

Ti

***Complete
Solutions
for Today's
Titanium
Challenges***

Including Taps with

NEW HRG
TECHNOLOGY

NEW Advanced
Left-Hand Flute

EMUGE

HIGH PERFORMANCE TOOLS

NEW EMUGE

Titanium Tools Program

Efficient, Economical Threading of Alloyed Titanium

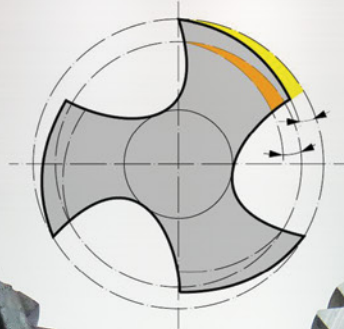
Featuring Advanced New High-Relief Geometry (HRG) Technology.



Emuge has introduced a comprehensive line of high-performance tools for threading demanding alloyed titanium materials. Ranging from taps with unique new geometry designs to reliable solid carbide thread mills, the answers to your titanium challenges on Aerospace, Defense and Medical machining start here.

NEW HRG Technology with advanced High-Relief Geometry

increases space between the friction surfaces for enhanced lubrication and reduced torque load in both forward and reverse direction. HRG counteracts the high compressive forces produced by the extreme elastic memory of titanium.



NEW C-Ti Taps with Advanced Left-Hand Helical Flute Form

and chamfer geometry combine to optimize chip evacuation in the forward direction and add strength to the cutting teeth for enhanced tool life and process security.

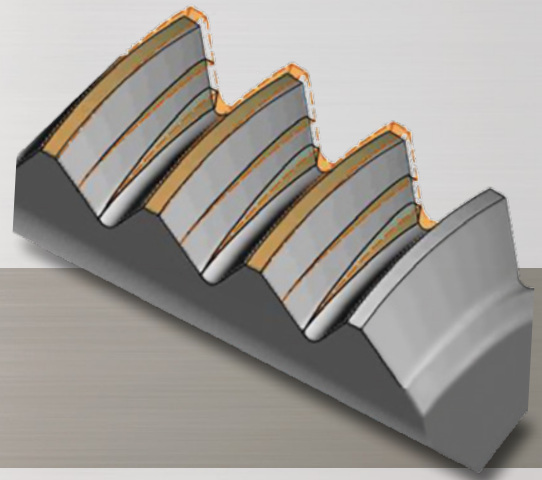
- NT2 – Nitriding + Steam treatment: Nitriding provides increased edge hardness. Steam layer over nitriding provides lubricity to prevent cold welding.
- TiCN – Multi-layer PVD coating for increased edge hardness and surface lubricity.
- Modified bottoming chamfer (2-3 threads) provides reduced torque and increased tool life.
- 3BX class of fit for internal UNJ threading applications.
- DIN length for improved chip clearance in hard-to-reach applications.
- For optimal results, run on a CNC machine with a synchronous spindle utilizing a tap holder with minimal compensation such as Emuge Softsynchro®.



C-Ti Tap
with NT2 coating


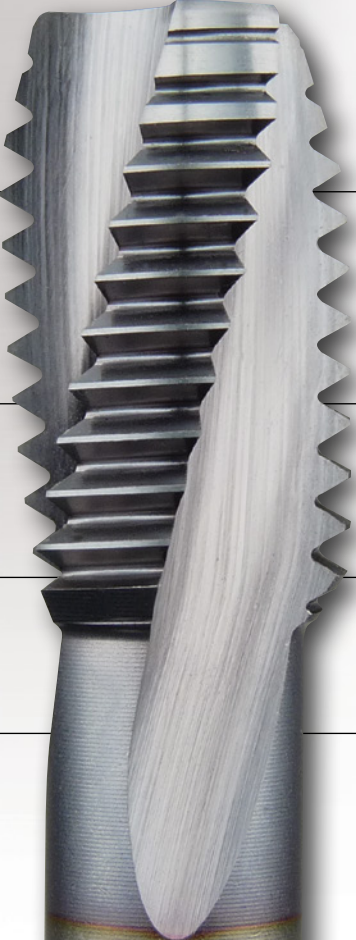
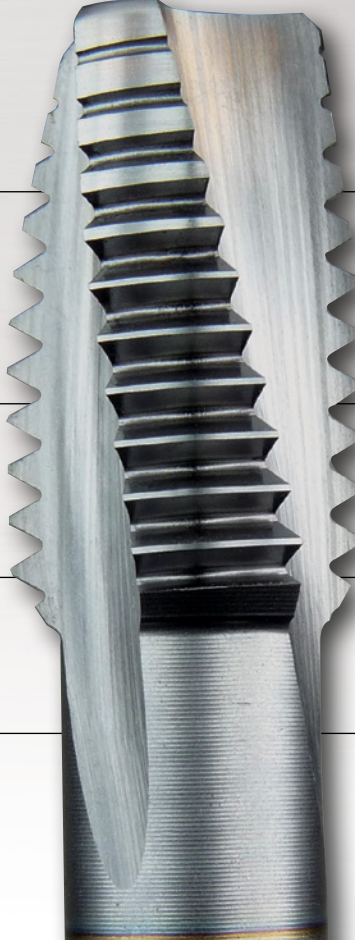
D-Ti Tap
with TiCN coating

Innovative Geometry



Optimized Geometries Ideal for Difficult Titanium Machining

The benefits of HRG Technology in tough, long-chipping titaniums are extraordinary tool life, superior thread finish, excellent guiding properties for true-to-gauge fit and significantly reduced chipped teeth or tap breakage.

