

# EMUGE

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- SUPERIOR THREAD-MILLING

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Thru extensive research and development Emuge has produced an extensive line of High Performance Taps even for the most difficult materials.

**EMUGE  
FRANKEN**

**High Performance Tools**

**EMUGE HIGH PERFORMANCE PRODUCTION TAPS DIN LENGTH - ANSI SHANK**

**Enorm -VA-NE2** BOTTOM



- For: Stainless Steels, Alloyed Steels and Copper Alloys
- Steam oxide
- Chamfer: 2-3 threads
- Spiral Flute (35°)
- Class: 2B or 3B

**Enorm - Z / E - TiN** BOTTOM



- For Stainless Steels, Alloyed Steels, Copper Alloys & Aluminum
- TiN coated
- Chamfer: 1.5-2 threads
- Class: 2B
- Spiral Flute (45°)

**Rekord -B -VA** PLUG



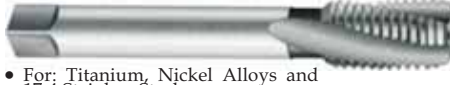
- For: Stainless Steels, Alloyed Steels, Cast Iron, Copper Alloys & Aluminum.
- NT-Nitriding treatment for hard surface
- Chamfer: 4-5 threads
- Spiral Point
- Class: 2B

**Rekord - B - TiN** PLUG




- For Stainless Steels, Alloyed Steels, Cast Iron, Copper Alloys and Aluminum
- TiN coated
- Spiral Point
- Chamfer: 4-5 threads
- Class: 2B

**Rekord -D -Ti** BOTTOM



- For: Titanium, Nickel Alloys and 17-4 Stainless Steel
- NT2-Nitrided and steam treated for hardness & lubricity
- Slow Spiral Flute (15°) for thru hole
- Chamfer: 2-3 threads
- Class: 2B

**Rekord - D - Ti - TiCN** BOTTOM



- For Titanium, Nickel Alloys & 17-4 stainless
- TiCN coated
- Slow Spiral (15°)
- Class: 3B
- Chamfer: 2-3 threads

**Rekord - DF - Ni - TiCN** BOTTOM



- For Inconel 718, Reno 100
- Right hand 10° Spiral for blind hole
- TiCN coated
- Class: 3B
- Chamfer: 2-3 threads

**Rekord - C - Ni - TiCN** PLUG



- For Inconel 718, Reno 100
- Left hand spiral (8°) for thru hole
- TiCN coated
- Class: 3B
- Chamfer: 4-5 threads

**Rekord - C - Ti - TiCN** PLUG



- For Titanium, Nickel Alloys and 17-4 Stainless
- TiCN coated
- Left hand spiral (15°)
- Class: 3B
- Chamfer: 4-5 threads

**APPLICATION CHART**

MATERIAL GROUP	MATERIAL EXAMPLE	HARDNESS RANGE		BOTTOM						PLUG						PLUG & BOT	
		HRC	BHN	ENORM		D-Ti	D-Ti TiCN	DF-Ni TiCN	REKORD						A-Z TiCN	A-H	
				VA-NE2	Z/E TiN				B-VA	B-TiN	B AERO	C-Ti	C-Ti TiCN	C-Ni TiCN			Either
<b>1 Steel Materials</b>				TAPS FOR BLIND HOLES						TAPS FOR THRU-HOLES						EITHER	
1.1 Cold-extrusion steels, Magnetic soft iron	1008/1010		≤ 120		●												
1.2 Free cutting steels, General construction steels	1008 / 1010 / 12L14 / A36 11L17, 1140, 12L15		≤ 180	● (1)	●				●	● (1)							
1.3 Free cutting steels, Construction steels, Alloyed steels, Steel castings	1018, 1060, 4130, 4140, 41L30, 41L45, 86L20, 86L40, 1045	≤ 25	≤ 250	● (1)	●				●	● (1)							
1.4 Chrome alloy steel, Heat-treatable steels, Nitriding steels, Cold work steels	5115, A29, A519, J404 4130, 8030, 4140, 4330, Nitralloy 125, 135, 230, EZ, A7	≤ 35	≤ 320	● (1)	●				●	● (1)					○	○	
1.5 Heat-treatable steels, Nitriding steels, Hot work steels, Hardened steels up to 44HRC, Cold work steels	D2, D3, D4, D5, D7, 4130, 8030, 4140, 4330, H10, H11, H14, H21, H22, H46 4130, 4340, 150, 4161, 5160, 8660	≤ 44	≤ 410			●	● (1)				●	●	●		○	○	
1.6 Hardened steels	4130, 4340, 150, 4161, H13, H10	> 44-55															
1.7 Hardened steels	52100, M-50, 4340, D5ac, H11	> 55-60															
1.8 Hardened steels	M1-M47, 52100	> 60-63															
1.9 Hardened steels	M1-M47	> 63-66															
1.10 Stainless steels, Acid-proof steels, Heat-resistant steels	303, 304, 316, 316L, 416, 420	≤ 25	≤ 250	● (1)	●				●	● (1)					○	○	
1.11 Stainless/Acid-proof steels, Heat-resistant steels	410, 420, C18M, 17-4PH	≤ 35	≤ 320	● (1)	●				●	● (1)					○	○	
1.12 Stainless/Acid-proof steels, Heat-resistant steels	347, 420, 440, 15-5PH, 17-4PH	≤ 44	≤ 410			●	● (1)				●	●	●		●	●	
1.13 Special steel materials	Ferro-TiC, Hardox 500					●	● (1)	●			●	●	●	●	○		
<b>2 Cast iron</b>																	
2.1 Cast iron	ASTM A48, SAE J431c grade, 1800		< 280												○ (1)	○	
2.2 Cast iron with nodular graphite	ASTM A48 class 20, 30, 35, 40 SAE J431c grade G3000		< 280						●	●					● (1)	○	
2.3 Cast iron with vermicular graphite			< 280						●	○					● (1)	○	
2.4 Malleable cast iron	ASTM A47 grades 32510, 35018		< 400						●	○					● (1)	○	
2.5 Hard castings up to 400 BHN			< 400														
<b>3 Copper, Copper alloys, Bronze, Brass</b>																	
3.1 Pure copper and low alloyed copper	99% pure		≤ 150		●												
3.2 Copper-zinc alloys (brass, long-chipping)	320, 360																
3.3 Copper-zinc alloys (brass, short-chipping)																	
3.4 Copper-alum. alloys (aluminum, long-chipping)					●	●			●	●							○
3.5 Copper-tin alloys (bronze, long-chipping)																	○
3.6 Copper-tin alloys (bronze, short-chipping)	> 38 HRC use only carbide taps																○
3.7 Special copper alloys, up to Q18											●	●	●		●	○	
3.8 Special copper alloys, over Q18								○							○		
<b>4 Nickel/Cobalt alloys</b>																	
4.1 Nickel/Cobalt alloys heat-resistant	Hastelloy B, C, C-276	≤ 25	≤ 250			○	○				○	○	○				
4.2 Nickel/Cobalt alloys high-heat resistant	Inconel 718, Rene 100	25-44	250-410				● (1)				●	●	●	● (1)	○		
4.3 Nickel/Cobalt alloys high-heat resistant	Inconel 718, Haynes 235	> 44	> 410														
<b>5 Aluminum alloys</b>																	
5.1 Aluminum wrought alloys	2014, 2117, 5050, 6061, 7004																
5.2 Aluminum cast alloys ≤ 5% Si	201, 213, 295, 435, 2, 511.0						● (1)				●					○	
5.3 Aluminum cast alloys 5% < Si ≤ 12%	319, 333, 356, 343, 369, 380						○ (1)			●	○					○ (1)	
5.4 Aluminum cast alloys 12% < Si ≤ 17%	390, 393, 413						○ (1)									○ (1)	
<b>6 Magnesium alloys</b>																	
6.1 Magnesium wrought alloys																	
6.2 Magnesium cast alloys																	
<b>7 Titanium, Titanium alloys</b>																	
7.1 Pure titanium, Titanium alloys	Commercially pure C-1, C-2	≤ 27	≤ 270			●	● (1)				●	●	●	● (1)			
7.2 Titanium alloys	6A/4V	27-39	270-370			●	● (1)				●	●	●	● (1)			
<b>8 Synthetics</b>																	
8.1 Duroplastics (short-chipping)	Bakelite																○
8.2 Thermoplastics (long-chipping)	PVC																○
8.3 Fibre-reinforced synthetics	Phenolic																○
<b>9 Materials for special applications</b>																	
9.1 Graphite																	○
9.2 Tungsten-copper alloys																	○

● (1) FIRST CHOICE ● = EXCELLENT ○ = VERY GOOD NOTE: FOR APPLICATIONS NOT SHOWN - PLEASE CALL.

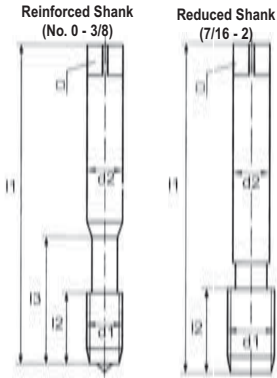
# EMUGE HIGH PERFORMANCE PRODUCTION TAPS

**BOTTOMING**  
FOR BLIND HOLES



SEE PAGE 1 FOR APPLICATION CHART.

