

Indexable "ECO-Cutter" system



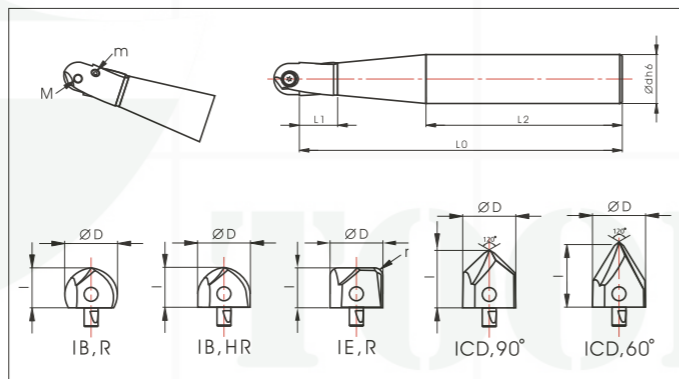
YTEI "ECO-Cutter" Long Body



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		Work-piece	Cutting speed range (Vc=m/min.)	feed rate per flute (fz=mm/rev.)	IE Flat milling insert	
			Ball Radius milling	Slot & Shoulder milling				Slot & Shoulder milling	Slot & Shoulder milling
Cast Iron	100-200	0.3-0.4	Φ8-12	Φ16-32	Alloy & Carbon steel (Hardness below HRC40)	50-130	0.08-0.15	Φ8-20	Φ25-32
Die & Tool steel(Hardness HRC30-40)	60-100	0.1-0.15	Vc=150m/min. fz=0.35mm/flute ap=0.025mm, ae=0.1xD(Φ)	Vc=160m/min. fz=0.35mm/flute ap=0.05mm, ae=0.1xD(Φ)	Alloy & Carbon steel (Hardness below HRC30)	60-160	0.1-0.15	Vc=90m/min. fz=0.12mm/flute ap=0.5mm, ae=0.6xD(Φ)	Vc=90m/min. fz=0.12mm/flute ap=0.5mm, ae=0.6xD(Φ)
Alloy & Carbon steel (Hardness HRC30-40)	70-150	0.2-0.3	Vc=90m/min. fz=0.1mm/flute ap=0.03mm, ae=0.1xD(Φ)	Vc=80m/min. fz=0.15mm/flute ap=0.05mm, ae=0.1xD(Φ)	Normal Mild steel(Hardness below HB 200)	70-200	0.1-0.15	Vc=130m/min. fz=0.2mm/flute ap=0.5mm, ae=0.6xD(Φ)	Vc=130m/min. fz=0.2mm/flute ap=1mm, ae=0.6xD(Φ)
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(Φ)	Vc=110m/min. fz=0.3mm/flute ap=0.05mm, ae=0.1xD(Φ)					
Hardened steel(Hardness HRC50-60)	200-250	0.2-0.4	Vc=200m/min. fz=0.25mm/flute ap=0.01mm, ae=0.1xD(Φ)	Vc=220m/min. fz=0.25mm/flute ap=0.01mm, ae=0.02xD(Φ)					

Work-piece	Cutting speed range (Vc=m/min.)	ICD Centering & Chamfering insert			
		Centering(Spotting)		Chamfering	
Alloy & Carbon steel (Hardness below HRC40)	40-60	Vc=50m/min. fz=0.1-0.15 mm/rev.	Vc=50m/min. fz=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. fz=0.1-0.2 mm/rev.	Vc=70m/min. fz=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. fz=0.1-0.3 mm/rev.	Vc=120m/min. fz=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	I	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						6.19	-	0.5/1.0		
	IE 080						9.08	-	-		
	ICD 080-90						10.10	-	-		
YTEI 100	IB 100 R	10.0	12	107	12	70	7.86	5.0	-	M2.5	M2.5
	IB 100 HR						7.86	-	0.5/1.0		
	IE 100						11.40	-	-		
	ICD 100-60						12.64	-	-		
YTEI 120	IB 120 R	12.0	16	131	11	90	9.16	6.0	-	M3	M3
	IB 120 HR						9.16	-	0.5/1.0		
	IE 120						13.61	-	-		
	ICD 120-90						15.12	-	-		
YTEI 160	IB 160 R	16.0	20	158	18	95	12.13	8.0	-	M4	M4
	IB 160 HR						12.13	-	1.0/3.0		
	IE 160						18.88	-	-		
	ICD 160-60						20.14	-	-		
YTEI 200	IB 200 R	20.0	25	165	20	100	15.10	10.0	-	M5	M4
	IB 200 HR						15.10	-	1.0/3.0		
	IE 200						22.69	-	-		
	ICD 200-60						25.22	-	-		
YTEI 250	IB 250 R	25.0		191	21	110	18.71	12.5	-	M6	M5
	IB 250 HR						18.71	-	1.0/3.0		
	IE 250						28.32	-	-		
	ICD 250-60						31.47	-	-		
YTEI 300	IB 300 R	30.0	32	227	32	120	22.74	15.0	-	M8	M6
	IB 300 HR						22.74	-	1.0/3.0		
	IE 300						34.12	-	-		
	ICD 300-60						37.89	-	-		
YTEI 320	IB 320 R	32.0		326	32	250	24.01	16.0	-	M6	M6
	IB 320 HR						24.01	-	1.0/3.0		
	IE 320						36.55	-	-		
	ICD 320-90						40.59	-	-		