D-Ti Taps		C-Ti Taps with Advanced LH Helical Flute Form
	<p>Optimized flute angle and profile for tough, long chips that evacuate axially in one direction</p>	
	<p>LH helical flute form with special rake and relief to optimize chip evacuation</p>	
	<p>Premium HSS-E with exceptional heat and wear resistance</p>	
	<p>STI thread sizes for jet engine components</p>	
	<p>NT2 & TiCN coated options for enhanced cutting edge wear and resistance to material cold welding</p>	

Spiral Flute Semi-Bottoming Taps

EMUGE

Rekord D-Ti Style
COARSE

HRG
TECHNOLOGY



C / 2-3 Chamfer Length • 3BX Class of Fit • DIN Length / ANSI Shank

UNC / BLIND HOLE - NT2 COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
1	64	2	0.141	0.110	1.772	BU4560115000
2	56	2	0.141	0.110	1.772	BU4560115001
3	48	2	0.141	0.110	1.969	BU4560115002
4	40	2	0.141	0.110	2.205	BU4560115003
5	40	2	0.141	0.110	2.205	BU4560115004
6	32	3	0.141	0.110	2.205	BU4560115005
8	32	3	0.168	0.131	2.480	BU4560115006
10	24	3	0.194	0.152	2.756	BU4560115007
12	24	3	0.220	0.165	3.150	BU4560115008
1/4	20	3	0.255	0.191	3.150	BU4560115009
5/16	18	3	0.318	0.238	3.543	BU4560115010
3/8	16	3	0.381	0.286	3.937	BU4560115011
7/16	14	3	0.323	0.242	3.937	CU4560115012
1/2	13	3	0.367	0.275	4.331	CU4560115013
9/16	12	3	0.429	0.322	4.331	CU4560115014
5/8	11	3	0.480	0.360	4.331	CU4560115015
3/4	10	3	0.590	0.442	4.921	CU4560115016
7/8	9	3	0.697	0.523	5.512	CU4560115017
1	8	3	0.800	0.600	6.299	CU4560115018

UNC / BLIND HOLE - TiCN COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
1	64	2	0.141	0.110	1.772	BU4596115000
2	56	2	0.141	0.110	1.772	BU4596115001
3	48	2	0.141	0.110	1.969	BU4596115002
4	40	2	0.141	0.110	2.205	BU4596115003
5	40	2	0.141	0.110	2.205	BU4596115004
6	32	3	0.141	0.110	2.205	BU4596115005
8	32	3	0.168	0.131	2.480	BU4596115006
10	24	3	0.194	0.152	2.756	BU4596115007
12	24	3	0.220	0.165	3.150	BU4596115008
1/4	20	3	0.255	0.191	3.150	BU4596115009
5/16	18	3	0.318	0.238	3.543	BU4596115010
3/8	16	3	0.381	0.286	3.937	BU4596115011
7/16	14	3	0.323	0.242	3.937	CU4596115012
1/2	13	3	0.367	0.275	4.331	CU4596115013
9/16	12	3	0.429	0.322	4.331	CU4596115014
5/8	11	3	0.480	0.360	4.331	CU4596115015
3/4	10	3	0.590	0.442	4.921	CU4596115016
7/8	9	3	0.697	0.523	5.512	CU4596115017
1	8	3	0.800	0.600	6.299	CU4596115018

UNC / BLIND HOLE - STI - NT2 COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
4	40	3	0.141	0.110	2.205	BU4560115611
5	40	3	0.168	0.131	2.480	BU4560115612
6	32	3	0.194	0.152	2.756	BU4560115613
8	32	3	0.220	0.165	3.150	BU4560115614
10	24	3	0.255	0.191	3.150	BU4560115615
12	24	3	0.318	0.238	3.543	BU4560115616
1/4	20	3	0.318	0.238	3.543	BU4560115617
5/16	18	3	0.381	0.286	3.937	BU4560115618
3/8	16	3	0.367	0.275	3.937	CU4560115619
7/16	14	3	0.429	0.322	4.331	CU4560115620
1/2	13	3	0.480	0.360	4.331	CU4560115621
9/16	12	3	0.542	0.406	4.921	CU4560115622
5/8	11	3	0.590	0.442	4.921	CU4560115623
3/4	10	3	0.697	0.523	5.512	CU4560115624

Refer to back cover for Materials / Application Reference Table.

