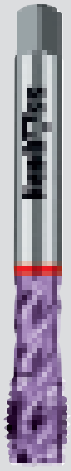
d_1		P (mm)	l_1	l_2	d_2	□	øD
M 12	x	1	100	18	9	7	11,00
M 12	x	1,25	100	18	9	7	10,80
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50
M 22	x	1,5	125	24	18	14,5	20,50
M 24	x	1,5	140	24	18	14,5	22,50

HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	Nitrided	
Catalogue-No.	7055/06	6045
Tolerance	ISO 2-6H	ISO 2-6H
	Rapid-Spez. 	Grulo-Spez.
Application add. see Page 14, 15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

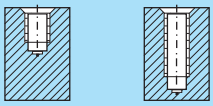
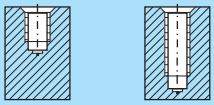
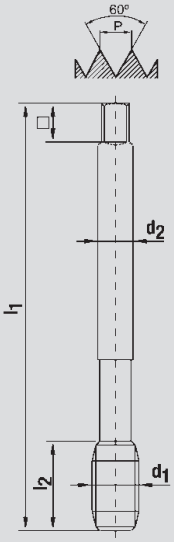
d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 6	x	0,75	80	12	4,5	3,4	5,20
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 12	x	1	100	18	9	7	11,00
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50
M 22	x	1,5	125	24	18	14,5	20,50
M 24	x	1,5	140	24	18	14,5	22,50

HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Nitrided		TiCN-Coating	TiCN-Coating
Catalogue-No.	7255/06	6245	7255/81	6245/81
Tolerance	ISO 2-6H	ISO 2-6H	ISO 2-6H	ISO 2-6H
	Rapid-Spez.-R	Grulo-Spez.-R 	Rapid-Spez.-R TiCN	Grulo-Spez.-R TiCN 
Application add. see Page 12, 13	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1400 N/mm²	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Special Cutting Oil	
Cutting Speed v_c	3 - 10 m/min		3 - 10 m/min	

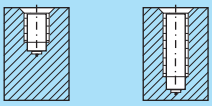
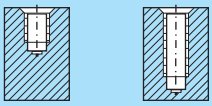
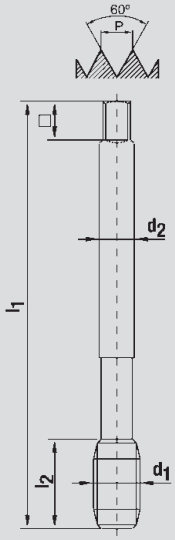
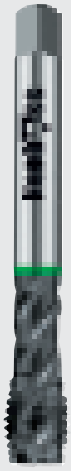
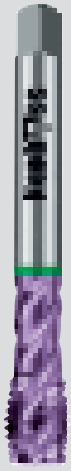
d_1		P (mm)	l_1	l_2	d_2	□	⌀D1
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 12	x	1	100	18	9	7	11,00
M 12	x	1,25	100	18	9	7	10,80
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50
M 22	x	1,5	125	24	18	14,5	20,50
M 24	x	1,5	140	24	18	14,5	22,50

HSSE / PM DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Steam Tempered	TiCN-Coating	Steam Tempered	TiCN-Coating
Catalogue-No.	7235/78	7235/81	6365/78	6365/81
Tolerance	6HX	6HX	6HX	6HX
	Rapid-V4A	Rapid-V4A TiCN	Grulo-V4A	Grulo-V4A TiCN
Application add. see Page 12, 13	Stainless Steels with High Chromium-Nickel-Content (VA-Steels)			
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	6 - 10 m/min	10 - 20 m/min	6 - 10 m/min	10 - 20 m/min

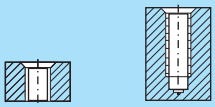
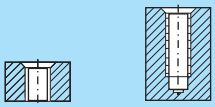
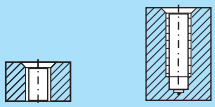
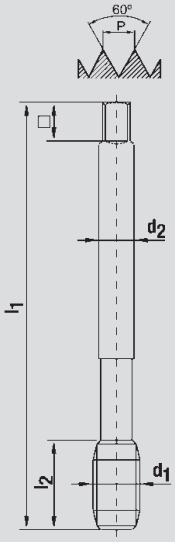
d_1		P (mm)	l_1	l_2	d_2	□	ø D
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50

HSSE DIN 374 **MF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Steam Tempered	TiCN-Coating	Steam Tempered	TiCN-Coating
Catalogue-No.	7375/78	7375/81	6445/78	6445/81
Tolerance	6HX	6HX	6HX	6HX
	Rapid-VA-G	Rapid-VA-G TiCN	Grulo-Spez.-G 	Grulo-Spez.-G TiCN 
Application add. see Page 12, 13	Stainless Steels (V2A-Steels); High Temperature Stainless Steels (V2A- and V4A-Steels)			
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	6 - 10 m/min	10 - 20 m/min	6 - 10 m/min	10 - 20 m/min

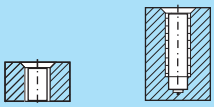
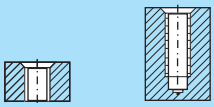
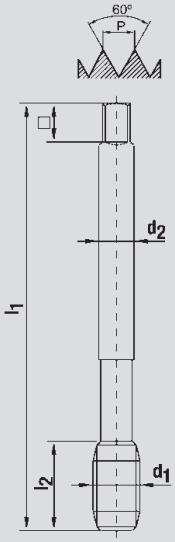
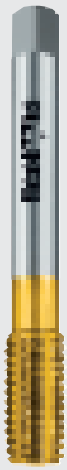
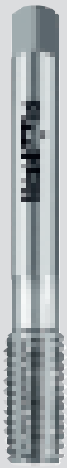
d_1		P (mm)	l_1	l_2	d_2	□	øD1
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50

HSSE / PM DIN 374 **MF**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer, KA = Axial Internal Cooling Size M8 and up
Type of Hole			
Surface Treatment	Nitrided	TiAlN-Coating	TiAlN-Coating
Catalogue-No.	6008/06	6308/70	B6308/70
Tolerance	6HX	6HX	6HX
	C-GG	C-GG TM	C-GG TM with KA
Application add. see Page 10, 11	Grey Cast Iron	Grey Cast Iron; Nodular Cast Iron; Malleable Cast Iron; Vermicular Cast Iron	
Coolant	Cutting Oil	Dry, Air or Emulsion	
Cutting Speed v_c	10 - 20 m/min	20 - 50 m/min	

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 6	x	0,75	80	12	4,5	3,4	5,20
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 12	x	1	100	18	9	7	11,00
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1,5	125	24	16	12	18,50
M 22	x	1,5	125	24	18	14,5	20,50
M 24	x	1,5	140	24	18	14,5	22,50

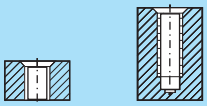
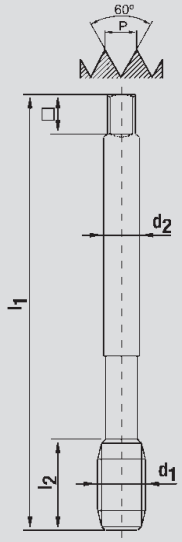
HSSE DIN 374 **MF**

Version	Form C, 2- 3 Threads Chamfer, with Oil Flutes	Form C, 2 - 3 Threads Chamfer, with Oil Flutes
Type of Hole		
Surface Treatment	TiN-Coating	CrN-Coating
Catalogue-No.	6060/80	6064/79
Tolerance	6HX	6HX
	Formex TiN 	Formex CrN 
Application add. see Page 16, 17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	Aluminium Alloys, Copper Alloys
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion
Cutting Speed v_c	20 - 30 m/min	30 - 40 m/min

d_1		P (mm)	l_1	l_2	d_2	□	* øD_1
M 8	x	1	90	15	6	4,9	7,50
M 10	x	1	90	18	7	5,5	9,50
M 10	x	1,25	100	18	7	5,5	9,40
M 12	x	1	100	18	9	7	11,50
M 12	x	1,5	100	18	9	7	11,25
M 14	x	1,5	100	18	11	9	13,25
M 16	x	1,5	100	18	12	9	15,25

* The recommended core hole diameters are for reference purpose only.

HSSE / PM DIN 374 **MF**

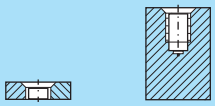
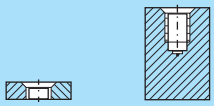
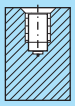
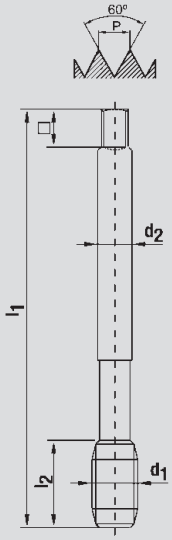
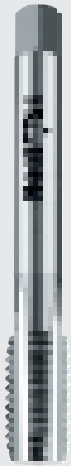
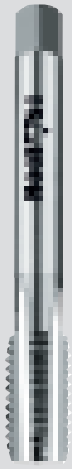
Version	Straight Flute, Form C, 2 - 3 Threads Chamfer, MKS and Dry	
Type of Hole		
Surface Treatment	TiAlN-Coating	
Catalogue-No.	6308/70	
Tolerance	6HX	
	C-GG TM 	

Application and Cutting Speed in Dry Cutting / MKS

Dry Cutting / MKS: **For further details refer to Page 158**		Dry	MKS = Minim. Lubrication Syst.
	Grey, Nodular, Malleable and Vermicular Cast Iron	v_c = 15 - 30 m/min	v_c = 20 - 40 m/min
	add. see Page 10, 11		

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 12	x	1	100	18	9	7	11,00
M 12	x	1,5	100	18	9	7	10,50
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1,5	100	18	12	9	14,50

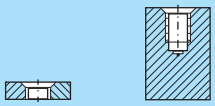
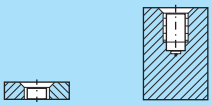
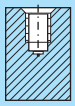
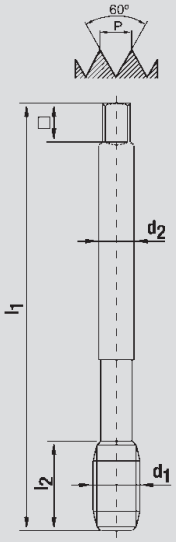
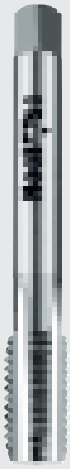
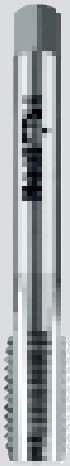
HSSE DIN 374 **MF**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (only up to M36)
Type of Hole			
Surface Treatment			
Catalogue-No.	6002	6002	6030
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H
	C 	C 	Rsp
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	15 - 20 m/min		

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 3	x	0,35	56	8	2,2		2,65
M 3,5	x	0,35	56	9	2,5	2,1	3,15
M 4	x	0,35	63	10	2,8	2,1	3,65
M 4	x	0,5	63	10	2,8	2,1	3,50
M 4,5	x	0,5	70	12	3,5	2,7	4,00
M 5	x	0,5	70	12	3,5	2,7	4,50
M 6	x	0,5	80	12	4,5	3,4	5,50
M 6	x	0,75	80	12	4,5	3,4	5,20
M 7	x	0,75	80	12	5,5	4,3	6,20
M 8	x	0,5	80	15	6	4,9	7,50
M 8	x	0,75	80	15	6	4,9	7,20
M 8	x	1	90	15	6	4,9	7,00
M 9	x	0,75	80	15	7	5,5	8,20
M 9	x	1	90	15	7	5,5	8,00

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 10	x	0,5	90	18	7	5,5	9,50
M 10	x	0,75	90	18	7	5,5	9,20
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 11	x	1	90	18	8	6,2	10,00
M 12	x	0,5	100	18	9	7	11,50
M 12	x	0,75	100	18	9	7	11,20
M 12	x	1	100	18	9	7	11,00
M 12	x	1,25	100	18	9	7	10,80
M 12	x	1,5	100	18	9	7	10,50
M 13	x	1	100	18	11	9	12,00
M 14	x	0,75	100	18	11	9	13,20
M 14	x	1	100	18	11	9	13,00
M 14	x	1,25	100	18	11	9	12,80

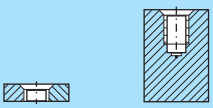
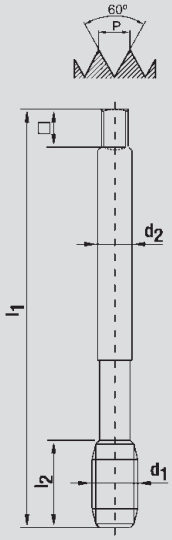
HSSE DIN 374 **MF**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (only up to M36)
Type of Hole			
Surface Treatment			
Catalogue-No.	6002	6002	6030
Tolerance	ISO 2-6H	ISO 3-6G	ISO 2-6H
	C 	C 	Rsp
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	15 - 20 m/min		

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 14	x 1,5	100	18	11	9	12,50
M 15	x 1	100	18	12	9	14,00
M 15	x 1,5	100	18	12	9	13,50
M 16	x 1	100	18	12	9	15,00
M 16	x 1,5	100	18	12	9	14,50
M 17	x 1	100	18	12	9	16,00
M 18	x 1	110	20	14	11	17,00
M 18	x 1,5	110	20	14	11	16,50
M 18	x 2	125	20	14	11	16,00
M 20	x 1	125	24	16	12	19,00
M 20	x 1,5	125	24	16	12	18,50
M 20	x 2	140	24	16	12	18,00
M 22	x 1	125	24	18	14,5	21,00
M 22	x 1,5	125	24	18	14,5	20,50

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 22	x 2	140	24	18	14,5	20,00
M 24	x 1	140	24	18	14,5	23,00
M 24	x 1,5	140	24	18	14,5	22,50
M 24	x 2	140	24	18	14,5	22,00
M 25	x 1,5	140	24	18	14,5	23,50
M 26	x 1,5	140	24	18	14,5	24,50
M 27	x 1,5	140	28	20	16	25,50
M 27	x 2	140	28	20	16	25,00
M 28	x 1,5	140	28	20	16	26,50
M 30	x 1	150	28	22	18	29,00
M 30	x 1,5	150	28	22	18	28,50
M 30	x 2	150	28	22	18	28,00
M 32	x 1,5	150	28	22	18	30,50
M 32	x 2	150	28	22	18	30,00

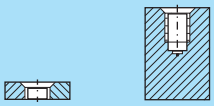
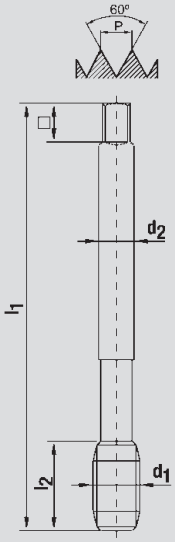
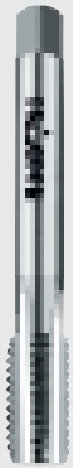
HSSE DIN 374 MF

Version	Straight Flute, Form C, 2- 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (only up to M36)
Type of Hole		
Surface Treatment		
Catalogue-No.	6002	6030
Tolerance	ISO 2-6H	ISO 2-6H
	C 	Rsp
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	15 - 20 m/min	

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 33	x	1,5	160	28	25	20	31,50
M 33	x	2	160	28	25	20	31,00
M 34	x	1,5	170	28	28	22	32,50
M 35	x	1,5	170	28	28	22	33,50
M 36	x	1,5	170	28	28	22	34,50
M 36	x	2	170	28	28	22	34,00
M 36	x	3	200	36	28	22	33,00
M 38	x	1,5	170	30	28	22	36,50
M 39	x	2	170	30	32	24	37,00
M 39	x	3	200	36	32	26	36,00
M 40	x	1,5	170	30	32	24	38,50

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 42	x	1,5	170	30	32	24	40,50
M 42	x	2	170	30	32	24	40,00
M 42	x	3	200	40	32	24	39,00
M 45	x	1,5	180	30	36	29	43,50
M 45	x	2	180	30	36	29	43,00
M 45	x	3	200	40	36	29	42,00
M 48	x	1,5	190	32	36	29	46,50
M 48	x	2	190	32	36	29	45,00
M 48	x	3	225	40	36	29	45,00
M 50	x	1,5	190	32	36	29	48,50
M 52	x	1,5	190	32	40	32	50,50

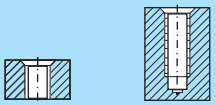
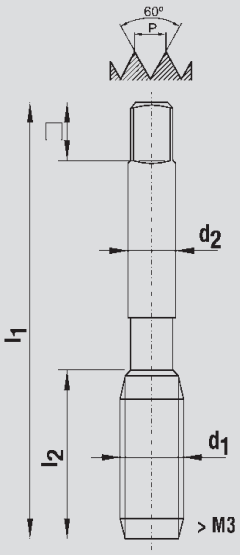
HSSE DIN 374 **MF**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer, Left Hand Version	
Type of Hole		
Surface Treatment		
Catalogue-No.	6002/LH Left	
Tolerance	ISO 2-6H-LH	
	C-LH 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 6	x	0,5	80	12	4,5	3,4	5,50
M 6	x	0,75	80	12	4,5	3,4	5,20
M 8	x	0,75	80	15	6	4,9	7,20
M 8	x	1	90	15	6	4,9	7,00
M 10	x	1	90	18	7	5,5	9,00
M 10	x	1,25	100	18	7	5,5	8,80
M 12	x	1	100	18	9	7	11,00
M 12	x	1,25	100	18	9	7	10,80
M 12	x	1,5	100	18	9	7	10,50

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 14	x	1	100	18	11	9	13,00
M 14	x	1,5	100	18	11	9	12,50
M 16	x	1	100	18	12	9	15,00
M 16	x	1,5	100	18	12	9	14,50
M 18	x	1,5	110	20	14	11	16,50
M 20	x	1	125	24	16	12	19,00
M 20	x	1,5	125	24	16	12	18,50
M 22	x	1,5	125	24	18	14,5	20,50
M 24	x	1,5	140	24	18	14,5	22,50

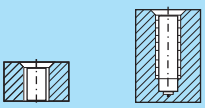
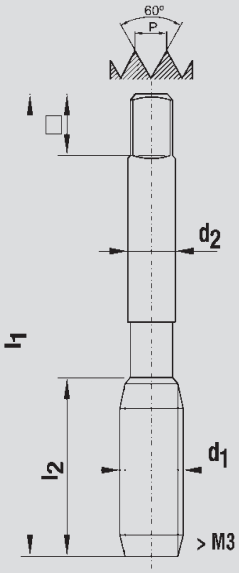
HSS DIN 2181 **MF**

Version	Neoboss Graduation *No. 3 in ISO 2-6H		
Type of Hole			
Surface Treatment			
Catalogue-No.	2000	2000	
Tolerance	ISO 2-6H		
	Complete Set 	Và2 Fà2* 	
Application	Unalloyed Steels; Zugfestigkeit ≤ 800 N/mm²		

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 2,5	x	0,35	40	9	2,8	2,1	2,15
(M 2,6)	x	0,35	40	8	2,8	2,1	2,25
M 3	x	0,35	41,5	9	3,5	2,7	2,65
M 3,5	x	0,35	45	10	4	3	3,15
M 4	x	0,35	46,4	10	4,5	3,4	3,65
M 4	x	0,5	46,4	10	4,5	3,4	3,50
M 4,5	x	0,5	50	12	6	4,9	4,00
M 5	x	0,5	50	12	6	4,9	4,50
M 6	x	0,5	52,5	12	6	4,9	5,50
M 6	x	0,75	52,5	12	6	4,9	5,20
M 7	x	0,75	50	12	6	4,9	6,20
M 8	x	0,5	50	12	6	4,9	7,50
M 8	x	0,75	50	12	6	4,9	7,20
M 8	x	1	56	18	6	4,9	7,00
M 9	x	0,75	56	16	7	5,5	8,20
M 9	x	1	63	18	7	5,5	8,00
M 10	x	0,5	63	16	7	5,5	9,50
M 10	x	0,75	63	16	7	5,5	9,20
M 10	x	1	63	18	7	5,5	9,00
M 10	x	1	70	18	7	5,5	8,80
M 11	x	1	63	18	8	6,2	10,00

