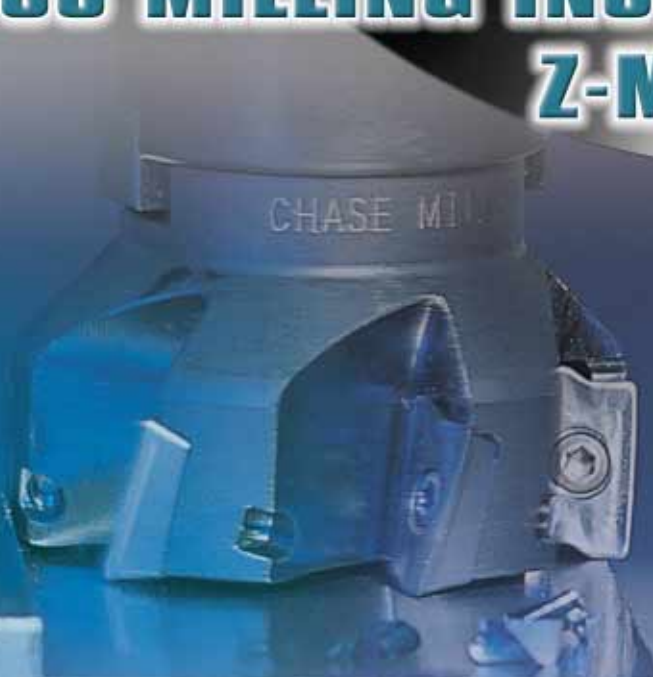


Member IMC Group
Ingersoll
Cutting Tools



TaeguTmill

CHASE MILLING FAMILY
ISO MILLING INSERT
Z-MILL



TaeguTec

Chase Milling Family

Only The Chase Milling Family can satisfy
all your requirements



 **TaeguTec**
Member IMC Group



Index

<i>ChaseMill</i>	4 ~ 9
<i>ChaseQuad</i>	10 ~ 16
<i>ChaseOcto</i>	18 ~ 19
<i>ChaseMold</i>	20
<i>ChaseBall</i>	21
<i>ISO Milling Insert</i>	22 ~ 23
<i>Z-Mill</i>	24 ~ 26
<i>Technical Information</i>	27 ~ 35

ChaseMill

Features

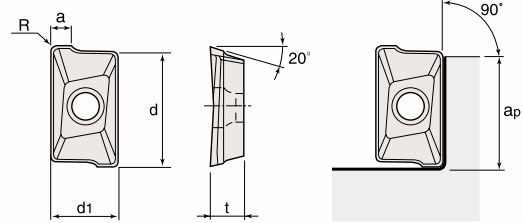
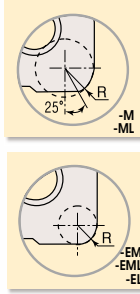
- Helical higher positive cutting edges guarantee smooth, quiet and efficient cutting with greater accuracy.
- TE90AX 90 degree end mills and TFM90AX face mills using **AXMT 0903 PER-EML** or **AXMT 0903 PER-AL** insert, are designed for less-rigid machines and setups where maximum insert density and depth of cuts under .350 provide optimum productivity.
- TE90AP 90 degree end mills & TFM90AP face mills using **APKT 1705 PER-M** or **EL** or **EM** or **AL** inserts, provide superior strength, versatility and accuracy when milling all materials up to .635" depth of cut.
- Corner radius and regular **-EL** or **-EM** or **-EML** inserts, which provide a variety of accurate cutting radii with pressed wiper flat provide economical and superior performance.
- New **AXMT 0903 PER-EML** & **AXMT 090308R-EML** inserts with improved cutting performance are mounted on new TE90AX & TFM90AX cutters and the same TE90AD & TFM90AD cutters.
- For Face milling, Slotting, Shoulder milling, Contouring, Straight and Helical Ramping.



Applications

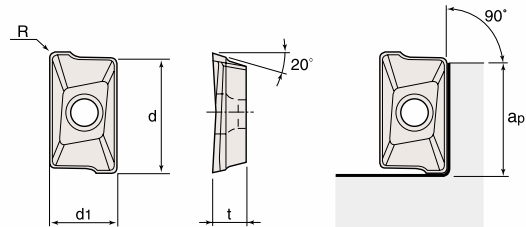
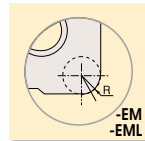
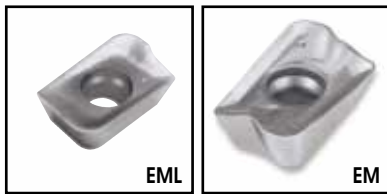


REGULAR INSERT



Designation	Dimension (inch)						Coated					Uncoated	
	d	d ₁	a	t	R	ap	TT9030	TT8030	TT8020	TT7030	TT6030	P30	K10
AXMT 0903 PER-EML	.374	.244	.049	.142	.020	.350	○	○	○	○	○		○
AXMT 0903 PER-ML	.374	.244	.049	.142	.020	.350			○	○	○		
APKT 1705 PER-M	.670	.421	.129	.219	.031	.635			○	○	○		○
APKT 1705 PER-EM	.670	.421	.129	.219	.031	.635	○	○	○	○	○	○	○
NEW APKT 1705 PER-EL	.670	.421	.114	.219	.031	.635	○		○				

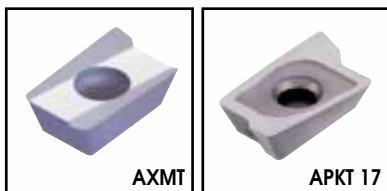
CORNER RADIUS INSERT



Designation	Dimension (inch)						Coated					Uncoated
	d	d ₁	t	R	ap	TT9030	TT8030	TT8020	TT7030	TT6030	P30	
AXMT 090308R-EML	.374	.244	.142	.031	.350	○	○	○	○	○		
NEW AXMT 090316R-EML	.374	.244	.142	.062	.350	○		○	○	○		
NEW APKT 170504R-EM	.671	.421	.219	.015	.635			○	○	○		
APKT 170516R-EM	.670	.421	.219	.062	.635	○		○	○	○		
APKT 170524R-EM	.670	.421	.219	.093	.635			○	○	○	○	
APKT 170532R-EM	.670	.421	.219	.125	.635	○		○	○	○	○	
APKT 170548R-EM	.670	.421	.219	.187	.635			○	○	○	○	
APKT 170564R-EM	.670	.421	.219	.250	.635			○	○	○	○	
NEW APKT 1705□□R-M	.671	.421	.219	.015-.250	.635			○				

• □□ = 04~64 : Various tailor-made corner radius (.015~.250)

INSERTS FOR ALUMINUM MACHINING



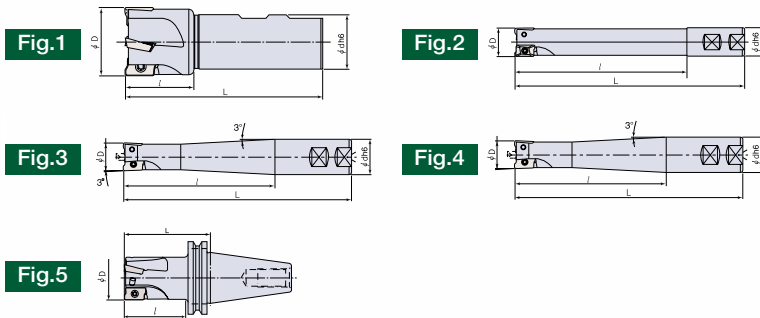
Designation	Dimension (inch)					Uncoated
	d	d ₁	t	R	ap	K10
AXMT 0903 PER-AL	.374	.244	.134	.020	.350	○
APKT 1705 PER-AL	.670	.421	.211	.031	.635	○

ChaseMill

End Mill



TE90AP - □□□



Standard length End Mills

Designation	Insert		Dimension (inch)				Fig.	Screw	Wrench
			D	d	L	l			
TE90AP-D.75-W.75-17	APKT 1705 PER-M APKT 1705 PER-EM NEW APKT 1705 PER-EL APKT 1705 □□ R-EM APKT 1705 PER-AL	1	.75	.75	3.75	1.25	1	TS40080I	TD15
TE90AP-D1.00-W1.00-17		2	1.00	1.00	4.00	1.50	1		
TE90AP-D1.25-W1.25-17		3	1.25	1.25	4.50	1.60	1	TS40093I	
TE90AP-D1.50-W1.25-17		4	1.50	1.25	4.50	1.60	1		
TE90AP-D1.50-W1.25-17-B		3	1.50	1.25	4.50	1.60	1		
TE90AP-D1.75-W1.25-17		4	1.75	1.25	4.50	1.70	1		
TE90AP-D2.00-W1.25-17		5	2.00	1.25	4.50	1.70	1	1	
TE90AP-D1.00-CAT40-17		2	1.00	—	2.50	1.55	5	TS40080I	
TE90AP-D1.25-CAT40-17		3	1.25	—	2.87	1.92	5	TS40093I	
TE90AP-D1.50-CAT40-17		3	1.50	—	2.87	1.92	5		

Long type End Mills

Designation	Insert		Dimension (inch)				Fig.	Screw	Wrench
			D	d	L	l			
TE90AP-D1.00-W1.00-17-L	APKT 1705 PER-M APKT 1705 PER-EM NEW APKT 1705 PER-EL APKT 1705 □□ R-EM APKT 1705 PER-AL	2	1.00	1.00	6.00	3.75	1	TS40080I	TD15
TE90AP-D1.00-W1.00-17-XL1		2	1.00	1.00	8.00	6.00	2		
TE90AP-D1.00-W1.00-17-XL2		2	1.00	1.00	10.00	8.00	2		
TE90AP-D1.00-W1.25-17-XL1		2	1.00	1.25	8.00	5.75	3		
TE90AP-D1.00-W1.25-17-XL2		2	1.00	1.25	10.00	7.75	3		
TE90AP-D1.00-W1.25-17-XL3		2	1.00	1.25	8.00	5.00	4	TS40093I	
TE90AP-D1.00-W1.25-17-XL4		2	1.00	1.25	10.00	7.00	4		
TE90AP-D1.25-W1.25-17-L		3	1.25	1.25	6.50	4.25	1		
TE90AP-D1.25-W1.25-17-XL1		3	1.25	1.25	8.00	5.25	2		
TE90AP-D1.25-W1.25-17-XL2		3	1.25	1.25	10.00	7.25	2		
TE90AP-D1.50-W1.25-17-L		3	1.50	1.25	6.50	1.80	1		
TE90AP-D1.50-W1.25-17-XL1		3	1.50	1.25	8.00	1.80	1		
TE90AP-D1.50-W1.50-17-XL1		3	1.50	1.50	8.00	5.50	2		
TE90AP-D1.50-W1.50-17-XL2		3	1.50	1.50	10.00	7.50	2		
TE90AP-D1.50-W1.50-17-XL3		3	1.50	1.50	11.00	8.50	2		

- L type : Long Shank
- XL1, XL2 type : Extra Long Shank
- B type : Coarse pitch End Mill
- Extended Reach End Mills are not as rigid as standard length End Mills.
Reduce DOC(Depth of Cut) and FPT(Feed per Tooth) to reduce risk of chatter.

