- YTEI Indexable "ECO-Cutter" system
- IB,R Carbide Ball radius Inserts
- IB,HR Carbide Ball half-radius Inserts
- IE,R Carbide End mill Inserts
- ICD Carbide Center drill Inserts, 60°, 90°
- YSET Solid Carbide End Mills
- YSEL Solid Carbide End Mills, Long series
- YSET/HH Solid Carbide High Helix End Mills
- YSER Solid Carbide Roughing End Mills
- YSEB Solid Carbide Ball End Mills
- YSEBL Solid Carbide Ball End Mills, Long series
- YSEBG Solid Carbide Ball End Mills for Graphite

Carbide End Mills and Cutters

Indexable "ECO-Cutter" system

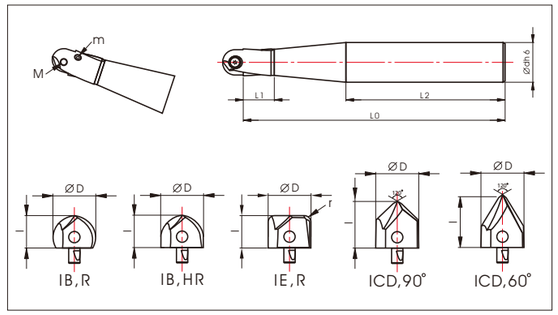
YTEI "ECO-Cutter" Long Body

YTEI,S "ECO-Cutter" Short Body

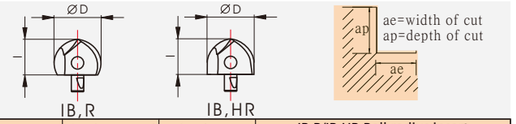
Model : YTEI

- 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

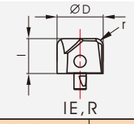
- **IB, R** Ball radius 2 flute insert with round(oval)
- **IB,HR** Ball radius 2 flute insert with half round
- **IE, R** 2 flute end mill with corner radius
- **ICD,90°** Center & chamfer drill insert with 90° point (dual point with 120°+ 90° for safer centering)
- **ICD,60°** Center & chamfer drill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



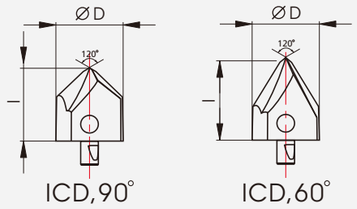
ECO-Cutter recommended cutting data



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 Φ8~12	Φ16~32
Cast Iron	100~200	0.3~0.4	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)
Die & Tool steel(Hardness HRC30~40)	60~100	0.1~0.15	Vc=90m/min. fz=0.1mm/flute ap=0.03m, ae=0.1xD(Φ)	Vc=80m/min. fz=0.15mm/flute ap=0.05m, ae=0.1xD(Φ)
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(Φ)	Vc=110m/min. fz=0.3mm/flute ap=0.05mm, ae=0.1xD(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=150m/min. fz=0.25mm/flute ap=0.06mm, 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=0.35mm/flute ap=0.01mm, ae=0.02xD(Φ)



Work-piece	Cutting speed range (Vc=m/min.)	feed rate per flute (fz=mm/rev.)	IE Flat milling insert Slot & Shoulder milling Φ8~20	Φ25~32
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(Φ)	Vc=90m/min. fz=0.12mm/flute ap=0.5mm, ae=0.6xD(Φ)
Alloy & Carbon steel (Hardness below HRC30)	60~160	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=0.5mm, ae=0.6xD(Φ)
Normal Mild steel(Hardness below HB 200)	70~200	0.1~0.15	Vc=150m/min. fz=0.2mm/flute ap=1mm, ae=0.6xD(Φ)	Vc=150m/min. fz=0.2mm/flute ap=1mm, ae=0.6xD(Φ)