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 12	x	0,5	70	16	9	7	11,50
M 12	x	0,75	70	16	9	7	11,20
M 12	x	1	70	20	9	7	11,00
M 12	x	1,25	70	20	9	7	10,80
M 12	x	1,5	70	20	9	7	10,50
M 13	x	1	70	20	11	9	12,00
M 13	x	1,5	70	20	11	9	11,50
M 14	x	0,75	70	16	11	9	13,20
M 14	x	1	70	20	11	9	13,00
M 14	x	1,25	70	20	11	9	12,80
M 14	x	1,5	70	20	11	9	12,50
M 15	x	1	80	20	12	9	14,00
M 15	x	1,5	80	20	12	9	13,50
M 16	x	1	80	20	12	9	15,00
M 16	x	1,5	80	20	12	9	14,50
M 17	x	1	80	20	12	9	16,00
M 18	x	1	80	22	14	11	17,00
M 18	x	1,5	80	22	14	11	16,50
M 18	x	2	80	22	14	11	16,00
M 20	x	1	80	22	16	12	19,00
M 20	x	1,5	80	22	16	12	18,50

HSS DIN 2181 **MF**

Version	Neoboss Graduation *No. 3 in ISO 2-6H		
Type of Hole			
Surface Treatment			
Catalogue-No.	2000	2000	
Tolerance	ISO 2-6H		
	Complete Set 	Và2 Fà2* 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 20	x 2	80	22	16	12	18,00
M 22	x 1	80	22	18	14,5	21,00
M 22	x 1,5	80	22	18	14,5	20,50
M 24	x 1	90	22	18	14,5	23,00
M 24	x 1,5	90	22	18	14,5	22,50
M 24	x 2	90	22	18	14,5	22,00
M 25	x 1,5	90	22	18	14,5	23,50
M 26	x 1,5	90	22	18	14,5	24,50
M 27	x 1,5	90	22	20	16	25,50
M 27	x 2	90	22	20	16	25,00
M 28	x 1,5	90	22	20	16	26,50
M 30	x 1	90	22	22	18	29,00
M 30	x 1,5	90	22	22	18	28,50
M 30	x 2	90	22	22	18	28,00
M 32	x 1,5	90	22	22	18	30,50
M 32	x 2	90	22	22	18	30,00
M 33	x 1,5	100	25	25	20	31,50
M 33	x 2	100	25	25	20	31,00
M 34	x 1,5	100	25	28	22	32,50
M 35	x 1,5	100	25	28	22	33,50

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
M 36	x 1,5	100	25	28	22	34,50
M 36	x 2	125	30	28	22	34,00
M 36	x 3	125	36	28	22	33,00
M 38	x 1,5	100	25	28	22	36,50
M 39	x 2	125	30	32	24	37,00
M 39	x 3	125	36	32	24	36,00
M 40	x 1,5	110	25	32	24	38,50
M 42	x 1,5	110	25	32	24	40,50
M 42	x 2	125	30	32	24	40,00
M 42	x 3	125	36	32	24	39,00
M 45	x 1,5	110	25	36	29	43,50
M 45	x 2	125	30	36	29	43,00
M 45	x 3	125	36	36	29	42,00
M 48	x 1,5	140	25	36	29	46,50
M 48	x 2	140	30	36	29	45,00
M 48	x 3	140	36	36	29	45,00
M 50	x 1,5	140	25	36	29	48,50
M 52	x 1,5	140	25	40	32	50,50

( ) DIN Profile not ISO

Machine Nut Taps
Metric ISO Fine Thread DIN 13

HSSE ≈ DIN 357 **MF**

Version	Straight Flute, Long Chamfer = 2/3 of Thread Length	
Type of Hole		
Surface Treatment		
Catalogue-No.	8000	
Tolerance	ISO 2-6H	

Application	Unalloyed and Alloyed Steels; Tensile Strength ≤ 900 N/mm²	

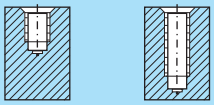
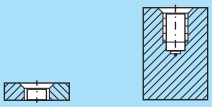
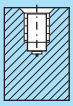
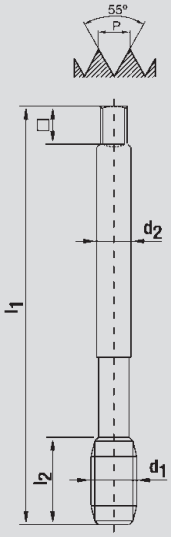
d_1		P (mm)	l_1	l_2	d_2	□	⌀D
M 8	x	1	125	35	6	4,9	7,00
M 10	x	1	140	35	7	5,5	9,00
M 12	x	1,5	170	42	9	7	10,50
M 14	x	1,5	190	42	11	9	12,50
M 16	x	1,5	200	45	12	9	14,50

Contents

	Page
Whitworth Thread BSW	
Machine Taps DIN 371/376	100 - 101
Hand Taps HSS DIN 351	102
Whitworth Pipe Thread G DIN ISO 228	
Machine Taps DIN 5156	103 - 109
Roll Taps DIN 5156	108
Hand Taps HSS DIN 5157	110
Cylindrical Pipe Thread Rp ISO 7/1 and DIN 2999	
Machine Taps DIN 5156	111
Whitworth Taper Pipe Thread Rc (formerly BSPT) **according to BS 21 and ISO 7/1, Taper 1:16**	
Machine Taps	112

BSW

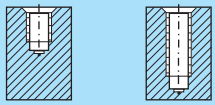
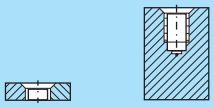
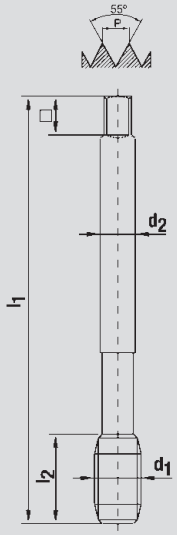
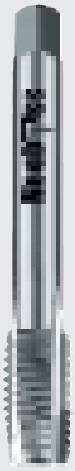
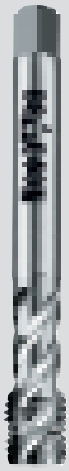
HSSE ≈ DIN 371

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment				
Catalogue-No.	7010	4040	4052	4230
Tolerance				
	Rapid	Grulo	C	Rsp
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			
Coolant	Cutting Oil or Emulsion			
Cutting Speed v_c	10 - 20 m/min			

d_1	P (Gg/1“)	l_1	l_2	l_3	d_2	□	øD_1
W 1/16	60	45	8		2,8	2,1	1,55
W 3/32	48	50	9		2,8	2,1	2,10
W 1/8	40	56	10	18	3,5	2,7	2,35
W 5/32	32	56	10	20	4	3	2,85
W 3/16	24	70	14	25	6	4,9	3,90
W 7/32	24	80	16	30	6	4,9	4,50
W 1/4	20	80	16	30	7	5,5	5,10
W 5/16	18	90	18	35	8	6,2	6,60
W 3/8	16	100	20	39	10	8	8,00

BSW

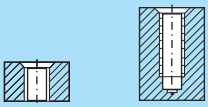
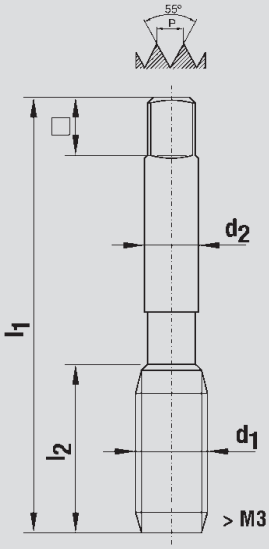
HSSE ≈ DIN 376

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment			
Catalogue-No.	7011	6040	6002
Tolerance			
	Rapid 	Grulo 	C
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 20 m/min		

d_1	P (Gg/1“)	l_1	l_2	d_2	□	øD_1
W 7/16	14	100	20	8	6,2	9,40
W 1/2	12	110	22	9	7	10,60
W 9/16	12	110	24	11	9	12,20
W 5/8	11	110	26	12	9	13,50
W 3/4	10	125	30	14	11	16,50
W 7/8	9	140	30	18	14,5	19,50
W 1	8	160	36	18	14,5	22,25

BSW

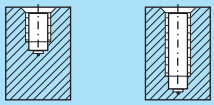
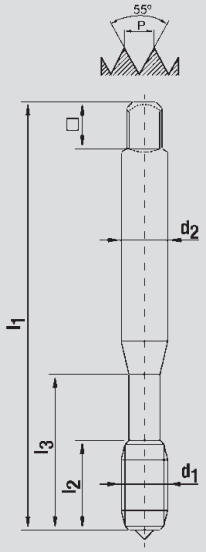
HSS ≈ DIN 351

Version	Neoboss Graduation	
Type of Hole		
Surface Treatment		
Catalogue-No.	2000	2000
Tolerance		
	Complete Set	Và3 Mà3 Fà3
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
W 1/16	60	36	8	2,8	2,1	1,55
W 3/32	48	40	9	2,8	2,1	2,10
W 1/8	40	41,5	11	3,5	2,7	2,35
W 5/32	32	46,4	12	4	3	2,85
W 3/16	24	50	16	6	4,9	3,90
W 7/32	24	52,2	16	6	4,9	4,50
W 1/4	20	57	22	6	4,9	5,10
W 5/16	18	63	20	6	4,9	6,60
W 3/8	16	70	20	6	5,5	8,00
W 7/16	14	75	25	8	6,2	9,40
W 1/2	12	80	28	9	7	10,60
W 9/16	12	80	30	11	9	12,20

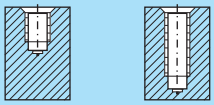
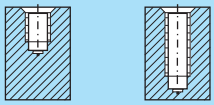
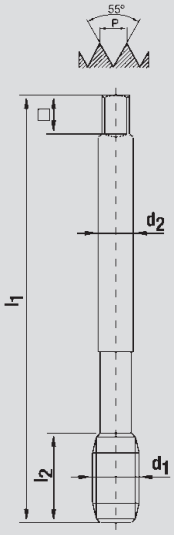
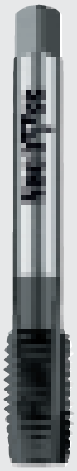
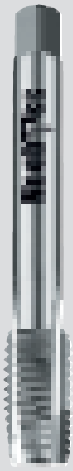
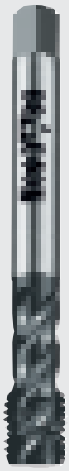
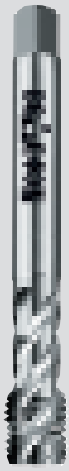
d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
W 5/8	11	90	30	12	9	13,50
W 3/4	10	105	35	14	11	16,50
W 7/8	9	110	35	18	14,5	19,50
W 1	8	110	38	20	14,5	22,25
W 1 1/8	7	132	43	22	18	25,00
W 1 1/4	7	132	43	22	18	28,00
W 1 3/8	6	132	43	28	22	30,75
W 1 1/2	6	150	50	32	22	34,00
W 1 5/8	5	150	50	32	24	36,25
W 1 3/4	5	150	50	36	29	39,50
W 1 7/8	4 1/2	190	50	36	29	42,00
W 2	4 1/2	150	50	40	32	45,00

HSSE DIN 5156 **G**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	TiN-Coating	TiN-Coating
Catalogue-No.	7275/80	6345/80
Tolerance		
	Rapid-UNI 	Grulo-UNI
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

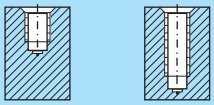
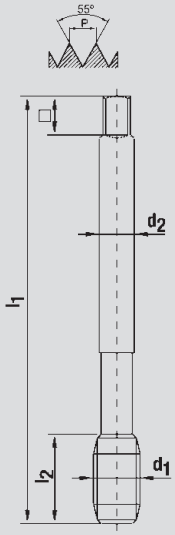
d_1	P (mm)	l_1	l_2	d_2	□	ø Di
G 1/8	28	90	16	7	5,5	8,80
G 1/4	19	100	18	11	9	11,80
G 3/8	19	100	18	12	9	15,25
G 1/2	14	125	24	16	12	19,00
G 5/8	14	125	24	18	14,5	21,00
G 3/4	14	140	28	20	16	24,50
G 7/8	14	150	28	22	18	28,25
G 1	11	160	28	25	20	30,75

HSSE DIN 5156 **G**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Therads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Steam Tempered		Steam Tempered	
Catalogue-No.	7011/78	7011	6040/78	6040
Tolerance				
	Rapid Vap. 	Rapid 	Grulo Vap. 	Grulo 
Application add. see Page 10, 11	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²			
Coolant	Cutting Oil or Emulsion			
Cutting Speed v_c	10 -20 m/min			

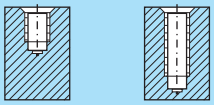
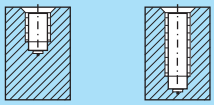
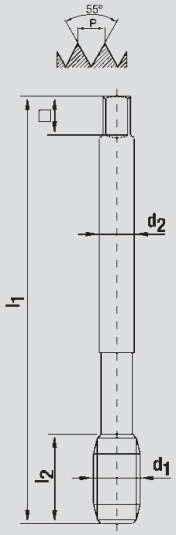
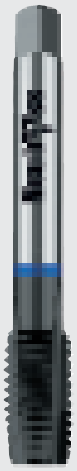
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
G 1/8	28	90	16	7	5,5	8,80
G 1/4	19	100	18	11	9	11,80
G 3/8	19	100	18	12	9	15,25
G 1/2	14	125	24	16	12	19,00
G 5/8	14	125	24	18	14,5	21,00
G 3/4	14	140	28	20	16	24,50
G 7/8	14	150	28	22	18	28,25
G 1	11	160	28	25	20	30,75

HSSE DIN 5156 **G**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment		
Catalogue-No.	7275	6345
Tolerance		
	Rapid-VA-G 	Grulo-Spez.-G
Application add. see Page 12, 13	Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 30 m/min	

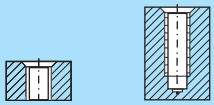
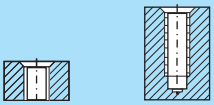
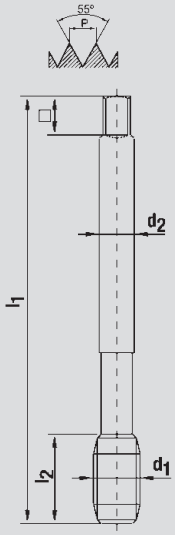
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
G 1/8	28	90	16	7	5,5	8,80
G 1/4	19	100	18	11	9	11,80
G 3/8	19	100	18	12	9	15,25
G 1/2	14	125	24	16	12	19,00
G 5/8	14	125	24	18	14,5	21,00
G 3/4	14	140	28	20	16	24,50
G 7/8	14	150	28	22	18	28,25
G 1	11	160	28	25	20	30,75

HSSE DIN 5156 **G**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Nitrided		Steam Tempered	Steam Tempered
Catalogue-No.	7055/06	6045	7235/78	6365/78
Tolerance				
	Rapid-Spez. 	Grulo-Spez.	Rapid-V4A	Grulo-V4A
Application add. see Page 12-15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²		Stainless Steels with High Chromium-Nickel-Content (VA-Steels)	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		6 - 10 m/min	

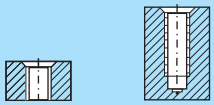
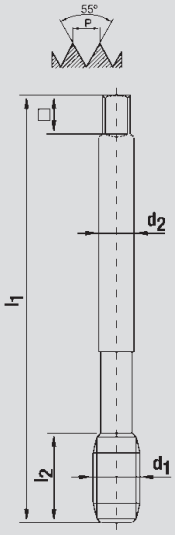
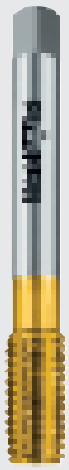
d_1	P (mm)	l_1	l_2	d_2	□	⌀D
G 1/8	28	90	16	7	5,5	8,80
G 1/4	19	100	18	11	9	11,80
G 3/8	19	100	18	12	9	15,25
G 1/2	14	125	24	16	12	19,00
G 3/4	14	140	28	20	16	24,50
G 1	11	160	28	25	20	30,75

HSSE DIN 5156 **G**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	Nitrided	TiAlN-Coating
Catalogue-No.	6008/06	6308/70
Tolerance		
	C-GG 	C-GG TM
Application add. see Page 10,11	Grey Cast Iron	Grey Cast Iron; Nodular Cast Iron; Malleable Cast Iron; Vermicular Cast Iron
Coolant	Cutting Oil	Dry, Air or Emulsion
Cutting Speed v_c	10 - 20 m/min	20 - 50 m/min

d_1	P (mm)	l_1	l_2	d_2	□	øD_1
G 1/8	28	90	16	7	5,5	8,80
G 1/4	19	100	18	11	9	11,80
G 3/8	19	100	18	12	9	15,25
G 1/2	14	125	24	16	12	19,00
G 3/4	14	140	28	20	16	24,50
G 7/8	14	150	28	22	18	28,25
G 1	11	160	28	25	20	30,75

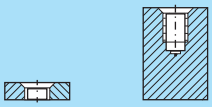
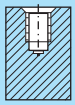
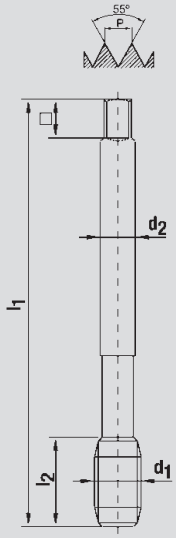
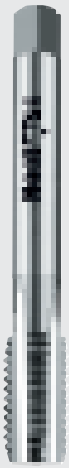
HSSE DIN 5156 **G**

Version	Form C, 2 - 3 Threads Chamfer, with Oil Flutes	
Type of Hole		
Surface Treatment	TiN-Coating	
Catalogue-No.	6060/80	
Tolerance		
	Formex TiN 	
Application add. see Page 16,17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	20 - 30 m/min	

d_1	P (mm)	l_1	l_2	d_2	□	ø D *
G 1/8	28	90	16	7	5,5	9,30
G 1/4	19	100	18	11	9	12,50
G 3/8	19	100	18	12	9	16,00
G 1/2	14	125	24	16	12	20,00
G 3/4	14	140	28	20	16	25,50
G 1	11	160	28	25	20	32,00

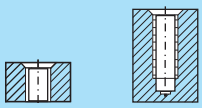
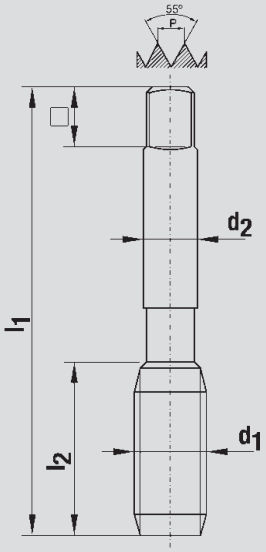
* The recommended core hole diameters are for reference purpose only.

