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# **HF4** //G MILL

New HIGH FEED 4 Corner Milling Series

## ENMX

### MINI HIGH FEED

for Narrow and Long Reach Application

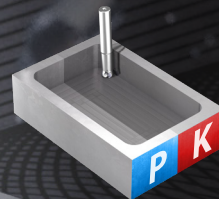


#### ENMX is Reliable

- Thick and Reinforced insert
- Wide Flank for strong clamping

#### ENMX is Economical

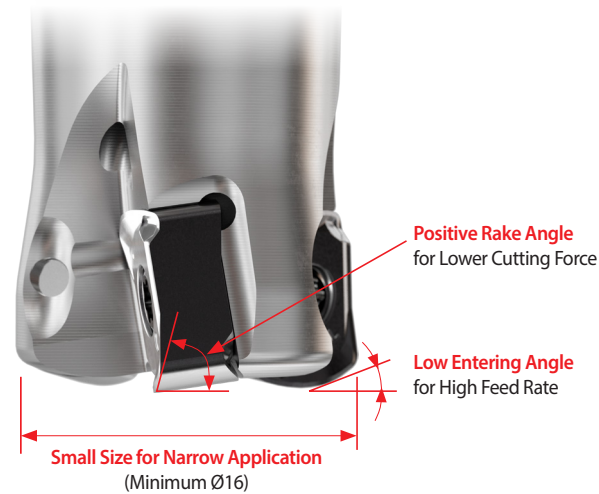
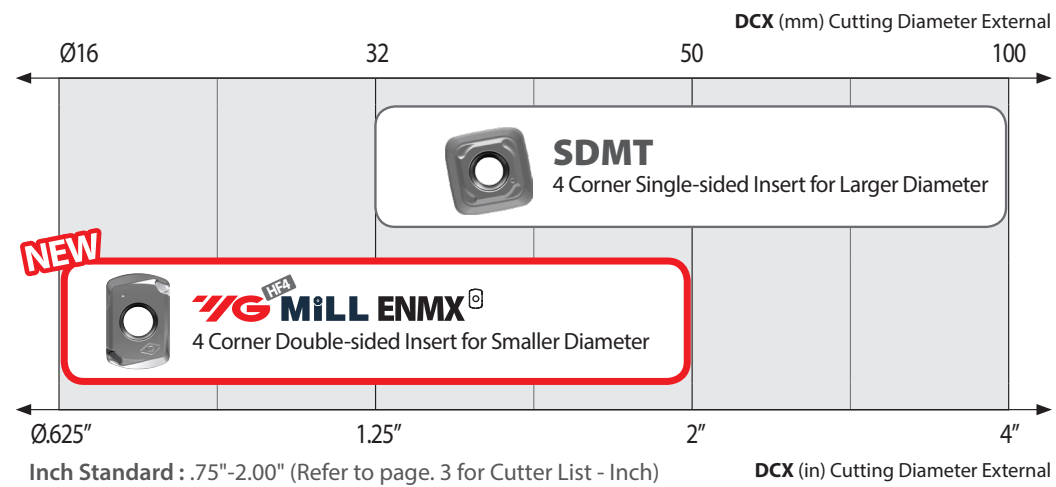
- Double-sided insert



#### High feed Milling

**P** Steel and **K** Cast Iron

## NEW High Feed Milling Series for Small Size

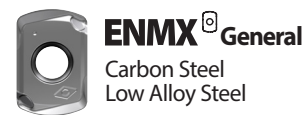


### Application

- High Feed Milling, Profiling, Face Milling, Ramping, Plunging, Helical Interpolation

### Features

- Diameter Range : 16~50mm (.750"-2.0")
- Double-sided Insert with 4 Corners
- Wide Flank Face with Reinforced Insert Shape
- Positive Rake Angle & Low Entering Angle
- 2 Insert Geometries



### Advantages

- Narrow application Available (Minimum Ø16)
- High Versatile Machining
- High Cost-Efficiency
- Rigid Clamping on Insert Seat
- Prevent Breakage on Machining
- High Feed Rate Available with Low Cutting Force