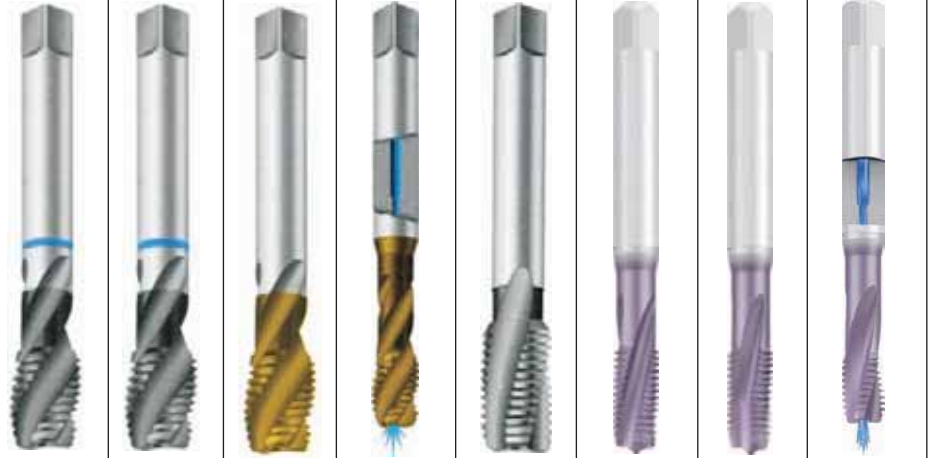
- (1) = FIRST CHOICE
- EXCELLENT
- VERY GOOD



DIN Length  
ANSI Shank



	HRC	ENORM-VA-NE2		ENORM Z/E-TiN	ENORM S-IKZ-TiN	REKORD D-Ti	REKORD D-Ti-TiCN	REKORD DF-Ni-TiCN	REKORD 1D-VA-IKZ-TiCN
		CLASS 2B	CLASS 3B	CLASS 2B	CLASS 2B	CLASS 2B	CLASS 3B	CLASS 3B	CLASS 2B
STAINLESS STEEL	≤ 35	● (1)	● (1)	●	●				●
	35-44					●	● (1)		
STEEL	≤ 35	● (1)	● (1)	●	●				●
	35-44					●	● (1)	●	
TITANIUM						○	○	● (1)	
INCONEL									
ALUMINUM				● (1)	●				●
CAST IRON									●
COPPER		●	●	●	●	●	○	○	○



SIZE d1	l1	l2		l3	d2	□		ENORM-VA-NE2		ENORM Z/E-TiN *	ENORM S-IKZ-TiN	REKORD D-Ti	REKORD D-Ti-TiCN	REKORD DF-Ni-TiCN	REKORD D-VA-IKZ-TiCN		
		Enorm	Rekord D					CLASS 2B	CLASS 3B	CLASS 2B	CLASS 2B	CLASS 2B	CLASS 2B	CLASS 3B	CLASS 3B	CLASS 3B	CLASS 2B
0-80	1.626	.157	.236	.433	.141	.110	.0480	BU5032005033	BU5032105033	BU5137005033		BU4560015033	-	-	-		
1-64	1.772	.177	.276	.472	.141	.110	.0595	BU5032005000	BU5032105000	BU5137005000		BU4560015000	-	-	-		
1-72	1.772	.157	.276	.472	.141	.110	.0595	BU5032005034	BU5032105034	BU5137005034		BU4560015034	-	-	-		
2-56	1.772	.177	.276	.472	.141	.110	.0700	BU5032005001	BU5032105001	BU5137005001		BU4560015001	-	-	-		
2-64	1.772	.177	.276	.472	.141	.110	.0730	BU5032005035	BU5032105035	BU5137005035		BU4560015035	-	-	-		
3-48	1.969	.197	.354	.551	.141	.110	.0820	BU5032005002	BU5032105002	BU5137005002		BU4560015002	-	-	-		
3-56	1.969	.197	.354	.551	.141	.110	.0827	BU5032005036	BU5032105036	BU5137005036		BU4560015036	-	-	-		
4-40	2.205	.236	.433	.709	.141	.110	.0890	BU5032005003	BU5032105003	BU5137005003		BU4560015003	-	BU35J4115003	-		
4-48	2.205	.236	.433	.709	.141	.110	.0945	BU5032005037	BU5032105037	BU5137005037		BU4560015037	-	-	-		
5-40	2.205	.276	.433	.709	.141	.110	.1015	BU5032005004	BU5032105004	BU5137005004		BU4560015004	-	BU35J4115004	-		
5-44	2.205	.276	.433	.709	.141	.110	.1063	BU5032005038	BU5032105038	BU5137005038		BU4560015038	-	-	-		
6-32	2.205	.276	.472	.787	.141	.110	.1110	BU5032005005	BU5032105005	BU5137005005		BU4560015005	-	BU35J4115005	-		
6-40	2.205	.276	.472	.787	.141	.110	.1181	BU5032005039	BU5032105039	BU5137005039		BU4560015039	-	-	-		
8-32	2.480	.315	.512	.827	.168	.131	.1360	BU5032005006	BU5032105006	BU5137005006		BU4560015006	-	BU35J4115006	-		
8-36	2.480	.315	.512	.827	.168	.131	.1378	BU5032005040	BU5032105040	BU5137005040		BU4560015040	-	-	-		
10-24	2.756	.394	.591	.984	.194	.152	.1520	BU5032005007	BU5032105007	BU5137005007		BU4560015007	BU4596115007	BU35J4115007	BU9793005007		
10-32	2.756	.394	.512	.984	.194	.152	.1614	BU5032005041	BU5032105041	BU5137005041	BW5537005041	BU4560015041	BU4596115041	BU35J4115041	BU9793005041		
12-24	3.150	.394	.630	1.142	.220	.165	.1770	BU5032005008	BU5032105008	BU5137005008		BU4560015008	-	-	-		
12-28	3.150	.394	.630	1.142	.220	.165	.1820	BU5032005042	BU5032105042	BU5137005042		BU4560015042	-	-	-		
14-20	3.150	.512	.669	1.181	.255	.191	.2040	BU5032005009	BU5032105009	BU5137005009	BW5537005009	BU4560015009	BU4596115009	BU35J4115009	BU9793005009		
14-28	3.150	.394	.669	1.181	.255	.191	2.165	BU5032005043	BU5032105043	BU5137005043	BW5537005043	BU4560015043	BU4596115043	BU35J4115043	BU9793005043		
5/16-18	3.543	.551	.787	1.378	.318	.238	2.610	BU5032005010	BU5032105010	BU5137005010	BW5537005010	BU4560015010	BU4596115010	BU35J4115010	BU9793005010		
5/16-24	3.543	.394	.669	1.260	.318	.238	2.717	BU5032005044	BU5032105044	BU5137005044	BW5537005044	BU4560015044	BU4596115044	BU35J4115044	BU9793005044		
3/8-16	3.937	.630	.866	1.535	.381	.286	3.160	BU5032005011	BU5032105011	BU5137005011	BW5537005011	BU4560015011	BU4596115011	BU35J4115011	BU9793005011		
3/8-24	3.937	.394	.709	1.535	.381	.286	3.346	BU5032005045	BU5032105045	BU5137005045	BW5537005045	BU4560015045	BU4596115045	BU35J4115045	BU9793005045		
7/16-14	3.937	.709	.866	-	.323	.242	3.680	CU5032005012	CU5032105012	CU5137005012	CW5537005012	CU4560015012	CU4596115012	CU35J4115012	CU9793005012		
7/16-20	3.937	.512	.866	-	.323	.242	3.898	CU5032005046	CU5032105046	CU5137005046	CW5537005046	CU4560015046	CU4596115046	CU35J4115046	CU9793005046		
1/2-13	4.331	.787	.984	-	.367	.275	4.219	CU5032005013	CU5032105013	CU5137005013	CW5537005013	CU4560015013	CU4596115013	CU35J4115013	CU9793005013		
1/2-20	3.937	.512	.866	-	.367	.275	4.528	CU5032005047	CU5032105047	CU5137005047	CW5537005047	CU4560015047	CU4596115047	CU35J4115047	CU9793005047		
9/16-12	4.331	.787	1.024	-	.429	.322	4.844	CU5032005014	CU5032105014	CU5137005014	CW5537005014	CU4560015014	CU4596115014	CU35J4115014	-		
9/16-18	3.937	.591	.866	-	.429	.322	5.118	CU5032005048	CU5032105048	CU5137005048	-	CU4560015048	CU4596115048	CU35J4115048	-		
5/8-11	4.331	.866	1.063	-	.480	.360	5.313	CU5032005015	CU5032105015	CU5137005015	CW5537005015	CU4560015015	CU4596115015	CU35J4115015	CU9793005015		
5/8-18	3.937	.591	.866	-	.480	.360	5.709	CU5032005049	CU5032105049	CU5137005049	CW5537005049	CU4560015049	CU4596115049	CU35J4115049	-		
3/4-10	4.921	.984	1.181	-	.590	.442	6.563	CU5032005016	CU5032105016	CU5137005016	CW5537005016	CU4560015016	CU4596115016	CU35J4115016	CU9793005016		
3/4-16	4.331	.669	.984	-	.590	.442	6.890	CU5032005050	CU5032105050	CU5137005050	CW5537005050	CU4560015050	CU4596115050	CU35J4115050	-		
7/8-9	5.512	1.063	1.260	-	.697	.523	7.656	CU5032005017	CU5032105017	CU5137005017	-	CU4560015017	-	-	CU9793005017		
7/8-14	4.921	.669	1.024	-	.697	.523	8.071	CU5032005051	CU5032105051	CU5137005051	-	CU4560015051	-	-	-		
1-8	6.299	1.181	1.417	-	.800	.600	8.750	CU5032005018	CU5032105018	CU5137005018	-	CU4560015018	-	-	-		
1-12	5.512	.787	1.102	-	.800	.600	9.219	CU5032005052	CU5032105052	CU5137005052	-	CU4560015052	-	-	-		
1.1/8-7	7.087	1.378	1.575	-	.896	.672	9.843	CU5032005019	CU5032105019	-	-	-	-	-	-	-	
1.1/8-8	7.087	1.181	1.575	-	.896	.672	1.0039	CU5032005024	CU5032105024	CU5037005024	-	-	-	-	-	-	
1.1/8-12	5.906	.866	1.181	-	.896	.672	1.0433	CU5032005053	CU5032105053	-	-	CU4560015053	-	-	-	-	
1.1/4-7	7.087	1.378	1.575	-	1.021	.766	1.1094	CU5032005020	CU5032105020	-	-	-	-	-	-	-	
1.1/4-8	7.087	1.181	1.575	-	1.021	.766	1.1250	CU5032005249	CU5032105249	CU5037005249	-	-	-	-	-	-	
1.1/4-12	5.906	.866	1.181	-	1.021	.766	1.1719	CU5032005054	CU5032105054	-	-	CU4560015054	-	-	-	-	
1.3/8-6	7.874	1.575	1.969	-	1.108	.831	1.2205	CU5032005021	CU5032105021	-	-	-	-	-	-	-	
1.3/8-8	7.874	1.181	1.654	-	1.108	.831	1.2500	CU5032005251	CU5032105251	CU5037005251	-	CU4560015251	-	-	-	-	
1.3/8-12	6.693	.945	1.299	-	1.108	.831	1.2992	CU5032005055	CU5032105055	-	-	CU4560015055	-	-	-	-	
1.1/2-6	7.874	1.575	1.969	-	1.233	.925	1.3386	CU5032005022	CU5032105022	-	-	-	-	-	-	-	
1.1/2-8	7.874	1.181	1.654	-	1.233	.925	1.3780	CU5032005253	CU5032105253	CU5037005253	-	CU4560015253	-	-	-	-	
1.1/2-12	6.693	.984	1.299	-	1.233	.925	1.4173	CU5032005056	CU5032105056	-	-	CU4560015056	-	-	-	-	
1.5/8-8	7.874	1.181	1.772	-	1.305	.979	1.4961	CU5032005255	CU5032105255	CU5037005255	-	CU4560015255	-	-	-	-	
1.3/4-5	8.661	1.772	2.283	-	1.430	1.072	1.5551										

