

Indexable "ECO-Cutter" system



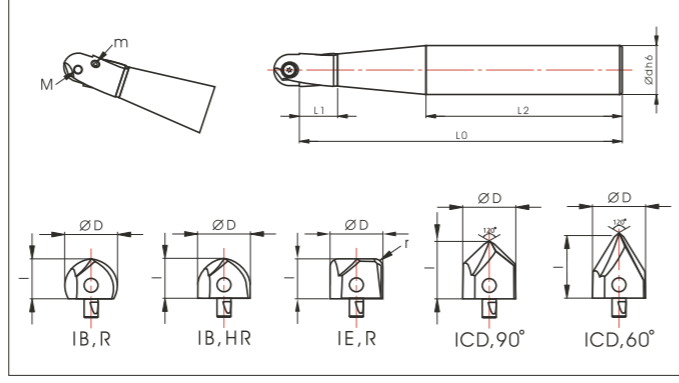
YTEI "ECO-Cutter" Long Body



YTEI,S "ECO-Cutter" Short Body

Model : YTEI

- ▶ 5 Different insert cutters interchangeable in YTEI body
- ▶ Strong clamping with two locking screws
- ▶ New design with center stem(pin) on the insert to keep better centralization and run-out
- ▶ Body consists of heat-treated tool steel
- ▶ All carbide inserts ground completely by CNC & TiAlN
- ▶ Ball radius IB insert has precise helical fluted marginal cutting edge like drill to enable copy milling smoothly.
- ▶ Higher speed & feed available than conventional end mills.
- ▶ Dual purpose of roughing & finishing job



- IB,R** Ball radius 2 flute insert with round(oval)
- IB,HR** Ball radius 2 flute insert with half round
- IE,R** 2 flute end mill with corner radius
- ICD,90°** Center & chamfer drill insert with 90° point (dual point with 120°+ 90° for safer centering)
- ICD,60°** Center & chamfer drill insert with 60° point (dual point with 120°+ 60° for safer centering)

ECO-Cutter recommended cutting data

Work-piece	Cutting speed range (Vc=m/min.)	feed rate per flute (fz=mm/rev.)	IB,R/IB,HR Ball radius insert Ball Radius milling		Work-piece	Cutting speed range (Vc=m/min.)	feed rate per flute (fz=mm/rev.)	IE Flat milling insert Slot & Shoulder milling	
			Ø8-12	Ø16-32				Ø8-20	Ø25-32
Cast Iron	100-200	0.3-0.4	Vc=150m/min. fz=0.35mm/flute ap=0.025mm, ae=0.1xD(Ø)	Vc=160m/min. fz=0.35mm/flute ap=0.05mm, ae=0.1xD(Ø)	Alloy & Carbon steel (Hardness below HRC40)	50-130	0.08-0.15	Vc=90m/min. fz=0.12mm/flute ap=0.5mm, ae=0.6xD(Ø)	Vc=90m/min. fz=0.12mm/flute ap=0.5mm, ae=0.6xD(Ø)
Die & Tool steel(Hardness HRC30-40)	60-100	0.1-0.15	Vc=90m/min. fz=0.1mm/flute ap=0.03mm, ae=0.1xD(Ø)	Vc=80m/min. fz=0.15mm/flute ap=0.05mm, ae=0.1xD(Ø)				Vc=130m/min. fz=0.2mm/flute ap=0.5mm, ae=0.6xD(Ø)	Vc=130m/min. fz=0.2mm/flute ap=0.5mm, ae=0.6xD(Ø)
Alloy & Carbon steel (Hardness HRC30-40)	70-150	0.2-0.3	Vc=130m/min. fz=0.2mm/flute ap=0.03mm, ae=0.1xD(Ø)	Vc=110m/min. fz=0.3mm/flute ap=0.05mm, ae=0.1xD(Ø)	Alloy & Carbon steel (Hardness below HRC30)	60-160	0.1-0.15	Vc=150m/min. fz=0.2mm/flute ap=0.06mm, ae=0.1xD(Ø)	Vc=150m/min. fz=0.2mm/flute ap=0.06mm, ae=0.1xD(Ø)
Alloy & Carbon steel (Hardness below HRC30)	100-200	0.2-0.3	Vc=150m/min. fz=0.2mm/flute ap=0.03mm, ae=0.1xD(Ø)	Vc=150m/min. fz=0.25mm/flute ap=0.01mm, ae=0.02xD(Ø)				Normal Mild steel(Hardness below HB 200)	70-200
Hardened steel(Hardness HRC50-60)	200-250	0.2-0.4	Vc=200m/min. fz=0.25mm/flute ap=0.01mm, ae=0.1xD(Ø)	Vc=200m/min. fz=0.25mm/flute ap=0.01mm, ae=0.02xD(Ø)					

Work-piece	Cutting speed range (Vc=m/min.)	ICD Centering & Chamfering insert			
		Centering(Spotting)		Chamfering	
		Ø8-20	Ø25-32	Ø8-20	Ø25-32
Alloy & Carbon steel (Hardness below HRC40)	40-60	Vc=50m/min. f=0.1-0.15 mm/rev.	Vc=50m/min. f=0.1-0.15 mm/rev.	Vc=50m/min. fz=0.05mm/ flute	Vc=50m/min. fz=0.1mm/ flute
Alloy & Carbon steel (Hardness below HRC30)	50-80	Vc=70m/min. f=0.1-0.2 mm/rev.	Vc=70m/min. f=0.1-0.2 mm/rev.	Vc=70m/min. fz=0.1mm/ flute	Vc=70m/min. fz=0.12mm/ flute
Normal Mild steel(Hardness below HB 200)	80-200	Vc=120m/min. f=0.1-0.3 mm/rev.	Vc=120m/min. f=0.1-0.3 mm/rev.	Vc=120m/min. fz=0.1mm/ flute	Vc=120m/min. fz=0.15mm/ flute