HSSE DIN 5156 **G**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (up to G1")
Type of Hole		
Surface Treatment		
Catalogue-No.	6002	6030
Tolerance		
	C 	Rsp
Application	Unalloyed Steels; Tensile Strength ≤800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

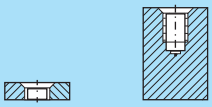
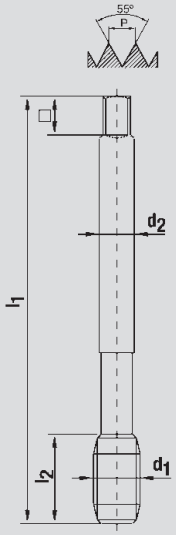
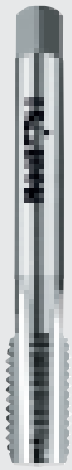
d_1	P (mm)	l_1	l_2	d_2	□	øD_1
G 1/8	28	90	16	7	5,5	8,80
G 1/4	19	100	18	11	9	11,80
G 3/8	19	100	18	12	9	15,25
G 1/2	14	125	24	16	12	19,00
G 5/8	14	125	24	18	14,5	21,00
G 3/4	14	140	28	20	16	24,50
G 7/8	14	150	28	22	18	28,25
G 1	11	160	28	25	20	30,75
G 1 1/8	11	170	30	28	22	35,50
G 1 1/4	11	170	30	32	24	39,50
G 1 3/8	11	180	32	36	29	41,50
G 1 1/2	11	190	32	36	29	45,25

HSS DIN 5157 **G**

Version	Neoboss Graduation		
Type of Hole			
Surface Treatment			
Catalogue-No.	2000	2000	
Tolerance			
	Complete Set	V à2 F à2	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		

d_1	P (Gg/1“)	l_1	l_2	d_2	□	⌀D
G 1/8	28	63	18	7	5,5	8,80
G 1/4	19	70	20	11	9	11,80
G 3/8	19	70	20	12	9	15,25
G 1/2	14	80	22	16	12	19,00
G 5/8	14	80	22	18	14,5	21,00
G 3/4	14	90	22	20	16	24,50
G 7/8	14	90	22	22	18	28,25
G 1	11	100	25	25	20	30,75
G 1 1/8	11	125	30	28	22	35,50
G 1 1/4	11	125	30	32	24	39,50
G 1 3/8	11	125	30	36	29	41,50
G 1 1/2	11	140	30	36	29	45,25

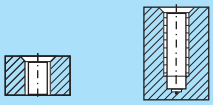
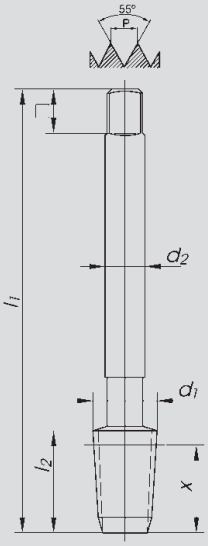
HSSE DIN 5156 Rp

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	6002	
Tolerance		
	C 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	15 - 20 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
Rp 1/8	28	90	16	7	5,5	8,55
Rp 1/4	19	100	18	11	9	11,40
Rp 3/8	19	100	18	12	9	14,90
Rp 1/2	14	125	24	16	12	18,60
Rp 3/4	14	140	28	20	16	24,10
Rp 1	11	160	28	25	20	30,25
Rp 1 1/2	11	190	32	36	29	44,75

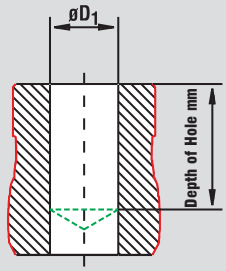
Machine Taps Whitworth Taper Pipe Thread according to BS 21 and ISO 7/1, Taper 1 : 16

HSSE Neoboss specs. Rc (BSPT)

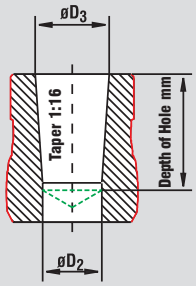
Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment	Steam Tempered	
Catalogue-No.	6700/78	
Tolerance		
		
Application add. see Page 16,17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	5 - 10 m/min	

Core Hole Diameter for American Taper Pipe Thread NPT, Taper 1 : 16 acc. to ANSI B 1.20.1

rough-drill cylindrically



rough-drill cylindrically and grind conically with reamer



							rough-drill cylindrically		rough-drill cylindrically and grind conically with reamer		
d_1	P (G g/1")	l_1	l_2	d_2	□	X-Dim*	Ø D_1 mm	Depth of Hole mm	Ø D_2 mm	Ø D_3 mm	Depth of Hole mm
Rc 1/8	28	90	12	7	5,5	8,9	8,20	11,90	8,10	8,57	11,90
Rc 1/4	19	100	20	11	9	13,3	11,00	17,70	10,75	11,45	17,70
Rc 3/8	19	100	12	12	9	13,7	14,50	18,10	14,25	14,95	18,10
Rc 1/2	14	125	22	16	12	18,1	18,00	24,00	17,75	18,63	24,00
Rc 3/4	14	140	22	20	16	19,5	23,50	25,30	23,00	24,12	25,30
Rc 1	11	160	32	25	20	23,1	29,50	30,60	29,00	30,29	30,60

* The recommended X-dimensions are for reference purpose only.

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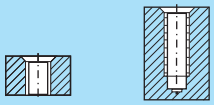
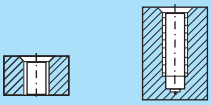
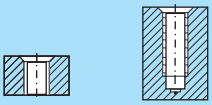
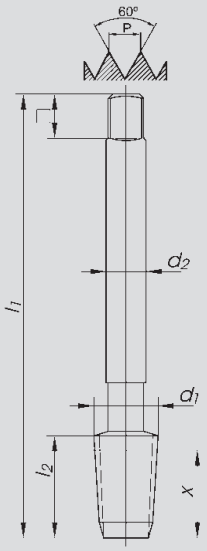
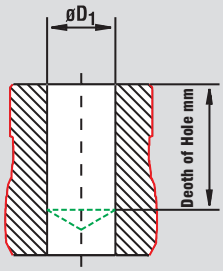
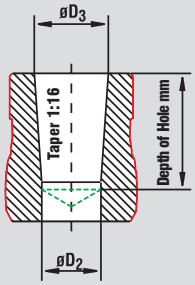
Short Machine Taps	117
American Cylindrical Pipe Thread NPSM acc. to ANSI B 1.20.1	
Machine Taps ≈ DIN 5156	118

Machine Taps American Taper Pipe Thread, Taper 1 : 16 according to ANSI B 1.20.1 for Threads with Sealing Compound

HSSE Neoboss specs. **NPT**

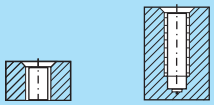
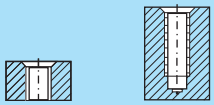
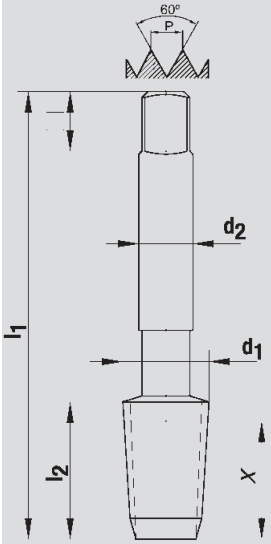
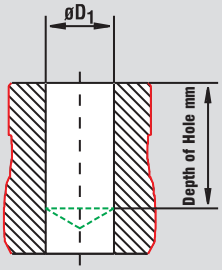
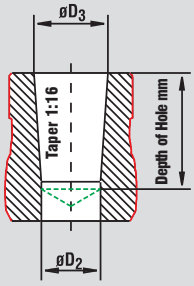
Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (up to d1 1")	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (up to d1 1")	**Core Hole Diameter for American Taper Pipe Thread NPT, Taper 1 : 16 acc. to ANSI B 1.20.1**
Type of Hole				
Surface Treatment	Steam Tempered	TiN-Coating	Steam Tempered	
Catalogue-No.	6700/78	6750/80	6750/78	
Tolerance				
				
				rough-drill cylindrically 
				rough-drill cylindrically and grind conically with reamer 
Application add. see Page 16, 17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	Nodular Cast Iron and Malleable Cast Iron	Stainless Steels (V2A-Steels)	
Coolant	Cutting Oil or Emulsion	Dry, Air or Emulsion	Cutting Oil or Emulsion	
Cutting Speed v_c	5 - 10 m/min	15 - 20 m/min	3 - 6 m/min	

							rough-drill cylindrically		rough-drill cylindrically and grind conically with reamer		
d_1	P (Gg/1")	l_1	l_2	d_2	□	X-Dim*	Ø D_1 mm	Depth of Hole mm	Ø D_2 mm	Ø D_3 mm	Depth of Hole mm
1/16	27	90	12	6	4,9	9,7	6,25	12,00	6,00	6,39	12,00
1/8	27	90	12	7	5,5	9,7	8,50	12,00	8,25	8,74	12,00
1/4	18	100	20	11	9	14,2	11,10	17,50	10,70	11,36	17,50
3/8	18	100	22	12	9	14,5	14,70	17,60	14,10	14,80	17,60
1/2	14	125	22	16	12	19,0	18,00	22,90	17,40	18,32	22,90
3/4	14	140	22	20	16	19,5	23,25	23,00	22,60	23,67	23,00
1	11 1/2	160	32	25	20	23,4	29,25	27,40	28,50	29,69	27,40
1 1/4	11 1/2	170	32	32	24	23,9	38,00	28,10	37,00	38,45	28,10
1 1/2	11 1/2	190	36	36	29	23,9	44,25	28,40	43,50	44,52	28,40
2	11 1/2	220	36	45	35	24,3	56,25	28,40	55,00	56,56	28,40

* The recommended X-dimensions are for reference purpose only.

Short Machine Taps American Taper Pipe Thread, Taper 1 : 16 acc. to ANSI B 1.20.1 for Thread with Sealing Compound

HSSE Neoboss specs. **NPT**

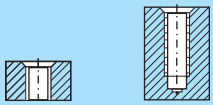
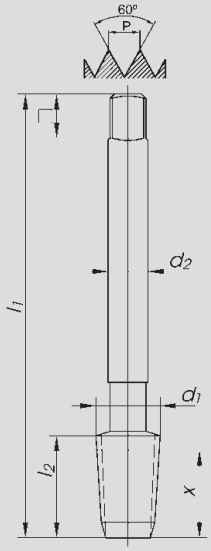
Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (up to d1 1")	**Core Hole Diameter for American Taper Pipe Thread NPT, Taper 1 : 16 acc. to ANSI B 1.20.1**
Type of Hole			
Surface Treatment	Steam Tempered	Steam Tempered	
Catalogue-No.	2700/78	2750/78	
Tolerance			
			 rough-drill cylindrically
			 rough-drill cylindrically and grind conically with reamer
Application add. see Page 16, 17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	Stainless Steels (V2A-Steels)	
Coolant	Cutting Oil or Emulsion	Cutting Oil or Emulsion	
Cutting Speed v_c	5 - 10 m/min	3 - 6 m/min	

							rough-drill cylindrically		rough-drill cylindrically and grind conically with reamer		
d_1	P (Gg/1")	l_1	l_2	d_2	□	X-Dim*	Ø D_1 mm	Depth of Hole mm	Ø D_2 mm	Ø D_3 mm	Depth of Hole mm
1/16	27	56	12	6	4,9	9,7	6,25	12,00	6,00	6,39	12,00
1/8	27	63	12	7	5,5	9,7	8,50	12,00	8,25	8,74	12,00
1/4	18	63	20	11	9	14,2	11,10	17,50	10,70	11,36	17,50
3/8	18	70	22	12	9	14,5	14,70	17,60	14,10	14,80	17,60
1/2	14	80	22	16	12	19,0	18,00	22,90	17,40	18,32	22,90
3/4	14	100	22	20	16	19,5	23,25	23,00	22,60	23,67	23,00
1	11 1/2	110	32	25	20	23,4	29,25	27,40	28,50	29,69	27,40
1 1/4	11 1/2	125	32	32	24	23,9	38,00	28,10	37,00	38,45	28,10
1 1/2	11 1/2	140	36	36	29	23,9	44,25	28,40	43,50	44,52	28,40
2	11 1/2	160	36	45	35	24,3	56,25	28,40	55,00	56,56	28,40

* The recommended X-dimensions are for reference purpose only.

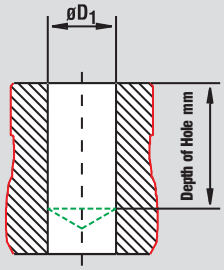
Machine Taps American Cylindrical Taper Pipe Thread, Taper 1 : 16 acc. to ANSI B 1.20.4 for Threads without Sealing Compound

HSSE Neoboss specs. **NPTF**

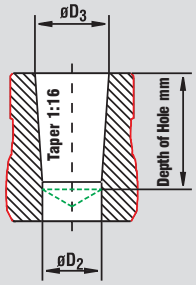
Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment	Steam Tempered	
Catalogue-No.	6700/78	
Tolerance		
		
Application add. see Page 16,17	Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	5 - 10 m/min	

Core Hole Diameter for American Taper Pipe Thread NPTF, Taper 1 : 16 acc. to ANSI B 1.20.4

rough-drill cylindrically



rough-drill cylindrically and grind conically with reamer

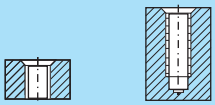
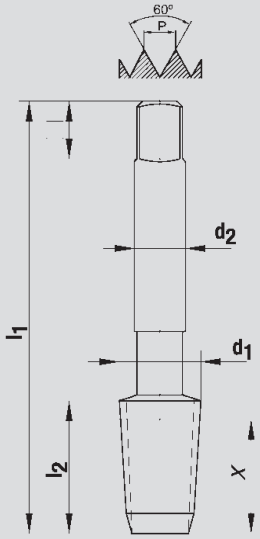
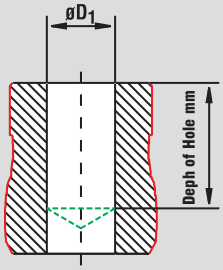
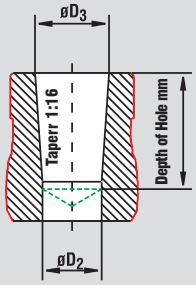


							rough-drill cylindrically		rough-drill cylindrically and grind conically with reamer		
d_1	P	l_1	l_2	d_2	□	X-Dim*	Ø D_1 mm	Depth of Hole mm	Ø D_2 mm	Ø D_3 mm	Depth of Hole mm
1/16	27	90	12	6	4,9	9,7	6,15	12,00	6,00	6,41	12,00
1/8	27	90	12	7	5,5	9,7	8,40	12,00	8,25	8,76	12,00
1/4	18	100	20	11	9	14,2	11,00	17,50	10,70	11,40	17,50
3/8	18	100	22	12	9	14,5	14,50	17,60	14,10	14,84	17,60
1/2	14	125	22	16	12	19,0	17,75	22,90	17,40	18,33	22,90
3/4	14	140	22	20	16	19,5	23,00	23,00	22,60	23,68	23,00
1	11 1/2	160	32	25	20	23,4	29,00	27,40	28,50	29,72	27,40
1 1/4	11 1/2	170	32	32	24	23,9	37,50	28,10	37,00	38,48	28,10
1 1/2	11 1/2	190	36	36	29	23,9	44,00	28,40	43,50	44,55	28,40
2	11 1/2	220	36	45	35	24,3	56,00	28,40	55,00	56,59	28,40

* The recommended X-dimensions are for reference purpose only.

Short Machine Taps American Taper Pipe Thread, Taper 1 : 16 acc. to ANSI B 1.20.4 for Threads without Sealing Compound

HSSE Neoboss specs. **NPTF**

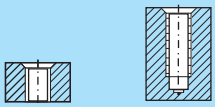
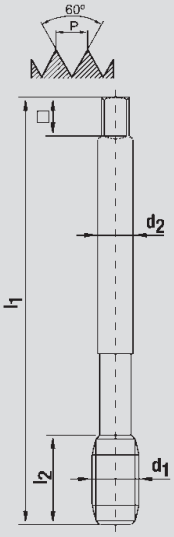
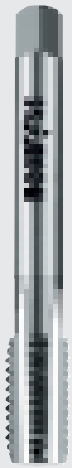
Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	**Core Hole Diameter for American Taper Pipe Thread NPTF, Taper 1 : 16 acc. to ANSI B 1.20.4**
Type of Hole		
Surface Treatment	Steam Tempered	
Catalogue-No.	2700/78	
Tolerance		
		rough-drill cylindrically  rough-drill cylindrically and grind conically with reamer 
Application add. see Page 16,17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	5 - 10 m/min	

							rough-drill cylindrically		rough-drill cylindrically and grind conically with reamer		
d_1	P (Gg/1")	l_1	l_2	d_2	□	X-Dim*	Ø D_1 mm	Depth of Hole mm	Ø D_2 mm	Ø D_3 mm	Depth of Hole mm
1/16	27	56	12	6	4,9	9,7	6,15	12,00	6,00	6,41	12,00
1/8	27	63	12	7	5,5	9,7	8,40	12,00	8,25	8,76	12,00
1/4	18	63	20	11	9	14,2	11,00	17,50	10,70	11,40	17,50
3/8	18	70	22	12	9	14,5	14,50	17,60	14,10	14,84	17,60
1/2	14	80	22	16	12	19,0	17,75	22,90	17,40	18,33	22,90
3/4	14	100	22	20	16	19,5	23,00	23,00	22,60	23,68	23,00
1	11 1/2	110	32	25	20	23,4	29,00	27,40	28,50	29,72	27,40

* The recommended X-dimensions are for reference purpose only.

