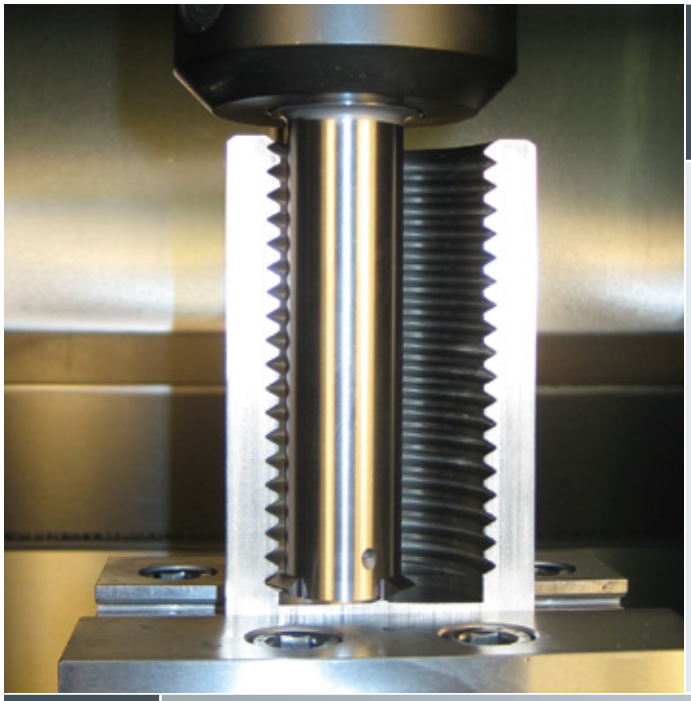
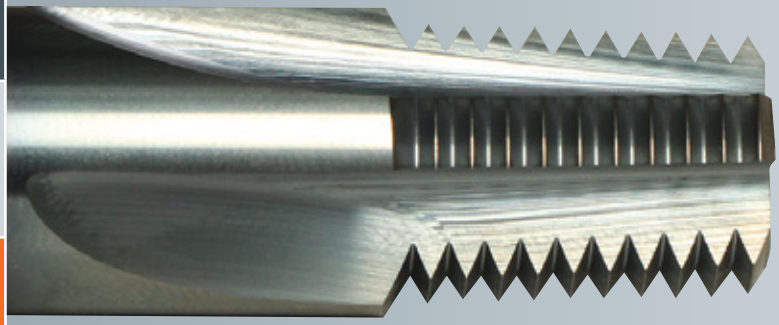
EMUGE





LEADING SOLUTIONS IN
THREAD MILLING TECHNOLOGY

Thread with Maximum Confidence, Depth, Versatility and Economy.

Emuge Shur-Thread™, Threads-All™, Vario-Z and NPT Solid Carbide Thread Mills; and Gigant-ic Indexable Insert System offer manufacturers advanced generation threading solutions at an unmatched value-to-performance ratio, providing new ways to improve part quality and increase productivity while reducing operating costs.

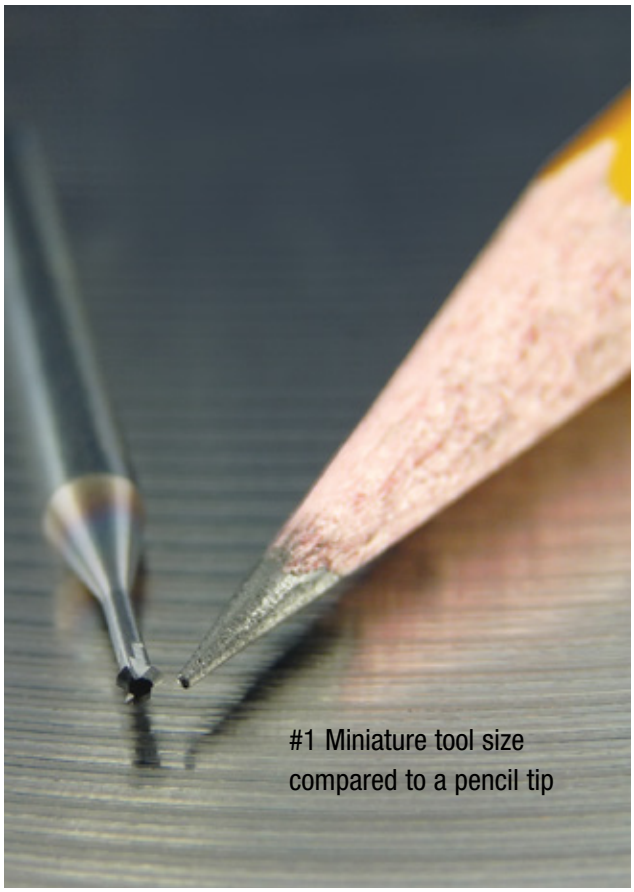
Thread Milling Technology Advantages:

- High process security and control
- Produce threads with excellent form, finish, and dimensional accuracy
- Easy machining of difficult materials
- Eliminate the possibilities and consequences of tap breakage
- Achieve full-bottom threading and precise thread depth control
- Optimum positional accuracy
- Pitch diameter can be controlled by CNC offset
- One tool for right-hand and left-hand threads
- One tool for through or blind holes
- Produces small controllable chips (no bird nesting of chips)
- Less spindle torque enables small machines to produce larger threads
- Less cutting pressure for thin-walled parts
- No spindle reversal required

Advanced Application Capabilities

Emuge is proud to introduce an expanded line of solid carbide thread mills. In the dynamic world of metal cutting, Emuge recognizes the need to continually deliver the latest technology to help manufacturers reduce costs, improve delivery times and produce world-class products.

