

Grooving and parting-off tool

TUNGCUT

Tungaloy Report No. 391S6-G

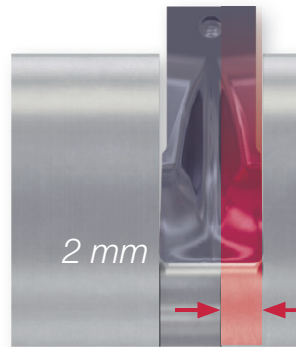
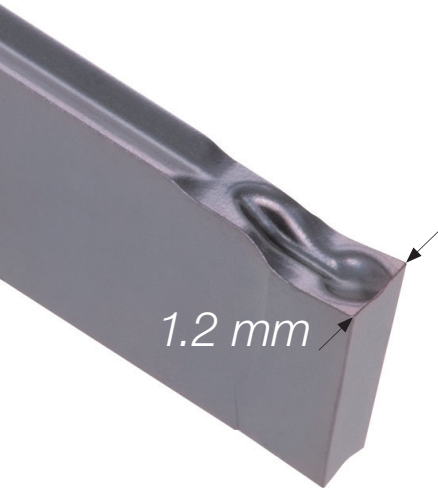
New 1.2 mm wide parting-off inserts optimized for applications on Swiss machines





■ 1.2 mm wide insert — the perfect solution for material cost reduction

- **Saves material by up to 40% by volume** when compared with existing 2 mm wide insert.



40% cost cut!

When swapped with 1.2 mm wide insert

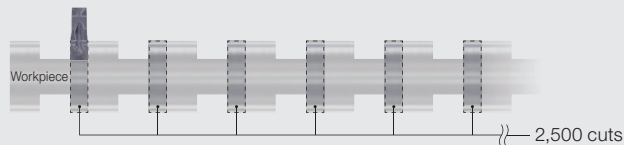
0.8 mm

Ex.) Lengths of materials wasted after 2,500 cuts by using 1.2 mm insert vs 2 mm insert:

New With 1.2 mm insert → 2,500 cuts x 1.2 mm/cut = **3,000 mm**

With 2 mm insert → 2,500 cuts x 2 mm/cut = **5,000 mm**

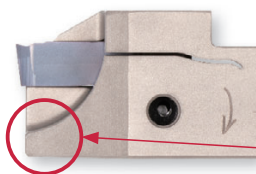
1.2 mm wide insert can save a 2,000-mm long bar stock worth of materials!!



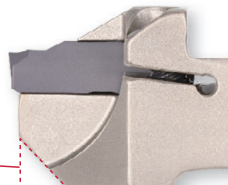
■ Robust tool design

Easy workpiece positioning after every cut-off

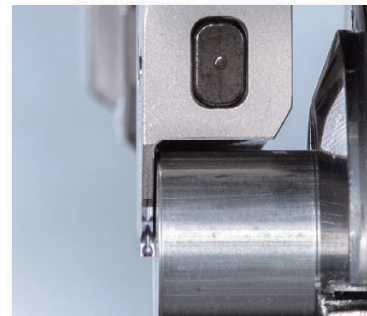
The robust toolholder design withstands repeating bar feeder pressures, allowing the toolholder to be used for workpiece positioning.



TUNG-CUT 1.2 mm



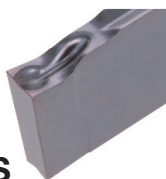
Conventional



■ Consistent chip forming and control

M Stainless steel (SUS304 / X5CrNi18-9)

