

CUTTING PERFORMANCE

Comparison of chip control

Smooth chip evacuation!
Better than conventional tools!

Tool diameter : $\phi D_c = \phi 125$ mm Feed per : $f_z = 0.19$ mm/t ($a_e = 10$ mm)
 Cutting speed : $V_c = 150$ m/min edge line $f_z = 0.14$ mm/t ($a_e = 20$ mm)
 Chip thickness : $t = 0.1$ mm $f_z = 0.125$ mm/t ($a_e = 25$ mm)
 No. of edge lines: 1 edge line $f_z = 0.12$ mm/t ($a_e = 30$ mm)
 Machine : Vertical M/C, BT50

TUNG^{MIN}SLIT ASV type

○ : Good ✕ : Bad, chip packing

P Steel S55C / C55 (200HB)
 Edge width: $W = 4$ mm, Dry (with air)
 Corner radius: $r_\xi = 0.4$ mm

Cutter	Depth of slot: a_e (mm)		
	10	20	25
TUNG ^{MIN} SLIT	○	○	○
Competitor A	○	○	✕
Competitor B	○	✕	✕

Chips at $a_e = 25$ mm depth



Competitor A



Packed chips

Competitor B



No chip control

M Stainless SUS304 / X5CrNi18-9 (180HB)
 Edge width: $W = 6$ mm, Wet
 Corner radius: $r_\xi = 0.8$ mm

Cutter	Depth of slot: a_e (mm)		
	10	20	30
TUNG ^{MIN} SLIT	○	○	○
Competitor A	○	✕	✕

Chips at $a_e = 30$ mm depth



Competitor A



Packed chips

TUNG^{UNIVERSAL}SLOT ASW / TSW type

P Steel S55C / C55 (200HB)
 Edge width: $W = 10$ mm, Dry
 Corner radius: $r_\xi = 0.8$ mm

Cutter	Depth of slot: a_e (mm)		
	10	20	30
TUNG ^{UNIVERSAL} SLOT	○	○	○
Competitor A	○	○	✕

Chips at $a_e = 30$ mm depth



Competitor A



Packed chips



Chips are packed because of bad chip control and flow.