Emuge thread mills set the standard for versatility, performance, process security and value and are specially designed for a wide range of threading applications. They are ideal for demanding industries using difficult materials such as Stainless Steels, Titanium and Inconel.



THREADS-ALL™

A Complete line of 2XD Solid Carbide Thread Mills, plus 3XD sizes for Maximum Reach

Miniature size thread mills provide a high-quality and dependable threading solution for a variety of difficult materials.

Standard sizes provide manufacturers a ready tooling solution which allows for quick adaptation to a variety of threading requirements in a wide range of materials.

- **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 designations
- In addition, Threads-All tools provide **total control over pitch diameter limits** including 2B • 3B • 3BG • and all oversize variants

ZGF-I 2XD - TiCN Coated

2XD	Tool Size	Thread Size									Cutter Dia.	Cut Length	No. Flutes	Overall Length	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	**GFS13706.5033** •
	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	**GFS23706.5000** •
	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	**GFS23706.5001** •
	4	4-40	4-48	2-56	–	–	4-40	4-48	–	–	0.081	0.224	3	1 5/8"	1/8"	HA	**GFS23706.5003** •
	STI 4	–	–	4-40	4-48	–	–	–	–	–	0.117	0.295	3	1 5/8"	1/8"	HA	**GFS23706.5611** •
	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	**GFS23706.5004** •
	6	6-32	6-40	–	–	–	6-32	6-40	–	–	0.100	0.276	3	1 5/8"	1/8"	HA	**GFS23706.5005** •
	STI 6	–	–	6-32	6-40	–	–	–	5 x .8	5 x .8	0.143	0.364	3	2 1/2"	1/4"	HB	**GFS23106.5613** •
	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	**GFS23706.5006** •
	STI 8	–	–	8-32	8-36	1/4-32	–	–	–	–	0.167	0.415	3	2 1/2"	1/4"	HB	**GFS23106.5614** •
STANDARD 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	**GFS23106.5007** •
	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	**GFS23106.5009** •
	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	**GFS33106.5010** ▲
	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	**GFS33106.5011** ▲
	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	**GFS33106.5012** ▲
	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	**GFS33106.5013** ▲
	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	**GFS33106.5015** ▲
	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	**GFS33106.5016** ▲

• 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

BOTH 2XD AND 3XD THREADS-ALL™ TOOLS PROVIDE:

- 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

ZGF-I 3XD - TiCN Coated

3XD	Tool Size	Thread Size					Cutter Dia.	Cut Length	No. Flutes	Overall Length	Shank Dia.	Shank Type	EDP No.
		UNC	UNF	STI UNC	STI UNF	M							
MINIATURE SIZES	**2**	2-56	2-64	2-56	2-64	M 2.2	0.067	0.258	3	1.625	1/8"	HA	**GFS83706.5001** •
	4	4-40	4-48	4-40	4-48	M 3	0.085	0.336	3	1.625	1/8"	HA	**GFS83706.5003** •
	6	6-32	6-40	6-32	6-40	M 3.5	0.106	0.414	3	1.625	1/8"	HA	**GFS83706.5005** •
	8	8-32	8-36	8-32	8-36	–	0.132	0.492	3	1.750	3/16"	HA	**GFS83706.5006** •
STANDARD SIZES	**10**	10-24	–	10-24	–	M 5	0.146	0.570	3	1.875	3/16"	HA	**GFS83706.5007** •
		–	10-32	–	10-32	–	0.154	0.570	4	1.875	3/16"	HA	**GFS83706.5041** •
	1/4	1/4-20	–	1/4-20	–	M 6	0.195	0.750	4	2.375	1/4"	HB	**GFS83106.5009** •
		–	1/4-28	–	1/4-28	–	0.207	0.750	4	2.375	1/4"	HB	**GFS83106.5043** •
	5/16	5/16-18	–	5/16-18	–	M 8	0.248	0.937	4	2.563	5/16"	HB	**GFS83106.5010** ▲
		–	5/16-24	–	5/16-24	–	0.260	0.937	5	2.563	5/16"	HB	**GFS83106.5044** ▲
	3/8	3/8-16	–	3/8-16	–	M 10	0.303	1.125	5	2.750	5/16"	HB	**GFS83106.5011** ▲
		–	3/8-24	–	3/8-24	–	0.323	1.125	5	2.875	3/8"	HB	**GFS83106.5045** ▲
	7/16	7/16-14	–	7/16-14	–	M 12	0.354	1.312	5	3.125	3/8"	HB	**GFS83106.5012** ▲
		–	7/16-20	–	7/16-20	–	0.376	1.312	5	3.060	3/8"	HB	**GFS83106.5046** ▲
	1/2	1/2-13	1/2-20	1/2-13	1/2-20	–	0.409	1.500	5	3.625	1/2"	HB	**GFS83106.5013** ▲
	5/8	5/8-11	5/8-18	5/8-11	5/8-18	M 16	0.514	1.875	5	4.125	5/8"	HB	**GFS83106.5015** ▲
	3/4	3/4-10	3/4-16	3/4-10	3/4-16	–	0.630	2.250	6	4.500	5/8"	HB	**GFS83106.5016** ▲

• 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

SHUR-THREAD™

Solid Carbide Thread Mills for 1 1/8" and under, with or without Coolant-Thru

Shur-Thread redefines the measure of value in solid carbide thread mills. This tooling line is packed with essential advanced technology for assured quality, performance, versatility, and ease-of-use.