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	I	R	r	M	m
YTEI 080S	IB 080 R	8	8	74	12	50	6.19	4.0	-	M2	M2.5
	IB 080 HR						6.19	-	0.5/1.0		
	IE 080						9.08	-	-		
	ICD 080-90						10.10	-	-		
YTEI 090S	IB 090 R	9	10	93	13	65	6.83	4.5	-	M2.5	M2.5
	IB 090 HR						6.83	-	0.5/1.0		
	IE 090						10.18	-	-		
	ICD 090-90						11.33	-	-		
YTEI 100S	IB 100 R	10	12	92	12	65	7.86	5.0	-	M2.5	M2.5
	IB 100 HR						7.86	-	0.5/1.0		
	IE 100						11.40	-	-		
	ICD 100-60						12.64	-	-		
YTEI 110S	IB 110 R	11	12	99	16	68	8.51	5.5	-	M3	M3
	IB 110 HR						8.51	-	0.5/1.0		
	IE 110						12.50	-	-		
	ICD 110-60						13.88	-	-		
YTEI 120S	IB 120 R	12	16	99	16	68	9.16	6.0	-	M3	M3
	IB 120 HR						9.16	-	0.5/1.0		
	IE 120						13.61	-	-		
	ICD 120-60						15.12	-	-		
YTEI 130S	IB 130 R	13	15	98	15	68	9.80	6.5	-	M3	M3
	IB 130 HR						9.80	-	0.5/1.0		
	IE 130						14.71	-	-		
	ICD 130-60						16.35	-	-		
YTEI 140S	IB 140 R	14	16	98	15	68	10.43	7.0	-	M3	M3
	IB 140 HR						10.43	-	1.0/2.0		
	IE 140						15.80	-	-		
	ICD 140-60						17.57	-	-		
YTEI 150S	IB 150 R	15	19	109	19	75	11.49	7.5	-	M3	M3
	IB 150 HR						11.49	-	1.0/2.0		
	IE 150						17.06	-	-		
	ICD 150-60						18.97	-	-		
YTEI 160S	IB 160 R	16	18	108	18	75	12.13	8.0	-	M4	M4
	IB 160 HR						12.13	-	1.0/3.0		
	IE 160						18.14	-	-		
	ICD 160-60						20.14	-	-		
YTEI 170S	IB 170 R	17	17	107	17	70	12.77	8.5	-	M4	M4
	IB 170 HR						12.77	-	1.0/3.0		
	IE 170						19.24	-	-		
	ICD 170-60						21.37	-	-		
YTEI 180S	IB 180 R	18	20	106	21	70	13.82	9.0	-	M5	M5
	IB 180 HR						13.82	-	1.0/3.0		
	IE 180						20.05	-	-		
	ICD 180-60						22.76	-	-		
YTEI 190S	IB 190 R	19	21	106	21	70	14.46	9.5	-	M5	M5
	IB 190 HR						14.46	-	1.0/3.0		
	IE 190						21.59	-	-		
	ICD 190-60						23.99	-	-		
YTEI 200S	IB 200 R	20	20	105	20	70	15.10	10.0	-	M4	M4
	IB 200 HR						15.10	-	1.0/3.0		
	IE 200						22.69	-	-		
	ICD 200-60						25.22	-	-		
YTEI 250S	IB 250 R	25	25	141	21	105	18.71	12.5	-	M6	M6
	IB 250 HR						18.71	-	1.0/3.0		
	IE 250						28.32	-	-		
	ICD 250-60						31.47	-	-		
YTEI 300S	IB 300 R	30	32	137	32	90	22.74	15.0	-	M5	M5
	IB 300 HR						22.74	-	1.0/3.0		
	IE 300						34.12	-	-		
	ICD 300-60						37.89	-	-		
YTEI 320S	IB 320 R	32	31	136	31	90	24.01	16.0	-	M6	M6
	IB 320 HR						24.01	-	1.0/3.0		
	IE 320						36.55	-	-		
	ICD 320-90						40.59	-	-		

Carbide End Mills and Cutters

69 (Yes)

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