### Benefits

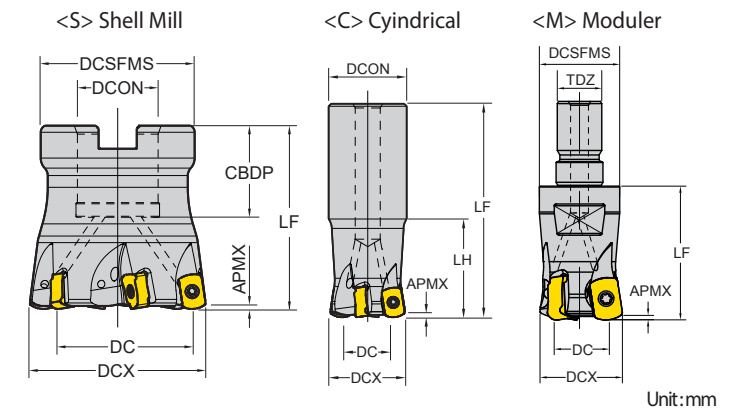
- Expand machining ability with High Versatility & Small Diameter Ability
- Boost up productivity with High Feed Rate
- Safe Machining with Rigidity and Strong Insert Shape



## Product List - Milling Cutter

### Milling - Cutter - High Feed Milling

# ENMX



### Cutter List - Metric

APMX	Designation	EDP 1700..	DC	DCX	ZEFP	LF	Type	DCON	LH	CBDP	DCSFMS		
0.9	EHF-ENMX06-D16Z2C16-L100	0644	9.0	16	2	100	Cylindrical	16	30	-	-	●	
	EHF-ENMX06-D16Z2C16-L150	0645	9.0	16	2	150		16	50	-	-	●	
	EHF-ENMX06-D17Z2C16-L100	0674	10.0	17	2	100		16	20	-	-	●	
	EHF-ENMX06-D17Z2C16-L150	0473	10.0	17	2	150		16	20	-	-	●	
1	EHF-ENMX06-D20Z3C20-L130	0463	12.6	20	3	130		20	50	-	-	●	
	EHF-ENMX06-D20Z3C20-L160	0646	12.6	20	3	160		20	80	-	-	●	
	EHF-ENMX06-D21Z3C20-L150	0475	13.6	21	3	150		20	20	-	-	●	
	EHF-ENMX06-D21Z3C20-L200	0476	13.6	21	3	200		20	20	-	-	●	
	EHF-ENMX06-D25Z4C25-L140	0647	17.6	25	4	140		25	60	-	-	●	
	EHF-ENMX06-D25Z4C25-L180	0464	17.6	25	4	180		25	80	-	-	●	
	EHF-ENMX06-D25Z4C25-L250	0648	17.6	25	4	250		25	120	-	-	●	
	EHF-ENMX06-D26Z4C25-L150	0479	18.6	26	4	150		25	30	-	-	●	
0.9	EHF-ENMX06-D26Z4C25-L200	0480	18.6	26	4	200	25	30	-	-	●		
	EHF-ENMX06-D32Z5C32-L150	0649	24.6	32	5	150	32	70	-	-	●		
	EHF-ENMX06-D32Z5C32-L200	0465	24.6	32	5	200	32	100	-	-	●		
	1	MHF-ENMX06-D16Z2M08	0691	9.0	16	2	23	Modular	M08	-	-	-	●
		MHF-ENMX06-D18Z2M08	0730	11.0	18	2	23		M08	-	-	-	●
		MHF-ENMX06-D20Z3M10	0692	12.6	20	3	30		M10	-	-	-	●
		MHF-ENMX06-D25Z4M12	0693	17.6	25	4	35		M12	-	-	-	●
		MHF-ENMX06-D32Z5M16	0694	24.6	32	5	42		M16	-	-	-	●
MHF-ENMX06-D35Z5M16		0695	27.6	35	5	42	M16		-	-	-	●	
MHF-ENMX06-D40Z6M16		0732	32.6	40	6	42	M16		-	-	-	●	
MHF-ENMX06-D42Z6M16		0696	34.6	42	6	42	M16		-	-	-	●	
1	FHF-ENMX06-D40Z6S16	0482	32.6	40	6	40	Shell Mill	16	-	18	37	●	
	FHF-ENMX06-D50Z6S22	0471	42.6	50	6	50		22	-	25	42	●	