The Shur-Thread Series is designed and priced to offer a superior level of value for any size machine shop or production volume. When combined with the latest CNC technology and smart controllers; outstanding flexibility, process control, tool life and part quality can be realized.

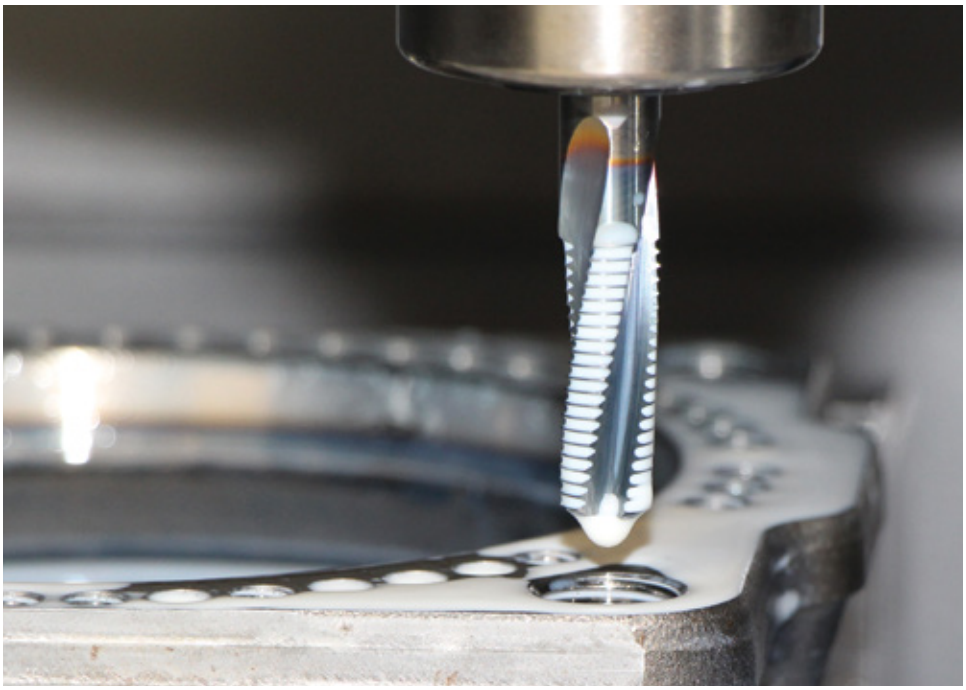
Exceptional balance of performance benefits and price are achieved by combining select design elements:

- **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-gage threads

SHUR-THREAD™ - GFI without Coolant-Thru

Thread Size	Cutter Dia.	Cut Length	No. Flutes	OAL	Shank Dia.	EDP No.
#10 - 24	0.136	0.395	3	2 1/2	1/4	**GFR15106.5007**
#10 - 32	0.150	0.390	3	2 1/2	1/4	**GFR15106.5041**
1/4 - 20	0.185	0.524	3	2 1/2	1/4	**GFR15106.5009**
1/4 - 28	0.203	0.517	3	2 1/2	1/4	**GFR15106.5043**
5/16 - 18	0.242	0.637	3	2 1/2	1/4	**GFR15106.5010**
5/16 - 24	0.246	0.644	3	2 1/2	1/4	**GFR15106.5044**
3/8 - 16	0.301	0.780	3	2 1/2	5/16	**GFR15106.5011**
3/8 - 24	0.309	0.769	3	2 1/2	5/16	**GFR15106.5045**
7/16 - 14	0.354	0.891	3	3	3/8	**GFR15106.5012**
7/16 - 20	0.371	0.874	3	3	3/8	**GFR15106.5046**
1/2 - 13	0.371	1.036	3	3	3/8	**GFR15106.5013**
1/2 - 20	0.371	1.023	3	3	3/8	**GFR15106.5047**
5/8 - 11	0.496	1.316	4	3 3/4	1/2	**GFR15106.5015**
3/4 - 10	0.621	1.548	4	4 1/4	5/8	**GFR15106.5016**
7/8 - 9	0.621	1.829	4	4 1/4	5/8	**GFR15106.5017**
1"- 8 & 1 1/8 - 8	0.746	2.058	4	4 3/4	3/4	**GFR15106.5018**