Work-piece	Cutting speed range (Vc=m/min.)	ICD Centering & Chamfering insert Centering(Spotting) Φ8~20	Φ25~32	Chamfering Φ8~20	Φ25~32
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

"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						6.19	-	0.5/1.0		
	ICD 080-90						9.08	-	-		
	ICD 080-60						10.10	-	-		
YTEI 100	IB 100 R	10.0	12	107	12	70	7.86	5.0	-	M2.5	
	IB 100 HR										
	IE 100						7.86	-	0.5/1.0		
	ICD 100-90						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										
	IE 120						9.16	-	0.5/1.0		
	ICD 120-90						13.61	-	-		
	ICD 120-60						15.12	-	-		
YTEI 160	IB 160 R	16.0	20	158	18	95	12.13	8.0	-	M4	
	IB 160 HR										
	IE 160						12.13	-	1.0/3.0		
	ICD 160-90						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										
	IE 200						15.10	-	1.0/3.0		
	ICD 200-90						22.69	-	-		
	ICD 200-60						25.22	-	-		
YTEI 250	IB 250 R	25.0		191	21	110	18.71	12.5	-	M6	
	IB 250 HR										
	IE 250						18.71	-	1.0/3.0		
	ICD 250-90						28.32	-	-		
	ICD 250-60						31.47	-	-		
YTEI 300	IB 300 R	30.0	32	227	32	120	22.74	15.0	-	M8	m5
	IB 300 HR										
	IE 300						22.74	-	1.0/3.0		
	ICD 300-90						34.12	-	-		
	ICD 300-60						37.89	-	-		
YTEI 320	IB 320 R	32.0		326	32	250	24.01	16.0	-		m6
	IB 320 HR										
	IE 320						24.01	-	1.0/3.0		
	ICD 320-90						36.55	-	-		
	ICD 320-60						40.59	-	-		