Screw : TP082507 Wrench : TPWFTP08

### Cutter List - Inch

APMX	Designation	EDP 1700..	DC	DCX	ZEFP	LF	Type	DCON	CBDP	DCSFMS	
.04	EHF-ENMX06-D075Z3W075-L500I	0669	.46	.75	3	5	Weldon	.75	-	-	●
	EHF-ENMX06-D100Z4W100-L550I	0670	.71	1	4	5.5		1	-	-	●
	EHF-ENMX06-D125Z5W125-L600I	0671	.96	1.25	5	6		1.25	-	-	●
.04	FHF-ENMX06-D150Z6S050I	0672	1.21	1.5	6	1.575	Shell Mill	.5	.75	1.34	●
	FHF-ENMX06-D200Z6S075I	0673	1.71	2	6	1.969		.75	.75	1.57	●

Screw : TP082507 Wrench : TPWFTP08

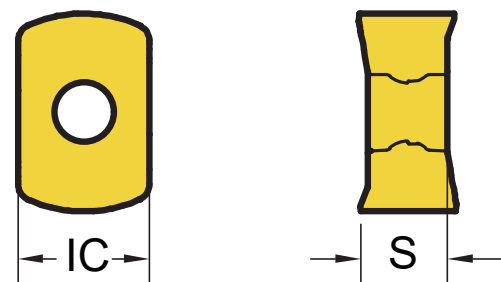
## Product List - Milling Insert

Milling - Insert

# ENMX

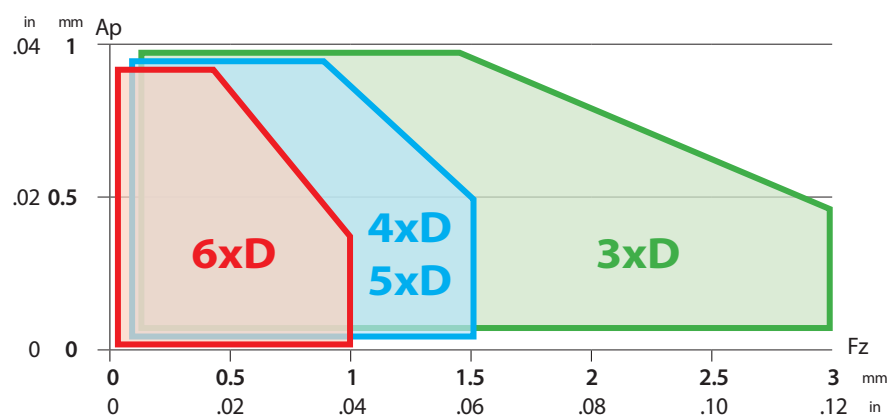
### High Feed Negative (4 Corners)

- Insert size (IC): 6.3 mm
- Thickness(S) : 4.21 mm



Geometry Type	Designation	EDP (YG602)
<b>ENMX</b> General Carbon Steel Low Alloy Steel	ENMX 0604	12000474
<b>ENMX</b> -TR Reinforced Edge High Alloy Steel Hardened Steel Cast Iron	ENMX 0604 - TR	12000459

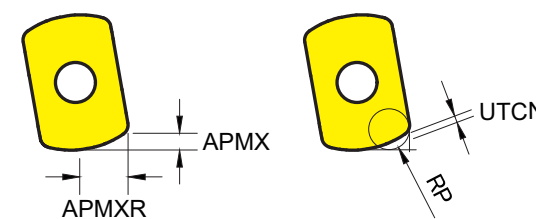
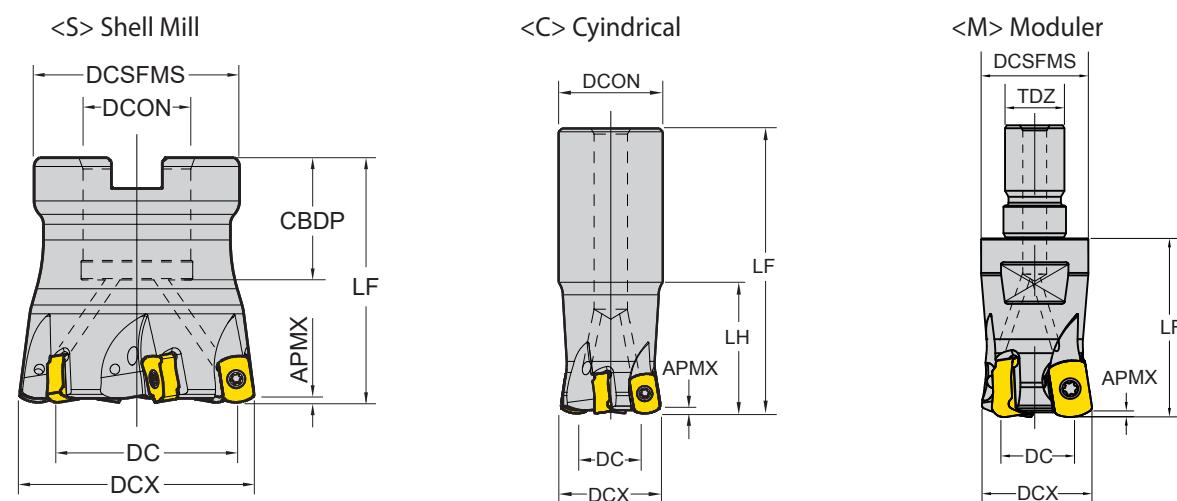
### Feed per tooth & Depth of Cut (Alloy Steel)