- **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



SHUR-THREAD™ - GFI-IKZ with Coolant-Thru

	Thread Size	Cutter Dia.	Cut Length	No. Flutes	OAL	Shank Dia.	EDP No.
	#10 - 24	0.136	0.395	3	2 1/2	1/4	**GFR35106.5007**
	#10 - 32	0.150	0.390	3	2 1/2	1/4	**GFR35106.5041**
	1/4 - 20	0.185	0.524	3	2 1/2	1/4	**GFR35106.5009**
	1/4 - 28	0.203	0.517	3	2 1/2	1/4	**GFR35106.5043**
	5/16 - 18	0.242	0.637	3	2 1/2	1/4	**GFR35106.5010**
	5/16 - 24	0.246	0.644	3	2 1/2	1/4	**GFR35106.5044**
	3/8 - 16	0.301	0.780	3	2 1/2	5/16	**GFR35106.5011**
	3/8 - 24	0.309	0.769	3	2 1/2	5/16	**GFR35106.5045**
	7/16 - 14	0.354	0.891	3	3	3/8	**GFR35106.5012**
	7/16 - 20	0.371	0.874	3	3	3/8	**GFR35106.5046**
	1/2 - 13	0.371	1.036	3	3	3/8	**GFR35106.5013**
	1/2 - 20	0.371	1.023	3	3	3/8	**GFR35106.5047**
	9/16 & 5/8-18	0.496	1.138	4	3 3/4	1/2	**GFR35106.5048**
	5/8 - 11	0.496	1.316	4	3 3/4	1/2	**GFR35106.5015**
	3/4 - 10	0.621	1.548	4	4 1/4	5/8	**GFR35106.5016**
	3/4 - 16	0.621	1.530	4	4 1/4	5/8	**GFR35106.5050**
	7/8 - 9	0.621	1.829	4	4 1/4	5/8	**GFR35106.5017**
	7/8 -14 & 1"-14	0.621	1.817	4	4 1/4	5/8	**GFR35106.5051**
	1"- 8 & 1 1/8 - 8	0.746	2.058	4	4 3/4	3/4	**GFR35106.5018**
METRIC	**M 6 x 1.0**	0.189	0.491	3	2 1/2	1/4	**GFR35106.0060**
	M 8 x1.25	0.246	0.663	3	2 1/2	1/4	**GFR35106.0080**
	M 10 x 1.5	0.309	0.796	3	2 1/2	5/16	**GFR35106.0100**
	M 12 x 1.75	0.371	0.997	3	3	3/8	**GFR35106.0112**
	M 14 x 2.0	0.457	1.140	4	3 3/4	1/2	**GFR35106.0114**
	M 16 x 2.0	0.496	1.280	4	3 3/4	1/2	**GFR35106.0116**
	M 20 x 2.5	0.621	1.595	4	4 1/4	5/8	**GFR35106.0120**
	M 24 x 3.0	0.746	1.920	4	4 3/4	3/4	**GFR35106.0124**

VARIO-Z

A NEW Generation High Performance Solid Carbide Thread Mill Program

Emuge has introduced a new line of high performance thread mills in a class of its own. Tools feature an increased flute count and core diameter, and multilayered TiALN-T46 coating, resulting in reduced vibration, cycle time and tool wear, combined with higher feed rates and improved thread quality.

- **Increased number of flutes** for higher feed rate and reduced cycle times
- **Increased core diameter** for improved radial stiffness and stability
- **Cutting geometry produces smaller chips** that can be removed faster and easier
- **Cutting edges enhanced** for additional strength
- **Advanced multilayer coating** resists heat, edge wear and chipping

VARIO-Z - UNC, UNF

	Thread Size (in)	Thread Pitch	Cutter Dia. (in)	Length of Cut (in)	No. Flutes	OAL (in)	Shank Dia. (mm)	Shank Type	EDP No.
UNC	≥ #10	24	0.145	0.398	4	2.16	6	HB	GFB35106.5007
	≥ 1/4	20	0.194	0.524	4	2.28	6	HB	GFB35106.5009
	≥ 5/16	18	0.248	0.637	4	2.44	8	HB	GFB35106.5010
	≥ 3/8	16	0.301	0.780	5	2.55	8	HB	GFB35106.5011
	≥ 7/16	14	0.354	0.890	5	2.91	10	HB	GFB35106.5012
	≥ 1/2	13	0.409	1.035	5	3.14	12	HB	GFB35106.5013
	≥ 9/16	12	0.464	1.205	5	3.34	12	HB	GFB35106.5014
	≥ 5/8	11	0.511	1.314	5	3.54	14	HB	GFB35106.5015
	≥ 3/4	10	0.625	1.546	5	3.93	16	HB	GFB35106.5016
	≥ 7/8	9	0.744	1.829	6	4.33	20	HB	GFB35106.5017
	≥ 1"	8	0.850	2.057	6	4.92	25	HB	GFB35106.5018
UNF	≥ #10	32	0.153	0.389	4	2.17	6	HB	GFB35106.5041
	≥ #12	28	0.175	0.445	4	2.28	6	HB	GFB35106.5042
	≥ 1/4	28	0.203	0.515	4	2.28	6	HB	GFB35106.5043
	≥ 5/16	24	0.259	0.644	5	2.44	8	HB	GFB35106.5044
	≥ 7/16	20	0.375	0.873	6	2.91	10	HB	GFB35106.5046
	≥ 9/16	18	0.492	1.136	7	3.35	14	HB	GFB35106.5048
	≥ 3/4	16	0.669	1.529	8	4.01	18	HB	GFB35106.5050

- **Extended milling section** for thread depths up to 2XD
- **Axial internal coolant** for superior cooling and chip removal
- **Precision ground** for high repeatability
- Produces threads with **excellent surface finish**