End Mill

New



TE90AX- □□□

Fig.1

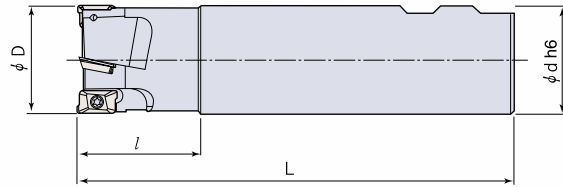


Fig.2



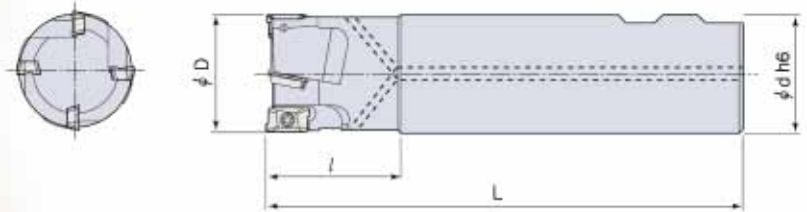
Designation	Insert		Dimension (inch)				Fig.	Screw	Wrench
			D	d	L	l			
TE90AX-D.38-W.50-09	AXMT 0903 PER-EML AXMT 0903 PER-ML AXMT 090308R-EML AXMT 090316R-EML AXMT 0903 PER-AL	1	.375	.500	3.00	.79	1	TS25055I/HG	TD8
TE90AX-D.44-W.62-09		1	.437	.625	3.25	1.03	1		
TE90AX-D.50-W.62-09		1	.500	.625	3.25	1.03	1		
TE90AX-D.56-W.62-09		1	.560	.625	3.25	1.03	1		
TE90AX-D.62-W.62-09		2	.625	.625	3.25	1.18	1		
TE90AX-D.70-W.75-09		2	.700	.750	3.35	1.18	1		
TE90AX-D.75-W.75-09		2	.750	.750	3.75	1.18	1		
TE90AX-D.75-W.75-09-J		3	.750	.750	3.75	1.18	1		
TE90AX-D.75-W.75-09-L		2	.750	.750	4.75	2.75	1		
TE90AX-D.75-W.75-09-XL NEW		2	.750	.750	6.00	2.75	2		
TE90AX-D.75-W.75-09-XL I		2	.750	.750	8.00	6.00	2		
TE90AX-D.88-W.75-09		3	.875	.750	3.75	1.18	1		
TE90AX-D1.00-W.75-09		3	1.000	.750	3.75	1.18	1		
TE90AX-D1.00-W.75-09-J		4	1.000	.750	3.75	1.18	1		
TE90AX-D1.00-W1.00-09-L		2	1.000	1.000	6.00	1.50	1		
TE90AX-D1.12-W1.00-09		3	1.125	1.000	3.75	1.18	1		
TE90AX-D1.25-W1.00-09		4	1.250	1.000	3.75	1.20	1		
TE90AX-D1.50-W1.00-09		4	1.500	1.000	4.00	1.25	1		
TE90AX-D2.00-W1.00-09		5	2.000	1.000	4.00	1.25	1		
							TS25075I/HG		

- L type : Long Shank
- XL & XLI type : Extra Long Shank
- J type : Cross pitch End Mill
- Extended Reach End Mills are not as rigid as standard length End Mills.
Reduce DOC(Depth of Cut) and FPT(Feed per Tooth) to reduce risk of chatter.
- TE90AX end mills are supplied when the stock of TE90AD end mill is depleted.

ChaseMill



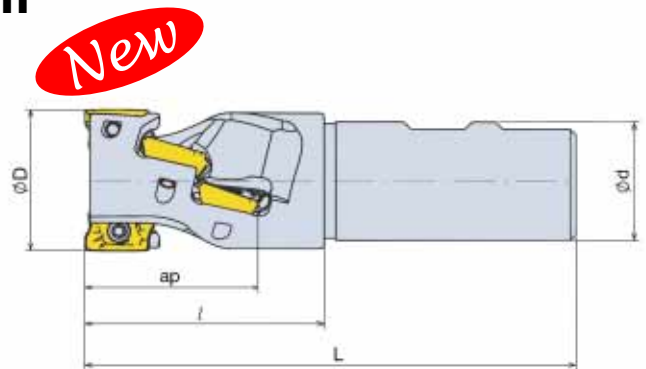
Coolant through End Mill



Designation	Insert		Dimension (inch)				Fig.	Screw	Wrench
			D	d	L	l			
TE90AP-D1.00-W1.00-17-C	APKT 1705 PER-M	2	1.00	1.00	4.00	1.50	1	TS40080I	TD15
TE90AP-D1.25-W1.25-17-C	APKT 1705 PER-EM	3	1.25	1.25	4.50	1.60	1	TS40093I	
TE90AP-D1.50-W1.25-17-C	APKT 1705 PER-EL	4	1.50	1.25	4.50	1.60	1		
TE90AP-D1.50-W1.25-17-BC	APKT 1705 □ R-EM APKT 1705 PER-AL	3	1.50	1.25	4.50	1.60	1		
TE90AX-D.75-W.75-09-C	AXMT 0903 PER-EML	2	.750	.750	3.75	1.18	1	TS25055I/HG	TD8
TE90AX-D1.00-W.75-09-C	AXMT 0903 PER-ML AXMT 090308R-EML AXMT 090316R-EML AXMT 0903 PER-AL	3	1.000	.750	3.75	1.18	1		

- C type : Coolant through End Mill
- TE90AX end mills are supplied when the stock of TE90AD end mill is depleted.

Extended Flute End Mill



Designation	Insert		No. of Inserts	Dimension (inch)					Screw	Wrench
				D	L	l	ap	d		
TEF-D1.25-W1.25-AP17	APKT 1705 PER-EM APKT 1705 PER-M	2	4	1.25	4.75	1.96	1.18	1.25	TS40093I	TD15
TEF-D1.50-W1.25-AP17	APKT 170504 R-EM APKT 1705 PER-EL APKT 1705 PER-AL	2	6	1.50	5.50	2.55	1.74	1.25		

Face Mill



TFM90AX-□□

New

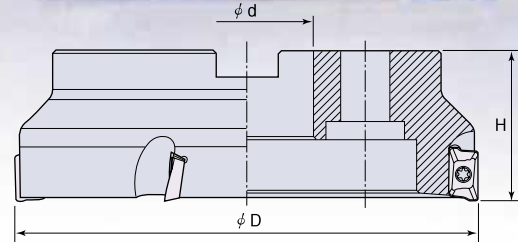


Fig1



TFM90AP-□□

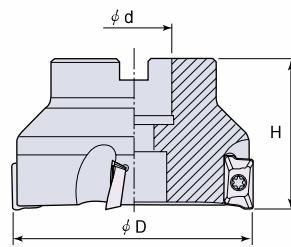


Fig.2

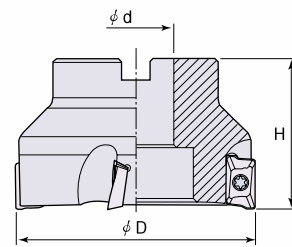


Fig.3

Designation	Insert		Dimension (inch)			Weight (lb)	Fig.	Screw	Wrench
			D	d	H				
TFM90AP -D2.00R-17-B	APKT 1705 PER-M APKT 1705 PER-EM APKT 1705 □□ R-EM APKT 1705 PER-AL NEW APKT 1705 PER-EL	3	2.00	.75	1.57	.88	1	TS40120I	T-T15
TFM90AP -D2.00R-17		5	2.00	.75	1.57	.88	1		
TFM90AP -D2.50R-17		6	2.50	.75	1.57	1.1	1		
TFM90AP -D3.00R-17-B		4	3.00	1.00	1.75	1.8	2		
TFM90AP -D3.00R-17		7	3.00	1.00	1.75	1.7	2		
TFM90AP -D4.00R-17-B		6	4.00	1.50	2.00	2.8	2		
TFM90AP -D4.00R-17		8	4.00	1.50	2.00	2.6	2		
TFM90AP -D5.00R-17		9	5.00	1.50	2.00	6.8	2		
TFM90AP -D6.00R-17-B		8	6.00	2.00	2.00	11.0	2		
TFM90AP -D6.00R-17		10	6.00	2.00	2.00	11.0	2		
TFM90AP -D8.00R-17		12	8.00	2.50	2.37	14.7	3		
TFM90AX-D1.50R-09		AXMT 0903 PER-EML AXMT 0903 PER-ML AXMT 090308R-EML NEW AXMT 090316R-EML AXMT 0903 PER-AL	5	1.50	.75	1.57	.7		
TFM90AX-D2.00R-09	6		2.00	.75	1.57	.9	1		
TFM90AX-D2.50R-09	8		2.50	.75	1.57	1.1	1		
TFM90AX-D3.00R-09	10		3.00	1.00	1.75	1.8	1		

• TFM90AX face mills are supplied when the stock of TFM90AD cutter is depleted.

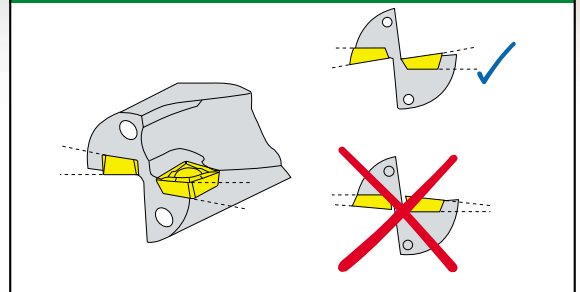
ChaseQuad

ChaseQuad for Drill-Mill, Plunging & Extended flute end mill

Features

- Variety of tools for Counter Boring, Spot Facing, Drill Milling, Plunge Milling, End Milling and Extended Flute End Mills cover needs for Die & Mold Industry.
- Just 4 sizes of inserts cover full range of operating conditions.
- SPMG inserts with chipbreaker and sharp cutting edges are for drilling.
- SPMT inserts with rake face geometry and strong cutting edges are best for roughing and general applications.

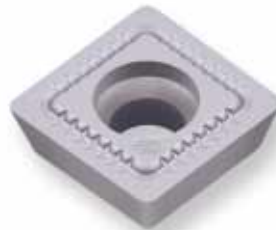
Mounting Instruction of XOMT Insert



I nsert



XOMT 060204



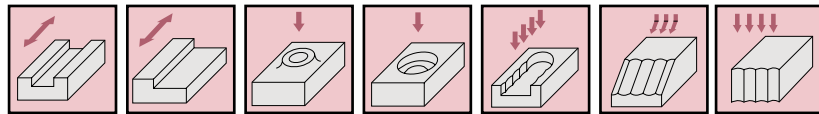
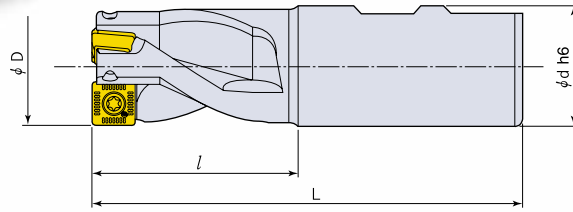
**SPMG 090408-EM
SPMG 110408-EM
SPMG 140508-EM**



**SPMT090408-EM
SPMT110408-EM
SPMT140508-EM**

Designation	Coated		
	TT8020	TT7030	TT6030
XOMT060204	○	○	○
SPMG 090408-EM, SPMT 090408-EM	○	○	○
SPMG 110408-EM, SPMT 110408-EM	○	○	○
SPMG 140508-EM, SPMT 140508-EM	○	○	○

End mill for Counter Boring, Spot Facing & Plunging



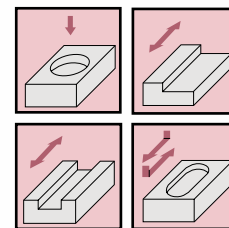
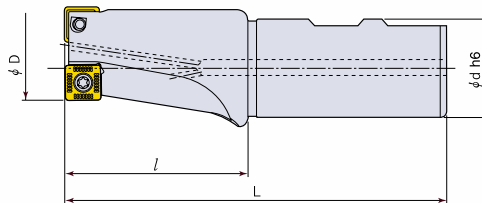
Designation	Insert		Dimension (inch)					
			D	l	d	L	Max. C'bore depth, Cd	ap
TSF-D.44-W.75-06	XOMT 060204	1	.438	.80	.750	3.20	.50	.220
TSF-D.53-W.75-06		1	.531	1.10	.750	3.50	.70	
TSF-D.62-W.75-06		2	.625	1.10	.750	3.50	.70	
TSF-D.71-W.75-06		2	.710	1.30	.750	3.70	1.00	
TSF-D.75-W.75-06		3	.750	1.30	.750	3.70	1.00	
TSF-D.81-W.75-06		3	.813	1.50	.750	4.00	1.20	
TSF-D.87-W.75-09	SPMG 090408-EM SPMT 090408-EM	2	.875	1.50	.750	4.00	1.20	.355
TSF-D1.00-W1.00-09		2	1.000	1.90	1.00	4.30	1.50	
TSF-D1.18-W1.25-09		3	1.187	2.00	1.25	4.50	1.55	
TSF-D1.25-W1.25-11	SPMG 110408-EM SPMT 110408-EM	3	1.250	2.00	1.25	4.50	1.55	.422
TSF-D1.37-W1.25-11		3	1.375	2.00	1.25	4.50	1.55	
TSF-D1.50-W1.25-11		3	1.500	2.40	1.25	4.90	1.80	
TSF-D1.63-W1.25-11		4	1.625	2.40	1.25	4.90	1.80	
TSF-D1.75-W1.25-14	SPMG 140508-EM SPMT 140508-EM	3	1.750	2.60	1.25	5.10	2.00	.528
TSF-D2.00-W1.25-14		4	2.000	3.00	1.25	5.90	2.40	

