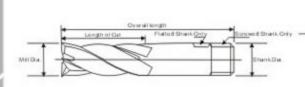


## HSS END MILL

## Troubleshooting in Endmilling

	•	(C. 7)
Breaking oftool	At time of engaging with work material When ending cut	Decrease feed rate.     Decrease projection amount.     Shorten cutting edge length to required minimun limit.
	During normal cutting	1. Decrease feed rate. 2. Contral wear—replace tool early. 3. Replace chuck or collet. 4. Decrease projection amount. 5. Carry out honing. 6. If 4 flute, reduce to 2 flute (clogging of chipping) 7. If dry cutting change to wet cutting utilize cutting fluid. In case of wet cutting flow oil supplied from the fint, change to from real angle of side top. Use ample with rate.
	When changing direction of feed	Utilize circular interpolation (in case of NC machine) or temporarily stop feed (Do welling)     Reduce feed rate before and after change of directions     Replace chuck or collet
Fracture of cutting edge	Fracture of corners	Carry out cham fering or nose with hand lapper.     Down cut →Up cut.
	Fracture at boundary of depth of cut	1. Down cut →Up cut 2. Reduce cutting speed
	Chipping at center part or overall	Carry out honing. Or enlarge.     Change number of rotation(in case machine vibrates).     Increase cutting speed.     In ease of squeaking noise during cutting, increase feed.     It dry cutting use cutting fluid or blowair.     Replace chuke or collet.     Reduce cutting speed.
	Large fracturing of cutting edge	1. Decrease feed rate. 2. If 4 flute reduce to 2 flute 3. Carry out honing. Or enlaege 4. Replace chuck or collet 5. Reduce cutting speed from the front, change to rear at an angle or from side top. Use ample supply.
Rapid tool wear		Reduce cutting speed     Up cut→Down cut     Increse feed     Utilize wet cutting or air     If reground tool, improve surface roughness of flank
	Surface is good but rough	1. Decrease feed 2. In case using 2 flute, increase to 4 flute

## Names of End Mill Parts



Type of End Mill





