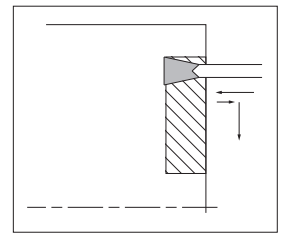
Guide for Face Grooving (Continued)

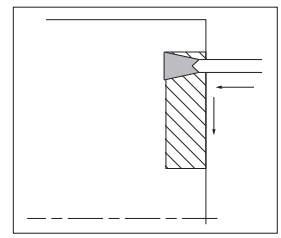
Point (Ⅰ) (Longitudinal turning after Grooving)

① Grooving Depth Over 0.5mm: For roughing (Refer to Fig.4)
Before Longitudinal turning, pull the tool back about 0.1mm after grooving, instead of Longitudinal turning subsequent to grooving.
(Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)



Before Longitudinal turning, pull the tool back about 0.1mm after grooving
(Grooving Depth Over 0.5mm: At roughing)
Fig.4

② Grooving Depth under 0.5mm: For finishing (Refer to Fig.5)
Longitudinal turning subsequent to grooving is possible because there is only a small force on the cutting edge..
(Retention time is not necessary.)



Longitudinal turning subsequent to grooving
(Grooving Depth under 0.5mm: At finishing)
Fig.5

Point (Ⅱ)

When widening the groove width, apply the “Step Turning” as shown in Fig.6.
The widened groove and side walls should be finished last.
(For better chip control, ap over 0.5mm is recommended.)

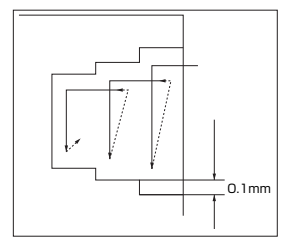
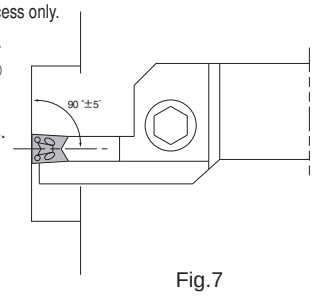


Fig.6

Trouble shooting

Trouble	Countermeasures
Whitish trace remains at the groove bottom.	① Increase the cutting speed for finishing process only. (This can handle most of the cases). If the method is not successful, try ② as follows. ② Check the insert edge's parallelness. (Adjustment: Apply the insert edge to the work face and adjust the toolholder within the angle of ±5'. (Fig.7)  Fig.7
Chips are entangled.	① Install the toolholder in the reverse position. Adjust the coolant flow to the cutting edge. ② When widening the groove, do not machine one deep groove. Instead, repeat shallow grooving and turning.
Insert cracks when Longitudinal turning.	Reverse the facing direction.
Groove is not straight.	Check the edge's parallelness. Decrease the feed rate.