COMPONENTS

Size	Insert	Screw	Wrench	
TSF-D.44~D.53	XOMT 060204	TS22046I	TD7	
TSF-D.62~D.81	XOMT 060204	TS22052I/HG	TD7	
TSF-D.87~D1.18	SPMG/T 090408-EM	TS35088I	TD10	
TSF-D1.25~D1.63	SPMG/T 110408-EM	TS40093I	TD15	
TSF-D1.75~D2.00	SPMG/T 140508-EM	SO50090I	TD20	

ChaseQuad

Drill-Mill



Designation	Insert		Dimension (inch)						Screw	Wrench
			D	l	d	L	Max. Drilling depth, Cd	ap		
TDM -D.50-W.75-06	XOMT 060204	1	.500	.80	.750	3.20	.50	.220	TS22046I	TD7
TDM -D.62-W.75-06		2	.625	1.10	.750	3.50	.80			
TDM -D.71-W.75-06		2	.719	1.30	.750	4.00	.90			
TDM -D.75-W.75-06		2	.750	1.30	.750	4.00	.90			
TDM -D.81-W1.00-06		2	.813	1.50	1.00	4.00	1.00			
TDM -D.84-W1.00-06		2	.844	1.50	1.00	4.00	1.00			
TDM -D1.00-W1.00-09	SPMG 090408-EM, SPMT 090408-EM	2	1.000	1.60	1.00	4.00	1.20	.355	TS35088I	TD10
TDM -D1.18-W1.25-11	SPMG 110408-EM SPMT 110408-EM	2	1.187	2.10	1.25	4.50	1.55	.422	TS40093I	TD15
TDM -D1.25-W1.25-11		2	1.250	2.10	1.25	4.50	1.55			
TDM -D1.37-W1.25-11		2	1.375	2.10	1.25	4.50	1.55			
TDM -D1.50-W1.25-11		2	1.500	2.40	1.25	4.90	1.85			
TDM -D1.75-W1.25-14	SPMG 140508-EM	2	1.750	2.60	1.25	5.10	2.05	.528	SO50090I	TD20
TDM -D2.00-W1.25-14	SPMT 140508-EM	2	2.000	2.80	1.25	5.60	2.20			

End mill for Chamfering

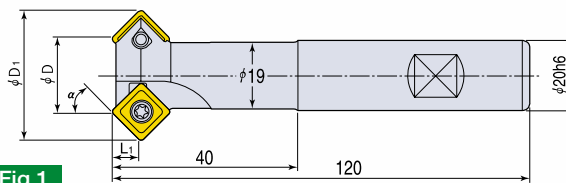


Fig.1

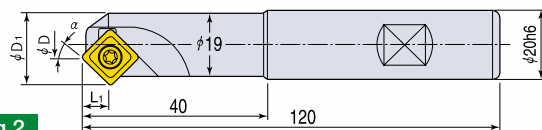
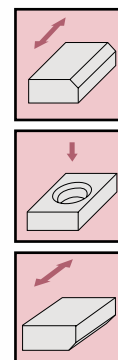


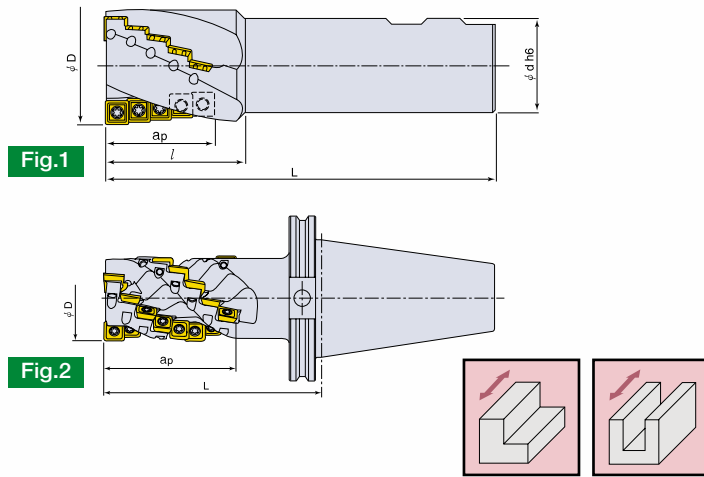
Fig.2



Designation	Insert	No. of Teeth	Dimension (inch)				Fig.	Application Range	Screw	Wrench
			α	D	D ₁	L ₁				
TCF15-D1.0-11	SPMT 110408-EM	2	15°	1	1.22	.4	2	Ø1.05 ~ Ø1.15	TS40093I	TD15
TCF30-D1.0-11		2	30°	1	1.42	.35	1	Ø1.05 ~ Ø1.35		
TCF45-D.30-11		1	45°	.3	.89	.28	2	Ø.35 ~ Ø.85		
TCF45-D.75-11		2	45°	.75	1.34	.28	1	Ø.80 ~ Ø1.30		
TCF45-D1.25-11		3	45°	1.25	1.84	.28	1	Ø1.30 ~ Ø1.80		

Extended Flute End Mill

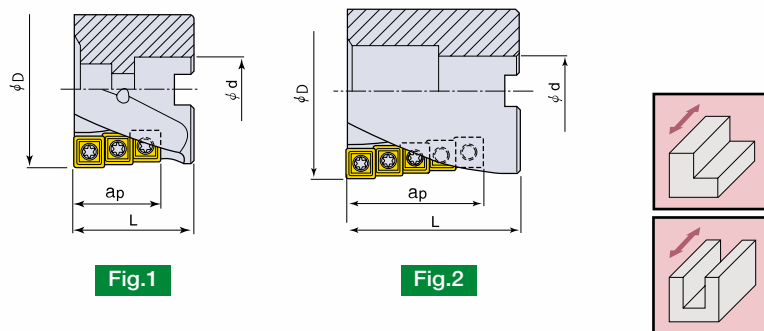
Full Effective



Designation	Insert	Flute	No. of Inserts	Dimension (inch)					Fig.	Screw	Wrench
				D	a_p	d	l	L			
TEF-D1.25-W1.25-09	SPMT 090408-EM	2	10	1.25	1.53	1.25	2.10	4.75	1	TS35088I	TD10
TEF-D1.50-W1.25-11B	SPMT 110408-EM	2	12	1.50	2.28	1.25	3.08	5.50	1	TS40093I	TD15
TEF-D1.50-W1.25-11		3	18	1.50	2.28	1.25	3.08	5.50	1		
TEF-D2.00-W1.25-11		3	18	2.00	2.28	1.25	3.08	5.50	1		
TEF-D2.00-CAT50-11		3	24	2.00	3.02	-	-	5.00	2		

Extended Flute Shell Mill

Full Effective



Designation	Insert	Flute	No. of Insert	Dimension (inch)				Fig.	Screw	Wrench
				D	a_p	d	L			
TES-D2.00-1.0-75-11	SPMT 110408-EM	3	9	2.00	1.16	.75	2.05	1	TS40093I	TD15
TES-D2.50-1.8-1.00-14	SPMT 140508-EM	3	15	2.50	2.40	1.00	3.00	1	SO50090I	T-T20
TES-D3.00-2.4-1.25-14		3	15	3.00	2.40	1.25	3.20	1		
TES-D3.00-2.9-1.25-14		4	24	3.00	2.88	1.25	3.60	1		
TES-D4.00-2.9-1.50-14		4	24	4.00	2.90	1.50	3.60	2		

ChaseQuad

ChaseQuad for General Milling

Features

- General purpose face mills for high productivity
- Special rake face geometry of SEKT 12T3 insert provides longer tool life due to fast heat evacuated in chip
- Added insert shim seat provides protection for longer cutter body life
- New wiper insert SEKT 12T3 AFTR-WC for finishing

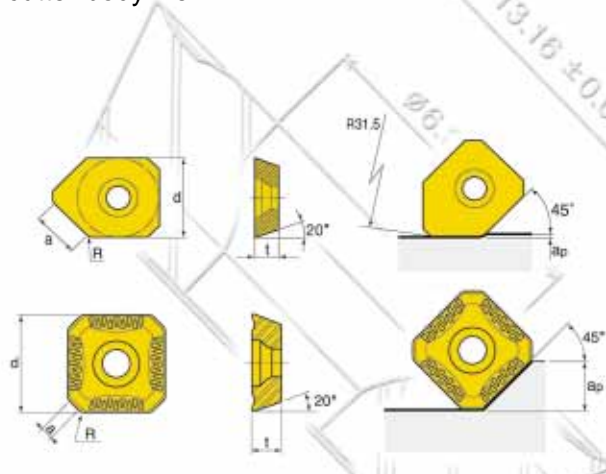
Insert



SEKT 12T3 AFTN-M



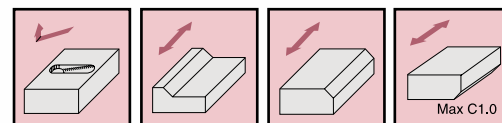
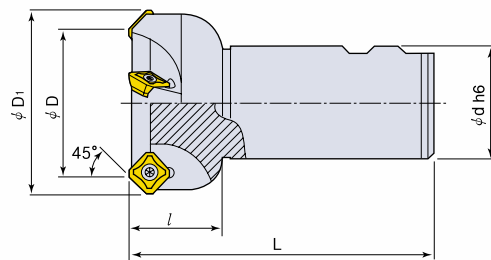
SEKT 12T3 AFTR-WC



Designation	Dimension (inch)					Coated				Uncoated	Cermet
	d	t	a	R	ap	TT9030	TT8020	TT7030	TT6030	P30	CT520
SEKT 12T3 AFTN-M	.520	.150	.100	.043	.266	○	○	○	○	○	○
SEKT 12T3 AFTR-WC	.520	.150	.291	.047	.040		○	○	○		

● WC : Wiper Insert

End Mill



Designation	Insert	✳	Dimension (inch)						Screw	Wrench
			D	D1	D2	d	L	l	TS35110I-L8.5	TD15
TE45SE - D1.00-W1.00-12	SEKT 12T3 AFTN-M	2	1.00	1.47	1.38	1.00	3.50	1.09	TS35110I-L8.5	TD15
D1.25-W1.25-12		3	1.25	1.72	1.60	1.25	4.00	1.25		
D1.50-W1.25-12		4	1.50	1.97	1.84	1.25	4.00	1.25		
D2.00-W1.25-12		5	2.00	2.47	2.32	1.25	4.00	1.25		

