

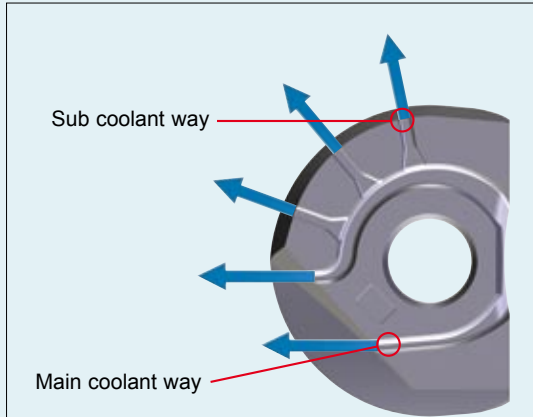
Laser Mill Features

- Ultra fine micrograin carbide grade for machining up to HRC 65, carbon steels, alloy steels, stainless and aluminium at high speed and long tool life
- High tolerance insert for mould making operations
- MQL minimum coolant system to reduce coolant costs
- Straight or taper neck tool holders

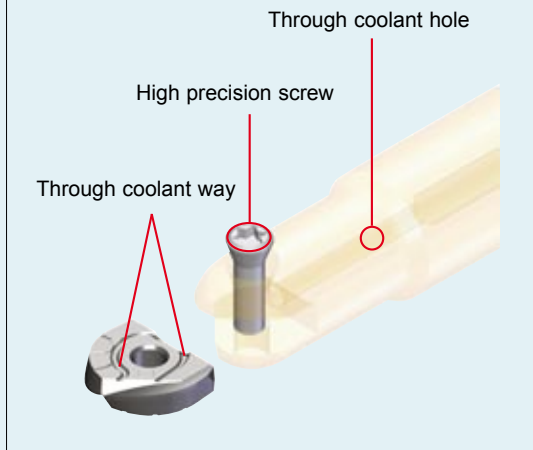


- Environmentally friendly coolant system
- Decreased coolant costs
- Coolant is directed at the exact point of the cutting edge for ultimate chip control
- Increased tool life and excellent surface finish

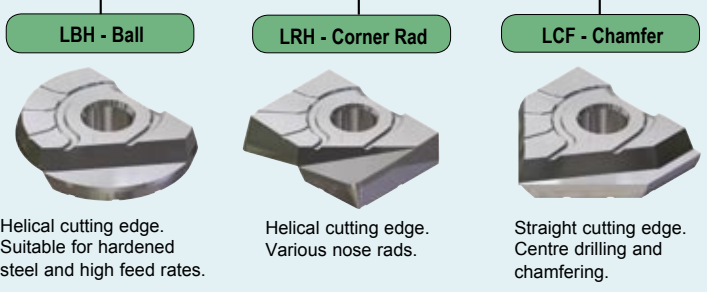
Features



High tolerance insert
 - Run-out: under 0.02mm
 - R form accuracy: under 0.01mm
 Through coolant system

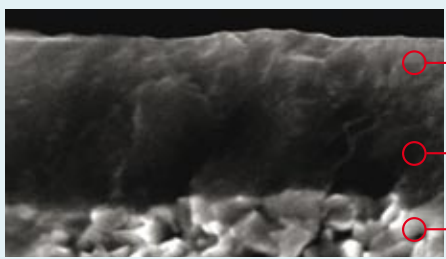


**3
IN
1
SYSTEM**



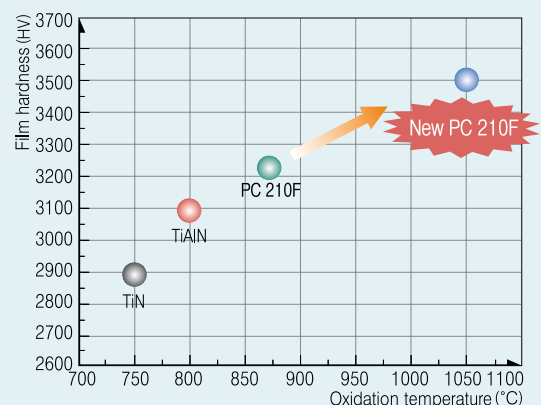
- 3 types of insert fit in 1 holder
- Single strong screw clamping
- Taper, straight neck or modular holders
- MQL coolant system

PC210F Grade



- Improvement of hardness and oxidation resistance.
- Improvement of adhesion and chipping resistance
- Ultra fine substrate.