- Higher feed rates
- Reduced cycle times
- Vibration-free machining
- Improved thread quality
- Excellent surface finish

VARIO-Z - M, MF

	Thread Size (mm)	Thread Pitch	Cutter Dia. (mm)	Length of Cut (mm)	No. Flutes	OAL (mm)	Shank Dia. (mm)	Shank Type	EDP No.
M, MF	≥ M 3	0.5	2.4	6.2	4	51	6	HB	GFB35106.0030
	≥ M 4	0.7	3.15	8.7	4	55	6	HB	GFB35106.0040
	≥ M 5	0.8	4	10.8	4	55	6	HB	GFB35106.0050
	≥ M 6	1	4.8	12.4	4	55	6	HB	GFB35106.0060
	≥ M 8	1.25	6.5	16.8	4	63	8	HB	GFB35106.0080
	≥ M10	1.5	8.2	21.7	5	70	10	HB	GFB35106.0100
	≥ M12	1.75	9.9	25.3	5	74	10	HB	GFB35106.0112
	≥ M14	2	11.6	28.9	5	85	12	HB	GFB35106.0114
	≥ M18	2.5	15	38.6	5	100	16	HB	GFB35106.0118
	≥ M24	3	19.9	49.4	6	115	20	HB	GFB35106.0124

GFI-ECO

NEW Value Offering

Emuge introduces a new GFI design solid carbide thread mill providing maximum value with premium Emuge quality.

- Multiple thread sizes with one cutter
- Precision ground for high repeatability
- PVD coated multilayer TiCN for wear resistance
- Cylindrical h6 shank diameter

GFI

Universal Applications

Solid carbide thread mills are designed to produce internal NPT pipe threads to a close tolerance on thread dimensions and limits of size, and with excellent surface quality on the thread flanks to consistently achieve tight, leak-free joints.

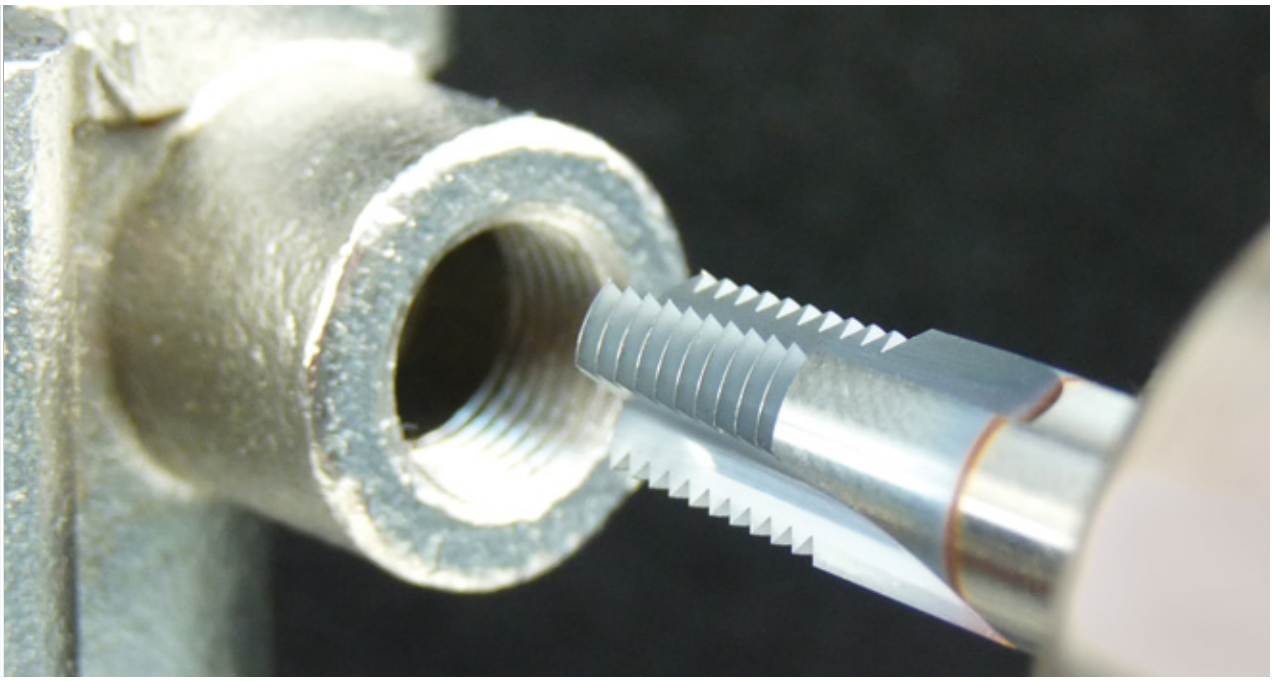
- Advanced NPT thread mills are finished ground with precise cutting geometry to ensure long tool life, low cycle times and superior finished threads in all materials up to 58 Rc
- PVD coated multilayer TiCN for wear resistance

GFI-API LP

High Performance Design

Innovative high performance thread mills for NPT threads. Extended milling section with 14 cutting teeth, to produce API LP thread depth.