Face Mill

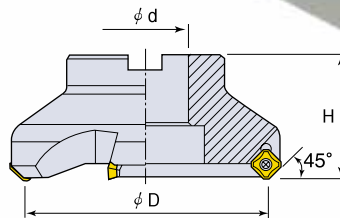


Fig.1

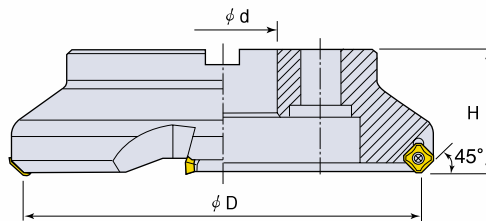


Fig.2

Designation	Insert		Dimension (inch)			Weight (lb)	Fig.	Mounting Ref.	
			D	d	H				
TFM45SE -D2.00R-12	SEKT 12T3 AFTR-WC SEKT 12T3 AFTN-M		4	2.00	.75	1.75	1.0	1	B
-D2.50R-12			5	2.50	.75	1.75	1.1	1	B
-D3.00R-12			5	3.00	1.00	1.75	2.0	1	B
-D4.00R-12			6	4.00	1.50	2.00	3.1	1	B
-D5.00R-12			7	5.00	1.50	2.00	5.2	1	B
-D6.00R-12			8	6.00	2.00	2.00	11.0	1	B
-D8.00R-12			10	8.00	2.50	2.50	14.7	2	C
-D10.00R-12			13	10.00	2.50	2.50	18.7	2	C

COMPONENTS

	Seat	Seat Screw	Screw	Wrench
	TSE-12T3-N	TS5035062S	TS35110I	T-T15

ChaseQuad

Face Mill



New

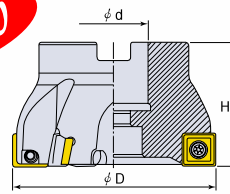


Fig.1

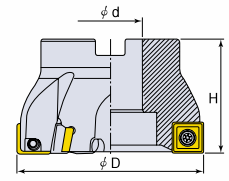


Fig.2

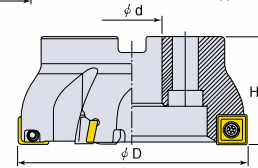
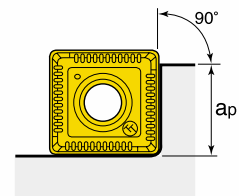
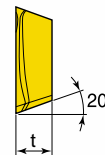
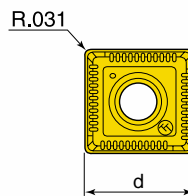


Fig.3

Designation	Insert		Dimension (inch)			Weight (lb)	Fig.
			D	H	d		
TFM90SE-D2.00R -13	SEMT 1304 PETR-M	5	2.00	1.57	.75	.9	1
TFM90SE-D2.00R -13-M		4	2.00	1.57	.75	.9	1
TFM90SE-D2.00R-13-B		3	2.00	1.57	.75	1.0	1
TFM90SE-D2.50R -13		5	2.50	1.57	.75	1.2	1
TFM90SE-D3.00R -13		6	3.00	1.75	1.00	2.0	2
TFM90SE-D3.00R-13-B		4	3.00	1.75	1.00	2.3	2
TFM90SE-D4.00R -13		7	4.00	2.00	1.50	3.0	2
TFM90SE-D4.00R-13-B		5	4.00	2.00	1.50	3.8	2
TFM90SE-D5.00R -13		8	5.00	2.00	1.50	6.5	2
TFM90SE-D6.00R-13		12	6.00	2.00	2.00	10.0	3
TFM90SE-D6.00R-13-B		8	6.00	2.00	2.00	10.3	3

Designation	Insert		Dimension (mm)			Weight (lb)	Fig.
			D	H	d		
TFM90SE-450-22R-13	SEMT 1304 PETR-M	4	50	40	22	.4	1
TFM90SE-563-22R-13		5	63	40	22	.6	1
TFM90SE-680-27R-13		6	80	50	27	1.2	2
TFM90SE-7100-32R-13		7	100	50	32	1.6	2
TFM90SE-8125-40R-13		8	125	63	40	2.9	2
TFM90SE-12160-40R-13		12	160	63	40	5.1	3

Insert



Designation	Dimension (inch)			NEW	Coating				Uncoated	CERMET
	d	t	ap		TT9030	TT8020	TT7030	TT6030	P30	CT520
SEMT 1304 PETR-M	.539	.187	.433	○	○	○	○	○	○	○

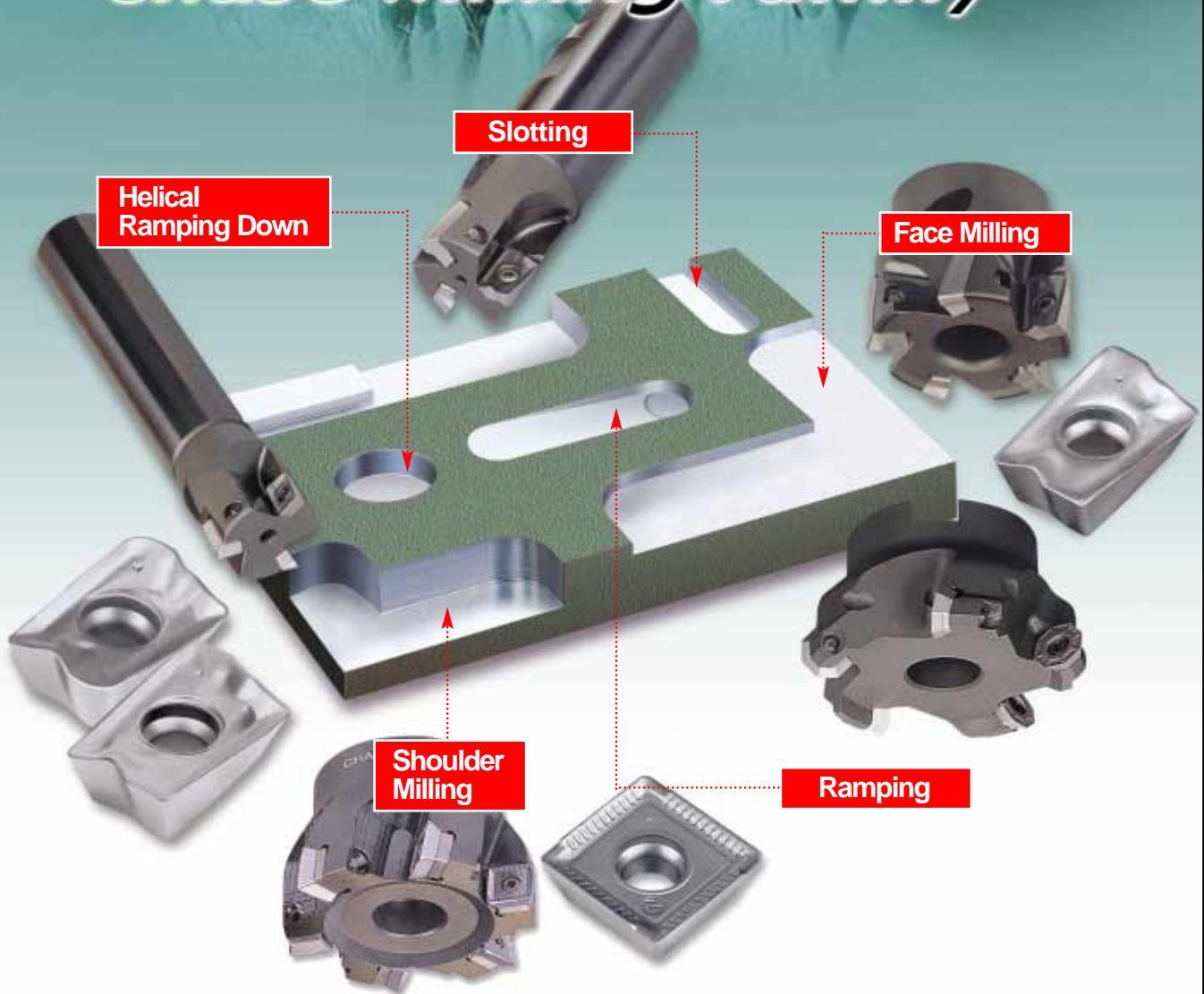
COMPONENTS

	Seat	Seat Screw	Screw	Wrench
	TSD-12T3-N		TS6040093S	
			TS401201	
				T-T15

* Not used for TFM90SE - D2.00R-13



Chase Milling Family



ChaseOcto

Features

- ChaseOcto insert ensures efficient cutting of all 8 cutting edges
- Four types of inserts cover all operating conditions (EMR & MR, EM & M, EML & ML and Round)
- High positive insert ensures less vibration and less power consumption
- Round inserts for Die & Mold industry fit the ChaseOcto cutter
- Super high positive inserts for aluminum

Insert

■ OFCW □□, OFCT □□, OFMT □□ & RFMT □□



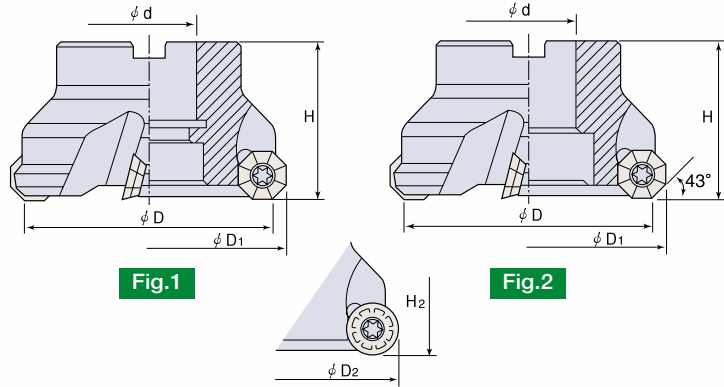
Designation	Coated				Uncoated		CERMET
	TT9030	TT8020	TT7030	TT6030	P30	K10	CT520
OFCW 05T3 TN-MR		○	○	○	○	○	
OFCW 05T3 TN-EMR		○	○	○			○
OFCT 05T3 TN-M		○	○	○	○		
OFCT 05T3 TN-EM	○	○	○	○			
NEW OFCT 05T3 TN-AL						○	
OFMT 05T3 TN-ML	○	○	○	○		○	
RFMT 1404 ML		○	○	○			

■ OFCN □□, OFMR □□, OFCR □□ & RFMR □□



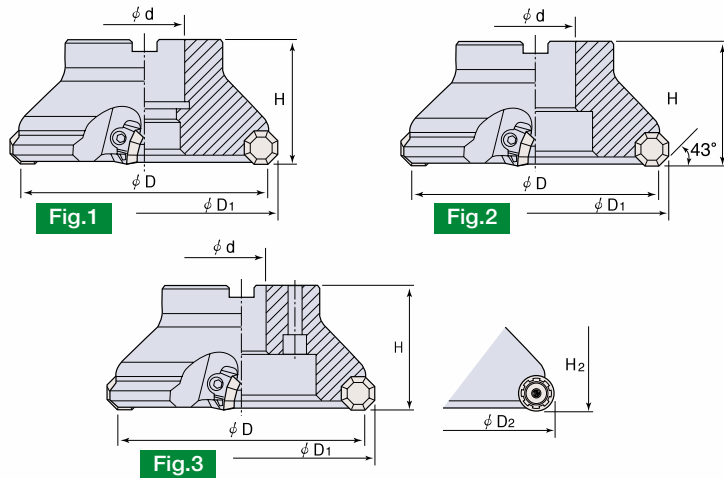
Designation	Coated				Uncoated	
	TT9030	TT8020	TT7030	TT6030	P30	K10
OFCN 0704 TN-MR		○	○	○		○
OFCN 0704 TN-EMR		○	○	○		
OFMR 0704 AER-M	○	○	○	○		
OFCR 0704 TN-ML		○	○	○	○	○
OFCR 0704 TN-EML	○	○	○	○		
RFMR 1904 M	○	○	○	○		
OFMR 0704 TN-AL						○

Insert



Designation		Dimension (inch)						Weight (lb)	Fig	Mounting Bolt	Screw	Wrench
		D	D ₁	D ₂	d	H	H ₂					
TFM43OFS -D2.00R-05	5	2.00	2.29	2.34	.75	1.57	1.59	1.3	1	SH-3-8I	TS40093I	T-T15
-D2.50R-05	6	2.50	2.79	2.84	.75	1.57	1.59	2.2	1	SH-3-8I		
-D3.00R-05	7	3.00	3.29	3.34	1.00	1.75	1.77	2.9	2	-		
-D4.00R-05	8	4.00	4.29	4.34	1.50	2.00	2.02	5.7	2	-		
-D5.00R-05	9	5.00	5.29	5.34	1.50	2.00	2.02	6.6	2	-		