NPSM

HSSE ≈ DIN 5156

Version	Straight Flute, Form C, 2 -3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	6002	
Tolerance		
	C 	
Application add. see Page 16,17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
1/8	27	90	16	7	5,5	9,10
1/4	18	100	18	11	9	12,00
3/8	18	100	18	12	9	15,50
1/2	14	125	24	16	12	19,00
3/4	14	140	28	20	16	24,50
1	11 1/2	160	28	25	20	30,50

Contents

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Unified-Extra-Fine-Thread UNEF ANSI B 1.1	
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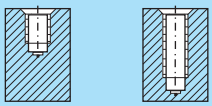
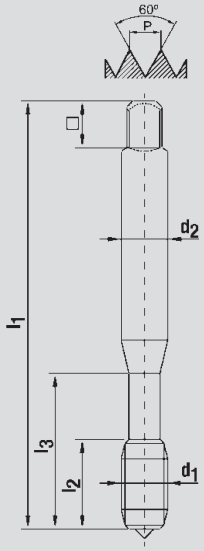
Unified-Thread UN, 8- and 12-Thread ANSI B 1.1	
Machine Taps DIN 374	143

UNC

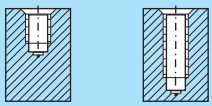
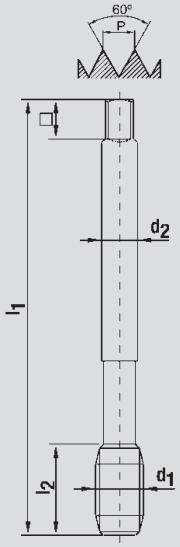
HSSE ≈ DIN 371

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	TiN-Coating	TiN-Coating
Catalogue-No.	7265/80	4345/80
Tolerance	2B	2B
	Rapid-UNI 	Grulo-UNI
Application add. see Page 10,11	UNIversal Use in an Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D
Nr. 4	- 40	56	10	18	3,5	2,7	2,35
Nr. 5	- 40	56	10	18	3,5	2,7	2,65
Nr. 6	- 32	56	10	20	4	3	2,85
Nr. 8	- 32	63	12	21	4,5	3,4	3,50
Nr. 10	- 24	70	14	25	6	4,9	3,90
Nr. 12	- 24	80	16	30	6	4,9	4,50
1/4	- 20	80	16	30	7	5,5	5,10
5/16	- 18	90	18	35	8	6,2	6,60
3/8	- 16	100	20	39	10	8	8,00

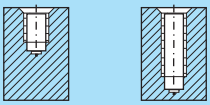
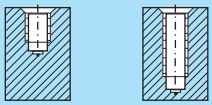
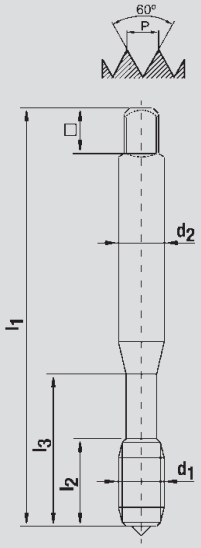
UNC

HSSE ≈ DIN 376

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	TiN-Coating	TiN-Coating
Catalogue-No.	7275/80	6345/80
Tolerance	2B	2B
	Rapid-UNI 	Grulo-UNI
Application add. see Page 10,11	UNIversal Use in a Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
5/16	- 18	90	18	6	4,9	6,60
3/8	- 16	100	20	7	5,5	8,00
1/2	- 13	110	22	9	7	10,80
5/8	- 11	110	26	12	9	13,50
3/4	- 10	125	30	14	11	16,50

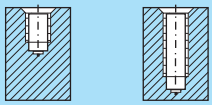
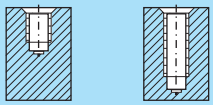
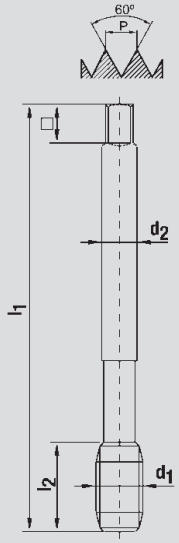
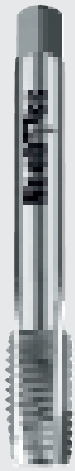
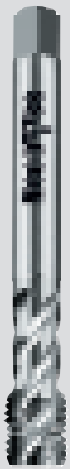
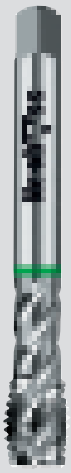
HSSE ≈ DIN 371 UNC

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment				
Catalogue-No.	7010	4040	7265	4345
Tolerance	2B	2B	2B	2B
	Rapid	Grulo	Rapid-VA-G	Grulo-Spez.-G
Application add. see Page 10-13	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emusion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		10 - 30 m/min	

d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D
Nr. 2	- 56	45	9		2,8	2,1	1,85
Nr. 3	- 48	50	9		2,8	2,1	2,10
Nr. 4	- 40	56	10	18	3,5	2,7	2,35
Nr. 5	- 40	56	10	18	3,5	2,7	2,65
Nr 6	- 32	56	10	20	4	3	2,85
Nr. 8	- 32	63	12	21	4,5	3,4	3,50
Nr. 10	- 24	70	14	25	6	4,9	3,90
Nr. 12	- 24	80	16	30	6	4,9	4,50
1/4	- 20	80	16	30	7	5,5	5,10
5/16	- 18	90	18	35	8	6,2	6,60
3/8	- 16	100	20	39	10	8	8,00

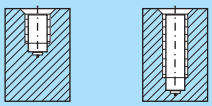
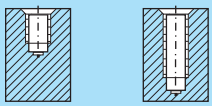
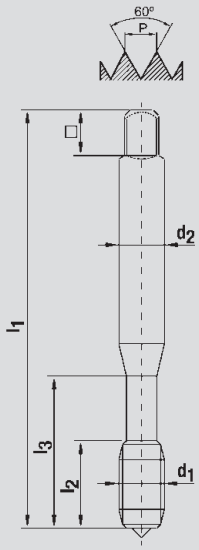
UNC

HSSE ≈ DIN 376

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment				
Catalogue-No.	7011	6040	7275	6345
Tolerance	2B	2B	2B	2B
	Rapid 	Grulo 	Rapid-VA-G	Grulo-Spez.-G 
Application add. see Page 10-13	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		10 - 30 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
1/4	- 20	80	16	4,5	3,4	5,10
5/16	- 18	90	18	6	4,9	6,60
3/8	- 16	100	20	7	5,5	8,00
7/16	- 14	100	20	8	6,2	9,40
1/2	- 13	110	22	9	7	10,80
9/16	- 12	110	24	11	9	12,20
5/8	- 11	110	26	12	9	13,50
3/4	- 10	125	30	14	11	16,50
7/8	- 9	140	30	18	14,5	19,50
1	- 8	160	36	18	14,5	22,25

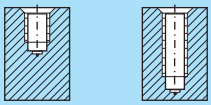
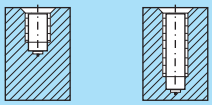
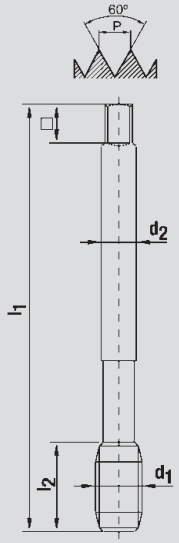
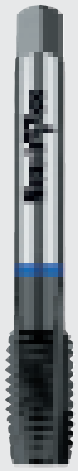
HSSE ≈ DIN 371 UNC

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Therads Chamfer
Type of Hole				
Surface Treatment	Nitrided		Nitrided	
Catalogue-No.	7045/06	4045	7245/06	4245
Tolerance	2B	2B	2B	2B
	Rapid-Spez.	Grulo-Spez.	Rapid-Spez.-R	Grulo-Spez.-R
Application add. see page 12-15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/m²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/m²	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		5 - 10 m/min	

d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D1
Nr. 4	- 40	56	10	18	3,5	2,7	2,35
Nr. 5	- 40	56	10	18	3,5	2,7	2,65
Nr. 6	- 32	56	10	20	4	3	2,85
Nr. 8	- 32	63	12	21	4,5	3,4	3,50
Nr. 10	- 24	70	14	25	6	4,9	3,90
Nr. 12	- 24	80	16	30	6	4,9	4,50
1/4	- 20	80	16	30	7	5,5	5,10
5/16	- 18	90	18	35	8	6,2	6,60
3/8	- 16	100	20	39	10	8	8,00

UNC

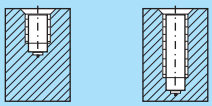
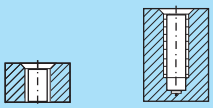
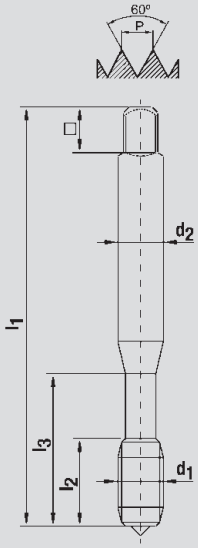
HSSE ≈ DIN 376

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Nitrided		Nitrided	
Catalogue-No.	7055/06	6045	7255/06	6245
Tolerance	2B	2B	2B	2B
	Rapid-Spez. 	Grulo-Spez.	Rapid-Spez.-R	Grulo-Spez.-R
Application add. see Page 12-15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/m²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		5 - 10 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
3/8	- 16	100	20	7	5,5	8,00
7/16	- 14	100	20	8	6,2	9,40
1/2	- 13	110	22	9	7	10,80
9/16	- 12	110	24	11	9	12,20
5/8	- 11	110	26	12	9	13,50
3/4	- 10	125	30	14	11	16,50
7/8	- 9	140	30	18	14,5	19,50
1	- 8	160	36	18	14,5	22,25

UNC

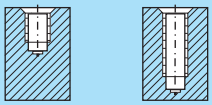
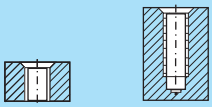
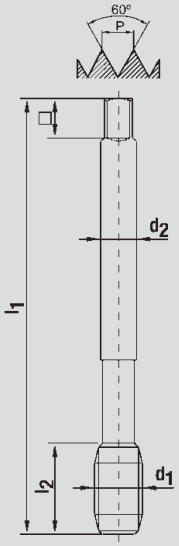
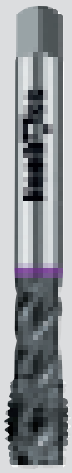
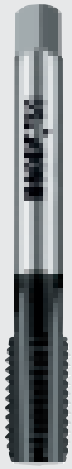
HSSE / PM ≈ DIN 371

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment	Steam Tempered	Steam Tempered	Nitrided
Catalogue-No.	7225/78	4365/78	4058/06
Tolerance	2BX	2BX	2BX
	Rapid-V4A	Grulo-V4A	C-GG
Application add. see Page 10-13	Stainless Steels with High Chromium-Nickel-Content (VA-Steels)		Grey Cast Iron
Coolant	Cutting Oil or Emulsion		Cutting Oil
Cutting Speed v_c	6 - 10 m/min		10 - 20 m/min

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
Nr. 4	- 40	56	10	18	3,5	2,7	2,35
Nr. 5	- 40	56	10	18	3,5	2,7	2,65
Nr. 6	- 32	56	10	20	4	3	2,85
Nr. 8	- 32	63	12	21	4,5	3,4	3,50
Nr. 10	- 24	70	14	25	6	4,9	3,90
Nr. 12	- 24	80	16	30	6	4,9	4,50
1/4	- 20	80	16	30	7	5,5	5,10
5/16	- 18	90	18	35	8	6,2	6,60
3/8	- 16	100	20	39	10	8	8,00

UNC

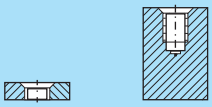
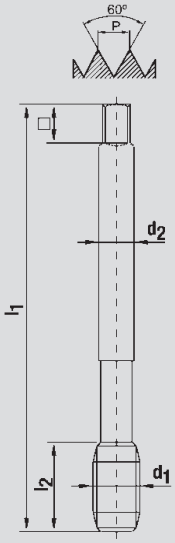
HSSE / PM ≈ DIN 376

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment	Steam Tempered	Steam Tempered	Nitrided
Catalogue-No.	7235/78	6365/78	6008/06
Tolerance	2BX	2BX	2BX
	Rapid-V4A	Grulo-V4A 	C-GG 
Application add. see Page 10-13	Stainless Steels with High Chromium-Nickel-Content (VA-Steels)		Grey Cast Iron
Coolant	Cutting Oil or Emulsion		Cutting Oil
Cutting Speed v_c	6 - 10 m/min		10 - 20 m/min

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D1
5/16	- 18	90	18	6	4,9	6,60
3/8	- 16	100	20	7	5,5	8,00
7/16	- 14	100	20	8	6,2	9,40
1/2	- 13	110	22	9	7	10,80
9/16	- 12	110	24	11	9	12,20
5/8	- 11	110	26	12	9	13,50
3/4	- 10	125	30	14	11	16,50
7/8	- 9	140	30	18	14,5	19,50
1	- 8	160	36	18	14,5	22,25
1 1/8	- 7	180	40	22	18	25,00
1 1/4	- 7	180	40	22	18	28,00
1 3/8	- 6	200	45	28	22	30,75
1 1/2	- 6	200	45	32	24	34,00

UNC

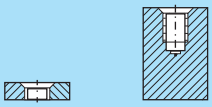
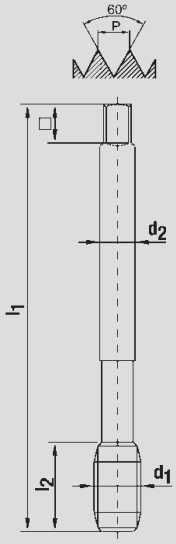
HSSE ≈ DIN 371

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	4052	
Tolerance	2B	
	C 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D
Nr. 1	- 64	45	8		2,8	2,1	1,55
Nr. 2	- 56	45	9		2,8	2,1	1,85
Nr. 3	- 48	50	9		2,8	2,1	2,10
Nr. 4	- 40	56	10	18	3,5	2,7	2,35
Nr. 5	- 40	56	10	18	3,5	2,7	2,65
Nr. 6	- 32	56	10	20	4	3	2,85
Nr. 8	- 32	63	12	21	4,5	3,4	3,50
Nr. 10	- 24	70	14	25	6	4,9	3,90
Nr. 12	- 24	80	16	30	6	4,9	4,50
1/4	- 20	80	16	30	7	5,5	5,10
5/16	- 18	90	18	35	8	6,2	6,60
3/8	- 16	100	20	39	10	8	8,00

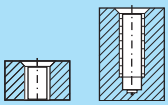
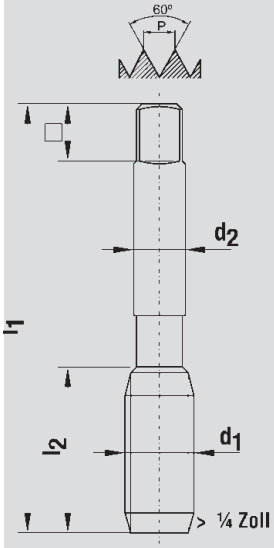
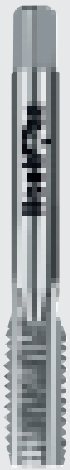
UNC

HSSE ≈ DIN 376

Version	Straight Flute, Form C, 2 - 3 Thread Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	6002	
Tolerance	2B	
	C 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
1/4	- 20	80	16	4,5	3,4	5,10
5/16	- 18	90	18	6	4,9	6,60
3/8	- 16	100	20	7	5,5	8,00
7/16	- 14	100	20	8	6,2	9,40
1/2	- 13	110	22	9	7	10,80
9/16	- 12	110	24	11	9	12,20
5/8	- 11	110	26	12	9	13,50
3/4	- 10	125	30	14	11	16,50
7/8	- 9	140	30	18	14,5	19,50
1	- 8	160	36	18	14,5	22,25

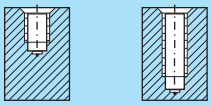
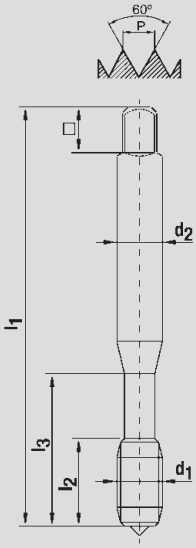
HSS ≈ DIN 351 UNC

Version	Neoboss Graduation, *No. 3 in Tolerance 2B	
Type of Hole		
Surface Treatment		
Catalogue-No.	2000	2000
Tolerance	2B	
	Complete Set 	V à3 M à3 F à3*
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
Nr. 1	- 64	36	8	2,8	2,1	1,55
Nr. 2	- 56	36	9	2,8	2,1	1,85
Nr 3	- 48	40	9	2,8	2,1	2,10
Nr. 4	- 40	41,5	11	3,5	2,7	2,35
Nr 5	- 40	41,5	11	3,5	2,7	2,65
Nr 6	- 32	45	9	4	3	2,85
Nr. 8	- 32	46,4	12	4,5	3,4	3,50
Nr. 10	- 24	50	16	6	4,9	3,90
Nr. 12	- 24	52,2	16	6	4,9	4,50
1/4	- 20	57	22	6	4,9	5,10
5/16	- 18	63	20	6	4,9	6,60
3/8	- 16	70	23	7	5,5	8,00
7/16	- 14	75	25	8	6,2	9,40

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
1/2	- 13	80	28	9	7	10,80
9/16	- 12	80	30	11	9	12,20
5/8	- 11	90	30	12	9	13,50
3/4	- 10	105	35	14	11	16,50
7/8	- 9	110	35	18	14,5	19,50
1	- 8	110	38	20	14,5	22,25
1 1/8	- 7	132	43	22	18	25,00
1 1/4	- 7	132	43	22	18	28,00
1 3/8	- 6	132	45	28	22	30,75
1 1/2	- 6	150	50	32	22	34,00
1 3/4	- 5	160	58	36	29	39,50
2	- 4 1/2	140	63	40	32	45,00

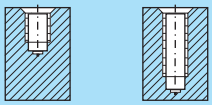
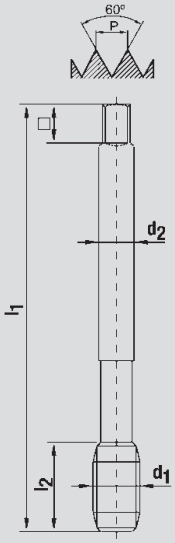
HSSE ≈ DIN 371 **UNF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	TiN-Coating	TiN-Coating
Catalogue-No.	7265/80	4345/80
Tolerance	2B	2B
	Rapid-UNI 	Grulo-UNI
Application add. see Page 10,11	UNIversal Use in a Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D
Nr. 4	- 48	56	8	18	3,5	2,7	2,40
Nr. 5	- 44	56	9	18	3,5	2,7	2,70
Nr. 6	- 40	56	10	20	4	3	2,95
Nr. 8	- 36	63	12	21	4,5	3,4	3,50
Nr. 10	- 32	70	12	25	6	4,9	4,10
Nr. 12	- 28	80	12	30	6	4,9	4,60
1/4	- 28	80	12	30	7	5,5	5,50
5/16	- 24	90	15	35	8	6,2	6,90
3/8	- 24	90	18	39	10	8	8,50

UNF

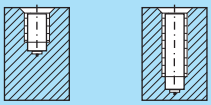
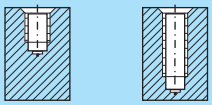
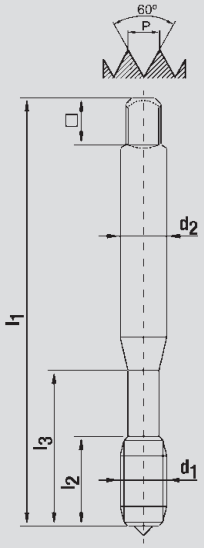
HSSE ≈ DIN 374

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	TiN-Coating	TiN-Coating
Catalogue-No.	7275/80	6345/80
Tolerance	2B	2B
	Rapid-UNI 	Grulo-UNI
Application add. see Page 10,11	UNIversal Use in a Broad Material Range	
Coolant	see Page 10	
Cutting Speed v_c	see Page 10	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
5/16	- 24	90	15	6	4,9	6,90
3/8	- 24	90	18	7	5,5	8,50
1/2	- 20	100	18	9	7	11,50
5/8	- 18	100	18	12	9	14,50
3/4	- 16	110	24	14	11	17,50

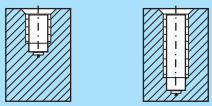
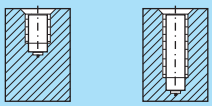
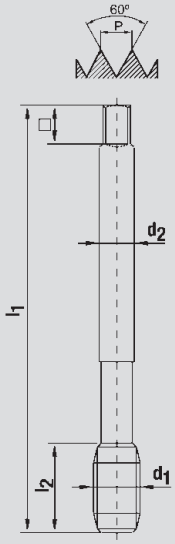
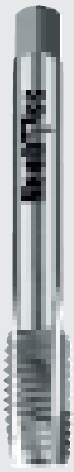
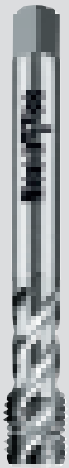
UNF

HSSE ≈ DIN 371

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment				
Catalogue-No.	7010	4040	7265	4345
Tolerance	2B	2B	2B	2B
	Rapid	Grulo	Rapid-VA-G	Grulo-Spez.-G
Application add. see Page 10-13	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		10 - 30 m/min	