Shank Type

Reinforced Style:
on tap sizes:
NT2 & TiCN: 1 – 3/8,
STI: 4 – 5/16

Reduced Style:
on tap sizes:
NT2 & TiCN: 7/16 – 1,
STI: 3/8 – 3/4

Spiral Flute Semi-Bottoming Taps



Rekord D-Ti Style
FINE



C / 2-3 Chamfer Length • 3BX Class of Fit • DIN Length / ANSI Shank

UNF / BLIND HOLE - NT2 COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
0	80	2	0.141	0.110	1.626	BU4560115033
1	72	2	0.141	0.110	1.772	BU4560115034
2	64	2	0.141	0.110	1.772	BU4560115035
3	56	2	0.141	0.110	1.969	BU4560115036
4	48	2	0.141	0.110	2.205	BU4560115037
5	44	2	0.141	0.110	2.205	BU4560115038
6	40	3	0.141	0.110	2.205	BU4560115039
8	36	3	0.168	0.131	2.480	BU4560115040
10	32	3	0.194	0.152	2.756	BU4560115041
12	28	3	0.220	0.165	3.150	BU4560115042
1/4	28	3	0.255	0.191	3.150	BU4560115043
5/16	24	3	0.318	0.238	3.543	BU4560115044
3/8	24	3	0.381	0.286	3.937	BU4560115045
7/16	20	3	0.323	0.242	3.937	CU4560115046
1/2	20	3	0.367	0.275	3.937	CU4560115047
9/16	18	3	0.429	0.322	3.937	CU4560115048
5/8	18	3	0.480	0.360	3.937	CU4560115049
3/4	16	4	0.590	0.442	4.331	CU4560115050
7/8	14	4	0.697	0.523	4.921	CU4560115051
1	12	4	0.800	0.600	5.512	CU4560115052

UNF / BLIND HOLE - TiCN COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
0	80	2	0.141	0.110	1.626	BU4596115033
1	72	2	0.141	0.110	1.772	BU4596115034
2	64	2	0.141	0.110	1.772	BU4596115035
3	56	2	0.141	0.110	1.969	BU4596115036
4	48	2	0.141	0.110	2.205	BU4596115037
5	44	2	0.141	0.110	2.205	BU4596115038
6	40	3	0.141	0.110	2.205	BU4596115039
8	36	3	0.168	0.131	2.480	BU4596115040
10	32	3	0.194	0.152	2.756	BU4596115041
12	28	3	0.220	0.165	3.150	BU4596115042
1/4	28	3	0.255	0.191	3.150	BU4596115043
5/16	24	3	0.318	0.238	3.543	BU4596115044
3/8	24	3	0.381	0.286	3.937	BU4596115045
7/16	20	3	0.323	0.242	3.937	CU4596115046
1/2	20	3	0.367	0.275	3.937	CU4596115047
9/16	18	3	0.429	0.322	3.937	CU4596115048
5/8	18	3	0.480	0.360	3.937	CU4596115049
3/4	16	4	0.590	0.442	4.331	CU4596115050
7/8	14	4	0.697	0.523	4.921	CU4596115051
1	12	4	0.800	0.600	5.512	CU4596115052

UNF / BLIND HOLE - STI - NT2 COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
4	48	3	0.141	0.110	2.205	BU4560115633
6	40	3	0.168	0.131	2.480	BU4560115635
8	36	3	0.220	0.165	3.150	BU4560115636
10	32	3	0.255	0.191	3.150	BU4560115637
1/4	28	3	0.318	0.238	3.543	BU4560115639
5/16	24	3	0.381	0.286	3.937	BU4560115640
3/8	24	3	0.323	0.242	3.937	CU4560115641
7/16	20	3	0.367	0.275	3.937	CU4560115642
1/2	20	3	0.429	0.322	3.937	CU4560115643
9/16	18	3	0.480	0.360	3.937	CU4560115644
5/8	18	4	0.542	0.406	4.331	CU4560115645
3/4	16	4	0.652	0.489	4.921	CU4560115646

Refer to back cover for Materials / Application Reference Table.

Shank Type

Reinforced Style:
NT2 & TiCN: 0 - 3/8,
STI: 4 - 5/16

Reduced Style:
on tap sizes:
NT2 & TiCN: 7/16 - 1,
STI: 3/8 - 3/4

Left-Hand Spiral Plug Taps



Rekord C-Ti Style with Advanced Left-Hand Helical Flute Form
COARSE



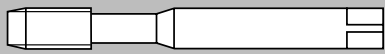
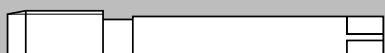
D / 4-5 Chamfer Length • 3BX Class of Fit • DIN Length / ANSI Shank

UNC / THROUGH HOLE - NT2 COATING						
Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
1	64	2	0.141	0.110	1.772	BU3060115000
2	56	2	0.141	0.110	1.722	BU3060115001
3	48	2	0.141	0.110	1.969	BU3060115002
4	40	2	0.141	0.110	2.205	BU3060115003
5	40	2	0.141	0.110	2.205	BU3060115004
6	32	3	0.141	0.110	2.205	BU3060115005
8	32	3	0.168	0.131	2.480	BU3060115006
10	24	3	0.194	0.152	2.756	BU3060115007
12	24	3	0.220	0.165	3.150	BU3060115008
1/4	20	3	0.255	0.191	3.150	BU3060115009
5/16	18	3	0.318	0.238	3.543	BU3060115010
3/8	16	3	0.381	0.286	3.937	BU3060115011
7/16	14	3	0.323	0.242	3.937	CU3060115012
1/2	13	3	0.367	0.275	4.331	CU3060115013
9/16	12	3	0.429	0.322	4.331	CU3060115014
5/8	11	3	0.480	0.360	4.331	CU3060115015
3/4	10	3	0.590	0.442	4.921	CU3060115016
7/8	9	3	0.697	0.523	5.512	CU3060115017
1	8	3	0.800	0.600	6.299	CU3060115018