■ D₂ & H₂ : Dimensions with Round inserts RFMT14



Designation		Dimension (inch)						Weight (lb)	Fig	Mounting Bolt	Wedge	Screw	Wrench
		D	D ₁	D ₂	d	H	H ₂						
TFM43OFW -D2.50R-07	4	2.50	2.93	3.01	.75	1.57	1.59	1.1	1	SH-3-8I	WFOF07R	WS8S	T-W4
-D3.00R-07	5	3.00	3.43	3.51	1.00	1.75	1.77	2.8	1	SH-1-2I		WS8	
-D4.00R-07	6	4.00	4.43	4.51	1.50	2.00	2.02	4.0	2	-			
-D5.00R-07	8	5.00	5.43	5.51	1.50	2.00	2.02	6.6	2	-			
-D6.00R-07	10	6.00	6.43	6.51	2.00	2.00	2.02	10.4	3	-			
-D8.00R-07	12	8.00	8.43	8.51	2.50	2.37	2.39	14.5	3	-			
-D10.00R-07	14	10.00	10.43	10.51	2.50	2.37	2.39	21.9	3	-			

● D₂ & H₂ : Dimensions with Round inserts RFMR19

● New TFM43AOFW cutter will be delivered when the stock of TFM43OFW cutter is depleted. (New TFM43AOFW Wedge: WFZ8-OF)

ChaseMold

Features

- General purpose copy & contour milling for Die and Mold
- Large chip gullets for excellent chip removal
- Strong cutting edges for maximum productivity



I nsert

- RDMX □□□□ :
D5, D7, D10, D12, D16 Metric
D.50 Inch
- RCKX 43TN-M :



E nd mill

*Modular
Milling Heads*

- TERD-□□-M□□
with RDMX□□

F lex-fit System

Shank for modular milling head

- TM-□□-L□□-□□

B utton Cutter

- TFMRD-□□ -12 with RDMX□□
- TFMRC-□□ -43-F with RCKX43



ChaseBall-Roughing

Features

- General purpose copy milling for Die and Mold
- Trigon, radius insert, provides strength while free cutting
- Large chip gullets for maximum metal removal



ST□□-TBE□□-□□

RBE □□

SPMT □□□
SDMT □□□

NEW RBEX50/40-M

NEW RBET20/25-M

ChaseBall-Finishing

Features

- Best for precision machining of Die & Mold
- Specially designed "S" cutting edges provide excellent performance
- Optimized design for improved cutting edge strength
- PVD coating on ultra fine carbide substrate produces maximum toughness and wear resistance



TBE□□□ B-T



TFBE□□□□

ISO Milling Insert

S PK & TPK Type

Features

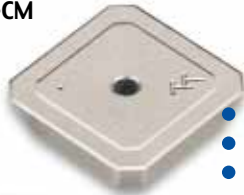
- Strong cutting edge geometry provides longer tool life and increased toughness
- Insert geometry excellent for interrupted cuts.



- SPK 42 EDTR-EM, -CM
- SPK 53 EDTR-EM, -CM



- TPK 43 PDTR-EM, -CM



- SEK 42 AFTN-EM
- SEK 43 AFTN-EM
- SEK 53 AFTN-EM



Designation	Coated	
	TT8020	TT7030
NEW SEK 42 AFTN-EM	○	○
NEW SEK 43 AFTN-EM	○	○
NEW SEK 53 AFTN-EM	○	○
SPK 43 EDTR-EM	○	○
SPK 53 EDTR-EM	○	○
TPK 43 PDTR-EM	○	○
SPK 42 EDTR-CM		○
SPK 53 EDTR-CM		○
TPK 43 PDTR-CM		○

S PKR & TPKR Type

Features

- Special rake face geometry provides longer tool life due to less heat transfer reducing insert thermal shock
- Great for stainless steels, high temperature alloys and alloy steels.



- SEKR 42 AFTN-EM
- SEKR 43 AFTN-EM

- SPKR 42 EDR-EM
- SPKR 53 EDTR-EM

- TPKR 43 PDR-EM



- TPKR 32 PPR-EM

Designation	Coated	
	TT8020	TT7030
NEW SEKR 42 AFTN-EM	○	○
NEW SEKR 43 AFTN-EM	○	○
NEW TPKR 32 PPR-EM	○	○
SPKR 42 EDR-EM	○	○
SPKR 53 EDTR-EM	○	○
TPKR 43 PDR-EM	○	○

ISO Milling Insert

New Cermet **CT520 & CT3000**

Features

- New cermet grade for general milling from roughing to finishing applications.
- Ultra-fine grain cermet with uniform and consistent microstructure provides excellent wear resistance and mechanical shock resistance together with best surface roughness.
- CT3000 grade provide excellent surface finish on high speed finish milling applications



Grade	HrA	Grain size	Workpiece materials
CT520	92.5	micro	<ul style="list-style-type: none"> • Steels • Cast Iron • Stainless steel
NEW CT3000	93.0		

Designation	Grade	
	CT520	CT3000 NEW
SEK 42 AFTN	○	○
SEK 53 AFTN	○	○
SPK 42 EDTR	○	○
SPK 53 EDTR	○	○
TPK 43 PDTR	○	○
SDK 42 MT	○	○
SDK 53 MT	○	○



New **Tiger-HP TT7070**



Features

- Tiger-HP inserts have a unique geometry to cover all applications from roughing, semi-finishing to finishing.
- Tiger-HP inserts provide longer tool life than most of the ground uncoated or coated ISO milling inserts due to new PVD coating on a unique substrate.
- Tiger-HP inserts produce an excellent surface finish with their specially designed wiper, and have longer tool life with the strong cutting edges.

Grade	ISO	HrA	Coating	Application
TT7070	P20-P40	92.0	PVD TiAlN	<ul style="list-style-type: none"> • Dry Milling • High Wear Resistance

Designation	Grade
	TT7070
SPK 42 EDTR-HP	○
SPK 53 EDTR-HP	○
TPK 43 PDTR-HP	○
SDK 42 MT-HP	○
SDK 53 MT-HP	○
SEK 42 AFTN-HP	○
SEK 53 AFTN-HP	○

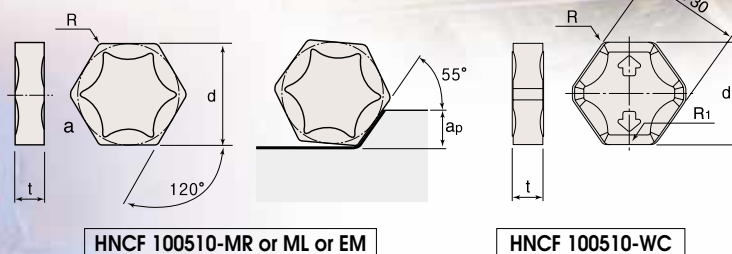
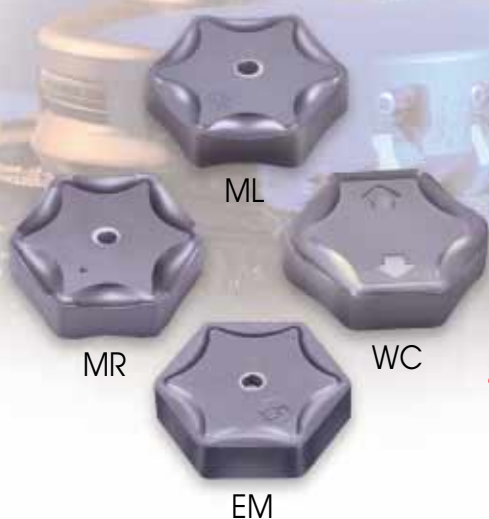
Z-Mill for Cast Iron

Features

- Zero runout with easy and reliable adjusting mechanism.
- Variety of cutter options - Adjustable type, Combination type & Closed type.
- Roughing & Finishing of Cast Iron.

Insert

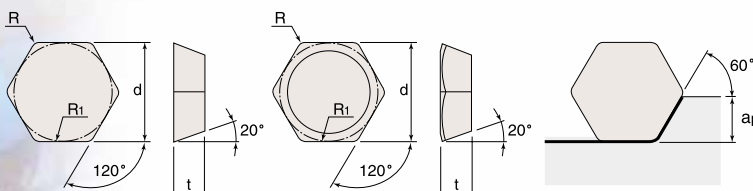
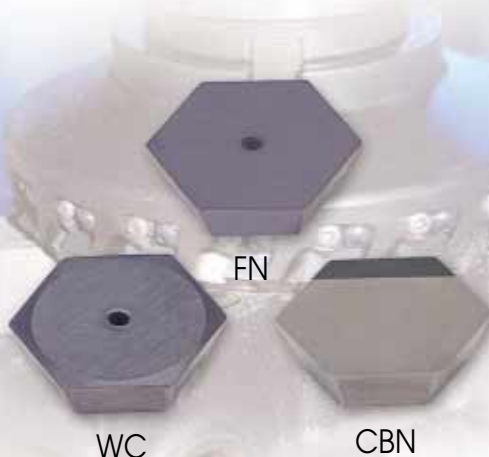
Insert for roughing & semi-finishing of cast iron



Designation	Dimension (inch)						Grade
	d	t	a	R	R ₁	ap	TT6030
HNCF 100510-MR	.750	.228	.024	.039	-	.315	●
NEW HNCF 100510-EM	.750	.228	.024	.039	-	.315	●
HNCF 100510-ML	.750	.228	.024	.039	-	.315	●
HNCF 100510-WC	.761	.228	.024	.047	17.71	.315	●

● WC : Wiper Insert

Insert for finishing of cast iron



Designation		Dimension (inch)					Grade	
ISO	ANSI	d	t	R	R ₁	ap	TT6030	KB90
HEHN 090408 FN	532	.625	.187	.031	-	.280	●	
HEEN 090408 WC	532	.625	.187	.031	28.3	.280	●	
HEEN 090408 CBN	532	.627	.187	.031	17.1	.280		●

● WC : Wiper Insert

Z-Mill

Cutter

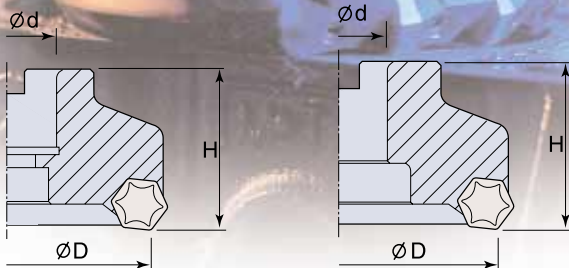


Fig.1

Fig.2

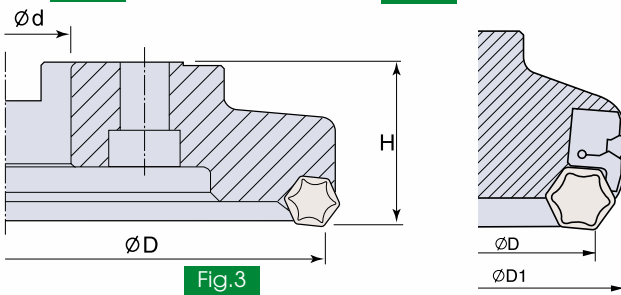


Fig.3

Closed Type
All fixed pockets
- Roughing & Semi-finishing -



Combination Type
Adjustable+Fixed pockets
- Roughing & Semi-finishing -



■ Closed Type : Fixed pocket Type

Designation	Insert	⊙	Dimension (Inch)			Weight (lb)	Fig.
			D	d	H		
TFM55HN - D3.00R/L - 10CS	HNC F 100510-MR NEW HNC F 100510-EM HNC F 100510-ML HNC F 100510-WC	8	3.00	1.00	2.00	3.3	1
- D4.00R/L - 10CS		10	4.00	1.50	2.38	5.0	1
- D5.00R/L - 10CS		14	5.00	1.50	2.38	8.4	2
- D6.00R/L - 10CS		18	6.00	1.50	2.38	14.0	2
- D8.00R/L - 10CS		24	8.00	2.50	2.38	22.7	3
- D10.00R/L - 10CS		30	10.00	2.50	2.38	34.1	3
- D12.00R/L - 10CS		36	12.00	2.50	2.38	54.0	3

