Achieving Better Chip Control During External Turning

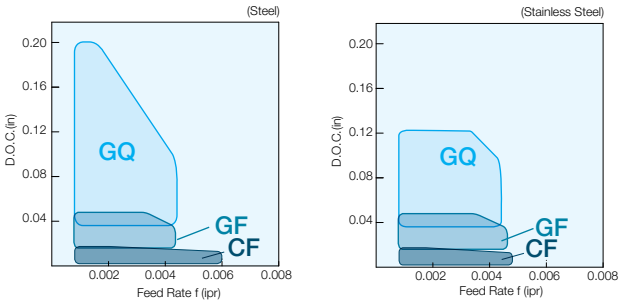
1) Use chipbreakers for various depths of cut

- Applicable to high precision cutting due to a finely ground sharp edge.
- The mirror polished insert provides improved adhesion resistance and surface finish.

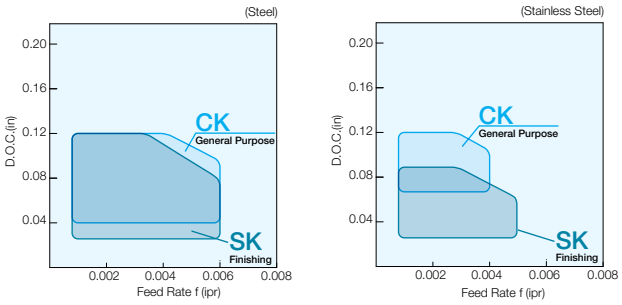
2) Improved chip control by cutting in 2 passes; roughing and finishing

- If chip control is not improved in 1 pass, use Goose-neck Holders or Sleeve Holders

Chip Processing



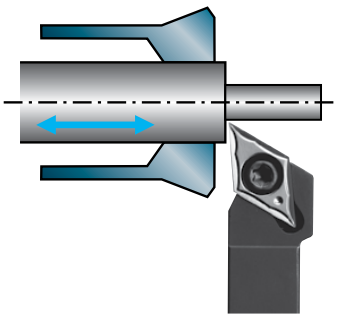
Low Resistance



Problems

Finishing with a General Toolholder

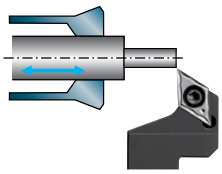
Bad Chip Control



After Roughing

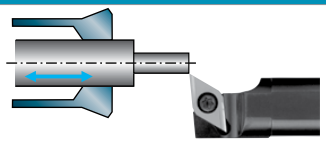
Solution ①

Finishing with a Goose-neck Holder



Solution ②

Finishing with a Sleeve Holder



Choosing Toolholders to Improve Productivity

Application	Tooling Example	Toolholder	Advantages	Workpiece diameter	D.O.C. for medium to roughing of carbon steel
Medium to Roughing	SCLN-FF SDLN-FF STLN-FF	Small Double-Sided Tooling	Cost Reduction	Ø0.236" or more Ø6mm or more	D.O.C.=~0.098" D.O.C.=~2.5mm
	PCLN-FF PTLN-FF	Toolholder for Double Sided Tooling (Lever Lock) FP-TK Chipbreaker	Cost Reduction	Ø0.630" or more Ø16mm or more	D.O.C.=0.059"~0.197" D.O.C.=1.5~5.0mm
Medium to Roughing + Finishing	E9 Fig.1	Small Double-Sided tooling (Screw Clamp)	Cost Reduction	Ø0.630" or more Ø16mm or more	D.O.C.=~0.098" D.O.C.=~2.5mm
		Goose-neck Holder (Sleeve Holder)	Better Chip Control	-	-
	E9 Fig.2	Toolholder for Double-Sided Tooling (Lever Lock) FP-TK Chipbreaker	Cost Reduction	Ø0.630"~1.260" Ø16mm ~ Ø32mm	D.O.C.=0.059"~0.197" D.O.C.=1.5~5.0mm
		Goose-neck Holder (Sleeve Holder)	Better Chip Control	-	-
	E9 Fig.3	Grooving Toolholders	Long curled chips are evacuated toward a fixed direction.	Ø0.630"~1.260" Ø16mm ~ Ø32mm	D.O.C.=0.158" or more D.O.C.=4.0mm or more
		Goose-neck Holder (Sleeve Holder)	Better Chip Control	-	-