# EMUGE HIGH PERFORMANCE PRODUCTION TAPS

## DIN LENGTH - ANSI SHANK

## PLUG STYLE FOR THRU HOLES



SEE PAGE 1 FOR APPLICATION CHART.

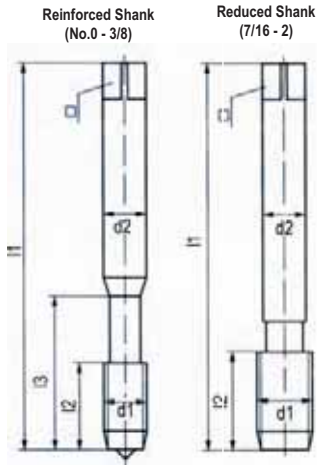
- (1) = FIRST CHOICE
- EXCELLENT
- VERY GOOD

	HRC	REKORD B-VA		REKORD B-TiN		REKORD B-AERO	REKORD C-Ti		REKORD C-Ti-TiCN CLASS 3B	REKORD C-Ni-TiCN CLASS 3B
		CLASS 2B	CLASS 3B	CLASS 2B	CLASS 3B		CLASS 2B	CLASS 3B		
STAINLESS STEEL	≤ 35	●	●	● (1)	● (1)	-	-	-	-	-
	35-44	-	-	-	-	●	-	●	●	-
ALLOYED STEEL	≤ 35	●	●	● (1)	● (1)	-	-	-	-	-
	35-44	-	-	-	-	●	●	●	●	-
TITANIUM		-	-	-	-	●	●	●	● (1)	-
INCONEL		-	-	-	-	●	○	○	○	● (1)
ALUMINUM		●	●	○	○	-	-	-	-	-
CAST IRON		●	●	●	●	-	-	-	-	-
COPPER		●	●	●	●	-	-	-	-	○