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

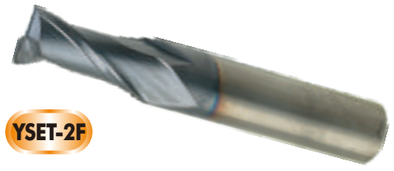
"ECO-Cutter" Short body system

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	m2.5
	IB 080 HR										
	IE 080						6.19	–	0.5/1.0		
	ICD 080-90						9.08	–	–		
	ICD 080-60						10.10	–	–		
YTEI 090S	IB 090 R	9	10	93	13	65	6.83	4.5	–		
	IB 090 HR										
	IE 090						6.83	–	0.5/1.0		
	ICD 090-90						10.18	–	–		
	ICD 090-60						11.33	–	–		
YTEI 100S	IB 100 R	10		92	12	65	7.86	5.0	–	M2.5	
	IB 100 HR										
	IE 100						7.86	–	0.5/1.0		
	ICD 100-90						11.40	–	–		
	ICD 100-60						12.64	–	–		
YTEI 110S	IB 110 R	11	12	99	16	68	8.51	5.5	–		
	IB 110 HR										
	IE 110						8.51	–	0.5/1.0		
	ICD 110-90						12.50	–	–		
	ICD 110-60						13.88	–	–		
YTEI 120S	IB 120 R	12		99	16	68	9.16	6.0	–	M3	
	IB 120 HR										
	IE 120						9.16	–	0.5/1.0		
	ICD 120-90						13.61	–	–		
	ICD 120-60						15.12	–	–		
YTEI 130S	IB 130 R	13	16	98	15	68	9.80	6.5	–		
	IB 130 HR										
	IE 130						9.80	–	0.5/1.0		
	ICD 130-90						14.71	–	–		
	ICD 130-60						16.35	–	–		
YTEI 140S	IB 140 R	14		98	15	68	10.43	7.0	–		
	IB 140 HR										
	IE 140						10.43	–	1.0/2.0		
	ICD 140-90						15.80	–	–		
	ICD 140-60						17.57	–	–		
YTEI 150S	IB 150 R	15		109	19	75	11.49	7.5	–		m3
	IB 150 HR										
	IE 150						11.49	–	1.0/2.0		
	ICD 150-90						17.06	–	–		
	ICD 150-60						18.97	–	–		
YTEI 160S	IB 160 R	16		108	18	75	12.13	8.0	–	M4	
	IB 160 HR										
	IE 160						12.13	–	1.0/3.0		
	ICD 160-90						18.14	–	–		
	ICD 160-60						20.14	–	–		
YTEI 170S	IB 170 R	17	20	107	17	70	12.77	8.5	–		
	IB 170 HR										
	IE 170						12.77	–	1.0/3.0		
	ICD 170-90						19.24	–	–		
	ICD 170-60						21.37	–	–		
YTEI 180S	IB 180 R	18		106	21	70	13.82	9.0	–		
	IB 180 HR										
	IE 180						13.82	–	1.0/3.0		
	ICD 180-90						20.05	–	–		
	ICD 180-60						22.76	–	–		
YTEI 190S	IB 190 R	19		106	21	70	14.46	9.5	–	M5	
	IB 190 HR										
	IE 190						14.46	–	1.0/3.0		
	ICD 190-90						21.59	–	–		
	ICD 190-60						23.99	–	–		
YTEI 200S	IB 200 R	20		105	20	70	15.10	10.0	–		m4
	IB 200 HR										
	IE 200						15.10	–	1.0/3.0		
	ICD 200-90						22.69	–	–		
	ICD 200-60						25.22	–	–		
YTEI 250S	IB 250 R	25	25	141	21	105	18.71	12.5	–	M6	
	IB 250 HR										
	IE 250						18.71	–	1.0/3.0		
	ICD 250-90						28.32	–	–		
	ICD 250-60						31.47	–	–		
YTEI 300S	IB 300 R	30	32	137	32	90	22.74	15.0	–	M8	m5
	IB 300 HR										
	IE 300						22.74	–	1.0/3.0		
	ICD 300-90						34.12	–	–		
	ICD 300-60						37.89	–	–		
YTEI 320S	IB 320 R	32		136	31	90	24.01	16.0	–		m6
	IB 320 HR										
	IE 320						24.01	–	1.0/3.0		
	ICD 320-90						36.55	–	–		
	ICD 320-60						40.59	–	–		

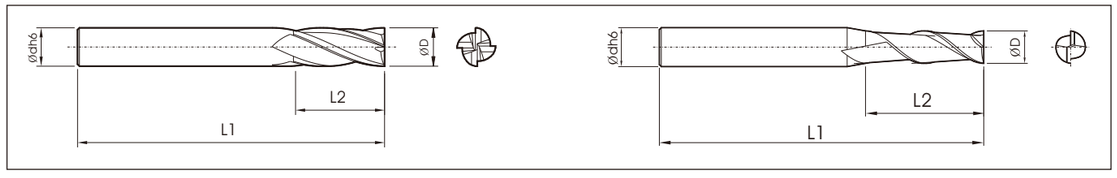
Note
This body dimension is similar to conventional solid end mill.
Same insert can be fit for both long & short body

Solid Carbide End Mills

YSET-4F



YSET-2F



Model : YSET, YSEL

- Standard length(**YSET**) & Long length(**YSEL**)
- Extra fine Micro grain carbide, PVD TiAlN coated to provide strength, lubricity, wear resistance and freer cutting action.
- 30° regular helix spiral, square end, 2 & 4 flutes configuration
- Suitable for high performance and high productivity machining
- Applicable to wide range materials

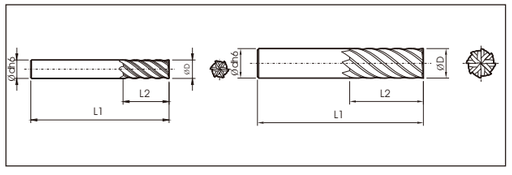
* Ordering : Please mark number of flutes in the square blank.

