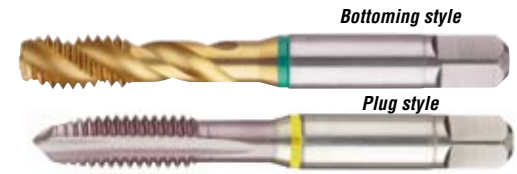




GUHRING

Cut Tap Application Guide (see reverse side for form taps)



DIN standard series are italicized. All others are ANSI standard taps

Workpiece Material		Condition	Hardness		Cutting Speed (SFM)	Tap Color Ring	Plug Style Tap Series				Bottoming Style Tap Series			
			HRC	BHN			UNC	UNF	Metric	Metric Fine	UNC	UNF	Metric	Metric Fine
Aluminum Alloy	6061, 7075, 2011	Normalized		150	30-80	Black	3967	3968	3966	<i>1861</i>	3970	3971	3969	<i>977</i>
Die Cast Aluminum	356AL, 390AL	As cast		150	40-65	Yellow	3961	3962	3960	<i>827</i>	3964	3965	3963	<i>834</i>
Cast Iron	Nodular, Grey	As cast	15	208	25-75	White	3937	3938	3936	<i>347</i>	3937	3938	3936	<i>347</i>
	High alloy	As cast			16-35	Red	3992	3994	<i>1914</i>	<i>828</i>	3993	3995	<i>811</i>	<i>835</i>
Low Carbon Steel	1010, 1018	Normalized	10	190	25-80	Yellow	3961	3962	3960	<i>827</i>	3964	3965	3963	<i>834</i>
Medium Carbon Steel	1035, 1045	Normalized	15	208	20-50	Yellow	3961	3962	3960	<i>827</i>	3964	3965	3963	<i>834</i>
High Carbon Steel	1065, 1095	Normalized	25	253	20-45	Green	3946	3947	3945	3973	3949	3950	3948	3974
Alloy Steel	4140, 4340, 8620	Normalized	25-32	253-301	20-50	Green	3946	3947	3945	3973	3949	3950	3948	3974
	4140, 4340, 8620	Hardened	35-42	327-393	15-20	Red	3992	3994	<i>1914</i>	<i>828</i>	3993	3995	<i>811</i>	<i>835</i>
Stainless Steel	303, 304, 316	Annealed	25	253	20-45	Blue	3907	3908	3906	<i>1873</i>	3910	3911	3909	<i>936</i>
	410, 430	Hardened	35-42	327-393	12-20	Blue	3907	3908	3906	<i>1873</i>	3910	3911	3909	<i>936</i>
	17-4, 15-5, A286	Annealed	25	253	15-20	Blue	3907	3908	3906	<i>1873</i>	3910	3911	3909	<i>936</i>
	17-4, 15-5, A286	Hardened	35-42	327-393	8-20	Red	3992	3994	<i>1914</i>	<i>828</i>	3993	3995	<i>811</i>	<i>835</i>
Tool Steel	D2, H13, P20, S7	Annealed	10-25	190-253	15-35	Red	3992	3994	<i>1914</i>	<i>828</i>	3993	3995	<i>811</i>	<i>835</i>
	H13, P20	Hardened	35-48	327-450	8-15	Red	3992	3994	<i>1914</i>	<i>828</i>	3993	3995	<i>811</i>	<i>835</i>
	D2, A2	Hardened	55-63		3-10	Red	3992	3994	<i>1914</i>	<i>828</i>	3993	3995	<i>811</i>	<i>835</i>
Titanium Alloy	6AL4V	Annealed	25-32	253-301	15-20	Grey	<i>2904</i>	<i>2906</i>	<i>2900</i>	<i>2902</i>	<i>2912</i>	<i>2914</i>	<i>2908</i>	<i>2910</i>
	6AL4V, 6AL6V	Hardened	35-42	327-393	8-15	Grey	<i>2904</i>	<i>2906</i>	<i>2900</i>	<i>2902</i>	<i>2912</i>	<i>2914</i>	<i>2908</i>	<i>2910</i>
Nickel Base Alloy	Inconel 718, 625	Annealed	25-32	253-301	8-15	Grey	<i>2918</i>	<i>2919</i>	<i>2916</i>	<i>2917</i>	<i>2922</i>	<i>2923</i>	<i>2920</i>	<i>2921</i>
	Inconel 718	Hardened	35-42	327-393	8-15	Grey	<i>2918</i>	<i>2919</i>	<i>2916</i>	<i>2917</i>	<i>2922</i>	<i>2923</i>	<i>2920</i>	<i>2921</i>
	Hastelloy, Waspelloy	Normalized	25-40	253-390	8-15	Grey	<i>2918</i>	<i>2919</i>	<i>2916</i>	<i>2917</i>	<i>2922</i>	<i>2923</i>	<i>2920</i>	<i>2921</i>
	Kovar	Normalized	25-40	253-390	8-15	Grey	<i>2918</i>	<i>2919</i>	<i>2916</i>	<i>2917</i>	<i>2922</i>	<i>2923</i>	<i>2920</i>	<i>2921</i>
Brass, Bronze			150	40-80	Yellow	3961	3962	3960	<i>827</i>	3964	3965	3963	<i>834</i>	
Copper			150	30-60	Yellow	3961	3962	3960	<i>827</i>	3964	3965	3963	<i>834</i>	