### STRAIGHT FLUTE WITH SPIRAL POINT

### 15° SPIRAL FLUTE

### 8° SP FLUTE



SIZE	I1	I2	I3	d2	□	REKORD B-VA CLASS 2B	REKORD B-VA CLASS 3B	REKORD B-TiN CLASS 2B	REKORD B-TiN CLASS 3B	REKORD B-AERO CLASS 3B	REKORD C-Ti		REKORD C-Ti-TiCN CLASS 3B	REKORD C-Ni-TiCN CLASS 3B
											CLASS 2B	CLASS 3B		
0-80	1.626	236	433	.141	.110	BU2030005033	BU2030105033	-	-	-	BU3060015033	BU3060115033	-	-
1-64	1.772	276	472	.141	.110	BU2030005000	BU2030105000	-	-	-	BU3060015000	BU3060115000	-	-
1-72	1.772	276	472	.141	.110	BU2030005034	BU2030105034	-	-	-	BU3060015034	BU3060115034	-	-
2-56	1.772	276	472	.141	.110	BU2030005001	BU2030105001	-	-	-	BU3060015001	BU3060115001	-	-
2-64	1.772	276	472	.141	.110	BU2030005035	BU2030105035	-	-	-	BU3060015035	BU3060115035	-	-
3-48	1.969	354	551	.141	.110	BU2030005002	BU2030105002	-	-	-	BU3060015002	BU3060115002	-	-
3-56	1.969	354	551	.141	.110	BU2030005036	BU2030105036	-	-	-	BU3060015036	BU3060115036	-	-
4-40	2.205	433	709	.141	.110	BU2030005003	BU2030105003	-	-	BU2065115003	BU3060015003	BU3060115003	BU3096115003	BU30J4115003
4-48	2.205	433	709	.141	.110	BU2030005037	BU2030105037	-	-	-	BU3060015037	BU3060115037	-	-
5-40	2.205	433	709	.141	.110	BU2030005004	BU2030105004	-	-	-	BU3060015004	BU3060115004	BU3096115004	BU30J4115004
5-44	2.205	433	709	.141	.110	BU2030005038	BU2030105038	-	-	-	BU3060015038	BU3060115038	-	-
6-32	2.205	472	787	.141	.110	BU2030005005	BU2030105005	-	-	BU2065115005	BU3060015005	BU3060115005	BU3096115005	BU30J4115005
6-40	2.205	472	787	.141	.110	BU2030005039	BU2030105039	-	-	BU2065115039	BU3060015039	BU3060115039	BU3096115005	BU30J4115005
8-32	2.480	512	827	.168	.131	BU2030005006	BU2030105006	-	-	BU2065115006	BU3060015006	BU3060115006	BU3096115006	BU30J4115006
8-36	2.480	512	827	.168	.131	BU2030005040	BU2030105040	-	-	-	BU3060015040	BU3060115040	-	-
10-24	2.756	591	984	.168	.152	BU2030005007	BU2030105007	BU2014005007	BU2014105007	BU2065115007	BU3060015007	BU3060115007	BU3096115007	BU30J4115007
10-32	2.756	512	984	.168	.152	BU2030005041	BU2030105041	BU2014005041	BU2014105041	BU2065115041	BU3060015041	BU3060115041	BU3096115041	BU30J4115041
12-28	3.150	630	1142	.194	.165	BU2030005008	BU2030105008	BU2014005008	BU2014105008	BU2065115008	BU3060015008	BU3060115008	-	-
12-28	3.150	630	1142	.220	.165	BU2030005042	BU2030105042	BU2014005042	BU2014105042	BU2065115042	BU3060015042	BU3060115042	-	-
14-20	3.150	669	1181	.220	.191	BU2030005009	BU2030105009	BU2014005009	BU2014105009	BU2065115009	BU3060015009	BU3060115009	BU3096115009	BU30J4115009
1/4-28	3.150	669	1181	.255	.191	BU2030005043	BU2030105043	BU2014005043	BU2014105043	BU2065115043	BU3060015043	BU3060115043	BU3096115043	BU30J4115043
5/16-18	3.543	787	1378	.318	.238	BU2030005010	BU2030105010	BU2014005010	BU2014105010	BU2065115010	BU3060015010	BU3060115010	BU3096115010	BU30J4115010
5/16-24	3.543	669	1260	.318	.238	BU2030005044	BU2030105044	BU2014005044	BU2014105044	BU2065115044	BU3060015044	BU3060115044	BU3096115044	BU30J4115044
3/8-16	3.937	866	1535	.381	.286	BU2030005011	BU2030105011	BU2014005011	BU2014105011	BU2065115011	BU3060015011	BU3060115011	BU3096115011	BU30J4115011
3/8-24	3.937	709	1535	.381	.286	BU2030005045	BU2030105045	BU2014005045	BU2014105045	BU2065115045	BU3060015045	BU3060115045	BU3096115045	BU30J4115045
7/16-14	3.937	866	-	.323	.242	CU2030005012	CU2030105012	CU2014005012	CU2014105012	CU2065115012	CU3060015012	CU3060115012	CU3096115012	CU30J4115012
7/16-20	3.937	866	-	.323	.242	CU2030005046	CU2030105046	CU2014005046	CU2014105046	CU2065115046	CU3060015046	CU3060115046	CU3096115046	CU30J4115046
1/2-13	4.331	984	-	.367	.275	CU2030005013	CU2030105013	CU2014005013	CU2014105013	CU2065115013	CU3060015013	CU3060115013	CU3096115013	CU30J4115013
1/2-20	4.331	866	-	.367	.275	CU2030005047	CU2030105047	CU2014005047	CU2014105047	CU2065115047	CU3060015047	CU3060115047	CU3096115047	CU30J4115047
9/16-12	4.331	1024	-	.429	.322	CU2030005014	CU2030105014	-	-	-	CU3060015014	CU3060115014	CU3096115014	CU30J4115014
9/16-18	4.331	866	-	.429	.322	CU2030005048	CU2030105048	CU2014005048	CU2014105048	-	CU3060015048	CU3060115048	CU3096115048	CU30J4115048
5/8-11	4.331	1063	-	.480	.300	CU2030005015	CU2030105015	CU2014005015	CU2014105015	CU2065115015	CU3060015015	CU3060115015	CU3096115015	CU30J4115015
5/8-18	4.331	866	-	.480	.300	CU2030005049	CU2030105049	CU2014005049	CU2014105049	CU2065115049	CU3060015049	CU3060115049	CU3096115049	CU30J4115049
3/4-10	4.921	1181	-	.590	.442	CU2030005016	CU2030105016	CU2014005016	CU2014105016	CU2065115016	CU3060015016	CU3060115016	CU3096115016	CU30J4115016
3/4-16	4.921	984	-	.590	.442	CU2030005050	CU2030105050	CU2014005050	CU2014105050	CU2065115050	CU3060015050	CU3060115050	CU3096115050	CU30J4115050
7/8-9	5.512	1260	-	.697	.523	CU2030005017	CU2030105017	CU2014005017	CU2014105017	-	CU3060015017	CU3060115017	-	-
7/8-14	5.512	1024	-	.697	.523	CU2030005051	CU2030105051	CU2014005051	CU2014105051	-	CU3060015051	CU3060115051	-	-
1-8	6.290	1447	-	.800	.600	CU2030005018	CU2030105018	CU2014005018	CU2014105018	-	CU3060015018	CU3060115018	-	-
1-12	5.512	1102	-	.800	.600	CU2030005052	CU2030105052	CU2014005052	CU2014105052	-	CU3060015052	CU3060115052	-	-
1 1/8-7	7.087	1575	-	.896	.672	CU2030005019	CU2030105019	-	-	-	CU3060015019	CU3060115019	-	-
1 1/8-8	7.087	1575	-	.896	.672	CU2030005247	-	-	-	-	-	-	-	-
1 1/8-12	7.087	1575	-	.896	.672	CU2030005053	CU2030105053	-	-	-	-	-	-	-
1 1/4-7	7.087	1575	-	1.021	.766	CU2030005020	CU2030105020	-	-	-	CU3060015020	CU3060115020	-	-
1 1/4-8	7.087	1575	-	1.021	.766	CU2030005249	-	-	-	-	-	-	-	-
1 1/4-12	7.087	1575	-	1.021	.766	CU2030005054	CU2030105054	-	-	-	-	-	-	-
1 3/8-6	7.874	1969	-	1.108	.831	CU2030005021	CU2030105021	-	-	-	CU3060015021	CU3060115021	-	-
1 3/8-8	7.874	1654	-	1.108	.831	CU2030005251	-	-	-	-	-	-	-	-
1 3/8-12	6.693	1299	-	1.108	.831	CU2030005055	CU2030105055	-	-	-	-	-	-	-
1 1/2-6	7.874	1969	-	1.233	.925	CU2030005022	CU2030105022	-	-	-	CU3060015022	CU3060115022	-	-
1 1/2-8	7.874	1654	-	1.233	.925	CU2030005252	-	-	-	-	-	-	-	-
1 1/2-12	6.693	1299	-	1.233	.925	CU2030005056	CU2030105056	-	-	-	-	-	-	-
1 5/8-8	7.874	1772	-	1.305	.979	CU2030005255	-	-	-	-	-	-	-	-
1 3/4-5	8.661	2283	-	1.430	1.072	CU2030005023	CU2030105023	-	-	-	CU3060015023	CU3060115023	-	-
2-4 1/2	9.843	2559	-	1.644	1.233	CU2030005024	CU2030105024	-	-	-	-	-	-	-

# EMUGE HIGH PERFORMANCE TAPS FOR ALUMINUM & CAST IRON

## Rekord A

	HRC	REKORD A-Z TiCN CLASS 2B	REKORD A-H CLASS 2B
STAINLESS STEEL	≤ 35	○	○
	35-44	●	○
ALLOYED STEEL	≤ 35	○	○
	35-44	○	○
INCONEL		○	○
ALUMINUM		● (1)	○
CAST IRON		● (1)	○
COPPER		●	○
DUROPLASTICS		●	○
GRAPHITE		○	○

● (1) = FIRST CHOICE ● EXCELLENT CHOICE ○ VERY GOOD



- FOR THRU AND BLIND HOLES
- DIN Length
- ANSI Shank
- Overall length acc. to DIN 371, DIN 376

# EMUGE METRIC HIGH PERFORMANCE TAPS DIN Length - DIN Shank - Class 6H

## REKORD-B-VA FOR THRU HOLES

For: Stainless Steels, Alloyed Steels, Cast Iron, Aluminum and Copper Alloys



## ENORM-VA-NE2 FOR BLIND HOLES

For: Stainless Steel, Alloyed Steel and Copper Alloys



## INCH

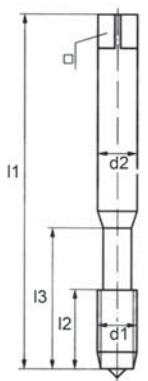
SIZE	I1	I2	I3	d2	REKORD B-VA	ENORM VA-NE2	
8 x 1.0	90	17	-	6.0	7.0	C02030000251	C05032000251
8 x 1.25	90	20	35	8.0	6.8	B02030000080	B05032000080
10 x 1.0	90	18	-	7.0	9.0	C02030000276	C05032000276
10 x 1.50	100	22	39	10.0	8.5	B02030000100	B05032000100
12 x 1.50	100	22	-	9.0	10.5	C02030000303	C05032000303
12 x 1.75	110	24	-	9.0	10.2	C02030000112	C05032000112
12 x 1.50	100	22	-	11.0	12.5	C02030000331	C05032000331
14 x 2.0	110	26	-	11.0	12.0	C02030000114	C05032000114
16 x 2.0	100	22	-	12.0	14.5	C02030000359	C05032000359
16 x 2.0	110	27	-	12.0	14.0	C02030000116	C05032000116
18 x 1.5	110	25	-	14.0	16.5	C02030000390	C05032000390
18 x 2.5	125	30	-	14.0	15.5	C02030000118	C05032000118
14 x 1.5	125	25	-	16.0	18.5	C02030000422	C05032000422
20 x 2.5	140	32	-	16.0	17.5	C02030000120	C05032000120
22 x 1.5	125	25	-	18.0	20.5	C02030000438	C05032000438
22 x 2.0	140	27	-	18.0	20.0	C02030000122	C05032000122
22 x 2.5	140	32	-	18.0	19.5	C02030000122	C05032000122
24 x 1.5	140	27	-	18.0	22.5	C02030000452	C05032000452
24 x 3.0	160	34	-	18.0	21.0	C02030000124	C05032000124
27 x 2.0	140	28	-	20.0	25.0	C02030000127	C05032000127
27 x 3.0	160	36	-	20.0	24.0	C02030000490	C05032000490
30 x 1.5	150	28	-	22.0	28.5	C02030000130	C05032000130
30 x 3.5	180	40	-	22.0	26.5	C02030000130	C05032000130

## METRIC

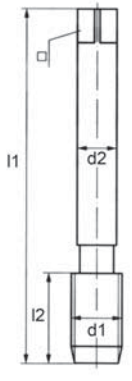
SIZE	I1	I2	I3	d2	REKORD B-VA	ENORM VA-NE2	
2 x 0.4	45	7	12	2.8	1.6	B02030000020	B05032000020
3 x 0.50	56	11	18	3.5	2.5	B02030000030	B05032000030
3.5 x 0.60	56	12	20	4.0	2.9	B02030000035	B05032000035
4 x 0.50	63	10	21	4.5	3.5	B02030000021	B05032000021
4 x 0.70	63	13	21	4.5	3.3	B02030000040	B05032000040
4.5 x 0.75	70	14	25	6.0	3.7	B02030000045	B05032000045
5 x 0.80	70	15	25	6.0	4.2	B02030000050	B05032000050
6 x 1.0	80	17	30	6.0	5.0	B02030000060	B05032000060