UNC / THROUGH HOLE - TiCN COATING						
Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
1	64	2	0.141	0.110	1.772	BU3096115000
2	56	2	0.141	0.110	1.772	BU3096115001
3	48	2	0.141	0.110	1.969	BU3096115002
4	40	2	0.141	0.110	2.205	BU3096115003
5	40	2	0.141	0.110	2.205	BU3096115004
6	32	3	0.141	0.110	2.205	BU3096115005
8	32	3	0.168	0.131	2.480	BU3096115006
10	24	3	0.194	0.152	2.756	BU3096115007
12	24	3	0.220	0.165	3.150	BU3096115008
1/4	20	3	0.255	0.191	3.150	BU3096115009
5/16	18	3	0.318	0.238	3.543	BU3096115010
3/8	16	3	0.381	0.286	3.937	BU3096115011
7/16	14	3	0.323	0.242	3.937	CU3096115012
1/2	13	3	0.367	0.275	4.331	CU3096115013
9/16	12	3	0.429	0.322	4.331	CU3096115014
5/8	11	3	0.480	0.360	4.331	CU3096115015
3/4	10	3	0.590	0.442	4.921	CU3096115016
7/8	9	3	0.697	0.523	5.512	CU3096115017
1	8	3	0.800	0.600	6.299	CU3096115018

Refer to back cover for Materials /
Application Reference Table.

Shank
Type

Reinforced Style:
on tap sizes:
NT2 & TiCN: 1 – 3/8

Reduced Style:
on tap sizes:
NT2 & TiCN: 7/16 – 1

Left-Hand Spiral Plug Taps



Rekord C-Ti Style with Advanced Left-Hand Helical Flute Form
FINE



D / 4-5 Chamfer Length • 3BX Class of Fit • DIN Length / ANSI Shank

UNF / THROUGH HOLE - NT2 COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
0	80	2	0.141	0.110	1.626	BU3060115033
1	72	2	0.141	0.110	1.772	BU3060115034
2	64	2	0.141	0.110	1.772	BU3060115035
3	56	2	0.141	0.110	1.969	BU3060115036
4	48	2	0.141	0.110	2.205	BU3060115037
5	44	2	0.141	0.110	2.205	BU3060115038
6	40	3	0.141	0.110	2.205	BU3060115039
8	36	3	0.168	0.131	2.480	BU3060115040
10	32	3	0.194	0.152	2.756	BU3060115041
12	28	3	0.220	0.165	3.150	BU3060115042
1/4	28	3	0.255	0.191	3.150	BU3060115043
5/16	24	3	0.318	0.238	3.543	BU3060115044
3/8	24	3	0.381	0.286	3.937	BU3060115045
7/16	20	3	0.323	0.242	3.937	CU3060115046
1/2	20	3	0.367	0.275	3.937	CU3060115047
9/16	18	3	0.429	0.322	3.937	CU3060115048
5/8	18	3	0.480	0.360	3.937	CU3060115049
3/4	16	4	0.590	0.442	4.331	CU3060115050
7/8	14	4	0.697	0.523	4.921	CU3060115051
1	12	4	0.800	0.600	5.512	CU3060115052

UNF / THROUGH HOLE - TiCN COATING

Size	T.P.I.	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
0	80	2	0.141	0.110	1.626	BU3096115033
1	72	2	0.141	0.110	1.772	BU3096115034
2	64	2	0.141	0.110	1.772	BU3096115035
3	56	2	0.141	0.110	1.969	BU3096115036
4	48	2	0.141	0.110	2.205	BU3096115037
5	44	2	0.141	0.110	2.205	BU3096115038
6	40	3	0.141	0.110	2.205	BU3096115039
8	36	3	0.168	0.131	2.480	BU3096115040
10	32	3	0.194	0.152	2.756	BU3096115041
12	28	3	0.220	0.165	3.150	BU3096115042
1/4	28	3	0.255	0.191	3.150	BU3096115043
5/16	24	3	0.318	0.238	3.543	BU3096115044
3/8	24	3	0.381	0.286	3.937	BU3096115045
7/16	20	3	0.323	0.242	3.937	CU3096115046
1/2	20	3	0.367	0.275	3.937	CU3096115047
9/16	18	3	0.429	0.322	3.937	CU3096115048
5/8	18	3	0.480	0.360	3.937	CU3096115049
3/4	16	4	0.590	0.442	4.331	CU3096115050
7/8	14	4	0.697	0.523	4.921	CU3096115051
1	12	4	0.800	0.600	5.512	CU3096115052

Refer to back cover for Materials / Application Reference Table.