Cutting Speed			Vc (m/min.)		Vc (ft/min.)	
ISO	VDI	Sub Group	YG602			
			Min	Max	Min	Max
P	1~5	Non-Alloyed Steel	140	380	460	1250
	6~9	Low-Alloyed Steel	120	300	390	980
	10~11	High-Alloyed Steel	70	150	230	490
M	12~13	Ferritic & Martensitic	120	200	390	660
	14	Austenitic Stainless Steel	130	250	430	820

Cutting Speed			Vc (m/min.)		Vc (ft/min.)	
ISO	VDI	Sub Group	YG602			
			Min	Max	Min	Max
K	15~16	Grey Cast Iron	120	250	390	820
	17~18	Nodular Cast Iron	130	220	430	720
N	21~30	Non-Ferrous Metals (Al)	-	-	-	-
S	31~37	Superalloys & Titanium	25	45	80	150
H	38~41	Hard Materials	40	80	130	260

## Technical information



Programmed Corner Radius RP	Uncut Thickness UTCN	Overcut
2 (.079)	0.31 (.012)	0 (.000)
2.5 (.098)	0.18 (.007)	0.18 (.007)
3 (.118)	0.07 (.003)	0.36 (.014)

General	Plunging	Ramping	Profiling	Helical Interpolation	Enlarge Hole				
External Cutter Diameter	Maximum Depth of Cut	Maximum Radial Depth of Cut	Maximum Ramping Angle(°)	Programmed Corner Radius	Uncut Thickness	Minimum Cutting Diameter	Maximum Cutting Diameter	Helical Interpolation Pitch	Enlarge Width
DCX	APMX	APMXR	RMPX	RP	UTCN	Diameter	Diameter	Pitch	Ae
16 mm (.625 in)	0.9 (.035)	3.5 (.137)	3.6°	R2.0 (R.079)	0.3 (.011)	21 (.817)	30 (1.171)	0.9 (.035)	12.5 (.487)
20 mm (.75 in)	1 (.039)	3.7 (.145)	3.3°	R2.0 (R.079)	0.31 (.012)	29 (1.067)	38 (1.421)	1 (.039)	16.3 (.604)
25 mm (1.00 in)	1 (.039)	3.7 (.145)	2.2°	R2.0 (R.079)	0.31 (.012)	39 (1.567)	48 (1.921)	1 (.039)	21.3 (.854)
32 mm (1.25 in)	1 (.039)	3.7 (.145)	1.5°	R2.0 (R.079)	0.31 (.012)	53 (2.067)	62 (2.421)	1 (.039)	28.3 (1.104)
40 mm (1.50 in)	1 (.039)	3.7 (.145)	1.1°	R2.0 (R.079)	0.31 (.012)	69 (2.567)	78 (2.921)	1 (.039)	36.3 (1.354)
50 mm (2.00 in)	1 (.039)	3.7 (.145)	0.8°	R2.0 (R.079)	0.31 (.012)	89 (3.567)	98 (3.921)	1 (.039)	46.3 (1.854)

Success Story

**P** Carbon Steel 1.1121  
JIS S10C DIN Ck10 AISI 1010

	<b>YG</b>	Competitor A
Designation	<b>ENMX 0604</b>	High Feed
Chipbreaker	<b>TR</b>	General
Grade	<b>YG602</b>	P Grade
Cutter Dia	<b>16 mm</b>	16 mm
ZEFP (Effective number of edge)	<b>2</b>	2
Vc (Cutting Speed)	100 m/min (328.08 ft/min)	90 m/min (295.27 ft/min)
Fz (Feed per tooth)	0.58 mm/tooth (.022 in/tooth)	0.42 mm/tooth (.016 in/tooth)
Ap (Depth of Cut)	0.5 mm (.019 in)	0.2 mm (.007 in)
Tool Life	<b>32 pcs</b> +166% Tool Life	<b>12 pcs</b>