DGS



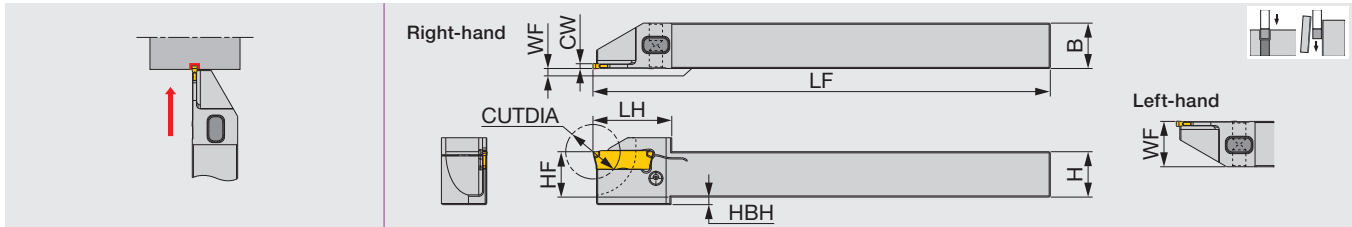
Toolholder : JTTER1212X1.2D16
Insert : DGS1.2-003 AH725
Cutting speed : $V_c = 60, 100$ m/min
Feed : $f = 0.01, 0.03, 0.05$ mm/rev
Groove width : 1.2 mm

Cutting speed: V_c (m/min)	100			
	60			
		0.01	0.03	0.05
		Feed: f (mm/rev)		

TOOLHOLDER

JTTER/L

External grooving and parting toolholder, for Swiss lathes



Designation	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF ⁽¹⁾	HBH	Torque*
JTTER/L1010H1.2D12	1.2	0.9	12	10	10	100	17	10	0/10	-	1.5
JTTER/L1212F1.2D16	1.2	0.9	16	12	12	85	19	12	0/12	-	1.5
JTTER/L1212X1.2D16	1.2	0.9	16	12	12	120	19	12	0/12	-	1.5
JTTER/L1212X1.2D20	1.2	0.9	20	12	12	120	21	12	0/12	2	1.5
JTTER/L1616X1.2D20	1.2	0.9	20	16	16	120	21	16	0/16	-	2

(1) "WF" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

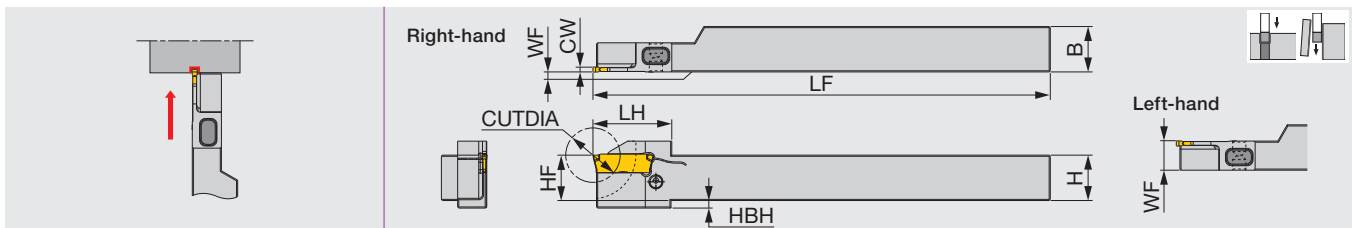
*Torque: Recommended clamping torque (N-m)

SPARE PARTS

Designation	Clamping screw	Clamping pin	Wrench
JTTER/L1010...	SSM3.5x0.35	PIN-SL-TC	P-2F
JTTER/L1212...	SSM3.5x0.35	PIN-SL-TC	P-2F
JTTER/L1616...	SRM5-24145-RL	PIN-32121	P-2.5F

JTTER/L-S

External grooving and parting toolholder, for Swiss lathes (for sub spindle)



Designation	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF ⁽¹⁾	HBH	Torque*
JTTER/L1010H1.2D12-S	1.2	0.9	12	10	10	100	17	10	0/7.7	-	1.5
JTTER/L1212F1.2D16-S ⁽²⁾	1.2	0.9	16	12	12	85	19	12	0	-	1.5
JTTER/L1212X1.2D16-S	1.2	0.9	16	12	12	120	21	12	0/7.7	-	1.5
JTTER/L1212X1.2D20-S	1.2	0.9	20	12	12	120	21	12	0/7.7	2	1.5
JTTER/L1616X1.2D20-S	1.2	0.9	20	16	16	120	21	16	0/7.7	-	1.5

(1) "WF" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

(2) No clamping screw from the insert side.