- Innovative left-hand flute geometry / anti-vibration design
- Extended milling section for API-LP thread depth
- TiALN-T46 multilayer coating resists heat, edge wear and chipping
- Multiple thread sizes possible with one tool
- Precision ground for repeatability
- Features external coolant channels only



GFI-ECO - NEW Value Offering

Size	Cutter Dia. (in)	Pitch	Flute Length (in)	OAL (in)	No. Flutes	Shank Dia. (in)	EDP No.
1/16	0.232	27	0.39	2.50	3	0.250	**GFT53AA6.5763**
1/8	0.246	27	0.39	2.50	3	0.250	**GFT53AA6.5764**
1/4 - 3/8	0.307	18	0.58	2.50	3	0.313	**GFT53A06.9677**
1/2 - 3/4	0.488	14	0.82	3.50	4	0.500	**GFT53A16.9678**
1" - 2"	0.606	11.5	1.09	4.00	4	0.625	**GFT53A36.9679**

GFI - Universal Applications

Size	Cutter Dia. (in)	Pitch	Flute Length (in)	OAL (in)	No. Flutes	Shank Dia. (in)	EDP No.
1/16	0.232	27	0.39	2.25	3	0.313	**GFT53106.5763**
1/8	0.301	27	0.39	2.25	3	0.313	**GFT53106.5764**
1/4	0.400	18	0.58	3.25	3	0.500	**GFT53116.5765**
3/8	0.439	18	0.58	3.25	4	0.500	**GFT53116.5766**
1/2 - 3/4	0.561	14	0.75	3.50	4	0.625	**GFT53136.9678**
1" - 2"	0.772	11.5	0.91	3.75	5	0.750	**GFT53156.9679**

GFI-API LP - High Performance Design

Size	Cutter Dia. (in)	Pitch	Flute Length (in)	OAL (in)	No. Flutes	Shank Dia. (in)	EDP No.
1/16 - 1/8	0.232	27	0.54	2.25	4	0.313	**GFT8B209.9676**
1/4 - 3/8	0.400	18	0.80	3.25	4	0.500	**GFT8B219.9677**
1/2 - 3/4	0.561	14	1.03	3.25	4	0.625	**GFT8B239.9678**
1" - 2"	0.772	11.5	1.26	3.75	5	0.750	**GFT8B259.9679**

GFI-NPTF - Taper Pipe

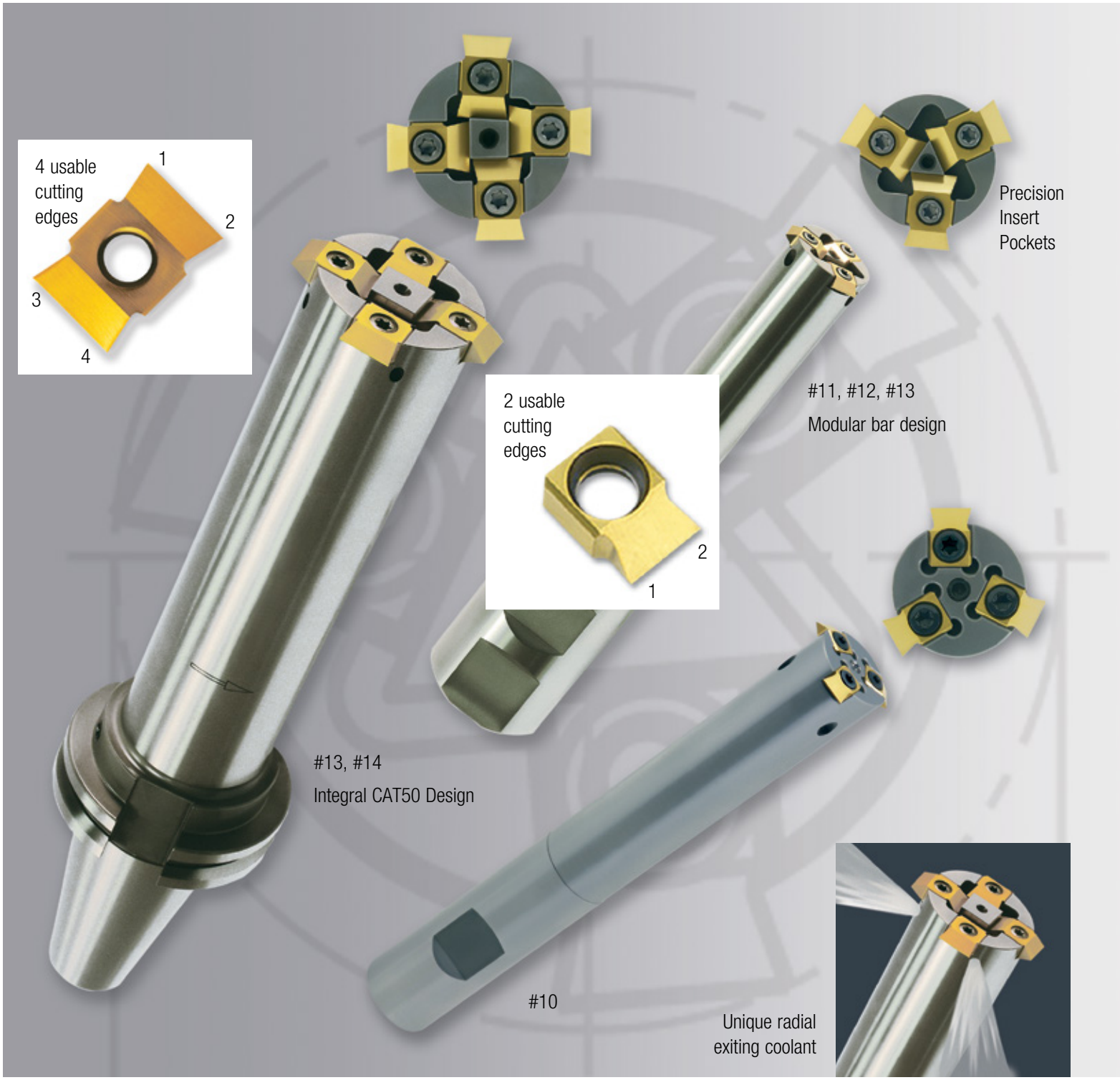
Size	Cutter Dia. (in)	Pitch	Flute Length (in)	OAL (in)	No. Flutes	Shank Dia. (in)	EDP No.
1/16	0.232	27	0.387	2.25	3	0.313	**GFT53106.5782**
1/8	0.301	27	0.387	2.25	3	0.313	**GFT53106.5783**
1/4	0.400	18	0.581	3.25	4	0.500	**GFT53116.5784**
3/8	0.439	18	0.581	3.25	4	0.500	**GFT53116.5785**
1/2	0.561	14	0.748	3.50	4	0.625	**GFT53136.5786**
3/4	0.561	14	0.748	3.50	4	0.625	**GFT53136.5787**
1" - 2"	0.772	11.5	0.911	3.75	5	0.760	**GFT53156.9684**