**P** Carbon Steel 1.0503  
JIS S45C DIN C45 AISI 1045

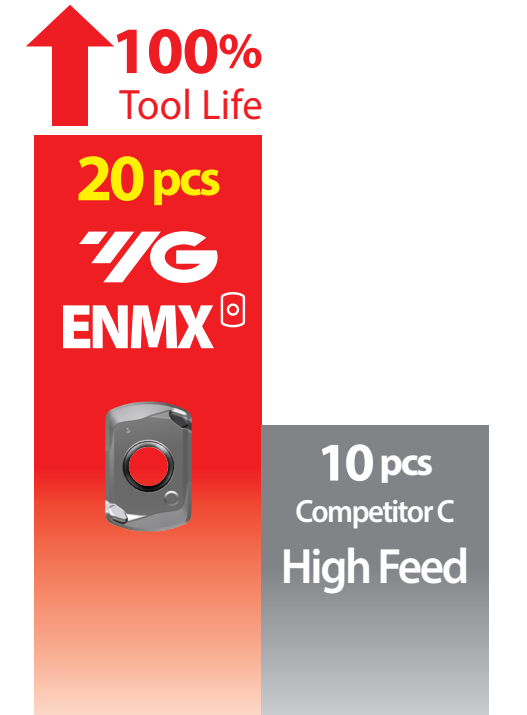
	<b>YG</b>	Competitor B
Designation	<b>ENMX 0604</b>	High Feed
Chipbreaker	<b>TR</b>	General
Grade	<b>YG602</b>	P Grade
Cutter Dia	<b>20 mm</b>	20 mm
ZEFP (Effective number of edge)	<b>3</b>	3
Vc (Cutting Speed)	188 m/min (616.79 ft/min)	157 m/min (515.09 ft/min)
Fz (Feed per tooth)	1.5 mm/tooth (.059 in/tooth)	0.8 mm/tooth (.031 in/tooth)
Ap (Depth of Cut)	0.5 mm (.019 in)	
Tool Life	<b>3 pcs</b> +200% Tool Life	<b>1 pc</b>



Success Story

**P** Tool Steel 1.6565  
JIS SNCM447 DIN 40NiCrMo6 AISI 4340

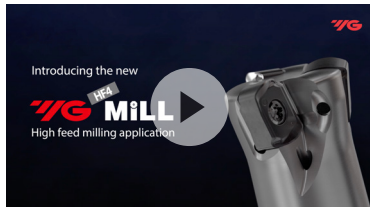
	<b>YG</b>	Competitor C
Designation	<b>ENMX 0604</b>	High Feed
Chipbreaker	<b>TR</b>	General
Grade	<b>YG602</b>	P Grade
Cutter Dia	<b>25 mm</b>	20 mm
ZEFP (Effective number of edge)	<b>4</b>	4
Vc (Cutting Speed)	150 m/min (492.13 ft/min)	
Fz (Feed per tooth)	0.39 mm/tooth (.015 in/tooth)	
Ap (Depth of Cut)	0.5 mm (.019 in)	
Tool Life	<b>20 pcs</b> +100% Tool Life	<b>10 pcs</b>



**P** Alloy Steel 1.6565  
JIS SNCM447 DIN 40NiCrMo6 AISI 4340

	<b>YG</b>	Competitor D
Designation	<b>ENMX 0604</b>	High Feed
Chipbreaker	<b>GN</b>	General
Grade	<b>YG602</b>	P Grade
Cutter Dia	<b>20 mm</b>	20 mm
ZEFP (Effective number of edge)	<b>3</b>	3
Vc (Cutting Speed)	180 m/min (590.55 ft/min)	
Fz (Feed per tooth)	0.66 mm/tooth (.025 in/tooth)	
Ap (Depth of Cut)	0.5 mm (.019 in)	
Tool Life	<b>7 pcs</b> +75% Tool Life	<b>4 pcs</b>





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YG HF4 Mill ENMX tools at work.

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