SIZE	I1	I2		I3	d2	□	REKORD A-Z TiCN CLASS 2B	REKORD A-H CLASS 2B	
		Rek A-H	Rek A-Z						
0-80	1.626	.236	.125	.433	.141	.110	.0480	-	BU1005015033
1-64	1.772	.276	.156	.472	.141	.110	.0595	-	BU1005015000
1-72	1.772	.276	.139	.472	.141	.110	.0595	-	BU1005015034
2-56	1.772	.276	.178	.472	.141	.110	.0700	-	BU1005015001
2-64	1.772	.276	.156	.472	.141	.110	.0730	-	BU1005015035
3-48	1.969	.354	.208	.551	.141	.110	.0820	-	BU1005015002
3-56	1.969	.354	.179	.551	.141	.110	.0827	-	BU1005015036
4-40	2.205	.433	.250	.709	.141	.110	.0890	BU1094015003	BU1005015003
4-48	2.205	.433	.208	.709	.141	.110	.0945	-	BU1005015037
5-40	2.205	.433	.250	.709	.141	.110	.1015	BU1094015004	BU1005015004
5-44	2.205	.433	.227	.709	.141	.110	.1063	-	BU1005015038
6-32	2.205	.472	.313	.787	.141	.110	.1110	BU1094015005	BU1005015005
6-40	2.205	.472	.250	.787	.141	.110	.1181	-	BU1005015039
8-32	2.480	.512	.313	.827	.168	.131	.1360	BU1094015006	BU1005015006
8-36	2.480	.512	.278	.827	.168	.131	.1378	-	BU1005015040
10-24	2.756	.591	.417	.984	.168	.152	.1520	BU1094015007	BU1005015007
10-32	2.756	.512	.313	.984	.194	.152	.1614	BU1094015041	BU1005015041
12-24	3.150	.630	.417	1.142	.194	.165	.1770	-	BU1005015008
12-28	3.150	.630	.357	1.142	.220	.165	.1820	-	BU1005015042
14-20	3.150	.669	.500	1.181	.220	.191	.2040	BU1094015009	BU1005015009
14-28	3.150	.669	.357	1.181	.255	.191	.2165	BU1094015043	BU1005015043
5/16-18	3.543	.787	.556	1.378	.318	.238	.2610	BU1094015010	BU1005015010
5/16-24	3.543	.669	.417	1.260	.318	.238	.2717	BU1094015044	BU1005015044
3/8-16	3.937	.866	.625	1.535	.381	.286	.3160	BU1094015011	BU1005015011
3/8-24	3.937	.709	.417	1.535	.381	.286	.3360	BU1094015045	BU1005015045
7/16-14	3.937	.866	.714	-	.323	.242	.3680	CU1094015012	CU1005015012
7/16-20	3.937	.866	.500	-	.323	.242	.3898	CU1094015046	CU1005015046
1/2-13	4.331	.984	.769	-	.367	.275	.4219	CU1094015013	CU1005015013
1/2-20	3.937	.866	.500	-	.367	.275	.4528	CU1094015047	CU1005015047
9/16-12	4.331	1.024	.833	-	.429	.322	.4844	CU1094015014	CU1005015014
9/16-18	3.937	.866	.556	-	.429	.322	.5118	CU1094015048	CU1005015048
5/8-11	4.331	1.063	.909	-	.480	.360	.5313	CU1094015015	CU1005015015
5/8-18	3.937	.866	.556	-	.480	.360	.5709	CU1094015049	CU1005015049
3/4-10	4.921	1.181	1.000	-	.590	.442	.6563	CU1094015016	CU1005015016
3/4-16	4.331	.984	.625	-	.590	.442	.6890	CU1094015050	CU1005015050
7/8-9	5.512	1.260	1.111	-	.697	.523	.7656	-	CU1005015017
7/8-14	4.921	1.024	.714	-	.697	.523	.8071	-	CU1005015051
1-8	6.299	1.417	1.25	-	.800	.600	.8750	-	CU1005015018
1-12	5.512	1.102	.833	-	.800	.600	.9219	-	CU1005015052
1 1/8-8	7.087	1.575	1.25	-	.896	.672	1.0039	-	CU1005015247
1 3/8-8	7.874	1.654	1.25	-	1.108	.831	1.2500	-	CU1005015251
1 1/2-8	7.874	1.654	1.25	-	1.233	.925	1.3780	-	CU1005015253
1 3/4-8	7.874	1.772	1.25	-	1.430	1.072	1.6339	-	CU1005015257
2-8	8.858	1.969	1.25	-	1.644	1.233	1.8750	-	CU1005015261
2 1/2-8	10.827	2.165	1.25	-	2.100	1.575	2.3819	-	CU1005015265

## Reinforced Shank (No. 0 - 3/8)



## Reduced Shank (7/16 - 2 1/2)



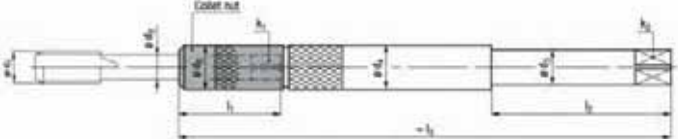
# EMUGE TAP EXTENSIONS

Available with or without Coolant Hole

Std. for Taps without Coolant Hole (P/N: FZ111900)



with Coolant Hole for Coolant Thru Taps (IKZ) (P/N: FZ112300)



## TAP LIMITS CROSS REFERENCE

UNC THREAD	TAP LIMIT	
	3B	2B
#1-64	H1/H2	H2/H3
#2-56	H1/H2	H2/H3
#3-48	H1/H2	H2/H3
#4-40	H2	H2/H3
#5-40	H2	H2/H3
#6-32	H2	H3/H4
#8-32	H2	H3/H4
#10-24	H2/H3	H3/H4
#12-24	H2/H3	H3/H4
#14-20	H3	H4/H5
5/16-18	H3	H4/H5
3/8-16	H3/H4	H4/H5
7/16-14	H3/H4	H4/H5
1/2-13	H4	H5/H6
9/16-12	H4	H5/H6
5/8-11	H4	H5/H6
3/4-10	H4/H5	H6/H7
7/8-9	H4/H5	H6/H7
1-8	H5	H6/H7
1 1/8-7	H5	H7/H8
1 1/4-7	H5/H6	H7/H8
1 3/8-6	H6	H7/H8
1 1/2-6	H6	H7/H8
1 3/4-5	H6/H7	H8/H9
2-4 1/2	H7	H8/H9

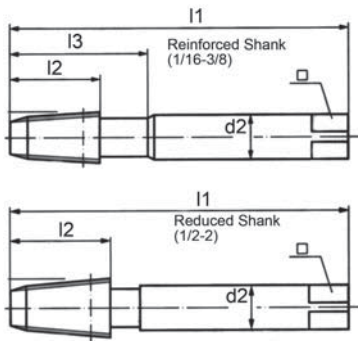
UNF THREAD	TAP LIMIT	
	3B	2B
#0-80	H1	H1/H2
#1-72	H1/H2	H2/H3
#2-64	H1/H2	H2/H3
#3-56	H1/H2	H2/H3
#4-48	H2	H2/H3
#5-44	H2	H2/H3
#6-40	H2	H2/H3
#8-36	H2	H2/H3
#10-32	H2	H2/H3
#12-28	H2/H3	H3/H4
1/4-28	H2/H3	H3/H4
5/16-24	H3	H3/H4
3/8-24	H3	H3/H4
7/16-20	H3	H4/H5
1/2-20	H3	H4/H5
9/16-18	H3/H4	H4/H5
5/8-18	H3/H4	H4/H5
3/4-16	H4	H5/H6
7/8-14	H4	H5/H6
1-12	H4/H5	H5/H6
1 1/8-12	H4/H5	H6/H7
1 1/4-12	H4/H5	H6/H7
1 3/8-12	H4/H5	H6/H7
1 1/2-12	H4/H5	H6/H7

TAP SIZE	TAP DIMENSIONS			EXTENSION DIMENSIONS					STD	WITH COOLANT HOLE
	d1	d2	k1	I1	d3	k2	I2	d4/d5		
#0 - #6	0.141	0.110	0.91	0.255	0.191	2.36	0.295	5.12	FZ111900101	FZ112300101
#8	0.168	0.131	0.91	0.255	0.191	2.36	0.331	5.12	FZ111900102	FZ112300102
#10	0.194	0.152	0.91	0.255	0.191	2.36	0.398	5.12	FZ111900103	FZ112300103
#12	0.220	0.165	1.02	0.255	0.191	2.36	0.476	5.12	FZ111900104	FZ112300104
1/4	0.255	0.191	1.02	0.255	0.191	2.36	0.476	5.12	FZ111900105	FZ112300105
5/16	0.318	0.238	1.18	0.318	0.238	2.36	0.512	5.12	FZ111900106	FZ112300106
7/16	0.323	0.242	1.18	0.						