GIGANT-IC Indexable Insert Thread Milling System

A New Way to Make Large Threads

This unique indexable insert thread mill solution provides **4x longer tool life** and unsurpassed thread finish quality – the industry's most versatile system for threads 7/8" – M20 and above.

Emuge Gigant-ic is based on lean manufacturing principles and facilitates quick set-ups and rapid changeovers for a wide range of threading applications.



GIGANT-IC For threads 7/8" – M20 and above, with Coolant-Thru

PVD coated carbide insert application range

TiN – Aluminum, Soft low alloy steels < 25 Rc, Brass, Bronze and Copper

TiALN-T4 – Cast irons, Hard high alloy steels > 25 Rc, Mold and Tool steels, Stainless steels, Titanium, Inconel, Monel and Hastelloy

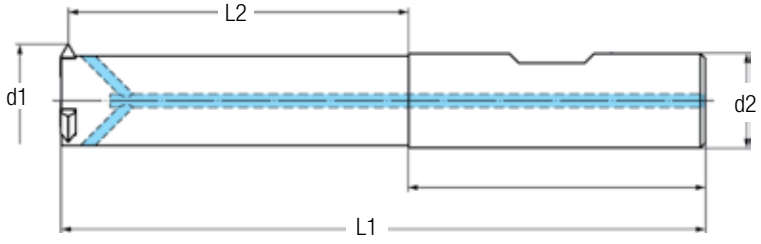
- **Partial Profile Insert Technology.** Only 2 inserts are required for multiple thread diameters and pitches – UN, UNC, UNF, UNEF, UNJF, UNS, M, MF, MJ, NPT, NPSM, API
- **Rotatable carbide inserts with 4 useable cutting edges provide up to 4x more tool life**
- **Low radial cutting pressure** ensures true-to-gage threads
- **Rigidity, security and precision** provide unsurpassed process consistency and safety for expensive workpieces

GIGANT-IC - Insert Body with Weldon Style Shank

Bar Size	Cutter Dia. d1	Min. Thread Dia.	Maximum Depth L2	Shank Dia. d2	OAL L1	No. Inserts	EDP No.
10	0.669"	7/8" - M20	1.50"	1/2"	3.42"	2	• GZ340000
	0.807"	1" - M24	2.50"	5/8"	4.57"	3	GZ340050
	0.940"	1 1/8" - M30	3.00"	1 1/4"	5.61"	5	• GZ340200
11	0.940"	1 1/8" - M30	3.00"	1 1/4"	5.51"	3	GZ340001
	0.940"	1 1/8" - M30	3.50"	1 1/4"	5.91"	3	GZ340101
	1.293"	1 1/2" - M40	3.50"	1 1/4"	6.26"	5	• GZ340201
	1.339"	1 3/4" - M40	2.36"	1 1/4"	4.80"	6	• GZ340221
12	1.293"	1 1/2" - M40	3.50"	1 1/4"	6.10"	3	GZ340012
	1.293"	1 1/2" - M40	4.50"	1 1/4"	6.89"	3	GZ340112
	1.585"	2" - M48	4.25"	1 1/4"	6.77"	5	• GZ340202
13	1.585"	2" - M48	4.25"	1 1/4"	6.73"	4	GZ340153
	1.585"	2" - M48	5.50"	1 1/4"	8.11"	4	GZ340143
	1.893"	2 1/4" - M58	6.69"	1 1/2"	9.55"	5	• GZ340203