Shank Type

Reinforced Style:
on tap sizes:
NT2 & TiCN: 0 – 3/8

Reduced Style:
on tap sizes:
NT2 & TiCN: 7/16 – 1

Spiral Flute Semi-Bottoming Taps COARSE

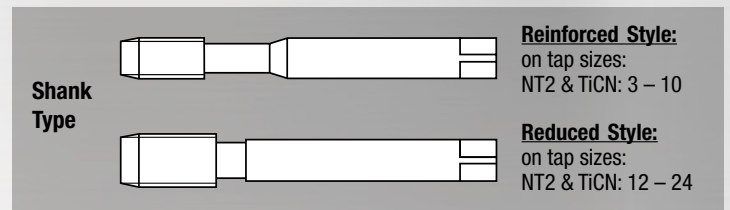


C / 2-3 Chamfer Length • 6HX Class of Fit • DIN Length / DIN Shank

UNC / BLIND HOLE - NT2 COATING					
Size	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
3 x 0.5	2	3.5	2.7	56	B04560010030
4 x 0.7	3	4.5	3.4	63	B04560010040
5 x 0.8	3	6	4.9	70	B04560010050
6 x 1.0	3	6	4.9	80	B04560010060
8 x 1.25	3	8	6.2	90	B04560010080
10 x 1.5	3	10	8	100	B04560010100
12 x 1.75	3	9	7	110	C04560010112
16 x 2.0	3	12	9	110	C04560010116
20 x 2.5	3	16	12	140	C04560010120
24 x 3.0	3	18	14.5	160	C04560010124

UNC / BLIND HOLE - TiCN COATING					
Size	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
3 x 0.5	2	3.5	2.7	56	B04596010030
4 x 0.7	3	4.5	3.4	63	B04596010040
5 x 0.8	3	6	4.9	70	B04596010050
6 x 1.0	3	6	4.9	80	B04596010060
8 x 1.25	3	8	6.2	90	B04596010080
10 x 1.5	3	10	8	100	B04560010100
12 x 1.75	3	9	7	110	C04596010112
16 x 2.0	3	12	9	110	C04596010116
20 x 2.5	3	16	12	140	C04596010120
24 x 3.0	3	18	14.5	160	C04596010124

Refer to back cover for Materials / Application Reference Table.



Left Hand Spiral Plug Taps with Advanced Left-Hand Helical Flute Form COARSE

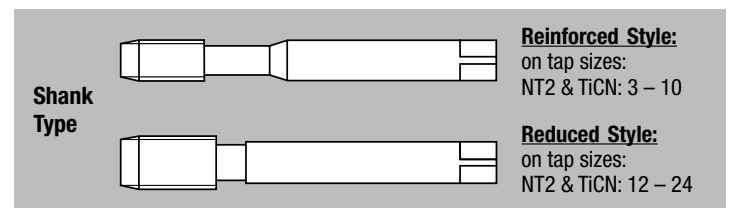


D / 4-5 Chamfer Length • 6HX Class of Fit • DIN Length / DIN Shank

UNC / THROUGH HOLE - NT2 COATING					
Size	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
3 x 0.5	2	3.5	2.7	56	B03060010030
4 x 0.7	3	4.5	3.4	63	B03060010040
5 x 0.8	3	6	4.9	70	B03060010050
6 x 1.0	3	6	4.9	80	B03060010060
8 x 1.25	3	8	6.2	90	B03060010080
10 x 1.5	3	10	8	100	B03060010100
12 x 1.75	3	9	7	110	C03060010112
16 x 2.0	3	12	9	110	C03060010116
20 x 2.5	3	16	12	140	C03060010120
24 x 3.0	3	18	14.5	160	C03060010124

UNC / THROUGH HOLE - TiCN COATING					
Size	# Flutes	Shank Dia.	Square Width	OAL	EDP No.
3 x 0.5	2	3.5	2.7	56	B03096010030
4 x 0.7	3	4.5	3.4	63	B03096010040
5 x 0.8	3	6	4.9	70	B03096010050
6 x 1.0	3	6	4.9	80	B03096010060
8 x 1.25	3	8	6.2	90	B03096010080
10 x 1.5	3	10	8	100	B03096010100
12 x 1.75	3	9	7	110	C03096010112
16 x 2.0	3	12	9	110	C03096010116
20 x 2.5	3	16	12	140	C03096010120
24 x 3.0	3	18	14.5	160	C03096010124

Refer to back cover for Materials / Application Reference Table.