Carbide End Mills and Cutters

"ECO-Cutter" Long Body system



Body	Insert	ΦD	Φd	L0	L1	L2	l	R	r	M	m
YTEI 080	IB 080 R	8.0	10	94	12	60	6.19	4.0	-	M2	M2.5
	IB 080 HR										
	IE 080										
	ICD 080-90										
	ICD 080-60										
YTEI 100	IB 100 R	10.0	12	107	12	70	7.86	5.0	-	M2.5	M2.5
	IB 100 HR										
	IE 100										
	ICD 100-90										
	ICD 100-60										
YTEI 120	IB 120 R	12.0	16	131	11	90	9.16	6.0	-	M3	M3
	IB 120 HR										
	IE 120										
	ICD 120-90										
	ICD 120-60										
YTEI 160	IB 160 R	16.0	20	158	18	95	12.13	8.0	-	M4	M4
	IB 160 HR										
	IE 160										
	ICD 160-90										
	ICD 160-60										
YTEI 200	IB 200 R	20.0	25	165	20	100	15.10	10.0	-	M5	M4
	IB 200 HR										
	IE 200										
	ICD 200-90										
	ICD 200-60										
YTEI 250	IB 250 R	25.0	32	191	21	110	18.71	12.5	-	M6	M4
	IB 250 HR										
	IE 250										
	ICD 250-90										
	ICD 250-60										
YTEI 300	IB 300 R	30.0	32	227	32	120	22.74	15.0	-	M5	M5
	IB 300 HR										
	IE 300										
	ICD 300-90										
	ICD 300-60										
YTEI 320	IB 320 R	32.0	32	326	32	250	24.01	16.0	-	M8	M6
	IB 320 HR										
	IE 320										
	ICD 320-90										
	ICD 320-60										

67 *Yes!* **68** *Yes!* r : different corner radius available on request.
L0 : note that total length of tool will be increased after fits insert.

"ECO-Cutter" Short body system



Body	Insert	ΦD	Φd	L0	L1	L2	l	R	r	M	m
YTEI 080S	IB 080 R	8	8	74	12	50	6.19	4.0	-	M2	M2
	IB 080 HR										
	IE 080										
	ICD 080-90										
	ICD 080-60										
YTEI 090S	IB 090 R	9	10	93	13	65	6.83	4.5	-	M2.5	M2.5
	IB 090 HR										
	IE 090										
	ICD 090-90										
	ICD 090-60										
YTEI 100S	IB 100 R	10	12	92	12	65	7.86	5.0	-	M2.5	M2.5
	IB 100 HR										
	IE 100										
	ICD 100-90										
	ICD 100-60										
YTEI 110S	IB 110 R	11	12	99	16	68	8.51	5.5	-	M3	M2.5
	IB 110 HR										
	IE 110										
	ICD 110-90										
	ICD 110-60										
YTEI 120S	IB 120 R	12	16	99	16	68	9.16	6.0	-	M3	M3
	IB 120 HR										
	IE 120										
	ICD 120-90										
	ICD 120-60										
YTEI 130S	IB 130 R	13	16	98	15	68	9.80	6.5	-	M3	M3
	IB 130 HR										
	IE 130										
	ICD 130-90										
	ICD 130-60										
YTEI 140S	IB 140 R	14	16	98	15	68	10.43	7.0	-	M3	M3
	IB 140 HR										
	IE 140										
	ICD 140-90										
	ICD 140-60										
YTEI 150S	IB 150 R	15	16	109	19	75	11.49	7.5	-	M3	M3
	IB 150 HR										
	IE 150										
	ICD 150-90										
	ICD 150-60										
YTEI 160S	IB 160 R	16	16	108	18	75	12.13	8.0	-	M3	M3
	IB 160 HR										
	IE 160										
	ICD 160-90										
	ICD 160-60										
YTEI 170S	IB 170 R	17	16	107	17	70	12.77	8.5	-	M4	M4
	IB 170 HR										
	IE 170										
	ICD 170-90										
	ICD 170-60										
YTEI 180S	IB 180 R	18	16	106	21	70	13.82	9.0	-	M4	M4
	IB 180 HR										
	IE 180										
	ICD 180-90										
	ICD 180-60										
YTEI 190S	IB 190 R	19	16	106	21	70	14.46	9.5	-	M5	M5
	IB 190 HR										
	IE 190										
	ICD 190-90										
	ICD 190-60										
YTEI 200S	IB 200 R	20	16	105	20	70	15.10	10.0	-	M5	M5
	IB 200 HR										
	IE 200										
	ICD 200-90										
	ICD 200-60										
YTEI 250S	IB 250 R	25	16	141	21	105	18.71	12.5	-	M6	M4
	IB 250 HR										
	IE 250										
	ICD 250-90										
	ICD 250-60										
YTEI 300S	IB 300 R	30	16	137	32	90	22.74	15.0	-	M5	M5
	IB 300 HR										
	IE 300										
	ICD 300-90										
	ICD 300-60										
YTEI 320S	IB 320 R	32	16	136	31	90	24.01	16.0	-	M8	M6
	IB 320 HR										
	IE 320										
	ICD 320-90										
	ICD 320-60										

Carbide End Mills and Cutters

Note This body dimension is similar to conventional solid end mill. Same insert can be fit for both long & short body

69 *Yes!*