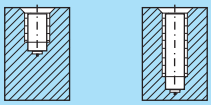
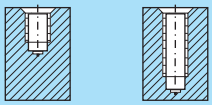
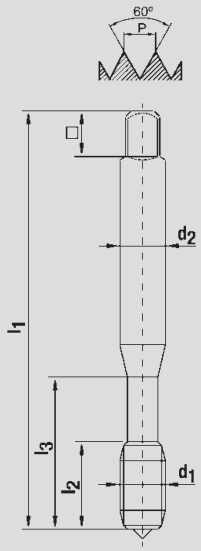
d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D1
Nr. 2	- 64	45	8		2,8	2,1	1,85
Nr. 3	- 56	50	8		2,8	2,1	2,15
Nr. 4	- 48	56	8	18	3,5	2,7	2,40
Nr. 5	- 44	56	9	18	3,5	2,7	2,70
Nr. 6	- 40	56	10	20	4	3	2,95
Nr. 8	- 36	63	12	21	4,5	3,4	3,50
Nr. 10	- 32	70	12	25	6	4,9	4,10
Nr. 12	- 28	80	12	30	6	4,9	4,60
1/4	- 28	80	12	30	7	5,5	5,50
5/16	- 24	90	15	35	8	6,2	6,90
3/8	- 24	90	18	39	10	8	8,50

HSSE ≈ DIN 374 UNF

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment				
Catalogue-No.	7011	6040	7275	6345
Tolerance	2B	2B	2B	2B
	Rapid 	Grulo 	Rapid-VA-G	Grulo-Spez.-G
Application add. see Page 10-13	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		Aluminium Alloys, Copper Alloys	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		10 - 30 m/min	

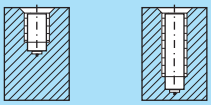
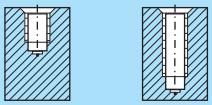
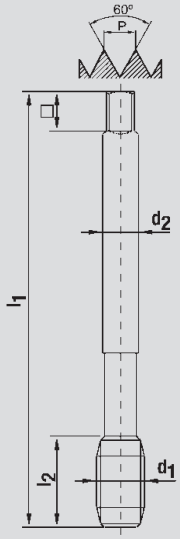
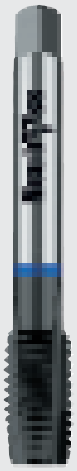
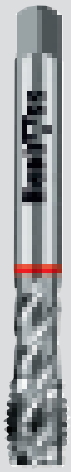
d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D1
1/4	- 28	80	12	4,5	3,4	5,50
5/16	- 24	90	15	6	4,9	6,90
3/8	- 24	90	18	7	5,5	8,50
7/16	- 20	100	18	8	6,2	9,90
1/2	- 20	100	18	9	7	11,50
9/16	- 18	100	18	11	9	12,90
5/8	- 18	100	18	12	9	14,50
3/4	- 16	110	24	14	11	17,50
7/8	- 14	125	24	18	14,5	20,50
1	- 12	140	28	18	14,5	23,25

HSSE ≈ DIN 371 **UNF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Nitrided		Nitrided	
Catalogue-No.	7045/06	4045	7245/06	4245
Tolerance	2B	2B	2B	2B
	Rapid-Spez.	Grulo-Spez.	Rapid-Spez.-R	Grulo-Spez.-R
Application add. see Page 12-15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		5 - 10 m/min	

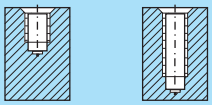
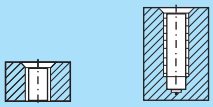
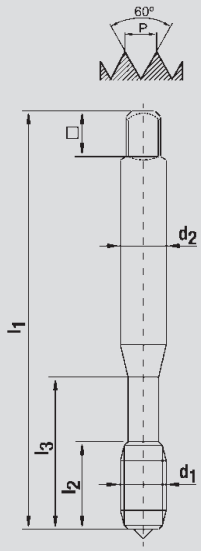
d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D
Nr. 4	- 48	56	8	18	3,5	2,7	2,40
Nr. 5	- 44	56	9	18	3,5	2,7	2,70
Nr. 6	- 40	56	10	20	4	3	2,95
Nr. 8	- 36	63	12	21	4,5	3,4	3,50
Nr. 10	- 32	70	12	25	6	4,9	4,10
Nr. 12	- 28	80	12	30	6	4,9	4,60
1/4	- 28	80	12	30	7	5,5	5,50
5/16	- 24	90	15	35	8	6,2	6,90
3/8	- 24	90	18	39	10	8	8,50

HSSE ≈ DIN 374 **UNF**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	Nitrided		Nitrided	
Catalogue-No.	7055/06	6045	7255/06	6245
Tolerance	2B	2B	2B	2B
	Rapid-Spez. 	Grulo-Spez.	Rapid-Spez.-R	Grulo-Spez.-R 
Application add. see Page 12-15	Unalloyed and Alloyed Steels; Tensile Strength ≤ 1000 N/mm²		Unalloyed and Alloyed Steels; Tensile Strength ≤ 1200 N/mm²	
Coolant	Cutting Oil or Emulsion		Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min		5 - 10 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
7/16 -	20	100	18	8	6,2	9,90
1/2 -	20	100	18	9	7	11,50
9/16 -	18	100	18	11	9	12,90
5/8 -	18	100	18	12	9	14,50
3/4 -	16	110	24	14	11	17,50
7/8 -	14	125	24	18	14,5	20,50
1 -	12	140	28	18	14,5	23,25

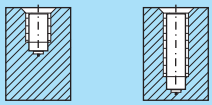
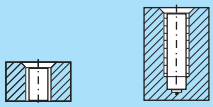
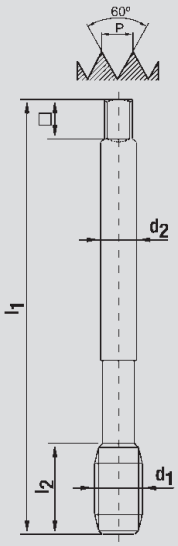
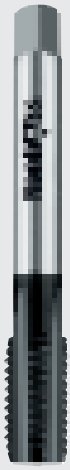
HSSE / PM ≈ DIN 371 UNF

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment	Steam Tempered	Steam Tempered	Nitrided
Catalogue-No.	7225/78	4365/78	4058/06
Tolerance	2BX	2BX	2BX
	Rapid-V4A	Grulo-V4A	C-GG
Application add. see Page 10-13	Stainless Steels with High Chromium-Nickel-Content (VA-Steels)		Grey Cast Iron
Coolant	Cutting Oil or Emulsion		Cutting Oil
Cutting Speed v_c	6 - 10 m/min		10 - 20 m/min

d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D
Nr. 4	- 48	56	8	18	3,5	2,7	2,40
Nr. 5	- 44	56	9	18	3,5	2,7	2,70
Nr. 6	- 40	56	10	20	4	3	2,95
Nr. 8	- 36	63	12	21	4,5	3,4	3,50
Nr. 10	- 32	70	12	25	6	4,9	4,10
Nr. 12	- 28	80	12	30	6	4,9	4,60
1/4	- 28	80	12	30	7	5,5	5,50
5/16	- 24	90	15	35	8	6,2	6,90
3/8	- 24	90	18	39	10	8	8,50

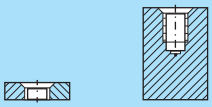
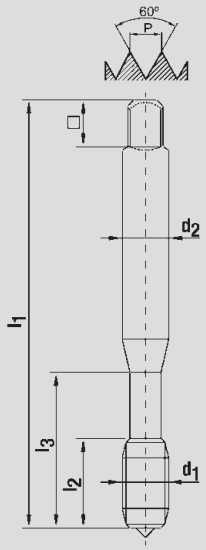
UNF

HSSE / PM ≈ DIN 374

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form C, 2 - 3 Threads Chamfer
Type of Hole			
Surface Treatment	Steam Tempered	Steam Tempered	Nitrided
Catalogue-No.	7235/78	6365/78	6008/06
Tolerance	2BX	2BX	2BX
	Rapid-V4A	Grulo-V4A	C-GG 
Application add. see Page 10-13	Stainless Steels with High Chromium-Nickel-Content (VA-Steels)		Grey Cast Iron
Coolant	Cutting Oil or Emulsion		Cutting Oil
Cutting Speed v_c	6 - 10 m/min		10 - 20 m/min

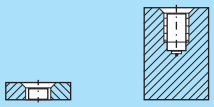
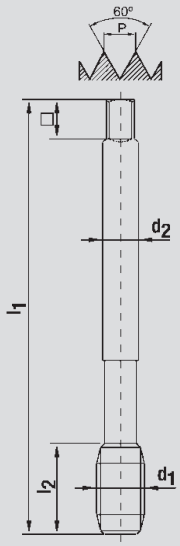
d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
5/16	24	90	15	6	4,9	6,90
3/8	24	90	18	7	5,5	8,50
7/16	20	100	18	8	6,2	9,90
1/2	20	100	18	9	7	11,50
9/16	18	100	18	11	9	12,90
5/8	18	100	18	12	9	14,50
3/4	16	110	24	14	11	17,50
7/8	14	125	24	18	14,5	20,50
1	12	140	24	18	14,5	23,25
1 1/8	12	150	36	22	18	26,50
1 1/4	12	150	36	22	18	29,50
1 3/8	12	170	36	28	22	32,75
1 1/2	12	170	36	28	22	36,00

HSSE ≈ DIN 371 **UNF**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	4052	
Tolerance		
	C 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

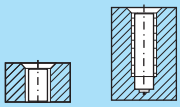
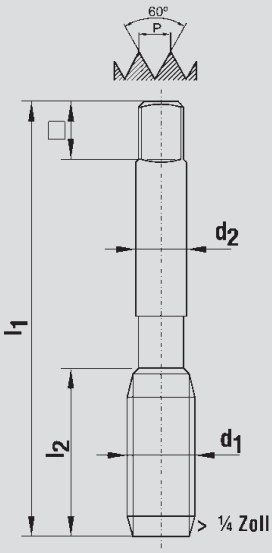
d_1	P (Gg/1")	l_1	l_2	l_3	d_2	□	⌀D
Nr. 1	- 72	45	8		2,8	2,1	1,55
Nr. 2	- 64	45	8		2,8	2,1	1,85
Nr. 3	- 56	50	8		2,8	2,1	2,15
Nr. 4	- 48	56	8	18	3,5	2,7	2,40
Nr. 5	- 44	56	9	18	3,5	2,7	2,70
Nr. 6	- 40	56	10	20	4	3	2,95
Nr. 8	- 36	63	12	21	4,5	3,4	3,50
Nr. 10	- 32	70	12	25	6	4,9	4,10
Nr. 12	- 28	80	12	30	6	4,9	4,60
1/4	- 28	80	12	30	7	5,5	5,50
5/16	- 24	90	15	35	8	6,2	6,90
3/8	- 24	90	18	39	10	8	8,50

HSSE ≈ DIN 374 **UNF**

Version	Straight Flute, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment		
Catalogue-No.	6002	
Tolerance	2B	
	C 	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed. v_c	10 - 20 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	ø D
1/4	- 28	80	12	4,5	3,4	5,50
5/16	- 24	90	15	6	4,9	6,90
3/8	- 24	90	18	7	5,5	8,50
7/16	- 20	100	18	8	6,2	9,90
1/2	- 20	100	18	9	7	11,50
9/16	- 18	100	18	11	9	12,90
5/8	- 18	100	18	12	9	14,50
3/4	- 16	110	24	14	11	17,50
7/8	- 14	125	24	18	14,5	20,50
1	- 12	140	24	18	14,5	23,25

HSSE ≈ DIN 2181 UNF

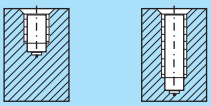
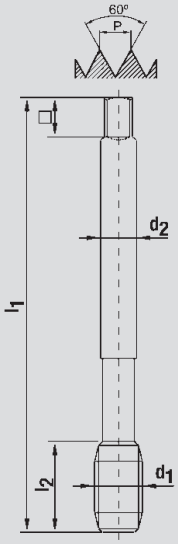
Version	Neoboss Graduation, *No. 3 in Tolerance 2B		
Type of Hole			
Surface Treatment			
Catalogue-No.	2000	2000	
Tolerance	2B		
	Complete Set	V à2 F à2*	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		

d1	P (Gg/1")	l1	l2	d2	□	⌀D
Nr. 1	- 72	36	8	2,8	2,1	1,55
Nr. 2	- 64	36	9	2,8	2,1	1,85
Nr. 3	- 56	40	9	2,8	2,1	2,15
Nr. 4	- 48	41,5	8	3,5	2,7	2,40
Nr. 5	- 44	41,5	8	3,5	2,7	2,70
Nr. 6	- 40	45	9	4	3	2,95
Nr. 8	- 36	46,4	10	4,5	3,4	3,50
Nr. 10	- 32	50	12	6	4,9	4,10
Nr. 12	- 28	52,2	12	6	4,9	4,60
1/4	- 28	51,1	12	6	4,9	5,50
5/16	- 24	56	18	6	4,9	6,90

d1	P (Gg/1")	l1	l2	d2	□	⌀D
3/8	- 24	63	18	7	5,5	8,50
7/16	- 20	63	18	8	6,2	9,90
1/2	- 20	70	20	9	7	11,50
9/16	- 18	70	20	11	9	12,90
5/8	- 18	70	20	12	9	14,50
3/4	- 16	80	22	14	11	17,50
7/8	- 14	90	22	18	14,5	20,50
1	- 12	90	22	18	14,5	23,25
1 1/8	- 12	90	22	22	18	26,50
1 1/4	- 12	90	22	22	18	29,50
1 3/8	- 12	125	30	28	22	32,75
1 1/2	- 12	125	30	32	22	36,00

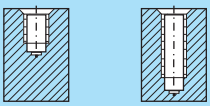
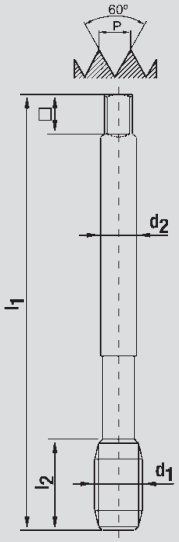
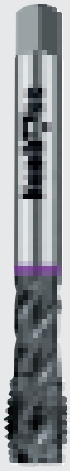
UNEF

HSSE ≈ DIN 374

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole		
Surface Treatment	Steam Tempered	Steam Tempered
Catalogue-No.	7055/78	6045/78
Tolerance	2B	2B
	Rapid-Spez. Vap. 	Grulo-Spez. Vap.
Application add. see Page 14, 15	Unalloyed Steels; Tensile Strength ≤ 1000 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	10 - 20 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
1/4	- 32	80	12	4,5	3,4	5,60
5/16	- 32	90	15	6	4,9	7,20
3/8	- 32	90	18	7	5,5	8,80
7/16	- 28	90	18	8	6,2	10,25
1/2	- 28	100	18	9	7	11,80
9/16	- 24	100	18	11	9	13,30
5/8	- 24	100	18	12	9	14,75
3/4	- 20	110	24	14	11	17,75
7/8	- 20	125	24	18	14,5	21,00
1	- 20	140	24	18	14,5	24,25

HSSE ≈ DIN 374 **UN**

Version	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	
Type of Hole		
Surface Treatment	Steam Tempered	
Catalogue-No.	6365/78	
Tolerance	2BX	
	Grulo-V4A 	
Application add. see Page 12, 13	Stainless Steels with High Chromium-Nickel-Content (VA-Steels)	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	6 - 10 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
UN 8-Thread						
1 1/8	- 8	180	35	22	18	25,50
1 1/4	- 8	180	40	22	18	28,75
1 1/2	- 8	200	36	28	22	35,00

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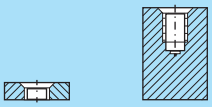
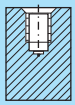
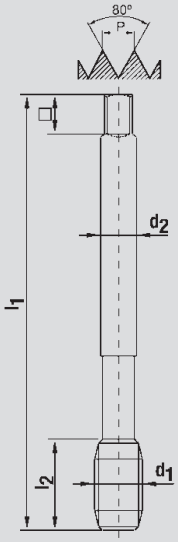
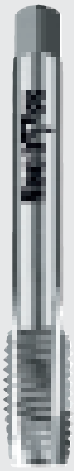
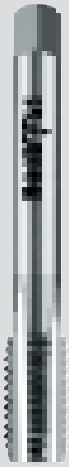
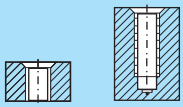
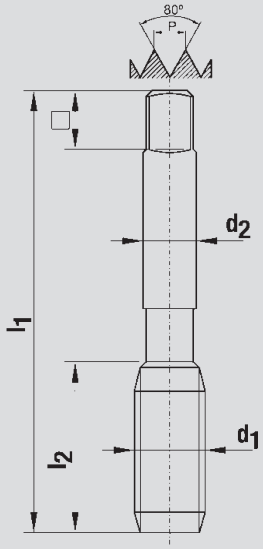
HSSE DIN 40 433 **Pg**

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer (only up to Pg 29)	Straight Flute, Form C, 2 - 3 Threads Chamfer	Ca. 15° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer (only up to Pg 29)
Type of Hole			
Surface Treatment			
Catalogue-No.	7011	6002	6030
Tolerance	Neoboss Specs.	Neoboss Specs.	Neoboss Specs.
	Rapid 	C 	Rsp
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		
Coolant	Cutting Oil or Emulsion		
Cutting Speed v_c	10 - 20 m/min		

d_1	P (Gg/1“)	l_1	l_2	d_2	□	⌀D
Pg 7	20	100	20	9	7	11,35
Pg 9	18	100	20	12	9	13,95
Pg 11	18	110	20	14	11	17,35
Pg 13,5	18	125	24	16	12	19,15
Pg 16	18	125	24	18	14,5	21,25
Pg 21	16	150	28	22	18	26,95
Pg 29	16	170	30	28	22	35,60
Pg 36	16	190	32	36	29	45,60
Pg 42	16	190	32	40	32	52,60
Pg 48	16	220	40	45	35	57,90

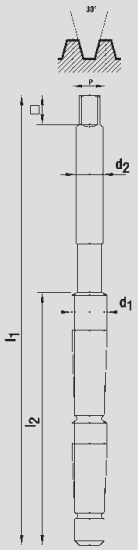
Hand Tap
Steel Conduit Pipe Thread Pg DIN 40 430

HSS DIN 40 432 **Pg**

Version	Neoboss Graduation		
Type of Hole			
Surface Treatment			
Catalogue-No.	2000	2000	
Tolerance	Neoboss specs.	Neoboss specs.	
	Complete Set	V à2 F à2	
Application	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²		

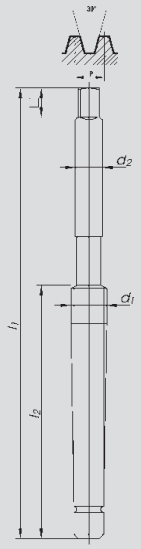
d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
Pg 7	20	70	20	9	7	11,35
Pg 9	18	70	20	12	9	13,95
Pg 11	18	80	22	14	11	17,35
Pg 13,5	18	80	22	16	12	19,15
Pg 16	18	80	22	18	14,5	21,25
Pg 21	16	90	22	22	18	26,95
Pg 29	16	100	25	28	22	35,60
Pg 36	16	140	25	36	29	45,60
Pg 42	16	140	32	40	32	52,60
Pg 48	16	160	32	45	35	57,90

HSSE Tr

Version	Ca. 6° Left Hand Spiral, with Taper Stage, for Nuts up to ca. 2 x d_1 Available upon request	
Type of Hole		
Surface Treatment		
Catalogue-No.	3010	
Tolerance	7H	
		