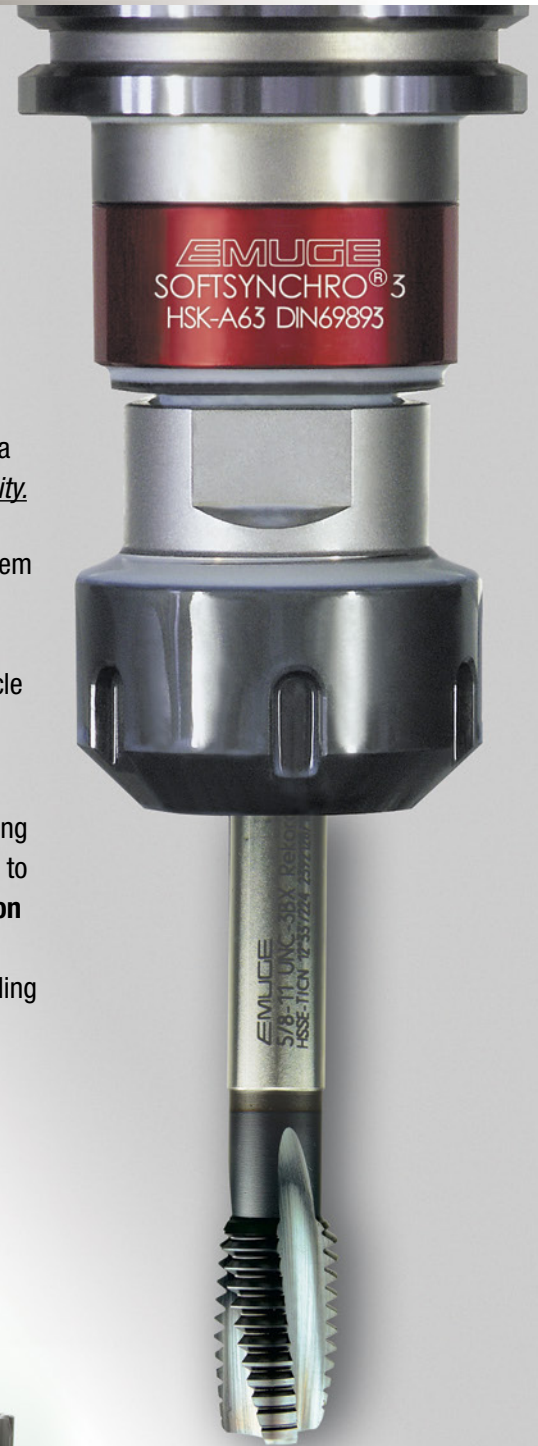


Increase tool life & thread quality with our unique design

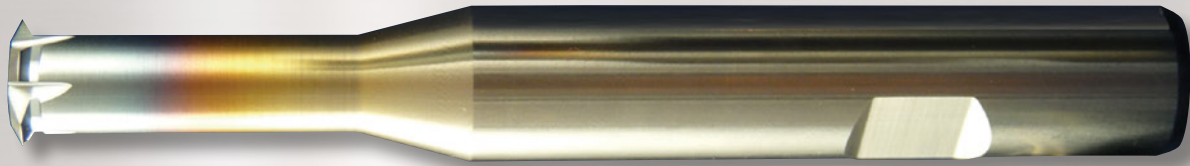
Featuring patented constructional separation of the transmission of torque and axial force.

The EMUGE collet holder type **KSN/HD/Softsynchro®** makes the optimum use of a synchronous spindle possible, with the *best imaginable tool life and thread surface quality*.

- Freedom from rotational play in the C-axis due to **form-positive transmission of torque by means of steel balls**.
- **Soft minimum length compensation on tension and compression**, with axial force transmission by means of pre-tensioned elastomer springs that are coolant resistant.
- Patented elastomer springs which, by means of their absorption characteristics, **prevent axial pressure forces that act negatively on the tap flank surfaces**.
- Minimum length compensation system **automatically corrects for small pitch errors** between synchronized spindle and tap lead during feed cycle and critically when spindle reverses direction of rotation to exit.
- Precision ball grooves minimize rolling friction on torque transmission balls to **guarantee precise micro correction of lead errors in a rigid tapping cycle**, even under the most demanding machining conditions.