*Torque: Recommended clamping torque (N-m)

SPARE PARTS

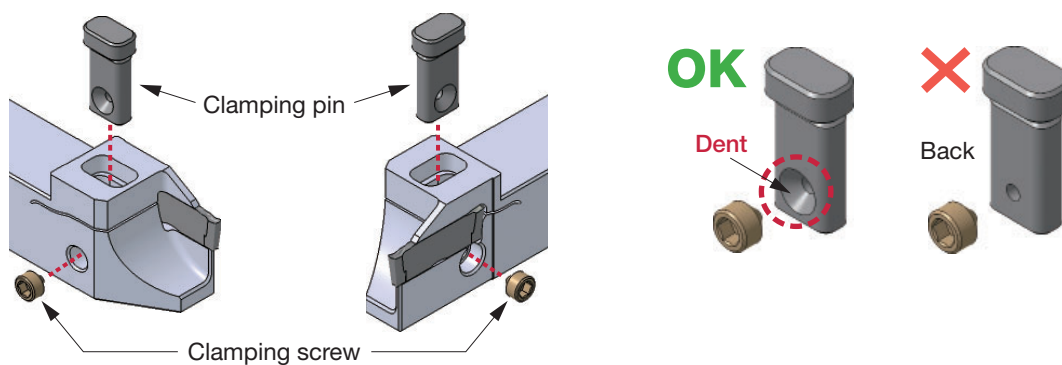
Designation	Clamping screw	Clamping pin	Wrench
JTTER/L*-S	SSM3.5x0.35	PIN-SL-TC	P-2F

STANDARD CUTTING CONDITIONS

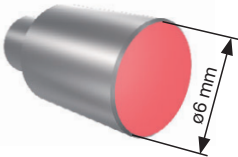
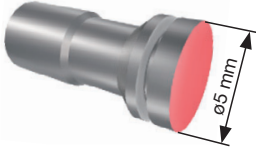
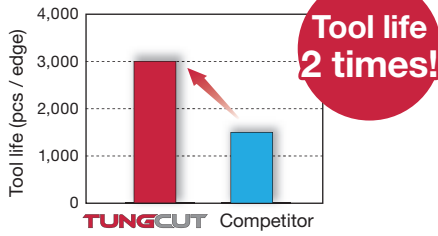
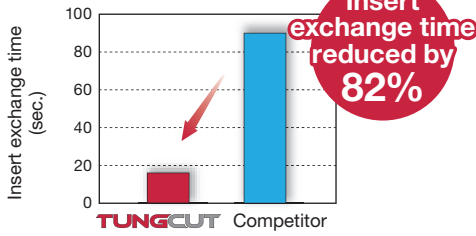
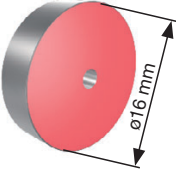
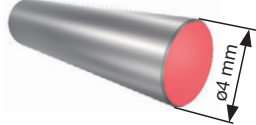
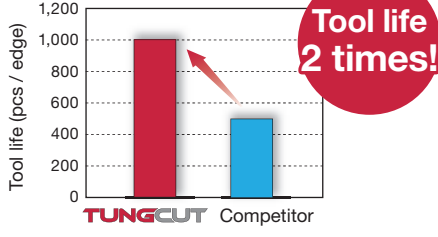
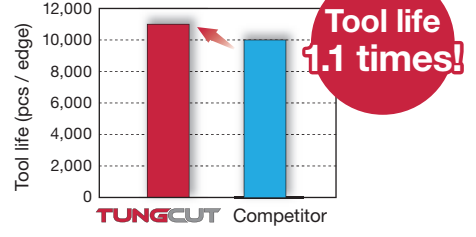
ISO	Workpiece material	Grade	Cutting speed V_c (m/min)	Feed f (mm/rev)
P	Steel C45, 34CrMo4, etc.	AH725	50 - 200	0.01 - 0.05
M	Stainless steel X10CrNiS18-9, etc.	AH725	50 - 200	0.01 - 0.05
S	Titanium alloys Ti-6Al-4V, etc.	AH725	30 - 80	0.01 - 0.05