- Due to ultra fine carbide, toughness of cutting edge has been increased
- Special coating has been applied for high speed machining and hardened workpiece.
- High quality of machined workpiece due to excellent lubrication property of the film.



Cutting condition formula for milling

•Cutting Speed

$$VC = \frac{\pi \times D \times n}{1000}$$

•RPM

$$n = \frac{vc \times 1000}{\pi \times D}$$

•Feed per tooth

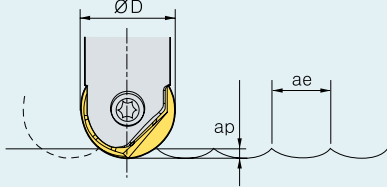
$$fz = \frac{vf}{n \times z} \text{ (mm/t)}$$

•Feed per minute

$$vf = fz \times n \times z \text{ (mm/min)}$$

•Chip removal amount

$$Q = \frac{ap \times ae \times vf}{1000} \text{ (cm}^3\text{/min)}$$



vc = Cutting speed (m/min)
n = Revolutions per minute
D = Cutting diameter
vf = Feed per minute (mm/min)
fz = Feed per tooth (mm/t)

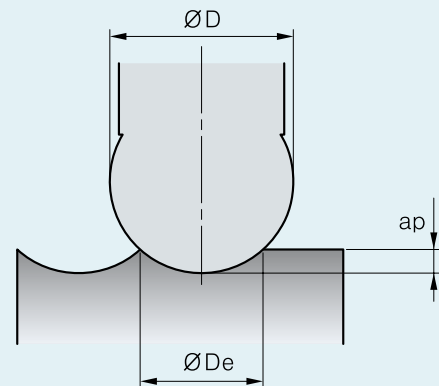
ap = Depth of cut
ae = Width of cut
Q = Chip removal amount
z = Number of teeth

Recommended cutting conditions

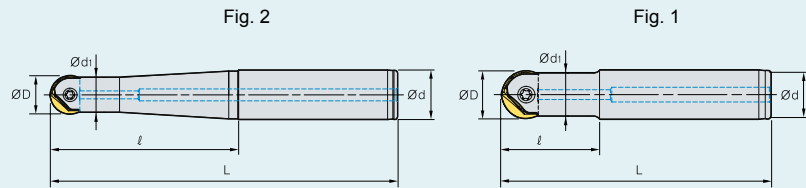
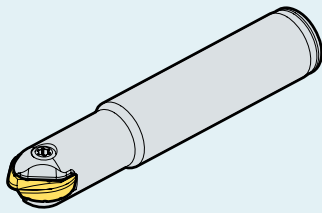
Workpiece	Grade	Hardness	VC (m/min)	fz (mm/t)	ap (mm)	ae (mm)
Carbon steel, Alloy steel	PC210F	<HRc30	100~250	0.2~0.3	0.07D	0.07D
Carbon steel, Alloy steel	PC210F	HRc 30~40	80~150	0.1~0.3	0.07D	0.07D
Die steel	PC210F	HRc 30~40	80~150	0.1~0.2	0.05D	0.05D
Cast iron	PC210F	-	100~200	0.3~0.35	0.07D	0.07D
Hardened steel	PC210F	HRc 40~60	100~150	0.1~0.3	0.03D	0.03D
Stainless steel	PC210F	-	80~150	0.1~0.3	0.05D	0.05D
Aluminium	PC210F	-	200~330	0.15~0.4	0.15D	0.15D