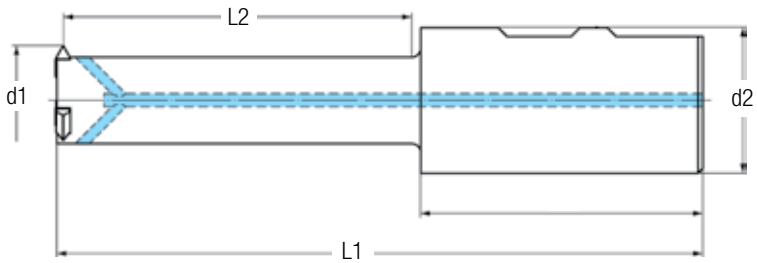
• NEW Items

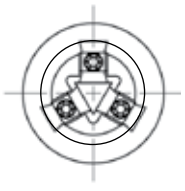
Modular Design - Chuck Sold Separately



#10

Modular Design - Chuck Sold Separately





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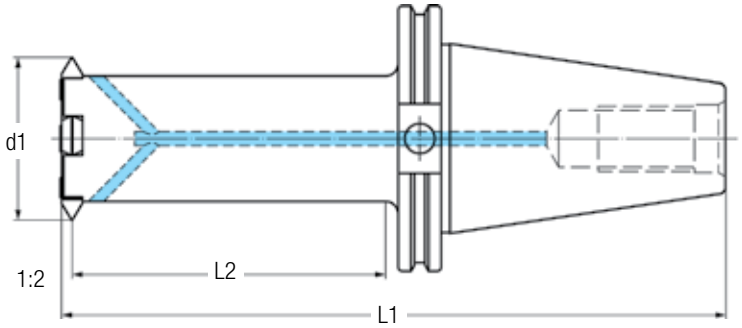
GIGANT-IC For threads 7/8" – M20 and above, with Coolant-Thru (continued...)

- **Micro-grain carbide inserts** with advanced cutting geometry and TiN coating allow for easy machining of all difficult materials
- **Modular bar design** allows for 4 bar sizes to be easily set-up and interchanged on a variety of CNC machines with Weldon style shank
- **Fast, easy set-up, programming and maintenance**
- **Rigid, anti-vibration body** design allows for a length-to-diameter-ratio to 2XD and greater
- **Innovative internal coolant supply** exits radially at the insert cutting edge for optimized cooling, chip evacuation, and thread quality
- **Inserts are rigidly affixed** in a solid steel precision pocket, securely fastened with a Torx locking screw

GIGANT-IC - Insert Body with CAT50 Shank

Bar Size	Cutter Dia. d1	Min. Thread Dia.	Maximum Depth L2	Shank Dia.	OAL L1	No. Inserts	EDP No.
13	1.585"	2" - M48	4.25"	CAT 50	9.62"	4	GZ346013
	1.585"	2" - M48	5.50"	CAT 50	11.00"	4	GZ346003
14	2.069"	2 1/2" - M64	7.50"	CAT 50	13.00"	4	GZ346024



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Solid One-Piece Construction

GIGANT-IC - Indexable Carbide Inserts

Insert Size	Thread Pitch Range				EDP No. TiN COATED	EDP No. TiALN-T4 COATED
	inch	mm	NPT-API	NPSM		
10	10 - 24	1 - 1.5	–	–	• GF643005.9512	• GF643007.9512
	8 - 16	1.5 - 3.0	14 - 11 1/2	14 -11 1/2	GF643005.9514	GF643007.9514
11	10 - 24	1 - 1.5	–	–	• GF643105.9512	• GF643107.9512
	10 - 16	1.5 - 2.5	11 1/2	11 1/2	GF643105.9514	GF643107.9514
	6 - 10	2.5 - 4.0	–	8	GF643105.9517	GF643107.9517
12	10 - 16	1 - 1.5	11 1/2	11 1/2	GF643205.9514	GF643207.9514
	4 1/2 - 10	2.5 - 5.0	–	8	GF643205.9517	GF643207.9517
13	9 - 16	1.5 - 3.0	8	11 1/2	GF643305.9514	GF643307.9514
	4 - 9	3.0 - 6.0	–	8	GF643305.9518	GF643307.9518
14	9 - 16	1.5 - 3.0	8	–	GF643405.9514	GF643407.9514
	4 - 9	3.0 - 6.0	–	8	GF643405.9518	GF643407.9518

• NEW Items

Emuge High Precision / Performance FPC Milling / Drilling Chucks

Emuge FPC Chucks provide unprecedented rigidity, vibration dampening, concentricity, machining speed and tool life vs. conventional chuck technologies for thread milling, milling and drilling applications. Available in a wide range of styles, internal and peripheral coolant collet options, and MQL-adaptable.

EMUGE

Ask about our convenient NEW EF-C Drill-Chamfer Tool Program.

Combination carbide drill-chamfer tools, **many sizes available from stock or order customized lengths in less than 4 weeks!**

- Tools are coolant-thru, 4 margin design with TiALN-T14 coating
- Full range of sizes in 2XD and 3.5XD lengths
- Save time – one tool handles two operations in a wide range of materials
- 90° chamfer style
- Cut or Form thread diameters

NEW EF-C Step Drills

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Emuge Corp. has been the product technology and performance leader in their field for nearly 100 years. Emuge manufactures an extensive line of taps, drills, thread mills, end mills, toolholders, clamping devices and other rotary cutting tools, over 100,000 items sold through distributors worldwide.