(unit : mm)

Code No.	ΦD	Φd	L1	L2	Available flutes
*** Standard Length 2F, 4F**					
YSET 2020	2.0	6.0	40	6	2
YSET 2025	2.5			8	
YSET 2030	3.0		45	10	
YSET 2040	4.0			12	
YSET □050	5.0		50	15	2, 4
YSET □060	6.0				
YSET 2070	7.0	8.0	60	20	2
YSET □080	8.0				2, 4
YSET 2090	9.0	10.0	70		2
YSET □100	10.0			25	2, 4
YSET 2110	11.0	12.0	75		2
YSET □120	12.0			30	2, 4
YSET □140	14.0	16.0	80	35	
YSET □150	15.0				
YSET □160	16.0		90	40	
YSET □180	18.0	20.0	100		
YSET □200	20.0		105	45	
*** Long Length 2F, 4F**					
YSEL 2060	6.0	6.0	70	30	2
YSEL 2080	8.0	8.0	80	35	
YSEL 4100	10.0	10.0	108	40	4
YSEL 4120	12.0	12.0		45	
YSEL 4160	16.0	16.0	120	55	
YSEL 4200	20.0	20.0		60	
YSEL 4250	25.0	25.0	160	70	

Carbide High Helix End Mills

YSET/HH



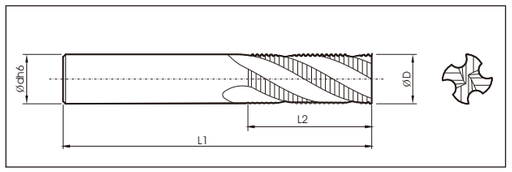
Model : YSET, Multi-flutes

- Standard length, High helix 40°, multi-flutes 6F & 8F configuration
- Extra fine Micro grain carbide, PVD TiAlN coated to
- provide strength, lubricity, wear resistance and freer cutting action.
- Finish milling operation
- Suitable for high performance and high productivity machining
- Applicable to wide range of material up to HRc60

Code No.	ΦD	Φd	L1	L2	Number of flute
YSET 6060	6.0	6.0	50	15	6
YSET 6080	8.0	8.0	60	20	
YSET 6100	10.0	10.0	70	25	
YSET 6120	12.0	12.0	75	30	
YSET 6140	14.0	16.0	80	35	
YSET 8160	16.0		90	40	8
YSET 8200	20.0	20.0	105	45	
YSET 8250	25.0	25.0	130	50	
YSET 8320	32.0	32.0	150	65	

Carbide Roughing End Mills

YSER



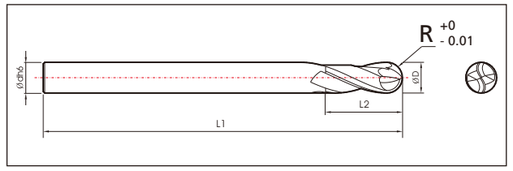
Model : YSER

- Standard length, Regular helix 30°, 3, 4, 6 flute configuration
- Extra fine Micro grain carbide, PVD TiAlN coated to provide strength, lubricity, wear resistance and freer cutting action.
- Strongest cutting edge and smooth operation
- Applicable high feed rate in shoulder milling and slotting operation

Code No.	ΦD	Φd	L1	L2	Number of flute
YSER 3060	6.0	6.0	50	15	3
YSER 3080	8.0	8.0	60	20	
YSER 3100	10.0	10.0	70	25	
YSER 4120	12.0	12.0	75	30	4
YSER 4140	14.0	16.0	80	35	
YSER 4160	16.0		90	40	
YSER 6200	20.0	20.0	105	45	6
YSER 6250	25.0	25.0	130	50	