Actual diameter data

ap \ ØD	Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
0.1	1.8	2.0	2.2	2.5	2.8	3.2	3.6
0.2	2.5	2.8	3.1	3.6	4.0	4.5	5.0
0.3	3.0	3.4	3.7	4.3	4.9	5.4	6.2
0.5	3.9	4.4	4.8	5.6	6.2	7.0	7.9
1.0	5.3	6.0	6.6	7.7	8.7	9.8	11.1
1.5	6.2	7.1	7.9	9.3	10.5	11.9	13.5
2.0	6.9	8.0	8.9	10.6	12.0	13.6	15.5
2.5	7.4	8.7	9.7	11.6	13.2	15.0	17.2
3.0	7.7	9.2	10.4	12.5	14.3	16.2	18.7
3.5	7.9	9.5	10.9	13.2	15.2	17.3	20.0
4.0	8.0	9.8	11.3	13.9	16.0	18.3	21.2
5.0	-	-	11.8	14.8	17.3	20.0	23.2
6.0	-	-	12.0	15.5	18.3	21.4	25.0
7.0	-	-	-	15.9	19.1	22.4	26.5
8.0	-	-	-	16.0	19.6	23.3	27.7
10.0	-	-	-	-	20.0	24.5	29.7



Laser Mill LBE SERIES



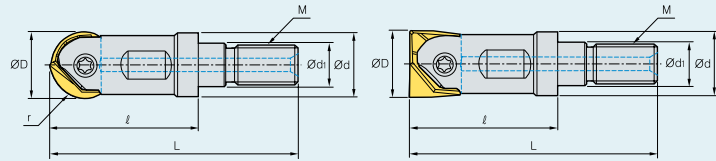
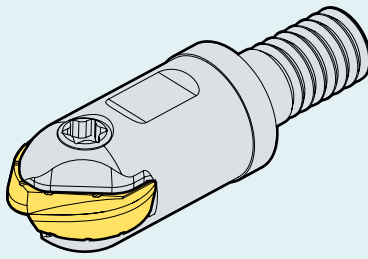
DESIGNATION	£	STOCK STATUS	ØD	ℓ	L	Ød	Ød ₁	CLAMP SCREW	WRENCH	INSERT DIAMETER (Ø)	Fig.
LBE 080035T-S12	£69.00	●	8	35	91	12	7.2				1
080055T-S12	£72.00	●	8	55	111	12	7.2	ETND02506F	TWP07S	8	1
080075T-S12	£74.00	●	8	75	131	12	7.2				1
100035T-S12	£69.00	●	10	35	91	12	9				1
100055T-S12	£72.00	●	10	55	111	12	9	ETND0307F	TWP08S	10	1
100075T-S12	£74.00	●	10	75	131	12	9				1
120035S-S12	£69.00	●	12	35	91	12	10.4				2
120055T-S12	£72.00	●	12	55	111	12	10.4	ETND03509	TWP10S	12	1
120085T-S16	£77.00	●	12	85	145	16	10.4				1
160035S-S16	£69.00	●	16	35	95	16	14				2
160065T-S16	£73.00	●	16	65	125	16	14	ETND0413	TWP15S	16	1
160100T-S20	£85.00	●	16	100	170	20	14				1
200040S-S20	£73.00	●	20	40	110	20	17.5				2
200075T-S20	£78.00	●	20	75	145	20	17.5	ETKD0516	TWP20	20	1
200115T-S25	£110.00	●	20	115	195	25	17.5				1
250045S-S25	£98.00	●	25	45	125	25	22				2
250090T-S25	£108.00	●	25	90	170	25	22	ETKD0620	TWP25	25	1
250135T-S32	£117.00	●	25	135	225	32	22				1
320055S-S32	£104.00	●	32	55	145	32	29				2
320105T-S32	£112.00	●	32	105	195	32	29	ETGD0825	TWP40	35	1
320160T-S32	£123.00	●	32	160	250	32	29				1

Stock Status ● Stock item (next day delivery) □ Non-stock item (7-10 days)

Laser Mill Features

- Ultra fine micrograin carbide grade for machining up to HRc 65, carbon steels, alloy steels, stainless and aluminium at high speed and long tool life
- High tolerance insert for mould making operations
- MQL minimum coolant system to reduce coolant costs
- Straight or taper neck tool holders