COMPONENTS	Wedge	Screw	Wrench
	WFZ8	WS8	T-W4

■ Combination Type

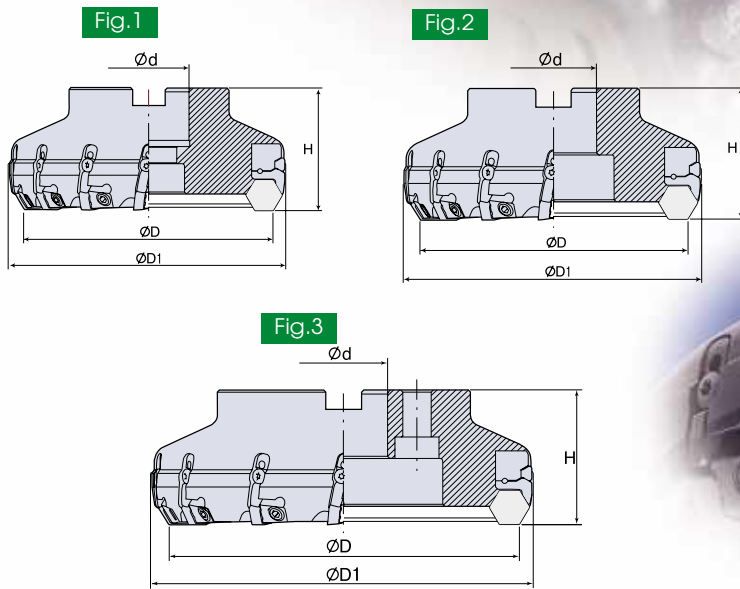
Designation	Insert	No. of Fixed pockets	No. of Adjustable pockets	Dimension (Inch)				Weight (lb)	Fig.
				D	D1	d	H		
TFM55HN - D3.00R/L - 10CB	HNC F 100510-MR NEW HNC F 100510-EM HNC F 100510-ML HNC F 100510-WC	6	2	3.00	3.70	1.00	2.00	3.3	1
- D4.00R/L - 10CB		8	2	4.00	4.70	1.50	2.38	5.0	1
- D5.00R/L - 10CB		12	2	5.00	5.70	1.50	2.38	8.4	2
- D6.00R/L - 10CB		15	3	6.00	6.70	1.50	2.38	14.0	2
- D8.00R/L - 10CB		20	4	8.00	8.70	2.50	2.38	22.7	3
- D10.00R/L - 10CB		25	5	10.00	10.70	2.50	2.38	34.1	3
- D12.00R/L - 10CB		30	6	12.00	12.70	2.50	2.38	54.0	3

● Adjustable pockets + Fixed pockets

COMPONENTS	Wedge	Screw	ADJ. Support	ADJ. Screw	Bolt	Wrench
	WFZ8	WS8	AJHN10N	SC40140I	SC3	T-W4, T15

Z-Mill

Cutter for finishing



Adjustable Type
- Finishing -

New



Adjustable Type

Designation	Insert	⊙	Dimension (Inch)				Weight (lb)	Fig.
			D	D ₁	d	H		
TFM60HE - D3.00R/L - 09	HEHN 090408 FN HEEN 090408 WC HEEN 090408 CBN	8	3.00	3.55	1.00	2.00	3.3	1
- D4.00R/L - 09		10	4.00	4.55	1.50	2.38	5.0	2
- D5.00R/L - 09		14	5.00	5.55	1.50	2.38	8.4	2
- D6.00R/L - 09		18	6.00	6.55	1.50	2.38	14.0	3
- D8.00R/L - 09		24	8.00	8.55	2.50	2.38	22.7	3
- D10.00R/L - 09		30	10.00	10.55	2.50	2.38	34.1	3
- D12.00R/L - 09		36	12.00	12.55	2.50	2.38	54.0	3

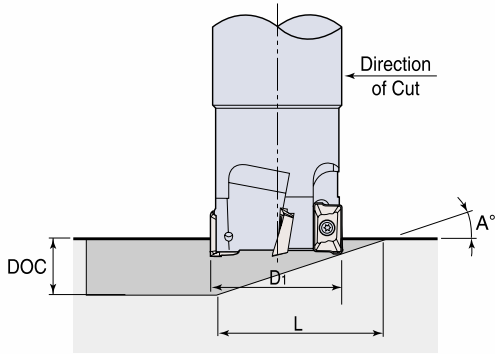
ADJUSTABLE TYPE COMPONENTS	Wedge	Screw	ADJ. Support	ADJ. Screw	Bolt	Wrench
	FW311	WS8	AJHN10N	SO40140I	SC3	T-W4, T15

Technical Information



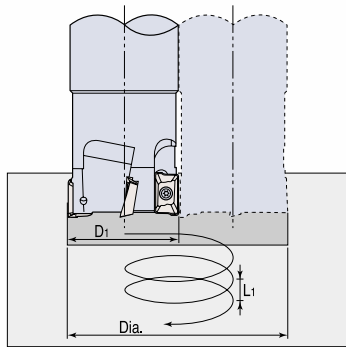
ChaseMill

Straight Ramping



Designation	Dimension (0° or inch)		
	Ramp Angle, A°	L	DOC
TE90AP-D.75	11.0	3.2	.635
TE90AP-D1.00	5.8	6.2	.635
TE90AP-D1.25	3.5	10.4	.635
TE90AP-D1.50	2.3	15.9	.635
TE90AP-D1.75	1.8	19.8	.635
TE90AP-D2.00	1.6	23.5	.635
TE90AX-D.38	7.0	2.8	.350
TE90AX-D.44	7.0	2.8	.350
TE90AX-D.50	6.8	2.9	.350
TE90AX-D.56	6.1	3.2	.350
TE90AX-D.62	5.1	3.9	.350
TE90AX-D.70	4.3	4.6	.350
TE90AX-D.75	4.1	4.8	.350
TE90AX-D.88	3.4	5.8	.350
TE90AX-D1.00	3.1	6.4	.350
TE90AX-D1.12	2.7	7.4	.350
TE90AX-D1.25	2.2	9.1	.350
TE90AX-D1.50	1.6	12.5	.350
TE90AX-D2.00	1.0	20.0	.350

Helical Ramping



Designation	Ramp Data (inch)			Helical Pitch
	Min. Dia.	Max. Dia.	L1	
TE90AP-D.75	1.00		.13	7.7
TE90AP-D1.00	1.25	1.5	.40	2.5
		2.0	.07	14.3
TE90AP-D1.25	1.65	2.0	.25	4.0
		2.5	.20	5.0
TE90AP-D1.50	2.15	3.0	.16	6.3
		3.5	.08	12.5
TE90AP-D1.75	2.65	4.0	.14	7.1
TE90AP-D2.00	3.15			
TE90AX-D.38	.50		.04	25
TE90AX-D.44	.58	.75	.12	8.3
		.88	.14	7.1
TE90AX-D.50	.62	1.00	.16	6.2
TE90AX-D.56	.65	1.12	.16	6.2
TE90AX-D.62	.72	1.25	.15	6.6
TE90AX-D.70	.88	1.40	.14	7.1
TE90AX-D.75	.98	1.50	.14	7.1
TE90AX-D.88	1.24	1.75	.14	7.1
TE90AX-D1.00	1.48	2.00	.14	7.1
TE90AX-D1.12	1.73	2.25	.14	7.1
TE90AX-D1.25	1.98	2.50	.12	8.3
TE90AX-D1.50	2.48	3.00	.11	9.0
TE90AX-D2.00	3.48	4.00	.09	11.1

• Calculation is based on APKT 1705 PER-EM & AXMT 0903 PER-EML insert.

Operating Guidelines for ChaseMill & ChaseQuad SEMT13 Inserts

Material	Brinell	D.O.C.	SFM	Best Grades	FPT** APKT17 & SEMT13	FPT** AXMT09 & ADKT09
1117 1020 (MS) 1018	85	.040	1300	7030, 8020, P30	.004 - .006	.002 - .005
	to 175	.150 .300	1150 1000		.004 - .006 .004 - .006	.002 - .004 .002 - .004
1045 4620 1095 8620 1060 9310 4140 52100 L1 W2 L6	175	.040	900	7030, 8020, P30	.004 - .006	.002 - .005
	to 225	.150 .300	800 600		.004 - .006 .004 - .006	.002 - .004 .002 - .004
4150 4140HT 9260 S7 4340	275	.040	800	7030, 8020, P30	.004 - .006	.002 - .005
	to 325	.150 .300	650 500	8020, 7030, P30 8020, 7030, P30	.004 - .006 .004 - .005	.002 - .004 .002 - .004
TOOL STEEL D2	200	.040	400	7030, 8020, P30	.004 - .006	.002 - .005
	to 250	.150 .300	350 300		.004 - .006 .004 - .005	.002 - .004 .002 - .004
TOOL STEEL A2 A6 P20	200	.040	915	7030, 8020, P30	.004 - .006	.002 - .005
	to 250	.150 .300	700 600		.004 - .006 .004 - .005	.002 - .004 .002 - .004
STAINLESS STEEL 303, 316 15-5PH	135	.040	800	8020, 7030, DX2	.004 - .006	.002 - .005
	to 185	.150 .300	700 500		.004 - .006 .004 - .005	.002 - .004 .002 - .004
STAINLESS STEEL 416 17-4PH	135	.040	1000	8020, 7030, DX2	.004 - .006	.002 - .005
	to 185	.150 .300	850 700		.004 - .006 .004 - .005	.002 - .004 .002 - .004
STAINLESS STEEL 13-8PH		.040	400	8020, 7030, DX2	.004 - .005	.002 - .005
		.150	300		.004 - .005	.002 - .004
		.300	200		.004 - .005	.002 - .004
INCONEL, HASTELLOY WASPALLOY		.040	150	8020, DX2, 7030	.004 - .005	.002 - .005
		.150	100		.004 - .005	.002 - .004
		.300	75		.004 - .005	.002 - .004
TITANIUM 6AL-4V		.040	180	8020, DX2, 7030	.004 - .005	.002 - .005
		.150	150		.004 - .005	.002 - .004
		.300	120		.004 - .005	.002 - .004
GRAY CAST IRON-CLASS 40-45-50	190	.040	1200	6030, 8020, K10	.004 - .006	.003 - .005
	to 220	.150 .300	1000 800		.004 - .006 .004 - .006	.003 - .005 .003 - .005
DUCTILE CAST IRON-GRADE 65-45-12	140	.040	1000	6030, 8020, K10	.004 - .006	.003 - .005
	to 190	.150 .300	850 700		.004 - .006 .004 - .006	.003 - .005 .003 - .005
DUCTILE CAST IRON-GRADE 80-55-06	190	.040	800	6030, 8020, K10	.004 - .006	.003 - .005
	to 225	.150 .300	700 500		.004 - .006 .004 - .006	.003 - .005 .003 - .005
ALUMINUM 6061 T-6 7075 T-6		.040	max	K10, 8020, DX2	.006 - .020	.005 - .020
		.150	max		.006 - .015	.005 - .015
		.300	1200 min		.006 - .015	.005 - .015
72 BRASS 360 18 AMPCO 660 BRONZE	60RB	.040	1600	K10, 6030, 8020	.006 - .020	.005 - .020
	to 100RB	.150 .300	1400 1200		.006 - .015 .006 - .015	.005 - .015 .005 - .015

- Reduce chip load by 28% for End Mills .750 dia. and under at D.O.C.>.150
- Reduce sfm by 20% for Face Mills when channel milling
- **FPT(Feed per tooth) shown at lower limit can be increased up to 2 times depending upon application