THREADS-ALL™ Z-GF Style



TiCN Coating

Z-GF THREAD MILLS IN MINIATURE AND EXPANDED SIZES

Tool Size	Thread Size									Cutter Dia.	Cut Length	# Flutes	OAL	Shank Dia.	Shank Type	EDP No.
	UNC	UNF	STI UNC	STI UNF	UNEF	UNJC	UNJF	M	MJ							
MINIATURE SIZES																
0	-	0-80	-	-	-	-	0-80	1.6 x .35	1.6 x .35	0.045	0.125	1	1 5/8	1/8	HA	GFS137065033
1	1-64	1-72	-	-	-	1-64	1-72	2 x .4	2 x .4	0.056	0.146	3	1 5/8	1/8	HA	GFS237065000
2	2-56	2-64	1-64	-	-	2-56	2-64	2.5 x .45	2.5 x .45	0.064	0.172	3	1 5/8	1/8	HA	GFS237065001
4	4-40	4-48	2-56	-	-	4-40	4-48	-	-	0.081	0.224	3	1 5/8	1/8	HA	GFS237065003
STI 4	-	-	4-40	4-48	-	-	-	-	-	0.117	0.295	3	1 5/8	1/8	HA	GFS237065611
5	5-40	5-44	-	-	-	5-40	5-44	3 x .5	3 x .5	0.095	0.250	3	1 5/8	1/8	HA	GFS237065004
6	6-32	6-40	-	-	-	6-32	6-40	-	-	0.100	0.276	3	1 5/8	1/8	HA	GFS237065005
STI 6	-	-	6-32	6-40	-	-	-	5 x .8	5 x .8	0.143	0.364	3	2 1/2	1/4	HB	GFS231065613
8	8-32	8-36	-	-	-	8-32	8-36	4 x .7	4 x .7	0.124	0.328	3	1 5/8	1/8	HA	GFS237065006
STI 8	-	-	8-32	8-36	1/4-32	-	-	-	-	0.167	0.415	3	2 1/2	1/4	HB	GFS231065614
EXPANDED SIZES																
10 •	10-24	10-32	10-24	10-32	-	10-24	10-32	-	-	0.136	0.380	3	2 1/2	1/4	HB	GFS231065007
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	0.185	0.500	3	2 1/2	1/4	HB	GFS231065009
5/16 •	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	0.242	0.625	4	2 1/2	1/4	HB	GFS331065010
3/8 •	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	0.301	0.750	5	2 1/2	5/16	HB	GFS331065011
7/16 •	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	0.354	0.875	5	3	3/8	HB	GFS331065012
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	0.407	1.00	5	3 3/4	1/2	HB	GFS331065013
5/8 •	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	0.512	1.25	5	3 3/4	1/2	HB	GFS331065015
3/4 •	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	0.630	1.50	6	4 1/4	5/8	HB	GFS331065016

• With external flood coolant only • With external flood coolant or axial internal coolant hole (MINIATURE SIZES EXTERNAL COOLANT ONLY)
Shank Types: HA-Straight shank without clamping flat, HB-Straight shank with Weldon clamping flat

- Easy machining of difficult materials.
- One tool for through 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.

Expanded Sizes:

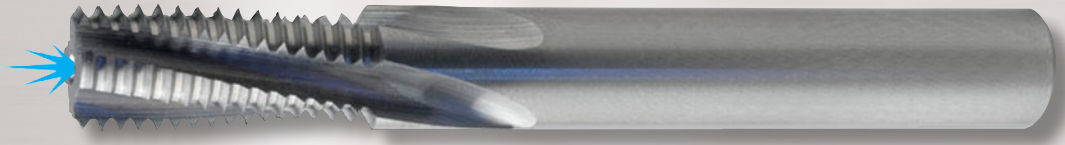
- **Requiring only 8 stock standard tool sizes, #10 • 1/4 • 5/16 • 3/8 • 7/16 • 1/2 • 5/8 • 3/4, it is now possible to produce 100+ commonly produced screw thread designs.**
- **THREADS-ALL tools provide total control over pitch diameter limits** including 2B • 3B • 3BG • and all oversize variants.

Refer to back cover for Materials / Application Reference Table.

Solid Carbide Thread Mills



SHUR-THREAD™ GFI-IKZ Style with Internal Coolant



TiCN Coating

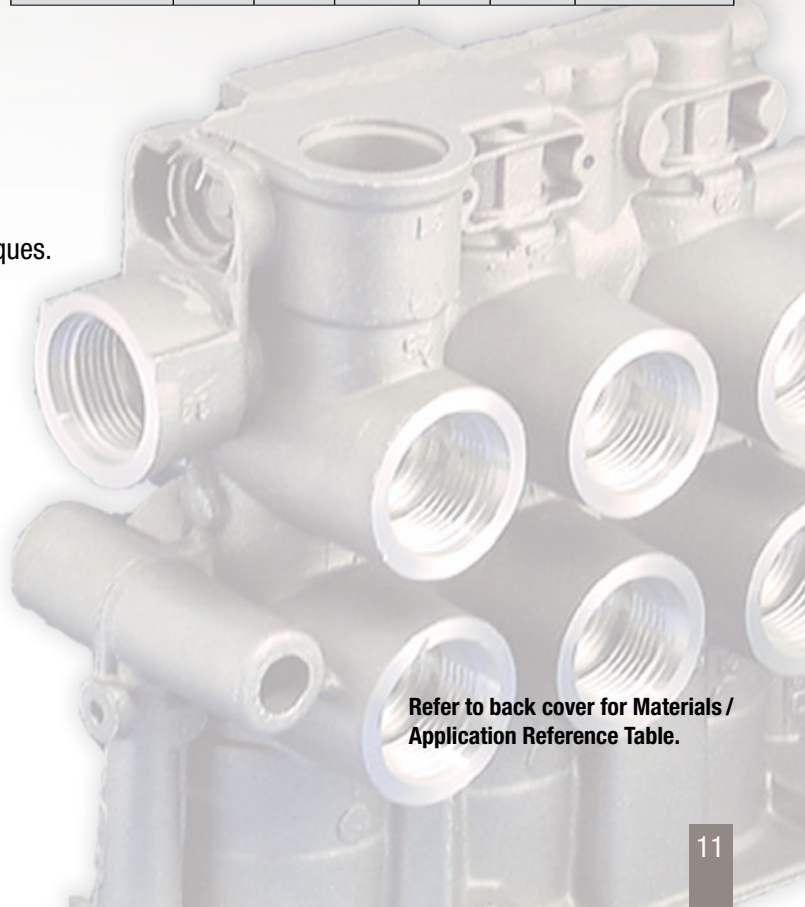
INCH GFI - IKZ						
Size	Cutter Dia.	Cut Length	# Flutes	OAL	Shank Dia.	EDP No.
#10 - 24	0.136	0.395	3	2 1/2	1/4	GFR351065007
#10 - 32	0.150	0.390	3	2 1/2	1/4	GFR351065041
1/4 - 20	0.185	0.524	3	2 1/2	1/4	GFR351065009
1/4 - 28	0.203	0.517	3	2 1/2	1/4	GFR351065043
5/16 - 18	0.242	0.637	3	2 1/2	1/4	GFR351065010
5/16 - 24	0.246	0.644	3	2 1/2	1/4	GFR351065044
3/8 - 16	0.301	0.780	3	2 1/2	5/16	GFR351065011
3/8 - 24	0.309	0.769	3	2 1/2	5/16	GFR351605045
7/16 - 14	0.354	0.891	3	3	3/8	GFR351065012
7/16 - 20	0.371	0.874	3	3	3/8	GFR351065046
1/2 - 13	0.371	1.036	3	3	3/8	GFR351065013
1/2 - 20	0.371	1.023	3	3	3/8	GFR351065047
9/16 & 5/8 - 18	0.496	1.138	4	3 3/4	1/2	GFR351065048
5/8 - 11	0.496	1.316	4	3 3/4	1/2	GFR351065015
3/4 - 10	0.621	1.548	4	4 1/4	5/8	GFR351065016
3/4 - 16	0.621	1.530	4	4 1/4	5/8	GFR351065050