Application add. see Page 16, 17	Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	Cutting Oil or Emulsion	
Cutting Speed v_c	3 - 6 m/min	

d_1		P (mm)	l_1	l_2	d_2	□	⌀D
Tr 10	x	2	110	65	7	5,5	8,20
Tr 12	x	3	160	110	8	6,2	9,25
Tr 14	x	3	160	110	10	8	11,25
Tr 16	x	4	200	130	11	9	12,25
Tr 18	x	4	200	130	12	9	14,25
Tr 20	x	4	200	130	15	12	16,25
Tr 22	x	5	240	155	16	12	17,25
Tr 24	x	5	240	155	18	14,5	19,25
Tr 26	x	5	260	165	20	16	21,25
Tr 28	x	5	270	170	22	18	23,25
Tr 30	x	6	290	190	22	18	24,25

HSSE Tr

Version	Neoboss Graduation, for Nuts up to ca. 3 x d_1, *No. 3 in Tolerance 7H Available upon request	
Type of Hole		
Surface Treatment		
Catalogue-No.	3000	3000
Tolerance	7H	
	Complete Set 	V à3 M à3 F à3*
Application add. see Page 16, 17	Unalloyed Steels; Tensile Strength ≤800 N/mm²	

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
Tr 10	x 2	90	35	7	5,5	8,20
Tr 12	x 3	110	45	8	6,2	9,25
Tr 14	x 3	130	45	10	8	11,25
Tr 16	x 4	140	55	11	9	12,25
Tr 18	x 4	150	55	12	9	14,25
Tr 20	x 4	160	55	15	12	16,25
Tr 22	x 5	180	70	16	12	17,25
Tr 24	x 5	190	70	18	14,5	19,25
Tr 26	x 5	210	70	20	16	21,25
Tr 28	x 5	220	70	22	18	23,25
Tr 30	x 6	240	85	22	18	24,25

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EG-Unified-Coarse-Thread EG-UNC for Thread Inserts	
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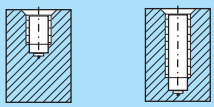
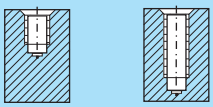
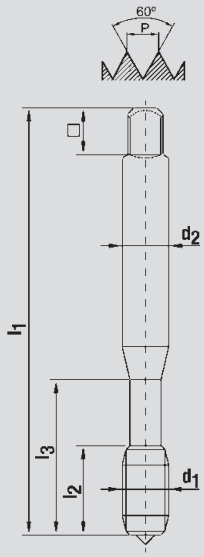
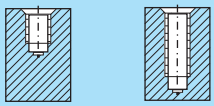
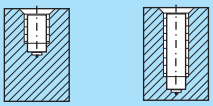
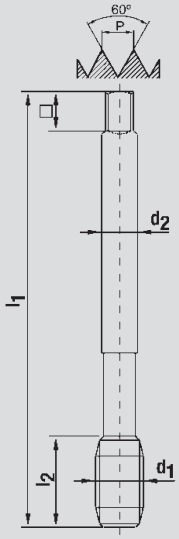
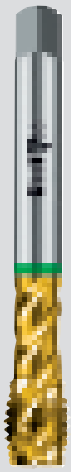
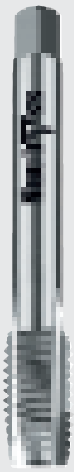
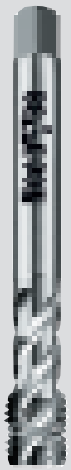
HSSE ≈ DIN 371 EG-M

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	TiN-Coating	TiN-Coating		
Catalogue-No.	7265/54/80	4345/54/80	7010/54	4040/54
Tolerance	6H mod	6H mod	6H mod	6H mod
	Rapid-UNI	Grulo-UNI	Rapid	Grulo
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range		Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	see Page 10		Cutting Oil or Emulsion	
Cutting Speed v_c	see Page 10		10 - 20 m/min	

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
EG M 2,5	0,45	56	10	18	3,5	2,7	2,65
EG M 3	0,5	63	12	21	4,5	3,4	3,15
EG M 3,5	0,6	70	14	25	6	4,9	3,70
EG M 4	0,7	70	14	25	6	4,9	4,20
EG M 5	0,8	80	16	30	6	4,9	5,25
EG M 6	1	90	18	35	8	6,2	6,30
EG M 8	1,25	100	20	39	10	8	8,40

EG-M

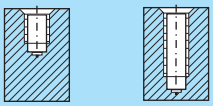
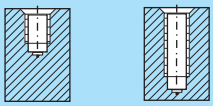
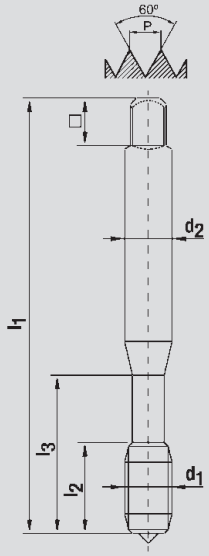
HSSE ≈ DIN 376

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	TiN-Coating	TiN-Coating		
Catalogue-No.	7275/54/80	6345/54/80	7011/54	6040/54
Tolerance	6H mod	6H mod	6H mod	6H mod
	Rapid-UNI	Grulo-UNI 	Rapid 	Grulo 
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range		Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	see Page 10		Cutting Oil or Emulsion	
Cutting Speed v_c	see Page 10		10 - 20 m/min	

d_1	P (mm)	l_1	l_2	d_2	□	⌀D
EG M 10	1,5	110	22	9	7	10,40
EG M 12	1,75	110	24	11	9	12,50
EG M 14	2	110	26	12	9	14,50
EG M 16	2	125	30	14	11	16,50

EG-UNC

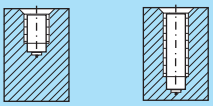
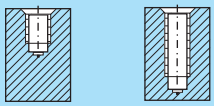
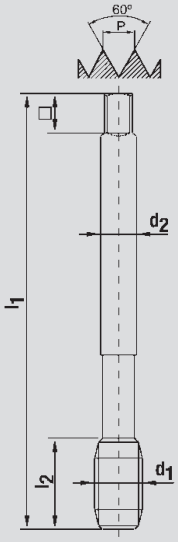
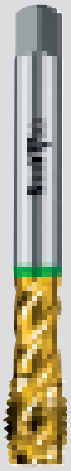
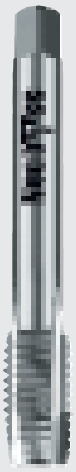
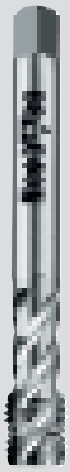
HSSE ≈ DIN 371

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer
Type of Hole				
Surface Treatment	TiN-Coating	TiN-Coating		
Catalogue-No.	7265/54/80	4345/54/80	7010/54	4040/54
Tolerance	2B mod	2B mod	2B mod	2B mod
	Rapid-UNI	Grulo-UNI	Rapid	Grulo
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range		Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	see Page 10		Cutting Oil or Emulsion	
Cutting Speed v_c	see Page 10		10 - 20 m/min	

d_1	P (mm)	l_1	l_2	l_3	d_2	□	⌀D
EG Nr. 4	- 40	63	12	21	4,5	3,4	3,10
EG Nr. 5	- 40	63	12	21	4,5	3,4	3,40
EG Nr. 6	- 32	70	14	25	6	4,9	3,80
EG Nr. 8	- 32	80	16	30	6	4,9	4,40
EG Nr. 10	- 24	80	16	30	7	5,5	5,20
EG Nr. 12	- 24	80	16	30	7	5,5	5,80
EG 1/4	- 20	90	18	35	8	6,2	6,70
EG 5/16	- 18	100	20	39	10	8	8,40

EG-UNC

HSSE ≈ DIN 376

Version	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfer	Straight Flute, Form B, with Spiral Point, 4 - 5 Threads Chamfer	Ca. 40° Right Hand Spiral, Form C, 2 - 3 Threads Chamfert
Type of Hole				
Surface Treatment	TiN-Coating	TiN-Coating		
Catalogue-No.	7275/54/80	6345/54/80	7011/54	6040/54
Tolerance	2B mod	2B mod	2B mod	2B mod
	Rapid-UNI	Grulo-UNI 	Rapid 	Grulo 
Application add. see Page 10, 11	UNIversal Use in a Broad Material Range		Unalloyed Steels; Tensile Strength ≤ 800 N/mm²	
Coolant	see Page 10		Cutting Oil or Emulsion	
Cutting Speed v_c	see Page 10		10 - 20 m/min	

d_1	P (Gg/1")	l_1	l_2	d_2	□	⌀D
EG 3/8	- 16	110	22	9	7	10,00
EG 7/16	- 14	110	24	11	9	11,60
EG 1/2	- 13	110	26	12	9	13,30
EG 9/16	- 12	125	30	14	11	15,00
EG 5/8	- 11	125	30	14	11	16,50
EG 3/4	- 10	140	30	18	14,5	19,75

Technical Part

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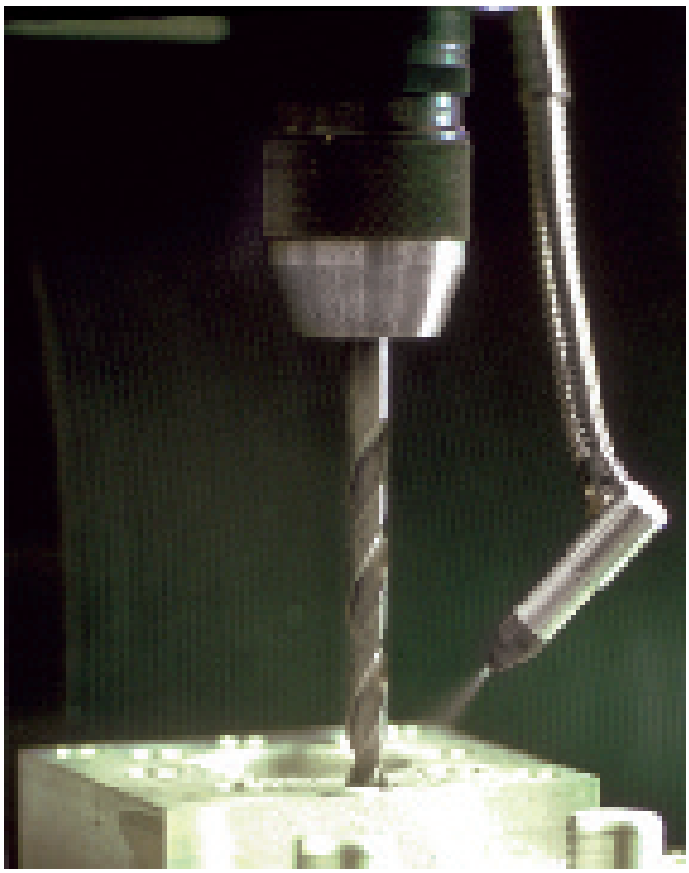
MKS = Minimum Lubrication System via 2-Phase-Technology

Maximum productivity in cutting technology stands for working up to high speeds. The resulting temperatures have to be absorbed, tool and material need to be cooled and lubricated to achieve high tool life.

The newly developed nozzle technology ensures the deep penetration of the finde-dosed coolant/lubricant into the cutting area and thus results in a high cooling and lubrication effect. The coolant/lubricant is applied via a 2-phase-nozzle. The coolant/lubricant jet is enveloped by an “air cushion” so that an unwanted mixture of liquid particles with the surrounding air is excluded.

The coolant/lubricant dismantled into microscopic particles cannot even be hurled away by high centrifugal forces (the disadvantage of full lubrication). The cooling and lubricating effect can thus be used to its full extend.

Proven Use in:
- Tapping
- Thread Rolling
- Thread Milling
- Drilling
- Reaming



Tool cooling and lubrication in an air cushion

Criteria: Cost

- Volume reduction of coolants and lubricants
- Increased tool life
- Reduced disposal and cleaning costs
- Maintenance-free

Criteria: Cooling

- Increased cooling effect
- Coolant/lubricant dismantled into microscopic particles
- Best cooling and lubricationg results

Criteria: Environmental

- Machining without tailings
- Saves costs of disposal
- Reduction of environmental load
- Eliminates health problems

Criteria: Efficiency

- Simple, clean and safe operation
- Well-dosed coolant and lubricant
- Reduced consumption due to independant regulation of air and liquid volumes
- Increased tool life

Neoboss Coatings

Advantages: • improved thread quality • precise accuracy to gauge • increased cutting speed • extended tool life	**TiN** TiN-coated Neoboss taps can be used universally.	**TiCN** Due to its high hardness and favourable viscosity TiCN-coating is recommended for difficult chipping and hard materials.	**TiAlN** Its extreme hardness and gliding quality guarantees high wear resistance against abrasive materials such as cast iron and Aluminium alloys. Its high ductility as well as thermal and chemical stability is extremly well suited for dry cutting and high speed cutting.	**CrN** This chrome nitride-coating with its high adhesive strength and excellent chemical durability is extremely well suited for thread rolling in Aluminium.	**DLC** With its highwear resistance and slight adhesion on nonferrous metals DLC-coating is perfectly recom-mended for cutting Aluminium and Aluminium alloys.
Micro Hard. (HV 0,05)	**2300**	**3000**	**3300**	**1750**	**2800**
Colour of Coating	**gold**	**blue-grey**	**purple - dark grey**	**silver-grey**	**black**
max. Working Temperature	**600 ° C**	**400 ° C**	**900 ° C**	**700 ° C**	**900 ° C**
Application	universal	difficult chipping materials	abrasive material, dry cutting / MKS	Rolling of Aluminium	Aluminium, Aluminium alloys

Recommended Core Hole Diameters for Taps

M Metric ISO Standard Thread DIN 13

Nom.-Ø mm		Pitch mm	Core Hole-Ø mm
M 1	x	0,25	0,75
M 1,1	x	0,25	0,85
M 1,2	x	0,25	0,95
M 1,4	x	0,30	1,10
M 1,6	x	0,35	1,25
M 1,7	x	0,35	1,35
M 1,8	x	0,35	1,45
M 2	x	0,40	1,60
M 2,2	x	0,45	1,75
M 2,3	x	0,40	1,90
M 2,5	x	0,45	2,05
M 2,6	x	0,45	2,15
M 3	x	0,50	2,50
M 3,5	x	0,60	2,90
M 4	x	0,70	3,30
M 4,5	x	0,75	3,70
M 5	x	0,80	4,20
M 5,5	x	0,90	4,60
M 6	x	1,00	5,00
M 7	x	1,00	6,00
M 8	x	1,25	6,80
M 9	x	1,25	7,80
M 10	x	1,50	8,50
M 11	x	1,50	9,50
M 12	x	1,75	10,20
M 14	x	2,00	12,00
M 16	x	2,00	14,00
M 18	x	2,50	15,50
M 20	x	2,50	17,50
M 22	x	2,50	19,50
M 24	x	3,00	21,00
M 27	x	3,00	24,00
M 30	x	3,50	26,50
M 33	x	3,50	29,50
M 36	x	4,00	32,00
M 39	x	4,00	35,00
M 42	x	4,50	37,50
M 45	x	4,50	40,50
M 48	x	5,00	43,00
M 52	x	5,00	47,00

MF Metric ISO Fine Thread DIN 13

Nom.-Ø mm		Pitch mm	Core Hole-Ø mm
M 2,5	x	0,35	2,15
M 2,6	x	0,35	2,25
M 3	x	0,35	2,65
M 3,5	x	0,35	3,15
M 4	x	0,35	3,65
M 4	x	0,50	3,50
M 4,5	x	0,50	4,00
M 5	x	0,50	4,50
M 6	x	0,50	5,50
M 6	x	0,75	5,20
M 7	x	0,75	6,20
M 8	x	0,50	7,50
M 8	x	0,75	7,20
M 8	x	1,00	7,00
M 9	x	0,75	8,20
M 9	x	1,00	8,00
M 10	x	0,50	9,50
M 10	x	0,75	9,20

MF Metric ISO Fine Thread DIN 13

Nom.-Ø mm		Pitch mm	Core Hole-Ø mm
M 10	x	1,00	9,00
M 10	x	1,25	8,80
M 11	x	1,00	10,00
M 12	x	0,50	11,50
M 12	x	0,75	11,20
M 12	x	1,00	11,00
M 12	x	1,25	10,80
M 12	x	1,50	10,50
M 13	x	1,00	12,00
M 13	x	1,50	11,50
M 14	x	0,75	13,20
M 14	x	1,00	13,00
M 14	x	1,25	12,80
M 14	x	1,50	12,50
M 15	x	1,00	14,00
M 15	x	1,50	13,50
M 16	x	1,00	15,00
M 16	x	1,50	14,50
M 17	x	1,00	16,00
M 18	x	1,00	17,00
M 18	x	1,50	16,50
M 18	x	2,00	16,00
M 20	x	1,00	19,00
M 20	x	1,50	18,50
M 20	x	2,00	18,00
M 22	x	1,00	21,00
M 22	x	1,50	20,50
M 22	x	2,00	20,00
M 24	x	1,00	23,00
M 24	x	1,50	22,50
M 24	x	2,00	22,00
M 25	x	1,50	23,50
M 26	x	1,50	24,50
M 27	x	1,50	25,50
M 27	x	2,00	25,00
M 28	x	1,50	26,50
M 30	x	1,00	29,00
M 30	x	1,50	28,50
M 30	x	2,00	28,00
M 32	x	1,50	30,50
M 32	x	2,00	30,00
M 33	x	1,50	31,50
M 33	x	2,00	31,00
M 34	x	1,50	32,50
M 35	x	1,50	33,50
M 36	x	1,50	34,50
M 36	x	2,00	34,00
M 36	x	3,00	33,00
M 38	x	1,50	36,50
M 39	x	2,00	37,00
M 39	x	3,00	36,00
M 40	x	1,50	38,50
M 42	x	1,50	40,50
M 42	x	2,00	40,00
M 42	x	3,00	39,00
M 45	x	1,50	43,50
M 45	x	2,00	43,00
M 45	x	3,00	42,00
M 48	x	1,50	46,50
M 48	x	2,00	45,00
M 48	x	3,00	45,00
M 50	x	1,50	48,50
M 52	x	1,50	50,50

BSW Whitworth-Thread

Nom.-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
W 1/16	-	60	1,55
W 3/32	-	48	2,10
W 1/8	-	40	2,35
W 5/32	-	32	2,85
W 3/16	-	24	3,90
W 7/32	-	24	4,50
W 1/4	-	20	5,10
W 5/16	-	18	6,60
W 3/8	-	16	8,00
W 7/16	-	14	9,40
W 1/2	-	12	10,60
W 9/16	-	12	12,20
W 5/8	-	11	13,50
W 3/4	-	10	16,50
W 7/8	-	9	19,50
W 1	-	8	22,25
W 1 1/8	-	7	25,00
W 1 1/4	-	7	28,00
W 1 3/8	-	6	30,75
W 1 1/2	-	6	34,00
W 1 5/8	-	5	36,25
W 1 3/4	-	5	39,50
W 1 7/8	-	4 1/2	42,00
W 2	-	4 1/2	45,00

G Whitworth Pipe Thread DIN ISO 228

Nom-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
G 1/8	-	28	8,80
G 1/4	-	19	11,80
G 3/8	-	19	15,25
G 1/2	-	14	19,00
G 5/8	-	14	21,00
G 3/4	-	14	24,50
G 7/8	-	14	28,25
G 1	-	11	30,75
G 1 1/8	-	11	35,50
G 1 1/4	-	11	39,50
G 1 3/8	-	11	41,50
G 1 1/2	-	11	45,25
G 1 3/4	-	11	51,00
G 2	-	11	57,00