Operating Guidelines for ChaseOcto & Round Inserts

Material	Brinell	D.O.C.	Max sfm	Best Grades***	FPT** OF-- 05 OF-- 07	FPT** RFMT 14 RFMR 19
1117 1020 (MS) 1018	85	.040	1200	7030, 8020, P30	.004 - .007	.008 - .014
	to	.100	1000		.004 - .006	.005 - .008
	175	.250 +	900		.004 - .006	.004 - .006
1045 4620 1095 8620 1060 9310 4140 52100 L1 W2 L6	175	.040	850	7030, 8020, P30	.004 - .007	.008 - .014
	to	.100	750		.004 - .006	.005 - .008
	225	.250 +	600		.004 - .006	.004 - .006
4150 4140HT 9260 S7 4340	275	.040	700	7030, 8020, P30	.003 - .005	.006 - .010
	to	.100	600	8020, 7030, P30	.003 - .004	.004 - .007
	325	.250 +	450	8020, 7030, P30	.003 - .004	.003 - .004
TOOL STEEL D2	200	.040	400	7030, 8020, P30	.003 - .005	.006 - .010
	to	.100	350		.003 - .004	.004 - .007
	250	.250 +	300		.003 - .004	.003 - .004
TOOL STEEL A2 A6 P20	200	.040	800	7030, 8020, P30	.003 - .007	.006 - .014
	to	.100	650		.003 - .005	.004 - .007
	250	.250 +	550		.003 - .005	.003 - .005
STAINLESS STEEL 303, 316 15-5PH	135	.040	800	8020, 7030, DX2	.003 - .007	.006 - .014
	to	.100	700		.003 - .005	.004 - .007
	185	.250 +	500		.003 - .005	.003 - .005
STAINLESS STEEL 416 17-4PH	135	.040	1100	8020, 7030, DX2	.003 - .007	.006 - .014
	to	.100	900		.003 - .005	.004 - .007
	185	.250 +	700		.003 - .005	.003 - .005
STAINLESS STEEL 13-8PH		.040	400	8020, 7030, DX2	.003 - .007	.006 - .014
		.100	300		.003 - .005	.004 - .007
		.250 +	200		.003 - .005	.003 - .005
INCONEL, HASTELLOY WASPALLOY		.040	150	8020, DX2, 7030	.003 - .007	.006 - .014
		.100	100		.003 - .005	.004 - .007
		.250 +	80		.003 - .005	.003 - .005
TITANIUM 6AL-4V		.040	250	8020, DX2, 7030	.003 - .007	.006 - .014
		.100	175		.003 - .005	.004 - .007
		.250 +	120		.003 - .005	.003 - .005
GRAY CAST IRON-CLASS 40-45-50	190	.040	1000	6030, 8020, K10	.003 - .007	.006 - .014
	to	.100	850		.003 - .005	.004 - .007
	220	.250 +	700		.003 - .005	.003 - .005
DUCTILE CAST IRON-GRADE 65-45-12	140	.040	900	6030, 8020, K10	.003 - .007	.006 - .014
	to	.100	750		.003 - .005	.004 - .007
	190	.250 +	600		.003 - .005	.003 - .005
DUCTILE CAST IRON-GRADE 80-55-06	190	.040	800	6030, 8020, K10	.003 - .007	.006 - .014
	to	.100	700		.003 - .005	.004 - .007
	225	.250 +	500		.003 - .005	.003 - .005
ALUMINUM 6061 T-6 7075 T-6		.040	max	K10, 8020, DX2	.006 - .020	.012 - .040
		.100	max		.006 - .015	.008 - .020
		.250 +	1200 min		.006 - .015	.006 - .015
72 BRASS 360 18 AMPCO 660 BRONZE	60RB	.040	1600	K10, 6030, 8020	.006 - .020	.012 - .040
	to	.100	1400		.006 - .015	.008 - .020
	100RB	.250 +	1200		.006 - .015	.006 - .015

- Reduce sfm by 20% for Face Mills when channel milling
- **FPT(Feed per tooth) shown at lower limit can be increased up to 2 times depending upon application
- FPT reflects 40% increase to compensate for 45 degree chip thinning
- ***In order of preference, uncoated carbide reduce sfm 20%

Operating guidelines for ChaseQuad TSF and TDM End mill using Inserts: XOMT 06, SPMT 09, SPMG 09, SPMT 11, SPMG 11, SPMT 14, SPMG 14

Material	BRINELL	D.O.C.	SFM	BEST GRADES BY PREFERENCE	FPT XOMT 06	FPT SPM-09	FPT SPM-11	FPT SPM-14
1117 1020 (MS) 1018	80	.040	1300	8020, 7030, P30	.003 - .007	.004 - .008	.004 - .008	.005 - .010
	to 175	.150	1150		.003 - .006	.004 - .008	.004 - .008	.005 - .010
		.250	1000		.003 - .005	.004 - .008	.004 - .008	.005 - .010
1045 4620 1095 8620 1060 9310 4140 52100 L1 W2 L6	175	.040	900	8020, 7030, P30	.003 - .007	.004 - .007	.004 - .007	.005 - .010
	to 225	.150	800		.003 - .006	.004 - .007	.004 - .007	.005 - .010
		.250	600		.003 - .005	.004 - .007	.004 - .007	.005 - .010
4150 4140HT 9260 S7 4340	275	.040	600	8020, 7030, DX2	.003 - .007	.004 - .006	.004 - .006	.004 - .008
	to 325	.150	500		.003 - .006	.004 - .006	.004 - .006	.004 - .008
		.250	400		.003 - .005	.004 - .005	.004 - .005	.004 - .008
TOOL STEEL D2	200	.040	400	8020, 7030, P30	.002 - .005	.004 - .006	.004 - .006	.004 - .008
	to 250	.150	350		.002 - .004	.004 - .006	.004 - .006	.004 - .008
		.250	300		.002 - .004	.004 - .005	.004 - .005	.004 - .008
TOOL STEEL A2 A6 P20	200	.040	915	8020, 7030, P30	.002 - .005	.004 - .006	.004 - .006	.004 - .007
	to 250	.150	700		.002 - .004	.004 - .006	.004 - .006	.004 - .007
		.250	600		.002 - .004	.004 - .005	.004 - .005	.004 - .007
STAINLESS STEEL 303, 316 15-5PH	135	.040	800	8020, DX2, 7030	.003 - .006	.004 - .007	.004 - .007	.004 - .007
	to 185	.150	700		.003 - .005	.004 - .006	.004 - .006	.004 - .007
		.250	500		.003 - .005	.004 - .005	.004 - .005	.004 - .007
STAINLESS STEEL 416 17-4PH	135	.040	1000	8020, P30, 7030	.002 - .005	.004 - .007	.004 - .007	.004 - .008
	to 185	.150	850		.002 - .004	.004 - .006	.004 - .006	.004 - .008
		.250	700		.002 - .004	.004 - .005	.004 - .005	.004 - .008
STAINLESS STEEL 13-8PH		.040	400	8020, DX2, 7030	.002 - .005	.003 - .005	.003 - .005	.004 - .007
		.150	300		.002 - .004	.003 - .005	.003 - .005	.004 - .007
		.250	200		.002 - .004	.003 - .005	.003 - .005	.004 - .007
INCONEL, HASTELLOY WASPALLOY		.040	150	8020, DX2, 7030	.002 - .005	.003 - .005	.003 - .005	.004 - .007
		.150	100		.002 - .004	.003 - .005	.003 - .005	.004 - .007
		.250	75		.002 - .004	.003 - .005	.003 - .005	.004 - .007
TITANIUM 6AL-4V		.040	180	8020, DX2, 7300	.002 - .005	.003 - .005	.003 - .005	.004 - .007
		.150	150		.002 - .004	.003 - .005	.003 - .005	.004 - .007
		.250	120		.002 - .004	.003 - .005	.003 - .005	.004 - .007
GRAY CAST IRON-CLASS 40-45-50	190	.040	1200	6030, 8020, K10	.003 - .005	.004 - .006	.004 - .006	.004 - .008
	to 220	.150	1000		.003 - .005	.004 - .006	.004 - .006	.004 - .008
		.250	800		.003 - .005	.004 - .006	.004 - .006	.004 - .008
DUCTILE CAST IRON-GRADE 65-45-12	140	.040	1000	6030, 8020, K10	.003 - .005	.004 - .006	.004 - .006	.004 - .008
	to 190	.150	850		.003 - .005	.004 - .006	.004 - .006	.004 - .008
		.250	700		.003 - .005	.004 - .006	.004 - .006	.004 - .008
DUCTILE CAST IRON-GRADE 80-55-06	190	.040	800	6030, 8020, P30	.003 - .005	.004 - .006	.004 - .006	.004 - .008
	to 225	.150	700		.003 - .005	.004 - .006	.004 - .006	.004 - .008
		.250	500		.003 - .005	.004 - .006	.004 - .006	.004 - .008
ALUMINUM 6061 T-6 7075 T-6		.040	max	K10, 8020, DX2	.005 - .020	.006 - .020	.006 - .020	.006 - .020
		.150	max		.005 - .015	.006 - .015	.006 - .015	.006 - .015
		.250	1200 min		.005 - .015	.006 - .015	.006 - .015	.006 - .015
72 BRASS 360 18 AMPCO 660 BRONZE	60RB	.040	1600	K10, 6030, 8020	.005 - .020	.006 - .020	.006 - .020	.006 - .020
	to 100RB	.150	1400		.005 - .015	.006 - .015	.006 - .015	.006 - .015
		.250	1200		.005 - .015	.006 - .015	.006 - .015	.006 - .015

- Reduce chip load by 28% for End Mills .750 dia and under at D.O.C.>.150



Operating guidelines for Ext. Flute Mills Overcut Shell Mills Series-TEF, TES Using Inserts SPMT09, SPMT11, SPMT14 & APKT17

(Feed per Effective flute by Cutter Diameter**)