GUHRING

Form Tap Application Guide and Recommended Drill Series



Tech Support: (800) 776-6170 or www.guhring.com

Workpiece Material		Condition	Hardness		Cutting Speed	Form (Fluteless) Tap Series				Recommended drill series - cut and form tap applications	
			HRC	BHN		UNC	UNF	Metric	Metric Fine	Series	Description
Aluminum Alloy	6061, 7075, 2011	Normalized		150	100-130	3943	3944	3942	3975	1184	Carbide RT 100 U high penetration, self-centering
Die Cast Aluminum	356AL, 390AL	As cast		150	80-130	3943	3944	3942	3975	768	Carbide RT 150 GG straight flute, high penetration
Cast Iron	Nodular, Grey	As cast	15	208						6501	Carbide RT 100 R for cast iron, high penetration
	High alloy	As cast								5510	Carbide RT 100 U self-centering, high penetration
Low Carbon Steel	1010, 1018	Normalized	10	190	100-165	3943	3944	3942	3975	2477	Carbide RT 100 X high penetration, self-centering
Medium Carbon Steel	1035, 1045	Normalized	15	208	80-130	3943	3944	3942	3975	2477	Carbide RT 100 X high penetration, self-centering
High Carbon Steel	1065, 1095	Normalized	25	253	50-100	3943	3944	3942	3975	2477	Carbide RT 100 X high penetration, self-centering
Alloy Steel	4140, 4340, 8620	Normalized	25-32	253-301	50-100	3943	3944	3942	3975	2477	Carbide RT 100 X high penetration, self-centering
	4140, 4340, 8620	Hardened	35-42	327-393	30-65	3943	3944	3942	3975	2477	Carbide RT 100 X high penetration, self-centering
Stainless Steel	303, 304, 316	Annealed	25	253	50-65	3943	3944	3942	3975	8510	Carbide RT 100 VA self-centering, high penetration
	410, 430	Hardened	35-42	327-393						8510	Carbide RT 100 VA self-centering, high penetration
	17-4, 15-5, A286	Annealed	25	253	30-50	3943	3944	3942	3975	8510	Carbide RT 100 VA self-centering, high penetration
	17-4, 15-5, A286	Hardened	35-42	327-393						8510	Carbide RT 100 VA self-centering, high penetration
Tool Steel	D2, H13, P20, S7	Annealed	10-25	190-253	65-115	3943	3944	3942	3975	2477	Carbide RT 100 X high penetration, self-centering
	H13, P20	Hardened	35-48	327-450						2477	Carbide RT 100 X high penetration, self-centering
	D2, A2	Hardened	55-63							2479	Carbide RT 100 X high penetration, self-centering
Titanium Alloy	6AL4V	Annealed	25-32	253-301						8510	Carbide RT 100 VA self-centering, high penetration
	6AL4V, 6AL6V	Hardened	35-42	327-393						8510	Carbide RT 100 VA self-centering, high penetration
Nickel Base Alloy	Inconel 718, 625	Annealed	25-32	253-301						5510	Carbide RT 100 U self-centering, high penetration
	Inconel 718	Hardened	35-42	327-393						5510	Carbide RT 100 U self-centering, high penetration
	Hastelloy, Waspelloy	Normalized	25-40	253-390						5510	Carbide RT 100 U self-centering, high penetration
	Kovar	Normalized	25-40	253-390						5510	Carbide RT 100 U self-centering, high penetration
Brass, Bronze				150	100-165	3943	3944	3942	3975	1184	Carbide RT 100 U high penetration, self-centering
Copper				150	100-165	3943	3944	3942	3975	1184	Carbide RT 100 U high penetration, self-centering

Free toolfinder software: Find the best-suited Guhring cutting tools for your application -- Go to www.guhring.com and click on the Navigator icon to test drive this software.
Use the tap/drill selector utility in the Technical section of www.guhring.com to find the correct drill size for your tap.