Rp Whitworth Pipe Thread ISO 7/1 and DIN 2999

Nom.-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
Rp 1/8	-	28	8,55
Rp 1/4	-	19	11,40
Rp 3/8	-	19	14,90
Rp 1/2	-	14	18,60
Rp 3/4	-	14	24,10
Rp 1	-	11	30,25
Rp 1 1/2	-	11	44,75
Rp 2	-	11	56,75

Recommended Core Hole Diameters for Taps

UNC — Unifed-Coarse-Thread ANSI B1.1

Nom.-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
Nr. 1	-	64	1,55
Nr. 2	-	56	1,85
Nr. 3	-	48	2,10
Nr. 4	-	40	2,35
Nr. 5	-	40	2,65
Nr. 6	-	32	2,85
Nr. 8	-	32	3,50
Nr. 10	-	24	3,90
Nr. 12	-	24	4,50
1/4	-	20	5,10
5/16	-	18	6,60
3/8	-	16	8,00
7/16	-	14	9,40
1/2	-	13	10,80
9/16	-	12	12,20
5/8	-	11	13,50
3/4	-	10	16,50
7/8	-	9	19,50
1	-	8	22,25
1 1/8	-	7	25,00
1 1/4	-	7	28,00
1 3/8	-	6	30,75
1 1/2	-	6	34,00
1 3/4	-	5	39,50
2	-	4 1/2	45,00

UNF — Unified-Fine-Thread ANSI B 1.1

Nom.-Ø inch		Pitch mm	Core Hole-Ø mm
Nr. 0	-	80	1,25
Nr. 1	-	72	1,55
Nr. 2	-	64	1,85
Nr. 3	-	56	2,15
Nr. 4	-	48	2,40
Nr. 5	-	44	2,70
Nr. 6	-	40	2,95
Nr. 8	-	36	3,50
Nr. 10	-	32	4,10
Nr. 12	-	28	4,60
1/4	-	28	5,50
5/16	-	24	6,90
3/8	-	24	8,50
7/16	-	20	9,90
1/2	-	20	11,50
9/16	-	18	12,90
5/8	-	18	14,50
3/4	-	16	17,50
7/8	-	14	20,50
1	-	12	23,25
1 1/8	-	12	26,50
1 1/4	-	12	29,50
1 3/8	-	12	32,75
1 1/2	-	12	36,00

UNEF — Unified-Extra-Fine-Thread ANSI B 1.1

Nom.-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
1/4	-	32	5,60
5/16	-	32	7,20
3/8	-	32	8,80
7/16	-	28	10,25
1/2	-	28	11,80
9/16	-	24	13,30
5/8	-	24	14,75
3/4	-	20	17,75
7/8	-	20	21,00
1	-	20	24,25

UN — Unified-Thread, 8- and 12-Threads ANSI B 1.1

Nom.-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
1 1/8	-	8	25,50
1 1/4	-	8	28,75
1 1/2	-	8	35,00
1 3/4	-	8	41,50
2	-	8	47,75
1 3/4	-	12	42,50
2	-	12	48,75

Pg — Steel Conduit Pipe Thread DIN 40430

Nom.-Ø		Pitch (Gg/1")	Core Hole-Ø mm
Pg 7	-	20	11,35
Pg 9	-	18	13,95
Pg 11	-	18	17,35
Pg 13,5	-	18	19,15
Pg 16	-	18	21,25
Pg 21	-	16	26,95
Pg 29	-	16	35,60
Pg 36	-	16	45,60
Pg 42	-	16	52,60
Pg 48	-	16	57,90

NPSM — American Cylindrical Pipe Thread NPSM acc. to ANSI B 1.20.1

Nom.-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
1/8	-	27	9,10
1/4	-	18	12,00
3/8	-	18	15,50
1/2	-	14	19,00
3/4	-	14	24,50
1	-	11 1/2	30,50

Rd — Round Thread DIN 405

Nom.-Ø mm		Pitch (Gg/1")	Core Hole-Ø mm
Rd 8	x	10	5,90
Rd 10	x	10	7,90
Rd 12	x	10	9,90
Rd 14	x	8	11,40
Rd 16	x	8	13,50
Rd 18	x	8	15,50
Rd 20	x	8	17,50
Rd 24	x	8	21,50
Rd 28	x	8	25,50

Tr — Trapezodial DIN 103

Nom.-Ø mm		Pitch mm	Core Hole-Ø mm
Tr 10	x	2	8,20
Tr 12	x	3	9,25
Tr 14	x	3	11,25
Tr 16	x	4	12,25
Tr 18	x	4	14,25
Tr 20	x	4	16,25
Tr 22	x	5	17,25
Tr 24	x	5	19,25
Tr 26	x	5	21,25
Tr 28	x	5	23,25
Tr 30	x	6	24,25

EG-M — EG-Metric ISO Standard Thread DIN 8140 Part 2 for Thread Inserts

Nom.-Ø mm		Pitch mm	Core Hole-Ø mm
EG M 2	x	0,45	2,65
EG M 3	x	0,50	3,15
EG M 3,5	x	0,60	3,70
EG M 4	x	0,70	4,20
EG M 5	x	0,80	5,25
EG M 6	x	1,00	6,30
EG M 8	x	1,25	8,40
EG M 10	x	1,50	10,40
EG M 12	x	1,75	12,50
EG M 14	x	2,00	14,50
EG M 16	x	2,00	16,50

EG-UNC — EG-Unified-Coarse-Thread for Thread Inserts

Nenn-Ø inch		Pitch (Gg/1")	Core Hole-Ø mm
EG Nr. 4	-	40	3,10
EG Nr. 5	-	40	3,40
EG Nr. 6	-	32	3,80
EG Nr. 8	-	32	4,40
EG Nr. 10	-	24	5,20
EG Nr. 12	-	24	5,80
EG 1/4	-	20	6,70
EG 5/16	-	18	8,40
EG 3/8	-	16	10,00
EG 7/16	-	14	11,60
EG 1/2	-	13	13,30
EG 9/16	-	12	15,00
EG 5/8	-	11	16,50
EG 3/4	-	10	19,75

Recommended Core Hole Diameters for Taps

RC — Whitworth Cylindrical Pipe Thread (BSPT), acc. BS 21 and ISO 7/1, Taper 1 : 16

rough-drill cylindrically

Nom-Ø inch		Pitch (Gg/1")	Ø D_1 mm	Hole Depth mm
Rc 1/16	-	28	6,20	11,90
Rc 1/8	-	28	8,20	11,90
Rc 1/4	-	19	11,00	17,70
Rc 3/8	-	19	14,50	18,10
Rc 1/2	-	14	18,00	24,00
Rc 3/4	-	14	23,50	25,30
Rc 1	-	11	29,50	30,60

rough-drill cylindrically and grind conically with reamer

Nom-Ø inch		Pitch (Gg/1")	Ø D_2 mm	Ø D_3 mm	Hole Depth mm
Rc 1/16	-	28	6,20	6,56	11,90
Rc 1/8	-	28	8,10	8,57	11,90
Rc 1/4	-	19	10,75	11,45	17,70
Rc 3/8	-	19	14,25	14,95	18,10
Rc 1/2	-	14	17,75	18,63	24,00
Rc 3/4	-	14	23,00	24,12	25,30
Rc 1	-	11	29,00	30,29	30,60

NPT — American Taper Pipe Thread, Taper 1 : 16 acc. to ANSI B 1.20.1

rough-drill cylindrically

Nom-Ø inch		Pitch (Gg/1")	Ø D_1 mm	Hole Depth mm
1/16	-	27	6,25	12,00
1/8	-	27	8,50	12,00
1/4	-	18	11,10	17,50
3/8	-	18	14,70	17,60
1/2	-	14	18,00	22,90
3/4	-	14	23,25	23,00
1	-	11 1/2	29,25	27,40
1 1/4	-	11 1/2	38,00	28,10
1 1/2	-	11 1/2	44,25	28,40
2	-	11 1/2	56,25	28,40

rough-drill cylindrically and grind conically with reamer

Nom-Ø inch		Pitch (Gg/1")	Ø D_2 mm	Ø D_3 mm	Hole Depth mm
1/16	-	27	6,00	6,41	11,90
1/8	-	27	8,25	8,76	12,00
1/4	-	18	10,70	11,40	17,50
3/8	-	18	14,10	14,84	17,60
1/2	-	14	17,40	18,33	22,90
3/4	-	14	22,60	23,68	23,00
1	-	11 1/2	28,50	29,72	27,40
1 1/4	-	11 1/2	37,00	38,48	28,10
1 1/2	-	11 1/2	43,50	44,55	28,40
2	-	11 1/2	55,00	56,59	28,40

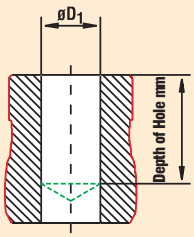
NPT — American Taper Pipe Thread, Taper 1 : 16 acc. to ANSI B 1.20.4

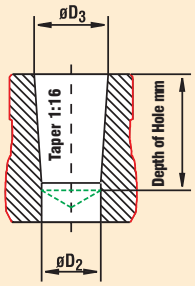
rough-drill cylindrically

Nom.-Ø inch		Pitch (Gg/1")	Ø D_1 mm	Hole Depth mm
1/16	-	27	6,15	12,00
1/8	-	27	8,40	12,00
1/4	-	18	11,00	17,50
3/8	-	18	14,50	17,60
1/2	-	14	17,75	22,90
3/4	-	14	23,00	23,00
1	-	11 1/2	29,00	27,40
1 1/4	-	11 1/2	37,50	28,10
1 1/2	-	11 1/2	44,00	28,40
2	-	11 1/2	56,00	28,40

rough-drill cylindrically and grind conically with reamer

Nom.-Ø inch		Pitch (Gg/1")	Ø D_2 mm	Ø D_3 mm	Hole Depth mm
1/16	-	27	6,00	6,41	12,00
1/8	-	27	8,25	8,76	12,00
1/4	-	18	10,70	11,40	17,50
3/8	-	18	14,10	14,84	17,60
1/2	-	14	17,40	18,33	22,90
3/4	-	14	22,60	23,68	23,00
1	-	11 1/2	28,50	29,72	27,40
1 1/4	-	11 1/2	37,00	38,48	28,10
1 1/2	-	11 1/2	43,50	44,55	28,40
2	-	11 1/2	55,00	56,59	28,40





Core Hole Diameters for Roll Taps

Please, note!
The core hole diameter has an impact on the quality of the thread.

Core hole too small:
Thread will be squeezed, danger of breaking the tool.

Core hole too wide:
No clean thread surface.

M Metric ISO Standard Thread DIN 13

Nom.-Ø mm		Pitch mm	Core Hole-Ø mm
M 1	x	0,25	0,88
M 1,2	x	0,25	1,08
M 1,4	x	0,30	1,25
M 1,6	x	0,35	1,45
M 1,7	x	0,35	1,55
M 1,8	x	0,35	1,65
M 2	x	0,40	1,80
M 2,2	x	0,45	2,00
M 2,3	x	0,40	2,10
M 2,5	x	0,45	2,30
M 2,6	x	0,45	2,40
M 3	x	0,50	2,80
M 3,5	x	0,60	3,25
M 4	x	0,70	3,70
M 5	x	0,80	4,65
M 6	x	1,00	5,55
M 8	x	1,25	7,40
M 10	x	1,50	9,30
M 12	x	1,75	11,20
M 14	x	2,00	13,10
M 16	x	2,00	15,10
M 18	x	2,50	16,90
M 20	x	2,50	18,90
M 22	x	2,50	20,90
M 24	x	3,00	22,65

MF Metric ISO Fine Thread DIN 13

Nom.-Ø mm		Pitch mm	Core Hole-Ø mm
M 4	x	0,50	3,75
M 5	x	0,50	4,75
M 6	x	0,50	5,75
M 6	x	0,75	5,65
M 8	x	0,50	7,75
M 8	x	0,75	7,65
M 8	x	1,00	7,55
M 10	x	0,75	9,65
M 10	x	1,00	9,55
M 12	x	1,00	11,55
M 12	x	1,50	11,30
M 14	x	1,00	13,55
M 14	x	1,50	13,30
M 16	x	1,00	15,55
M 16	x	1,50	15,30
M 18	x	1,00	17,55
M 18	x	1,50	17,30
M 20	x	1,50	19,30
M 20	x	2,00	19,10
M 22	x	1,50	21,30
M 22	x	2,00	21,10
M 24	x	1,50	23,30
M 24	x	2,00	23,10

UNC Unifed-Coarse-Thread ANSI B1.1

Nom.-Ø inch	Pitch mm	Core Hole-Ø mm
Nr. 2 - 56	0,454	1,95
Nr. 3 - 48	0,529	2,25
Nr. 4 - 40	0,635	2,55
Nr. 5 - 40	0,635	2,90
Nr. 6 - 32	0,794	3,15
Nr. 8 - 32	0,794	3,80
Nr. 10 - 24	1,058	4,35
Nr. 12 - 24	1,058	5,00
1/4 - 20	1,270	5,75
5/16 - 18	1,411	7,30
3/8 - 16	1,588	8,80
7/16 - 14	1,814	10,30
1/2 - 13	1,954	11,80
9/16 - 12	2,117	13,30
5/8 - 11	2,309	14,80
3/4 - 10	2,540	17,90
7/8 - 9	2,822	20,95
1 - 8	3,175	24,00

UNF Unified-Fine-Thread ANSI B 1.1

Nom.-Ø inch	Pitch mm	Core Hole-Ø mm
Nr. 2 - 64	0,397	2,00
Nr. 3 - 56	0,454	2,30
Nr. 4 - 48	0,529	2,60
Nr. 5 - 44	0,577	2,90
Nr. 6 - 40	0,635	3,20
Nr. 8 - 36	0,706	3,85
Nr. 10 - 32	0,794	4,45
Nr. 12 - 28	0,907	5,10
1/4 - 28	0,907	5,95
5/16 - 24	1,058	7,45
3/8 - 24	1,058	9,00
7/16 - 20	1,270	10,50
1/2 - 20	1,270	12,10
9/16 - 18	1,411	13,65
5/8 - 18	1,411	15,25
3/4 - 18	1,588	18,30
7/8 - 14	1,814	21,40
1 - 12	2,117	24,45

G Whitworth Pipe Thread DIN ISO 228

Nom.-Ø inch	Pitch mm	Core Hole-Ø mm
G 1/8 - 28	0,907	9,25
G 1/4 - 19	1,337	12,50
G 3/8 - 19	1,337	16,00
G 1/2 - 14	1,814	20,00
G 5/8 - 14	1,814	22,00
G 3/4 - 14	1,814	25,50
G 7/8 - 14	1,814	29,25
G 1 - 11	2,309	32,00

Recommended Cutting Speeds and RPM for Taping

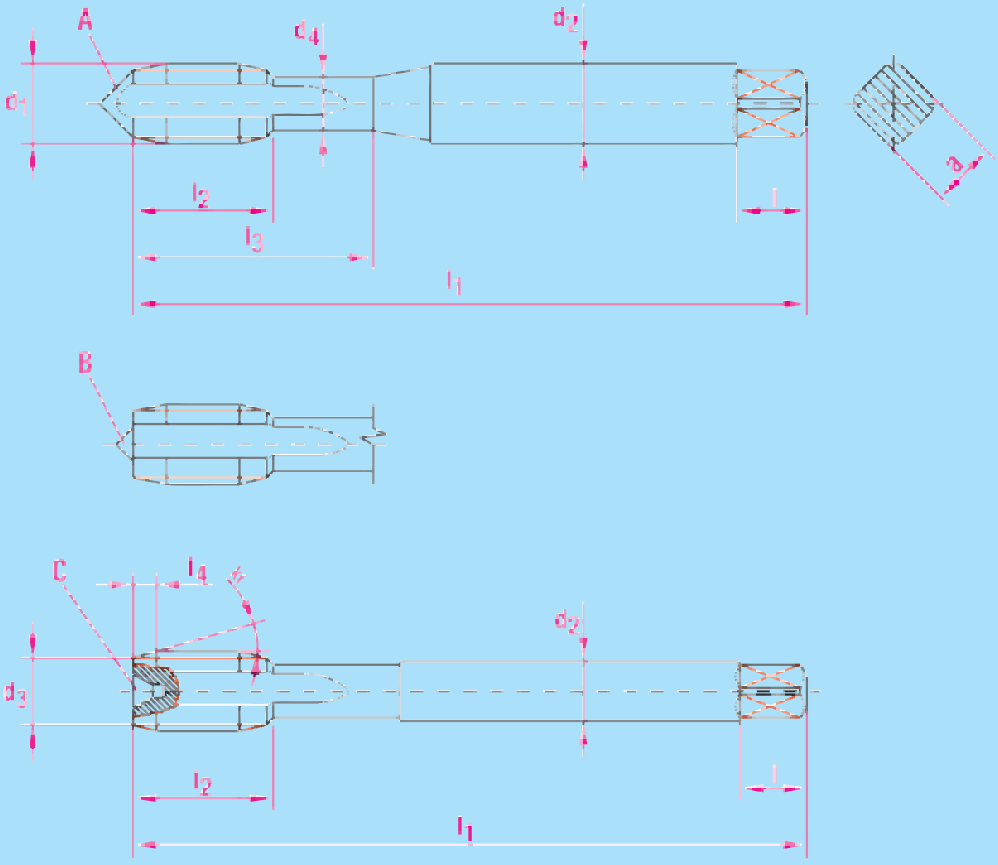
Thread	Cutting Speed v_c in m/min															RPM
Ø mm	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
M 1	318	637	955	1274	1592	1910	2548	3185	3822	4777	6396	7962	9554	12739	15924	19108
M 2	159	318	478	637	796	955	1274	1592	1911	2388	3185	3981	4777	6396	7962	9554
M 3	106	212	318	425	531	637	849	1062	1274	1592	2123	2654	3185	4246	5308	6369
M 4	80	159	239	318	398	478	637	796	955	1194	1592	1990	2389	3185	3981	4777
M 5	64	127	191	255	318	382	510	637	764	955	1274	1592	1911	2548	3185	3821
M 6	53	106	159	212	265	318	425	513	637	796	1062	1327	1592	2123	2653	3185
M 8	40	80	119	159	199	239	318	398	478	597	796	955	1194	1592	1990	2388
M 10	31	64	96	127	159	191	255	318	382	478	637	796	955	1274	1592	1911
M 12	26	53	80	106	133	159	212	265	318	398	531	663	796	1062	1327	1592
M 14	23	45	68	91	114	136	182	227	273	341	455	569	682	910	1137	1365
M 16	20	40	60	80	100	119	159	199	239	299	398	498	597	796	995	1194
M 18	18	35	53	71	88	106	142	177	212	265	354	442	531	708	885	1062
M 20	16	32	48	64	80	96	127	159	191	239	318	398	478	637	796	955
M 25	13	25	38	51	64	76	102	127	153	191	255	318	382	510	637	764
M 30	11	21	32	42	53	64	85	106	127	159	212	205	318	425	531	637
M 35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
M 40	8	16	24	32	40	48	64	80	96	119	159	199	239	318	398	478
M 45	7	14	21	28	35	42	57	71	85	106	142	177	212	283	354	425
M 50	6	13	19	25	32	38	51	64	76	96	127	159	191	255	318	382

Formula: $\text{RPM} = \dfrac{\text{Cutting Speed} \times 1000}{\text{Diameter} \times 3{,}14}$ $\quad n = \dfrac{v_c \times 1000}{d \times \pi} = \text{RPM}$ $\quad$ oder $v_c = \dfrac{d \times \pi \times n}{1000} = \text{m/min}$