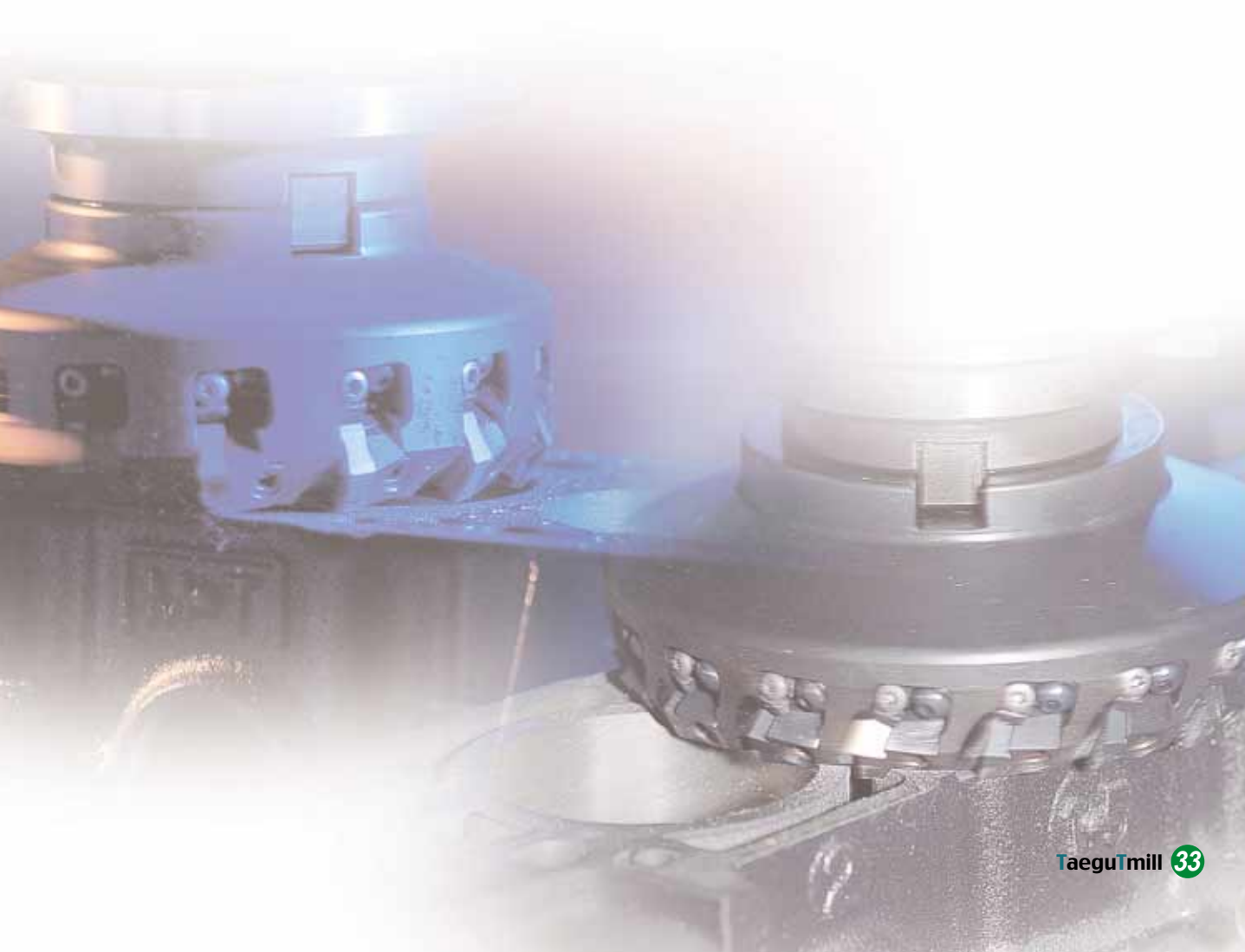
Material	BHN	RADIAL WOC	MAX SFM	BEST GRADES	1.250 DIA	1.500 DIA	2.000 DIA	2.500 DIA	3.000 DIA	4.000 DIA
1117 1020 (MS) 1018	80 to 175	0.02**	1000	7030, 8020, P30	.024	.030	.035	.048	.056	.064
		DIA/8**	900		.008	.009	.009	.011	.011	.011
		DIA/4**	800		.006	.007	.007	.008	.008	.008
		DIA/2	700		.005	.006	.006	.006	.006	.006
1045 4620 1095 8620 1060 9310 ACD 4140 W2 L6 52100 L1	175 to 225	0.02**	700	7030, 8020, P30	.024	.030	.035	.048	.056	.064
		DIA/8**	600		.008	.009	.009	.011	.011	.011
		DIA/4**	500		.006	.007	.007	.008	.008	.008
		DIA/2	400		.005	.006	.006	.006	.006	.005
4150 4140HT 4340 9260 S7	275 to 325	0.02**	600	8020, 7030, P30	.016	.022	.030	.042	.049	.056
		DIA/8**	500		.006	.008	.008	.009	.009	.009
		DIA/4**	400		.005	.006	.006	.007	.007	.007
		DIA/2	300		.004	.005	.005	.005	.005	.005
TOOL STEEL A2 A6 D2 P20	200 to 250	0.02**	450	8020, 7030, P30	.016	.022	.030	.042	.049	.056
		DIA/8**	450		.006	.008	.008	.009	.009	.009
		DIA/4**	350		.005	.006	.006	.007	.007	.007
		DIA/2	250		.004	.005	.005	.005	.005	.005
STAINLESS STEEL 303, 316 15-5PH	135 to 185	0.02**	600	8020, 7030, P30	.016	.022	.030	.042	.049	.056
		DIA/8**	600		.006	.008	.008	.009	.009	.009
		DIA/4**	500		.005	.006	.006	.007	.007	.007
		DIA/2	400		.004	.005	.005	.005	.005	.005
STAINLESS STEEL 416 17-4PH	135 to 185	0.02**	700	8020, 7030, P30	.024	.030	.035	.048	.056	.064
		DIA/8**	600		.008	.009	.009	.011	.011	.011
		DIA/4**	500		.006	.007	.007	.008	.008	.008
		DIA/2	400		.005	.006	.006	.006	.006	.006
STAINLESS STEEL 13-8PH		0.02**	400	8020, 7030, DX2	.016	.022	.030	.042	.049	.056
		DIA/8**	300		.006	.008	.008	.009	.009	.009
		DIA/4**	200		.005	.006	.006	.007	.007	.007
		DIA/2	150		.004	.005	.005	.005	.005	.005
INCONEL, HASTELLOY WASPALLOY		0.02**	150	8020, 7030, DX2	.016	.022	.030	.042	.049	.056
		DIA/8**	120		.006	.008	.008	.009	.009	.009
		DIA/4**	100		.005	.006	.006	.007	.007	.007
		DIA/2	75		.004	.005	.005	.005	.005	.005
TITANIUM 6AL-4V		0.02**	180	8020, 7300, DX2	.016	.022	.030	.042	.049	.056
		DIA/8**	170		.006	.008	.008	.009	.009	.009
		DIA/4**	150		.005	.006	.006	.007	.007	.007
		DIA/2	120		.004	.005	.005	.005	.005	.005
GRAY CAST IRON-CLASS 40-45-50	190 to 220	0.02**	700	6030, K10, 8020	.024	.030	.035	.048	.056	.064
		DIA/8**	500		.008	.009	.009	.011	.011	.011
		DIA/4**	400		.006	.007	.007	.008	.008	.008
		DIA/2	400		.005	.006	.006	.006	.006	.006
DUCTILE / NODULAT CAST IRON-GRADE 65-45-12	140 to 190	0.02**	700	6030, K10, P30	.024	.030	.035	.048	.056	.064
		DIA/8**	500		.008	.009	.009	.011	.011	.011
		DIA/4**	400		.006	.007	.007	.008	.008	.008
		DIA/2	400		.005	.006	.006	.006	.006	.006
DUCTILE / NODULAT CAST IRON-GRADE 80-55-06	190 to 225	0.02**	700	6030, K10, P30	.024	.030	.035	.048	.056	.064
		DIA/8**	500		.008	.009	.009	.011	.011	.011
		DIA/4**	400		.006	.007	.007	.008	.008	.008
		DIA/2	400		.005	.006	.006	.006	.006	.006
ALUMINUM BRASS BRONZE		0.02**	1500+	K10, 8020, DX2	.040	.044	.050	.060	.070	.080
		DIA/8**	1500+		.015	.015	.015	.015	.015	.015
		DIA/4**	1500+		.012	.012	.012	.012	.012	.012
		DIA/2	1500+		.010	.010	.010	.010	.010	.010

- ** FPT Adjusted to compensate for radial chip thinning FPT Above can be increased as Much as 50% depending upon application
- Decrease SFM 20% when width of cut(WOC) Exceeds DIA/1.3 (3/4 of cutter DIA) or consider using single stage end mills or face Mills-TE90AP, TFM90AP; Insert APKT1705 in Multiple passes to desired depth

Operating guidelines for Z-Mill, Face Mills series TFM55HN
using HNCF100510-MR, -ML, -EM Inserts

Material	BRINELL HARDNESS	D.O.C. (Depth Of Cut)	MAX SFM	BEST GRADES*** BY PREFERENCE	FPT** HNCF 100510
GRAY CAST IRON-CLASS 40-45-50	190 TO 220	.040	1000	6030, K10	.006 ~ .017
		.100	850		.006 ~ .014
	220	.310	700	KB90	.006 ~ .014
		max .040	2950		.003 ~ .006
DUCTILE/NODULAR CAST IRON-GRADE 65-45-12	140 TO 190	.040	900	6030, K10	.006 ~ .017
		.100	750		.006 ~ .014
	190	.310	600	KB90	.006 ~ .014
		max .040	2300		.003 ~ .006
DUCTILE/NODULAR CAST IRON-GRADE 80-55-06	190 TO 225	.040	700	6030, K10	.006 ~ .017
		.100	600		.006 ~ .014
	225	.310	450	KB90	.006 ~ .014
		max .040	1950		.003 ~ .006

- Reduce SFM by 20% when channel milling
- **Higher FPT reflects increase to compensate for 35 degree lead angle chip thinning.
- ***In order of preference, uncoated carbide reduce SFM 20%



Grades

Grade Chart

TaeguTec Grade	ISO Rating	Coating	HrA	Grain Size	Workpiece material	Feature
K10	K10 - K20 N10 - N20	Uncoated	92.8	Fine	Malleable & Gray Cast Iron over 220HB, Aluminum, Non-ferrous alloys, Copper, Plastics, High-temp alloys	High Wear resistance Dry Milling
P30	P25 - P35	Uncoated	91.7	Medium	Steels	High Shock Resistance, High Wear & Crater resistance
DX2	M30 - M40 K30 - K40	Uncoated	90.2	Fine	Stainless steels, Alloy steels, Cast Iron, High-temp alloys	Wet or Dry Milling, High Mechanical Shock & Wear resistance
NEW CT5000	P10 - P30 K10 - K20 M15 - M30 N10 - N25 H10 - H25	Cermet	92.5	Fine	Steels, Mold Steels, Stainless steels, Cast iron & Aluminum	High Wear & Shock Resistance for finishing to medium machining
NEW CT3000	P05 - P25 K05 - K15 M05 - M20 N05 - N20 H05 - H20	Cermet	93.0	Fine	Steels, Mold Steels, Cast iron, Stainless steels & Aluminum alloy	High Wear Resistance for finishing application
KT7300	P20 - P40	CVD TiCN-TiN	89.9	Coarse	Steels	Dry Milling at high Speeds & Lower FPT
TT6030	K05 - K20 N05 - N20 H05 - H20	PVD TiAlN	92.8	Fine	Malleable & Gray Cast Iron over 220HB, Aluminum, Non-ferrous alloys, Copper, Plastics, High-temp alloys	Dry & Wet Milling, High Wear Resistance
TT7030	P15 - P40	PVD TiAlN	91.7	Medium	Steels	Dry Milling, High wear & Crater resistance
NEW TT7070	P20 - P40	PVD TiAlN	92.0	Medium	Alloy Steels, Mold Steels, Cast Iron	Dry Milling High wear resistance
TT8020	M30 - M40 P30 - P45 K20 - K40 N15 - N30 S20 - S30	PVD TiCN	90.2	Fine	Stainless steels, Alloy steels, High-temp alloys, Cast Iron	All purpose Grade, High Mechanical & Shock resistance
NEW TT8030	M20 - M40 P25 - P45 K15 - K40 S15 - S30	PVD TiAlN	90.2	Fine	Alloy Steels, Stainless steels, High-temp alloys, Cast Iron	All purpose Grade, High Mechanical & Shock resistance
NEW TT9030	M10 - M30 P15 - P35 K10 - K30 S10 - S25	PVD TiAlN	92.8	Micro	Stainless steels, Alloy steels, High-temp alloys, Cast Iron	All purpose Grade, Dry & Wet milling
KT8600	P05 - P20 K05 - K20 H05 - H25	PVD TiAlN	92.8	Micro	Mold Steels, Cast Iron, Stainless steels	Wet or Dry Milling, High Mechanical Wear and Thermal Shock resistance

Ingersoll Cutting Tools for the Americas

Marketing & Technology Center
845 S. Lyford Road
Rockford, IL 61108-2749 U.S.A.

Tel: 815.387.6600
Fax: 815.387.6968
Email: info@ingersoll-imc.com
Internet: www.ingersoll-imc.com

Ingersoll Cutting Tool Ltd.
4510 Rhodes Drive, Unit #100
Windsor, Ontario N8W 5K5, Canada

Tel: 519.974.1019
Fax: 519.974.2260

Ingersoll Cutting Tools de México S.A. de C.V.
Carr. Saltillo Monterrey Km. 5.5, Local 2 y 3
Saltillo, Coahuila C.P. 25200, México

Tel: (844) 432.2546, (844) 432.2547
Fax: (844) 432.2544

Ingersoll Cutting Tools for Europe

Marketing & Technology Center
Ingersoll Werkzeuge GmbH
Kalteiche-Ring 21-25
35708 Haiger, Germany

Tel: 02773.742 0
Fax: 02773.742 812/814
Email: info@ingersoll-imc.de
Internet: www.ingersoll-imc.de