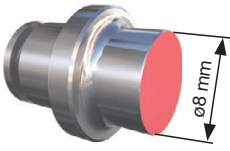
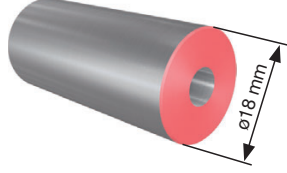
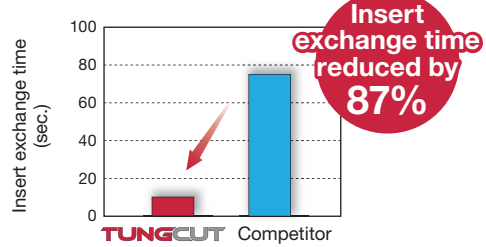
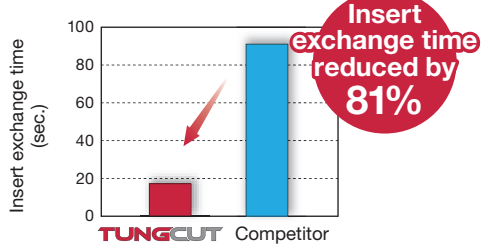
CAUTIONS WHEN INSTALLING THE CLAMPING PIN

 Set the clamping pin so that the dent faces towards the clamping screw.



PRACTICAL EXAMPLES

Workpiece type		Roller pin	Part for camera
Toolholder		JTTER1010H1.2D12	JTTEL1212X1.2D16
Insert		DGS1.2-003	DGS1.2-003
Grade		AH725	AH725
Workpiece material		SUJ2 / 100Cr6	SUS303 / X10CrNi18-9
		 P	 M
Cutting conditions	Cutting speed : V_c (m/min)	60	45
	Feed : f (mm/rev)	0.015	0.03
	Groove width : CW (mm)	1.2	1.2
	Machining	Parting-off	Parting-off
	Coolant	Wet	Wet
Results		 Current cutting width is 2 mm. TungCut DGS1.2 insert saved material waste by 40 vol %. Better surface finish and double tool life were achieved.	 Thanks to innovative side-locking method, insert change time was reduced by 82%.
Workpiece type		Injection part	Pin
Toolholder		JTTEL1212X1.2D20	JTTER1010H1.2D12
Insert		DGS1.2-003	DGS1.2-003
Grade		AH725	AH725
Workpiece material		SUS304 / X5CrNi18-9	SUS304 / X5CrNi18-9
		 M	 M
Cutting conditions	Cutting speed : V_c (m/min)	80	45
	Feed : f (mm/rev)	0.02	0.03
	Groove width : CW (mm)	1.2	1.2
	Machining	Parting-off	Parting-off
	Coolant	Wet	Wet
Results		 Competitor's insert had unpredictable tool life while the DGS1.2 insert provided 2 times tool life and reliability.	 Current cutting width is 1.5 mm. TungCut DGS1.2 insert saved material waste and achieved a 10% tool life increase.

Workpiece type		Pneumatic part	Shaft
Toolholder		JTTER1010H1.2D12	JTTER1212X1.2D20
Insert		DGS1.2-003	DGS1.2-003
Grade		AH725	AH725
Workpiece material		SUS304 / X5CrNi18-9	SUS304 / X5CrNi18-9
			
Cutting conditions	Cutting speed : V_c (m/min)	50	60
	Feed : f (mm/rev)	0.02	0.03
	Groove width : CW (mm)	1.2	1.2
	Machining	Parting-off	Parting-off
	Coolant	Wet	Wet
Results		 Insert exchange time (sec.) Insert exchange time reduced by 87% TUNG CUT Competitor The innovative Side Clamp insert clamping method eliminated the need for removing the entire tool from the tool post, reducing tool change time by 87%.	 Insert exchange time (sec.) Insert exchange time reduced by 81% TUNG CUT Competitor The innovative Side Clamp insert clamping method promoted swift tool change, while the holder remained in the machine, reducing machine downtime by 81%.

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