Laser Mill LBE-MHD SERIES



DESIGNATION	£	STOCK STATUS	ØD	ℓ	L	Ød	Ød1	M	CLAMP SCREW	WRENCH	INSERT DIAMETER (Ø)
LBE 100-MHD-M06	£59.00	●	10	25	40	9.5	6.5	M06	ETND0307F	TW08S	10
120-MHD-M06	£59.00	●	12	25	40	11	6.5	M06	ETND03509	TW10S	12
160-MHD-M08	£59.00	●	16	30	47	14.5	8.5	M08	ETND00413	TW15S	16
200-MHD-M10	£59.00	●	20	35	56	18	10.5	M10	ETKD0516	TWP20	20
250-MHD-M12	£75.00	●	25	45	69	22.5	12.5	M12	ETFD0620	TWP25	25
320-MHD-M16	£75.00	●	32	50	77	29	17	M16	ETGD0825	TWP40	32

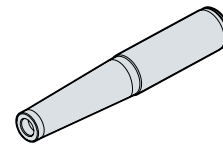
Stock Status ● Stock item (next day delivery) □ Non-stock item (7-10 days)

Available Inserts

Available Holders	LBH (BALL TYPE)	LRH (CORNER RADIUS TYPE)	LCF (CHAMFER TYPE)
LBE080	LBH080	-	-
LBE100	LBH100	LRH100-R05 LRH100-R10 LRH100-R20	-
LBE120	LBH120	LRH120-R05 LRH120-R10 LRH120-R20	-
LBE160	LBH160	LRH160-R05 LRH160-R10 LRH160-R20 LRH160-R30	LCF160-D90
LBE200	LBH200	LRH200-R05 LRH200-R10 LRH200-R20 LRH200-R30	LCF200-D90
LBE250	LBH250	LRH250-R05 LRH250-R10 LRH250-R20 LRH250-R30	LCF250-D90
LBE320	LBH320	LRH320-R10 LRH320-R20 LRH320-R30	-

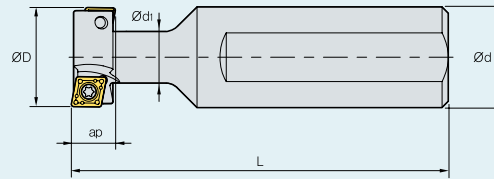
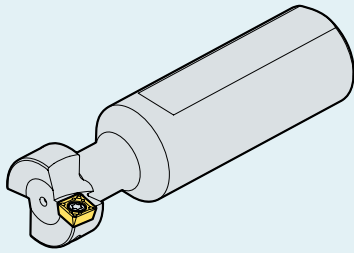
FOR INSERTS PLEASE SEE PAGES B8-B9

MODULAR ADAPTORS



PLEASE SEE PAGE B50

T-Slot Cutter TFE SERIES



INDEXABLE MILLING

DESIGNATION	£	STOCK		ØD	Ød	Ød ₁	ap	L	
TFE	2125R	£133.00	•	2	21	25	10.5	9	109
	2525R	£147.00	•	2	25	25	12.5	11	112
	3232R	£155.00	•	2	32	32	16.5	14	120
	4032R	£165.00	•	2	40	32	20.5	18	130
	5032R	£196.00	•	4	50	32	26.5	22	140

Spares & Accessories

HOLDER SERIES	INSERT DESIGNATION	No EDGES	INSERT PAGE	SCREW	WRENCH	END MILL HOLDERS
TFE2125R	CPMT 060204	2	B8	FTNA02555	TW08S	 Section G
TFE2525R	CPMT 080308	2	B8	FTNA0306	TW09S	
TFE3232R	CPMT 09T308	2	B8	FTNA0407	TW15S	
TFE4032R	CPMH 120408	2	B8	PTMA0511A	TW15S	
TFE5032R	CPMH 120408	2	B8	PTMA0511A	TW15S	

T-SLOT CUTTER