# EMUGE HIGH PERFORMANCE NPT & NPTF TAPS

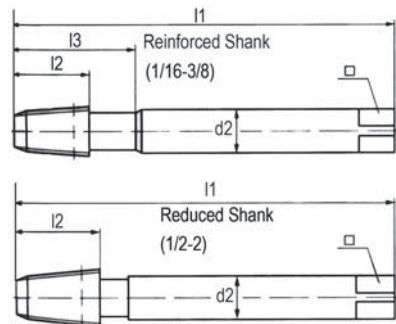
### Applications

MATERIAL	UNCOATED	COATED
STAINLESS	●	●
ALLOYED STEEL	○	●
CAST IRON	○	●
COPPER	○	○
ALUMINUM	○	●



SIZE	I1	I2	I3	d2	□	NPT		NPTF		NPTF W/COOLANT
						UNCOATED REKORD KEG-D-VA	TiN COATED REKORD KEG-D-VA-TiN	UNCOATED REKORD KEG-D-VA	TiN COATED REKORD KEG-D-VA-TiN	TiCN COATED REKORD KEG-D-VA-ikzn-tiCN
1/16-27	2.13	0.69	0.925	0.3125	0.234	AW4830005763	AW4831005763	AW4830005782	AW4831005782	AW8893005782
1/8-27	2.13	0.75	0.984	0.4375	0.328	AW4830005764	AW4831005764	AW4830005783	AW4831005783	AW8893005783
1/4-18	2.44	1.06	1.280	0.5625	0.421	AW4830005765	AW4831005765	AW4830005784	AW4831005784	AW8893005784
3/8-18	2.56	1.06	1.339	0.7000	0.531	AW4830005766	AW4831005766	AW4830005785	AW4831005785	AW8893005785
1/2-14	3.13	1.38	-	0.6875	0.515	AW4830005767	AW4831005767	AW4830005786	AW4831005786	AW8893005786
3/4-14	3.25	1.38	-	0.9063	0.679	AW4830005768	AW4831005768	AW4830005787	AW4831005787	AW8893005787
1-11.1/2	3.75	1.75	-	1.1250	0.843	AW4830005769	AW4831005769	AW4830005788	AW4831005788	AW8893005788
1.1/4-11.1/2	4.00	1.75	-	1.3125	0.984	AW4830005770	AW4831005770	AW4830005789	AW4831005789	-
1.1/2-11.1/2	4.25	1.75	-	1.5000	1.125	AW4830005771	AW4831005771	AW4830005790	AW4831005790	-
2-11.1/2	4.50	1.75	-	1.8750	1.406	AW4830005772	AW4831005772	AW4830005791	AW4831005791	-

# EMUGE HIGH PERFORMANCE LONG NPT TAPS

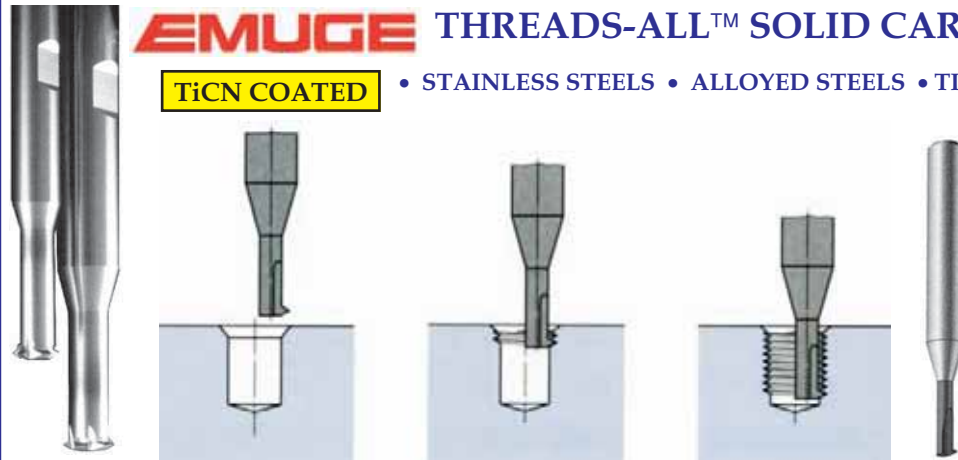


SIZE	I1	I2	I3	d2	□	UNCOATED		TiN COATED	
						REKORD KEG-2A	REKORD KEG-2A-TiN	REKORD KEG-2D-VA-TiN	REKORD KEG-2D-VA-TiN
1/16-27	3.543	0.69	1.161	0.3125	0.234	CW1810005763	CW1814005763	CW4831005763	CW4831005763
1/8-27	3.937	0.75	1.299	0.4375	0.328	CW1810005764	CW1814005764	CW4831005764	CW4831005764
1/4-18	3.937	1.06	1.772	0.5625	0.421	CW1810005765	CW1814005765	CW4831005765	CW4831005765
3/8-18	4.331	1.06	1.850	0.7000	0.531	CW1810005766	CW1814005766	CW4831005766	CW4831005766
1/2-14	5.512	1.38	-	0.6875	0.515	CW1810005767	CW1814005767	CW4831005767	CW4831005767
3/4-14	5.512	1.38	-	0.9063	0.679	CW1810005768	CW1814005768	CW4831005768	CW4831005768
1-11.1/2	6.299	1.75	-	1.1250	0.843	CW1810005769	CW1814005769	-	-
1.1/4-11.1/2	6.693	1.75	-	1.3125	0.984	CW1810005770	CW1814005770	-	-
1.1/2-11.1/2	7.480	1.75	-	1.5000	1.125	CW1810005771	CW1814005771	-	-
2-11.1/2	7.874	1.75	-	1.8750	1.406	CW1810005772	CW1814005772	-	-

# EMUGE THREADS-ALL™ SOLID CARBIDE THREAD MILLS

**TiCN COATED**

• STAINLESS STEELS • ALLOYED STEELS • TITANIUM • INCONEL • ALUMINUM



- Easy machining of difficult materials
- One tool for thru and blind holes
- Pitch diameter can be easily controlled
- Full bottom threading to within 1 pitch
- STI threads can be easily produced
- Produces excellent thread finish and gaging
- Total control over pitch diameter limits including 2B, 3B, 3BG and all oversize variants
- TiCN coated
- Coolant holes featured on sizes 5/16 to 3/4
- Weldon flat shanks featured on sizes #8 - 3/4"
- Single plane style, 1 to 6 teeth

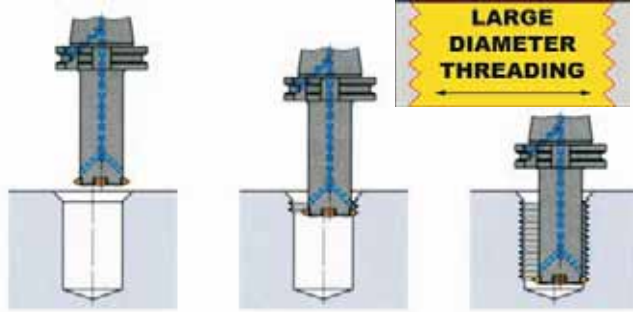
**OVER 100 THREAD DESIGNATIONS**

SIZE	PART NO.	CUTTER DIA.	LENGTH OF CUT	NO. FLUTES	OVERALL LENGTH	SHANK DIA.	WELD ON SHANK	COOLANT HOLE	THREAD SIZE SELECTOR								
									UNC	UNF	STI UNC	STI UNF	UNEF	UNJC	UNJF	M	MJ
#0	GFS137065033	0.045	0.125	1	1.5/8	1/8	-	-	-	0-80	-	-	-	-	0-80	1.6 x .35	1.6 x .35
#1	GX8820015000	0.056	0.146	3	1.5/8	1/8	-	-	1-64	1-72	-	-	-	1-64	1-72	2 x .4	2 x .4
#2	GX8820015001	0.064	0.172	3	1.5/8	1/8	-	-	2-56	2-64	-	-	-	2-56	2-64	2.5 x .45	2.5 x .45
#4	GX8820025003	0.081	0.224	3	1.5/8	1/8	-	-	4-40	4-48	2-56	-	-	4-40	4-48	-	-
STI 4	GX8820045611	0.117	0.295	3	1.5/8	1/8	-	-	-	-	4-40	4-48	-	-	-	-	-
#5	GX8820015004	0.095	0.250	3	1.5/8	1/8	-	-	5-40	5-44	-	-	-	5-40	5-44	3 x .5	3 x .5
#6	GX8820025005	0.100	0.276	3	1.5/8	1/8	-	-	6-32	6-40	-	-	-	6-32	6-40	-	-
STI 6	GX8820015613	0.143	0.364	3	2.1/2	1/4	-	-	-	-	6-32	6-40	-	-	-	5 x .8	5 x .8
#8	GX8820015006	0.124	0.328	3	1.5/8	1/8	✓	-	8-32	8-36	-	-	-	8-32	8-36	4 x .7	4 x .7
STI 8	GX8820045614	0.167	0.415	3	2.1/2	1/4	-	-	-	-	8-32	8-36	1/4-32	-	-	-	-
#10	GX8820035007	0.136	0.380	3	2.1/2	1/4	✓	✓	10-24	10-32	10-24	10-32	-	10-24	10-32	-	-
1/4	GX8820085009	0.185	0.500	3	2.1/2	1/4	✓	✓	1/4-20	1/4-28	1/4-20	1/4-28	5/16-32	1/4-20	1/4-28	6 x 1	6 x 1
5/16	GFS331065010	0.242	0.625	4	2.1/2	1/4	✓	✓	5/16-18	5/16-24	5/16-18	5/16-24	3/8-32	5/16-18	5/16-24	8 x 1.25	8 x 1.25
3/8	GFS331065011	0.301	0.750	5	2.1/2	5/16	✓	✓	3/8-16	3/8-24	3/8-16	3/8-24	7/16-28	3/8-16	3/8-24	10 x 1.5	10 x 1.5
7/16	GFS331065012	0.354	0.875	5	3.00	3/8	✓	✓	7/16-14	7/16-20	7/16-14	7/16-20	1/2-28	7/16-14	7/16-20	12 x 1.75	12 x 1.75
1/2	GFS331065013	0.407	1.000	5	3.3/4	1/2	✓	✓	1/2-13	1/2-20	1/2-13	1/2-20	5/8-24	1/2-13	1/2-20	14 x 2	14 x 2
5/8	GFS331065015	0.512	1.250	5	3.3/4	1/2	✓	✓	5/8-11	5/8-18	5/8-11	5/8-18	3/4-20	5/8-11	5/8-18	16 x 2	16 x 2
3/4	GFS331065016	0.630	1.500	6	4.1/4	5/8	✓	✓	3/4-10	3/4-16	3/4-10	3/4-16	7/8-20	3/4-10	3/4-16	20 x 2.5	20 x 2.5