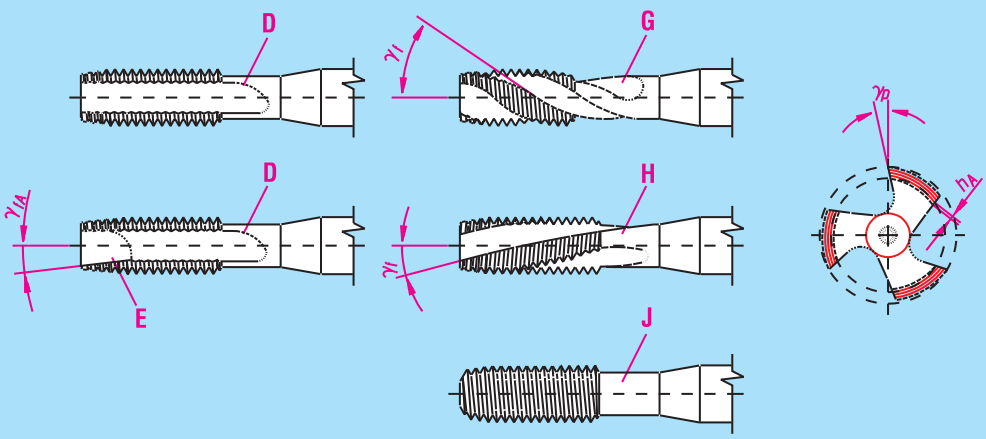
Taps - Technical Vocabulary

Letters of Dimensions Abbreviations

A = External Center
B = Reduced External Center
C = Internal Center
d_1 = Major Diameter of Tap
d_2 = Shank Diameter of Tap
d_3 = Chamfer Diameter
d_4 = Neck Diameter
l_1 = Total Length
l_2 = Thread Length
l_3 = Usable Length
l_4 = Square Size
a = Square Size
l = Square Length
K_f = Chamfer Angle



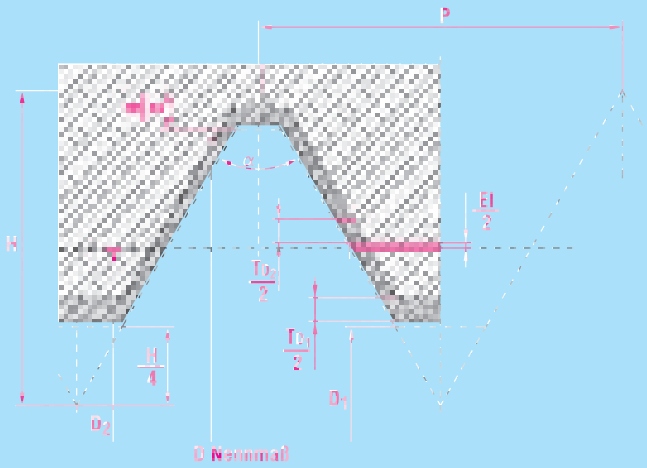
D = Straight Flutes
E = Spiral Point
G = Right Hand Spiral
H = Left Hand Spiral
J = Roll Tap
γ = Chip Angle, Side
γ_{fA} = Angle of Spiral Point
γ_p = Chip Angle
h_a = Chamfer Relief



Tap Tolerances (Thread Portion of Taps)

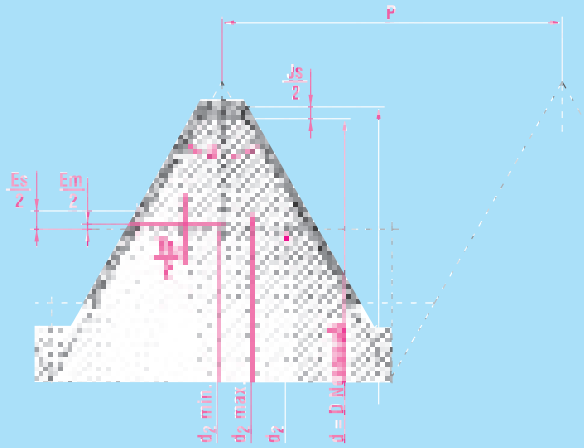
Extracted from DIN EN 22 857

Female Thread Profile

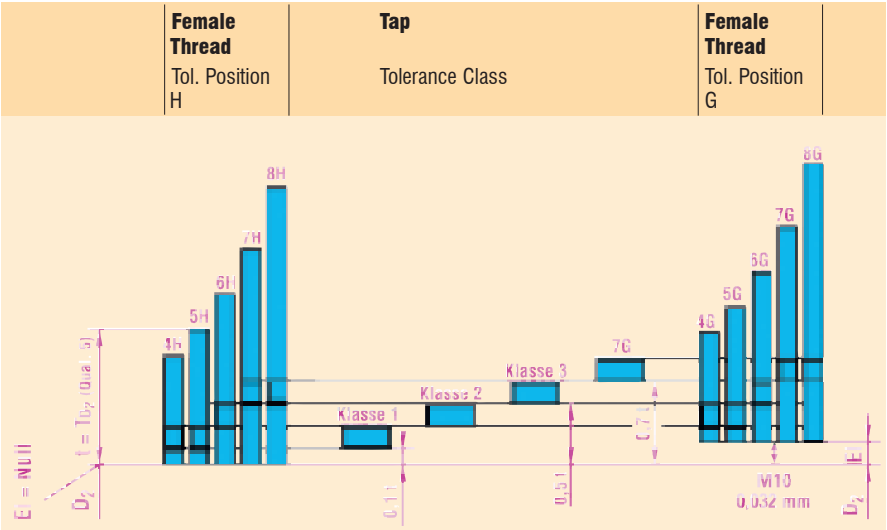


E1 = Theoretical Size
D = Nominal Diameter
D_1 = Nominal Core Diameter
D_2 = Flank Diameter
H = Triangular Height
P = Pitch
T_{D_1} = Tolerance of Core Hole Diameter
T_{D_2} = Tolerance of Flank Diameter
T_{D_2} = Tolerance Class 5 of Female Thread
Tolerance of Flank Diameter acc. to Class 5
a = Thread Angle

Profile of Tap



d-D = Nominal Diameter
d_{min} = Minimum Outside Diameter
$d_2 = D_2$ = Flank Diameter
d_2 max. = Maximum Flank Diameter
d_2 min. = Minimum Flank Diameter
Em = Minimum Flank Diameter
Es = Maximum Flank Diameter
Js = Minimum Outside Diameter
P = Pitch
$t\text{-}T_{D_2}$ = Tolerance Class 5 of Female Thread
Unit of Tolerance
T_{d_2} = Tolerance of the Flank Diameter

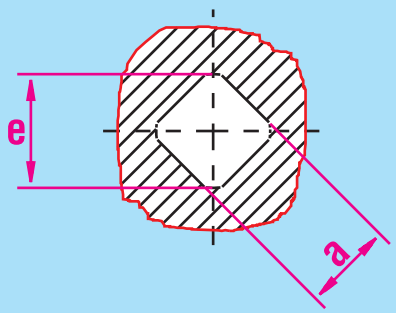


Tolerance Class of Tap		Area of Tolerance of Thread to be Cut				
Acording to						
DIN	ISO					
4H	ISO 1	4H	5H	–	–	–
6H	ISO 2	4G	5G	6H	–	–
6G	ISO 3	–	–	6G	7H	8H
7G	–	–	–	–	7G	8G

Squares

DIN 10 - 6.97 Tab. 1

Inner Squares



Outer Squares

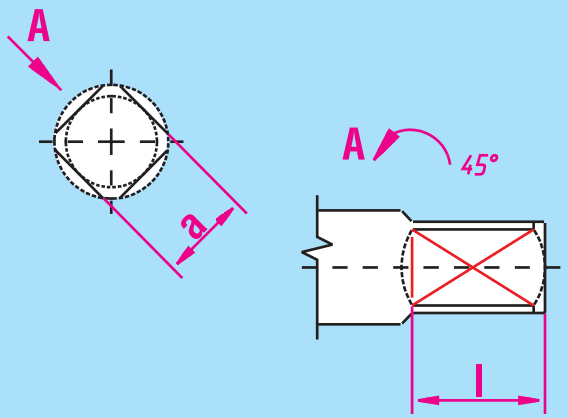


Chart 1

Description of a square with nom. dimension a = 10 mm
Square DIN 10 – 10

Dimensions in Millimeters

Nom. Dim.	Square						Cylindrical Shaft		
	Inner Square			Outer Square			Diameters		Preferred Diameter
a	a		e	a		l	d		d
	max.	min.	min.	max.	min.	js 16 [1]	from	to	
2,1	2,260	2,120	2,89	2,100	2,010	5	2,47	2,83	2,5; 2,8
2,4	2,560	2,420	3,27	2,400	2,310	5	2,83	3,20	–
2,7	2,860	2,720	3,67	2,700	2,610	6	3,20	3,60	3,5
3,0	3,160	3,020	4,08	3,000	2,910	6	3,60	4,01	4
3,4	3,610	3,430	4,60	3,400	3,280	6	4,01	4,53	4,5
3,8	4,010	3,830	5,15	3,800	3,680	7	4,53	5,08	5
4,3	4,510	4,330	5,86	4,300	4,180	7	5,08	5,79	5,5
4,9	5,110	4,930	6,61	4,900	4,780	8	5,79	6,53	6
5,5	5,710	5,530	7,41	5,500	5,380	8	6,53	7,33	7
6,2	6,460	6,240	8,35	6,200	6,050	9	7,33	8,27	8
7	7,260	7,040	9,54	7,000	6,850	10	8,27	9,46	9
8	8,260	8,040	10,77	8,000	7,850	11	9,46	10,67	10
9	9,260	9,040	12,10	9,000	8,850	12	10,67	12,00	11; 12
10	10,260	10,040	13,43	10,000	9,850	13	12,00	13,33	–
11	11,320	11,050	14,77	11,000	10,820	14	13,33	14,67	14
12	12,320	12,050	16,10	12,000	11,820	15	14,67	16,00	16
13	13,320	13,050	17,43	13,000	12,820	16	16,00	17,33	–
14,5	14,820	14,550	19,44	14,500	14,320	17	17,33	19,33	18
16	16,320	16,050	21,44	16,000	15,820	19	19,33	21,33	20
18	18,320	18,050	24,11	18,000	17,820	21	21,33	24,00	22
20	20,395	20,065	26,78	20,000	19,790	23	24,00	26,67	25
22	22,395	22,065	29,44	22,000	21,790	25	26,67	29,33	28
24	24,395	24,065	32,12	24,000	23,790	27	29,33	32,00	32
26	26,395	26,065	34,79	26,000	25,790	29	32,00	34,67	–
29	29,395	29,065	38,79	29,000	28,790	32	34,67	38,67	36
32	32,470	32,080	42,80	32,000	31,750	35	38,67	42,67	40
35	35,470	35,080	46,80	35,000	34,750	38	42,67	46,67	45
39	39,470	39,080	52,20	39,000	38,750	42	46,67	52,06	50
44	44,470	44,080	58,81	44,000	43,750	47	52,06	58,67	56
49	49,470	49,080	65,48	49,000	48,750	52	58,67	65,33	63
55	55,560	55,100	73,48	55,000	54,700	58	65,33	73,33	70
61	61,560	61,100	81,50	61,000	60,700	64	73,33	81,33	80
68	68,560	68,100	90,83	68,000	67,700	71	81,33	90,66	90
76	76,560	76,100	101,51	76,000	75,700	79	90,66	101,33	100

[1]) does not apply to tools activated by hand

Terms of Sales, Delivery and Payment

1. General
All orders hereunder are accepted subject to the following terms. Any other conditions mentioned by the customers unless expressly accepted in writing are not binding. This also applies to those cases when we did not explicitly contradict. Our terms only apply to business people and legal representatives of public law and property under public law.

2. Purchases
Purchases effected with us have to be accepted as agreed. Upon refusal of delivery we reserve the right to claim damages. In case the delivery of samples or trials preceeded the purchase in which the purchaser had the chance to convince himself of the kind of goods, quality, design and execution the purchaser cannot object to the kind of goods, quality, design and execution in any way. We reserve the right to adjust or improve our goods compared with samples sent previously or previous deliveries.

3. Cost estimates and offers
We retain the unlimited property and copyright of the use of our cost estimates, drawings and other documents; they shall not be disclosed to third parties. If the order is not placed drawings and documents have to be returned immediately.

4. Terms of Delivery
The beginning of the period of delivery set by us requires the final solution of all technical questions. Periods of delivery will be extended appropriately in case of labour disputes especially strike and lockout as well as in case of unforeseen events. This also applies when the corresponding circumstances happen to sub-suppliers. The event of such obstacles shall be reported to the customer immediately. The right to claim damages due to delay or non-compliance only applies to the customer when our delayed delivery is based on intent or gross negligence.

5. Passing of Risk and Dispatch
Incoterms apply in their latest version. If the acknowledgement does not explicitly mention another clause of the Incoterms, clause EXW (the works acknowledging the order) shall apply.

6. Complaints
Complaints and other objections regarding obvious defects have to be raised in writing immediately, 10 days after receipt of the goods at the latest, hidden defects immediately as well, however, 10 days after their discovery at the latest and no later than 6 months after receipt of the goods. Upon expiration of the a. m. deadline warranty claims of any kind are not possible.

7. Warranty
In general the obligation to examine and reproach according to §§377, 378 HGB (German Commercial Law) applies. As far as a defect of the purchased goods appears we have the right and it is our choice either to repair or exchange the goods. If we are not willing or not in the position to repair/exchange, or if this exceeds an appropriate timeframe based on reasons which we have to justify, or if we fail to repair/exchange in any other way, the customer has the right to decide whether to withdraw from the contract or ask for a corresponding reduction of the purchase price. We have the option to try a repair twice before the customer may use the a.m. rights. As far as there is no contradiction in the subsequent paragraphs, further claims no matter of which legal base are excluded. We are therefore not liable for damages which we did not occur on the purchased goods themselves, especially we are not liable for missed profit or any other damage to the property of the customer. The a.m. exclusion of liability does not apply if the cause of damage is intent or gross negligence. Furthermore it does not apply if the customer enforces damage claims based on §§ 463, 480 section 2 BGB (German Civil Law) for non-performance due to lack of a confirmed feature. As far as we negligently fail to meet an essential duty of the contract our liability to pay damages on goods or people is limited to the amount covered by our product liability insurance. We are prepared to show our policy to the customer on request. The warranty period is 6 months effective with the transfer of risk except if we have agreed to longer warranty periods in the individual contract. Our warranty periods are prescription periods and also apply to claims for damages as a result of defects if no claims based on tortuous act are put forward.

8. Delivery and Price
We generally dispatch from our respective works according to Incoterms “EXW”, ex works, including packing if no other agreement has been made. The value added tax with its official value at the time invoicing shall be added to the price. Partial shipments are permitted. In case of special manufacture we have the right to ship plus/minus 10% of the ordered volume.

9. Terms of payment
Upon cash payment as well as cash payment in advance we grant a 2% cash discount. Cash discounts do not apply to payments by drafts. Drafts and cheques are only accepted if especially agreed to and for payment purposes including all collecting and discount expenses. We do not guarantee the timely presentation ad submission of the protest of a bill. If a customer is delayed interest payments for delay used in banking will be charged, however, at least 4% above the discount rate of Deutsche Bundesbank (German Federal Bank). This does not exclude the additional claim for damages due to delay. Payments have to be effected directly to us; our commercial representatives are not authorized to receive payments. Invoices concerning partial deliveries are individually due according to their date of issue. If no terms of payment have been agreed to payment within 8 days with 2% discount, 30 days net of date of invoice shall apply.

10. Compensation/Right of Retention
The retention of payments or the compensation with possible counter-claims of the customer is only allowed if the counter-claims have been accepted by us or are legally confirmed.

11. Reservation of Title
We reserve the title of the purchased goods until the final payment of all payments resulting from the business relationship with the customer. If the customer acts against the sense of the contract, especially in case of delayed payment, we have the right to take the goods back. This does not constitute our resignation from the contract unless we explicitly confirm this in writing. After taking the goods back we are free to utilize them. The proceeds from the utilization shall be credited against the customer’s liability reduced by appropriate utilization costs. A distress or other interventions of a third party shall be immediately reported in writing by the customer. If the third party is not able to reimburse our legal and extra-legal costs of a claim concerning a release of our property (intervention claim according to §771 ZPO) the customer is liable for the loss. The customer has the right to resell the goods in an ordinary business relationship; he already transfers all claims amounting to the final value of the invoice (incl. Value added tax) resulting from the resale to his customers or third parties independent of the fact whether the delivered goods were resold without or after processing. The customer has the right to collect the debt after the transfer of this debt to us. This does not affect our right to collect the dept ourselves. We are obliged, though, not to collect as long as the customer meets his payment obligations, have no delayed payments, and an application for bankruptcy or settlement proceedings in not pending. If this is the case we can ask the customer to present the transferred claims and their debtors, make the necessary statements, hand over the corresponding documents and advise the debtors (third parties) of the transfer. If the goods delivered are processed to another mobile item this processing is done with us. The acquisition of property by the customer is excluded in accordance with § 950 BGB (German Civil Law). If the goods delivered are processed or mixed together with other items not belonging to us we acquire the property of the newly produced goods in relation to the value of the remaining goods at the time of manufacture. For these new goods created by the process the same applies as for goods supplied with reservations. Reservations and all other securing rights applying to us remain in existence up to the complete payment of all debts resulting from the business relationship. If these securities exceed all debts resulting from this business relationship by more than 20% we are obliged to release upon request by the customer.

12. Cession
We have the right to transfer our debts against our customers to third parties without the approval of our customers.

13. Liability
Our liability is exclusively based on these regulations. The claim for damages raised by the purchaser against us and our agents and executors for whatever legal reason, especially in case of fault when signing the contract, violation of contractual side duties and tortuous act, is excluded unless they are in result of the intent or gross negligence. The a.m. limitations of liability do not apply to claims according to §§ 1,4 of the Product Liability Law.

14. Place of Performance and Place of Jurisdiction
Place of performance are the premises of the seller. Jurisdiction is also the premises of the seller as long as the customer is a business man or legal representatives of public law and property under public law. We have the right to sue the purchaser at the court of his residence.

15. Jurisdiction
German legislation only shall apply.

16. Legality
If any of the aforementioned regulations of the contract do not become part of the contract in part or in total or if they have become or are invalid the rest of the contract shall remain in full force.

February 2011

HOW TO CHOOSE THE RIGHT TAP

Company:

Person:

Date:

Consumption / Year (in Pieces):

Type

Dimension:

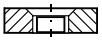
Tolerance:

Right Hand ☐ Left Hand ☐

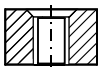
Depth of Core Hole: mm

Depth of Thread: mm

Through Hole



Short Thread

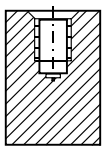


Depth of Thread up to 2-3 x d_1

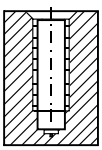
☐ ☐

Please, mark

Blind Hole



Depth of Thread 1,5 x d_1



Depth of Thread bis 3 x d_1

☐ ☐

Please, mark

Workpiece / Material

Material Designation:

Material Number:

Hardness / Tensile Strenght:

Tool Presently Used

Application

Required / Limits to Cutting Speed:

Coolant: ☐ Emulsion ☐ Dry ☐ Cutting Oil ☐ MKS

Machine:

Tool Holder / Compensation Chuck:

Further Details / Problems:

Neoboss-Tool Recommendation

Art.-No.:

Coating:

Neoboss GmbH
Im Brühl 12
D-72406 Bisingen/Germany

Phone +49 (0)7476 9451-0
Fax +49 (0)7476 9451-45
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