INCH GFI - IKZ (continued)						
Size	Cutter Dia.	Cut Length	# Flutes	OAL	Shank Dia.	EDP No.
7/8 - 9	0.621	1.829	4	4 1/4	5/8	GFR351065017
7/8 - 14 & 1 - 14	0.621	1.817	4	4 1/4	5/8	GFR351065051
1 - 8 & 1 1/8 - 8	0.746	2.058	4	4 3/4	3/4	GFR351065018

METRIC GFI - IKZ						
Size	Cutter Dia.	Cut Length	# Flutes	OAL	Shank Dia.	EDP No.
6 x 1.0	0.189	0.491	3	63.50	6.35	GFR351060060
8 x 1.25	0.246	0.663	3	63.50	6.35	GFR351060080
10 x 1.5	0.309	0.796	3	63.50	7.94	GFR351060100
12 x 1.75	0.371	0.997	3	76.20	9.53	GFR351060112
14 x 2.0	0.457	1.140	4	95.25	12.70	GFR351060114
16 x 2.0	0.496	1.280	4	95.25	12.70	GFR351060116
20 x 2.5	0.621	1.595	4	107.95	15.88	GFR351060120
24 x 3.0	0.746	1.920	4	120.65	19.05	GFR351060124

Exceptional balance of performance benefits and price are achieved by combining select design elements:

- Premium micro-grain carbide with state-of-the-art grinding techniques.
- Specially engineered multiple-spiral flutes eliminate chatter.
- Large cutter diameter with high profile correction ensures true-to-gauge threads.
- Extended milling portion allows for length-of-cut to 2xD.
- Enlarged flute space for efficient chip evacuation.
- End mill type shank with clamping flat for secure tool holding.
- TiCN coated for long tool life.
- Produce threads 1 1/8" and under in a wide range of soft and pre-hardened steels to 58 Rc, stainless steels, aluminum, cast iron, titanium, inconel, and all difficult to machine exotics.



Refer to back cover for Materials / Application Reference Table.

Thread Mill Programming



Thread milling is becoming the preferred option for internal threading in numerous applications.

Emuge understands that using proper programming techniques can be the difference between average results and high-performance levels. That's why Emuge offers a unique service where our application engineers actually help write your machine program line code.

This is not an "online" plug-and-play program writer, but actual experienced tooling engineers who discuss with you the material, machine tool and set-up requirements and then write a program tailored to your application.

Who is in a better position to help maximize your cutting results than the company that designs the cutting tool? ***This FREE service is available to all Emuge customers.***



Materials / Application Reference Table	
Titanium – Unalloyed and Alloyed	
	
Unalloyed - Commercially Pure grade examples	Alloyed grade examples
CP1, CP2, CP3, CP4, CP7	Ti6Al4v, Ti6Al7nb, Ti5Al2.5sn



Emuge Corp.
Headquarters,
West Boylston, MA



EMUGE

HIGH PERFORMANCE TOOLS

1800 Century Drive
West Boylston, MA 01583
800-323-3013 ■ fax: 800-393-1302
www.emuge.com

Emuge Corp. has been the product technology and performance leader in their field for nearly 100 years. Emuge manufactures an extensive line of taps, thread mills, drills, end mills, toolholders, clamping devices and other rotary cutting tools, over 100,000 items sold through distributors worldwide. Emuge also offers end-user technical support through a network of in-the-field engineers and in-house product specialists, all with extensive tooling and application experience.

A Full Line of High Performance Cutting Tools