# EMUGE GIGANT-IC CIRCULAR THREAD MILLS FOR LARGE HOLES

• ELIMINATE LARGE TAPS - THREAD ANY SIZE ABOVE 1"

- 4 TIMES THE TOOL LIFE
- UNSURPASSED THREAD FINISH QUALITY



**LARGE DIAMETER THREADING**



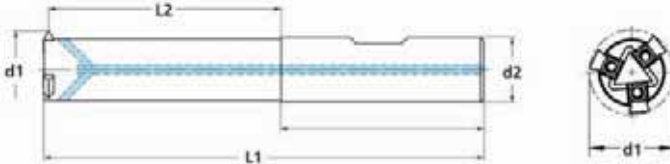
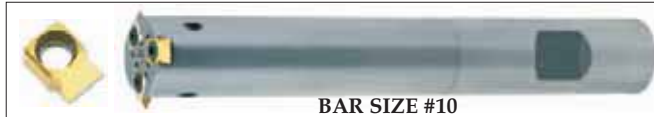
- Innovative internal coolant supply exits radially at the insert cutting edge for optimized cooling, chip evacuation and thread quality
- Rigidity, security, and precision provide unsurpassed process consistency and safety for expensive workpieces

PVD COATED INSERTS FOR WIDE APPLICATION RANGE

COATING	USE ON THE FOLLOWING MATERIALS:
TiAlN-T4	• STAINLESS STEELS • TITANIUM • INCONEL • MONEL • HASTELLOY • ALLOYED STEELS • MOLD & TOOL STEELS • CAST IRON • HARD HIGH ALLOYED STEELS HRC > 25
TiN	• ALUMINUM • BRONZE • COPPER • BRASS • SOFT ALLOYED STEELS HRC < 25

- Partial Profile Insert Technology Only 2 inserts are required for multiple thread diameters and pitches - UN, UNC, UNF, UNEF, UNJF, UNS, M, MF, MJ, NPT, NPSM, API
- Inserts are rigidly affixed in a solid steel precision pocket, securely fastened with a Torx locking screw
- Fast, easy set-up, programming and maintenance
- INDEXABLE carbide inserts with 4 useable cutting edges provide up to 4x more tool life
- Low radial cutting pressure ensures tru-to-gauge threads
- Rigid, anti-vibration body design allows for a length-to-dia-ratio to 2xD and greater
- Submicron carbide inserts with advanced cutting geometry and TiAlN or TiN coatings allow for easy machining of all difficult materials

## GIGANT-IC HOLDERS WITH WELDON STYLE SHANK



BAR SIZE	d1 CUTTER DIAMETER	MINIMUM THREAD DIAMETER	L2 MAXIMUM DEPTH	d2 SHANK DIAMETER	L1 OVERALL LENGTH	NUMBER OF INSERTS	PART NUMBER
10	0.807	1.00" (M24)	2.50	5/8"	4.57	3	GZ340050
11	0.940	1.1/8" (M30)	3.00	1.1/4"	5.51	3	GZ340001
11	0.940	1.1/8" (M30)	3.50	1.1/4"	5.91	3	GZ340101
11	1.293	1.1/2" (M40)	3.50	1.1/4"	6.26	5	GZ340201
12	1.293	1.1/2" (M40)	3.50	1.1/4"	6.10	3	GZ340012
12	1.293	1.1/2" (M40)	4.50	1.1/4"	6.89	3	GZ340112
12	1.585	2.00" (M48)	4.25	1.1/4"	6.77	5	GZ340202
13	1.585	2.00" (M48)	4.25	1.1/4"	6.73	4	GZ340153
13	1.585	2.00" (M48)	5.50	1.1/4"	8.11	4	GZ340143

## INSERTS

**TiAlN-T4 Coating:** For Stainless Steel, Titanium, Inconel, Monel, Hastelloy, Alloyed Steels, Tool Steel, Cast Iron & Hard Steels HRC > 25.

**TiN Coating:** For Soft Alloyed Steels HRC < 25, Aluminum, Bronze, Copper & Brass

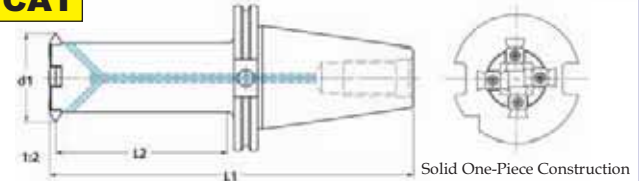


INSERT SIZE	THREAD PITCH RANGE				PART NO.	
	inch	mm	NPT-API	NPSM	TiN COATED	TiAlN-T4 COATED
10	8-16	1.5-3.0	14 - 11.1/2	14 - 11.1/2	GF6430059514	GF6430079514
11	10-16	1.5-2.5	11.1/2	11.1/2	GF6431059514	GF6431079514
11	6-10	2.5-4.0	-	8	GF6431059517	GF6431079517
12	10-16	1.5-2.5	11.1/2	11.1/2	GF6432059514	GF6432079514
12	4.1/2-10	2.5-5.0	-	8	GF6432059517	GF6432079517
13	9-16	1.5-3.0	8	11.1/2	GF6433059514	GF6433079514
13	4-9	3.0-6.0	-	8	GF6433059518	GF6433079518
14	9-16	1.5-3.0	8	-	GF6434059514	GF6434079514
14	4-9	3.0-6.0	-	8	GF6434059518	GF6434079518

## GIGANT-IC HOLDERS WITH CAT50 SHANK

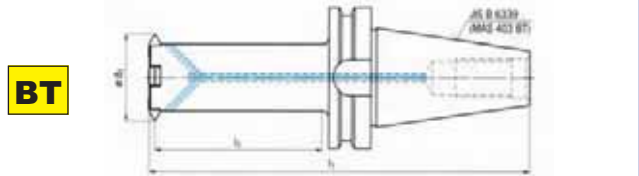


**CAT**



SHANK SIZE	BAR SIZE	d1 CUTTER DIAMETER	MINIMUM THREAD DIAMETER	L2 MAXIMUM DEPTH	L1 OVERALL LENGTH	NUMBER OF INSERTS	PART NUMBER
CAT50	13	1.585	2.00" (M48)	4.25	9.62	4	GZ346013
CAT50	13	1.585	2.00" (M48)	5.50	11.00	4	GZ346003
CAT50	14	2.069	2.1/2" (M64)	7.50	13.00	4	GZ346024

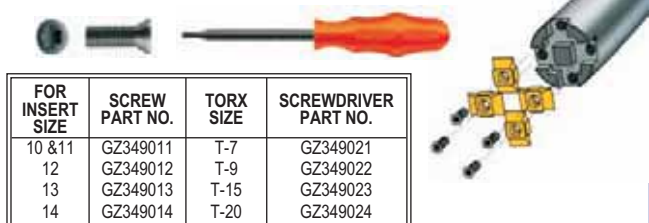
## GIGANT-IC HOLDERS WITH BT SHANKS



**BT**

SHANK SIZE	BAR SIZE	D min.	l1	INCH		NUMBER OF INSERTS	PART#
				l5	d1		
BT 40	13	2	8.543	4.331	1.585	4	GZ347003
BT 50		2	10.394	4.331	1.585	4	GZ348003
BT 40		2	9.921	5.709	1.585	4	GZ347103
BT 50		2	11.772	5.709	1.585	4	GZ348103
BT 40	14	2.1/2	10.157	5.906	2.069	4	GZ347014
BT 50		2.1/2	12.008	5.906	2.069	4	GZ348014
BT 40		2.1/2	11.929	7.677	2.069	4	GZ347114
BT 50		2.1/2	13.780	7.677	2.069	4	GZ348114
BT 50		3.1/4	12.874	6.693	2.620	7	GZ348024
BT 50		3.1/4	16.417	10.236	2.620	7	GZ348124