Carbide Ball End Mills

YSEB YSEBL



Model : YSEB, YSEBL

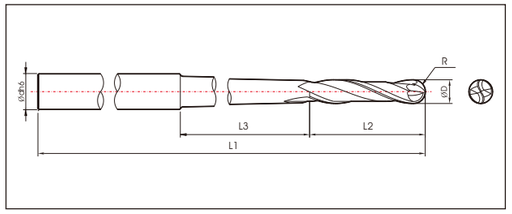
- Ball nose End Mill, Standard length(**YSEB**) & Long/Extra Long length(**YSEBL**)
- Extra fine Micro grain carbide, PVD TiAlN coated to Provide Strength, lubricity, wear resistance and freer cutting action
- 30° regular helix spiral, 2 flutes configuration
- Special geometry with eccentric cutting edge, high tolerance radius +0 ~ - 0.01 mm
- Applicable to wide range of material up to HRc60
- Suitable for high performance and high productivity machining

(unit : mm)

Code No.	D	R	d	L1	L2
* Standard Length					
YSEB 1.0R	2.0	1.0	6	60	5
YSEB 1.5R	3.0	1.5			7
YSEB 2.0R	4.0	2.0			8
YSEB 2.5R	5.0	2.5		70	10
YSEB 3.0R	6.0	3.0			16
YSEB 3.5R	7.0	3.5	8	80	18
YSEB 4.0R	8.0	4.0			20
YSEB 4.5R	9.0	4.5	10	90	22
YSEB 5.0R	10.0	5.0		100	25
YSEB 6.0R	12.0	6.0	12	108	30
YSEB 7.0R	14.0	7.0	16		32
YSEB 8.0R	16.0	8.0		120	35
YSEB 10.0R	20.0	10.0	20		40
YSEB 12.5R	25.0	12.5	25	160	50
YSEB 16.0R	32.0	16.0	32		60
* Long/Extra long Length					
YSEBL 3.0R110	6.0	3.0	6	110	20
YSEBL 3.0R160				160	25
YSEBL 4.0R160	8.0	4.0	8		30
YSEBL 4.0R200				200	35
YSEBL 5.0R160	10.0	5.0	10	160	40
YSEBL 5.0R200				200	45
YSEBL 6.0R160	12.0	6.0	12	160	50
YSEBL 6.0R200				200	55
YSEBL 8.0R160	16.0	8.0	16	160	60
YSEBL 8.0R200				200	65
YSEBL 10.0R160	20.0	10.0	20	160	70
YSEBL 10.0R200				200	75
YSEBL 12.5R200	25.0	12.5	25		85
YSEBL 16.0R200	32.0	16.0	32		95

Carbide Long Ball End Mills For graphite

YSEBG



Model : YSEBG

- Ball nose End Mill, Long length exclusively used for Graphite material
- Extra fine Micro grain carbide, PVD TiAlN coated to provide strength, lubricity, wear resistance and freer cutting action.
- 30° regular helix spiral, 2 flutes configuration
- Special geometry with eccentric cutting edge, high tolerance radius +0 ~ - 0.01mm
- Suitable for high performance and high productivity machining
- High stength TRS 4,300N/mm

(unit : mm)

Code No.	D	R	d	L1	L2	L3
YSEBG 1.0R160	2.0	1.0	6.0	160	6	95
YSEBG 1.5R160	3.0	1.5			8	80
YSEBG 2.0R160	4.0	2.0	8.0		10	85
YSEBG 3.0R160	6.0	3.0	10.0		20	80
YSEBG 3.0R200				200		70
YSEBG 4.0R160	8.0	4.0	12.0	160	30	
YSEBG 4.0R200				200		
YSEBG 5.0R160	10.0	5.0		160	40	55
YSEBG 5.0R200				200		50
YSEBG 6.0R160	12.0	6.0	16.0	160	50	
YSEBG 6.0R200				200		80
YSEBG 8.0R200	16.0	8.0	20.0		60	85