## SPARE PARTS



FOR INSERT SIZE	SCREW PART NO.	TORX SIZE	SCREWDRIVER PART NO.
10 & 11	GZ349011	T-7	GZ349021
12	GZ349012	T-9	GZ349022
13	GZ349013	T-15	GZ349023
14	GZ349014	T-20	GZ349024

# BASS TOOL & SUPPLY, INC.

2300 Fairway Park Dr.  
Houston, TX 77092

PRSRRT STD  
US POSTAGE  
PAID  
PERMIT # 600  
HOUSTON, TX



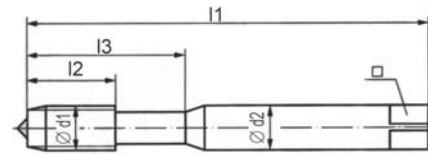
## HIGH PERFORMANCE MULTI APPLICATIONS TAPS

• Inch Taps Handle 2B & 3B Class • Metric Taps Handle 6H Class

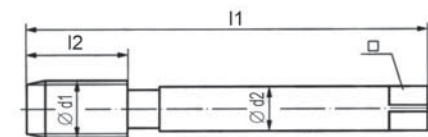
- STAINLESS STEEL • ALLOYED STEEL • CARBON STEEL
- CAST IRON • ALUMINUM • COPPER, BRASS & BRONZE

- All taps are made with Emuge's trademark long shanks - DIN length for extra reach.
- HSS-E (Proprietary to Emuge).
- Nitrided with NE2 Surface Treatment (Steam Oxide)

### SPIRAL POINT - DIN LENGTH FOR THRU HOLES



TAP SIZE  
#4 - 3/8"



TAP SIZE  
7/16"-3/4"

### INCH SIZES - DIN LENGTH - ANSI SHANK

- Inch taps handle 2B and 3B classes of fit
- CHAMFER: 4-5 threads

### PLUG STYLE

### METRIC SIZES - DIN LENGTH - DIN SHANK

- Metric taps handle 6H class of fit
- CHAMFER: 4-5 THREADS

SIZE	I1	I2	I3	d2		PART#	PRICE
4 x 0.7	63	13	21	4.5	3.3	B15773000040	14.80
5 x 0.8	70	15	25	6.0	4.2	B15773000050	14.80
6 x 1	80	17	30	6.0	5.0	B15773000060	15.90
8 x 1.25	90	20	35	8.0	6.8	B15773000080	18.00
10 x 1.5	100	22	39	10.0	8.5	B15773000100	22.70
12 x 1.75	110	24	-	9.0	10.2	C15773000112	27.60
16 x 2.0	110	27	-	12.0	14.0	C15773000116	47.50

MAIN GROUP	SUB-GROUP	EXAMPLES
STAINLESS STEEL	Austenitic	303, 304, 316
	Ferritic	405, 409, 430
	Martensitic	416, 420, 440
	Carbon, all grades	1010, 1018, 1045
	Free cutting	12L14, 1215
	Constructural	A36, T1 plate
	Alloyed Cast, or Forged	4140, 4130, 8620
ALUMINUM	Tool / Mold / Die	D2, S7, P20, H13
	Casting	356T6, 380, 390, 6061, 7075
CAST IRON	Grey Iron	G10, GG25, GG30
	High Strength	Nodular, Ductile
COPPER	Zinc Alloy	Brass
	TiN Alloy	Bronze

SIZE	I1	I2	I3	d2	□		PART#	PRICE
4-40	2.205	0.236	0.709	0.141	0.110	0.0890	BU4973005003	14.80
6-32	2.205	0.276	0.787	0.141	0.110	0.1110	BU4973005005	12.70
8-32	2.480	0.315	0.827	0.168	0.131	0.1360	BU4973005006	12.70
10-24	2.756	0.394	0.984	0.194	0.152	0.1614	BU4973005007	13.20
10-32	2.756	0.394	0.984	0.194	0.152	0.1614	BU4973005041	13.20
1/4-20	3.150	0.512	1.181	0.255	0.191	0.2040	BU4973005009	13.20
1/4-28	3.150	0.394	1.181	0.255	0.191	0.2165	BU4973005043	13.20
5/16-18	3.543	0.551	1.378	0.318	0.238	0.2610	BU4973005010	14.30
5/16-24	3.543	0.394	1.260	0.318	0.238	0.2717	BU4973005044	14.80
3/8-16	3.937	0.630	1.535	0.381	0.286	0.3160	BU4973005011	16.40
3/8-24	3.937	0.394	1.535	0.381	0.286	0.3346	BU4973005045	16.90
7/16-14	3.937	0.709	-	0.323	0.242	0.3680	CJ4973005012	21.10
7/16-20	3.937	0.512	-	0.323	0.242	0.3898	CJ4973005046	21.70
1/2-13	4.331	0.787	-	0.367	0.275	0.4219	CJ4973005013	25.40
1/2-20	3.937	0.512	-	0.367	0.275	0.4528	CJ4973005047	25.90
9/16-12	4.331	0.787	-	0.429	0.322	0.4844	CJ4973005014	35.90
9/16-18	3.937	0.591	-	0.429	0.322	0.5118	CJ4973005048	38.00
5/8-11	4.331	0.866	-	0.480	0.360	0.5313	CJ4973005015	43.30
5/8-18	3.937	0.591	-	0.480	0.360	0.5709	CJ4973005049	46.50
3/4-10	4.921	0.984	-	0.590	0.442	0.6563	CJ4973005016	66.50
3/4-16	4.331	0.669	-	0.590	0.442	0.6890	CJ4973005050	72.90

### SPIRAL FLUTE - DIN LENGTH FOR BOTTOMING HOLES



### BOTTOMING STYLE

### INCH SIZES - DIN LENGTH - ANSI SHANK

- Inch taps handle 2B and 3B classes of fit
- CHAMFER: 2-3 threads

### METRIC SIZES - DIN LENGTH - DIN SHANK

- Metric taps handle 6H class of fit
- CHAMFER: 2-3 THREADS

SIZE	I1	I2	I3	d2		PART#	PRICE
4 x 0.7	63	13	21	4.5	3.3	B49332000040	18.00
5 x 0.8	70	15	25	6.0	4.2	B49332000050	18.00
6 x 1	80	17	30	6.0	5.0	B49332000060	19.00
8 x 1.25	90	20	35	8.0	6.8	B49332000080	23.80
10 x 1.5	100	22	39	10.0	8.5	C49332000100	25.90
12 x 1.75	110	24	-	9.0	10.2	C49332000112	32.70
16 x 2.0	110	27	-	12.0	14.0	C49332000116	52.80

### EXCLUSIVE GEOMETRIC DESIGN

Multi-TAP™ is the result of collective years of Emuge's extensive tapping expertise and application research. It features a completely new, innovative geometric design and a special base material and surface treatment, allowing it to handle numerous materials and applications.

SIZE	I1	I2	I3	d2	□		PART#	PRICE
4-40	2.205	0.236	0.709	0.141	0.110	0.890	BU5332005003	20.10
6-32	2.205	0.276	0.787	0.141	0.110	0.1110	BU5332005005	17.40
8-32	2.480	0.315	0.827	0.168	0.131	0.1360	BU5332005006	17.40
10-24	2.756	0.394	0.984	0.194	0.152	0.1614	BU5332005007	18.00
10-32	2.756	0.394	0.984	0.194	0.152	0.1614	BU5332005041	18.00
1/4-20	3.150	0.512	1.181	0.255	0.191	0.2040	BU5332005009	19.00
1/4-28	3.150	0.394	1.181	0.255	0.191	0.2165	BU5332005043	19.00
5/16-18	3.543	0.551	1.378	0.318	0.238	0.2610	BU5332005010	21.70
5/16-24	3.543	0.394	1.260	0.318	0.238	0.2717	BU5332005044	21.70
3/8-16	3.937	0.630	1.535	0.381	0.286	0.3160	BU5332005011	24.30
3/8-24	3.937	0.394	1.535	0.381	0.286	0.3346	BU5332005045	24.30
7/16-14	3.937	0.709	-	0.323	0.242	0.3680	CU5332005012	31.20
7/16-20	3.937	0.512	-	0.323	0.242	0.3898	CU5332005046	31.20
1/2-13	4.331	0.787	-	0.367	0.275	0.4219	CU5332005013	37.00
1/2-20	3.937	0.512	-	0.367	0.275	0.4528	CU5332005047	37.00
9/16-12	4.331	0.787	-	0.429	0.322	0.4844	CU5332005014	56.00
9/16-18	3.937	0.591	-	0.429	0.322	0.5118	CU5332005048	61.30
5/8-11	4.331	0.866	-	0.480	0.360	0.5313	CU5332005015	63.40
5/8-18	3.937	0.591	-	0.480	0.360	0.5709	CU5332005049	69.20
3/4-10	4.921	0.984	-	0.590	0.442	0.6563	CU5332005016	86.60
3/4-16	4.331	0.669	-	0.590	0.442	0.6890	CU5332005050	90.80