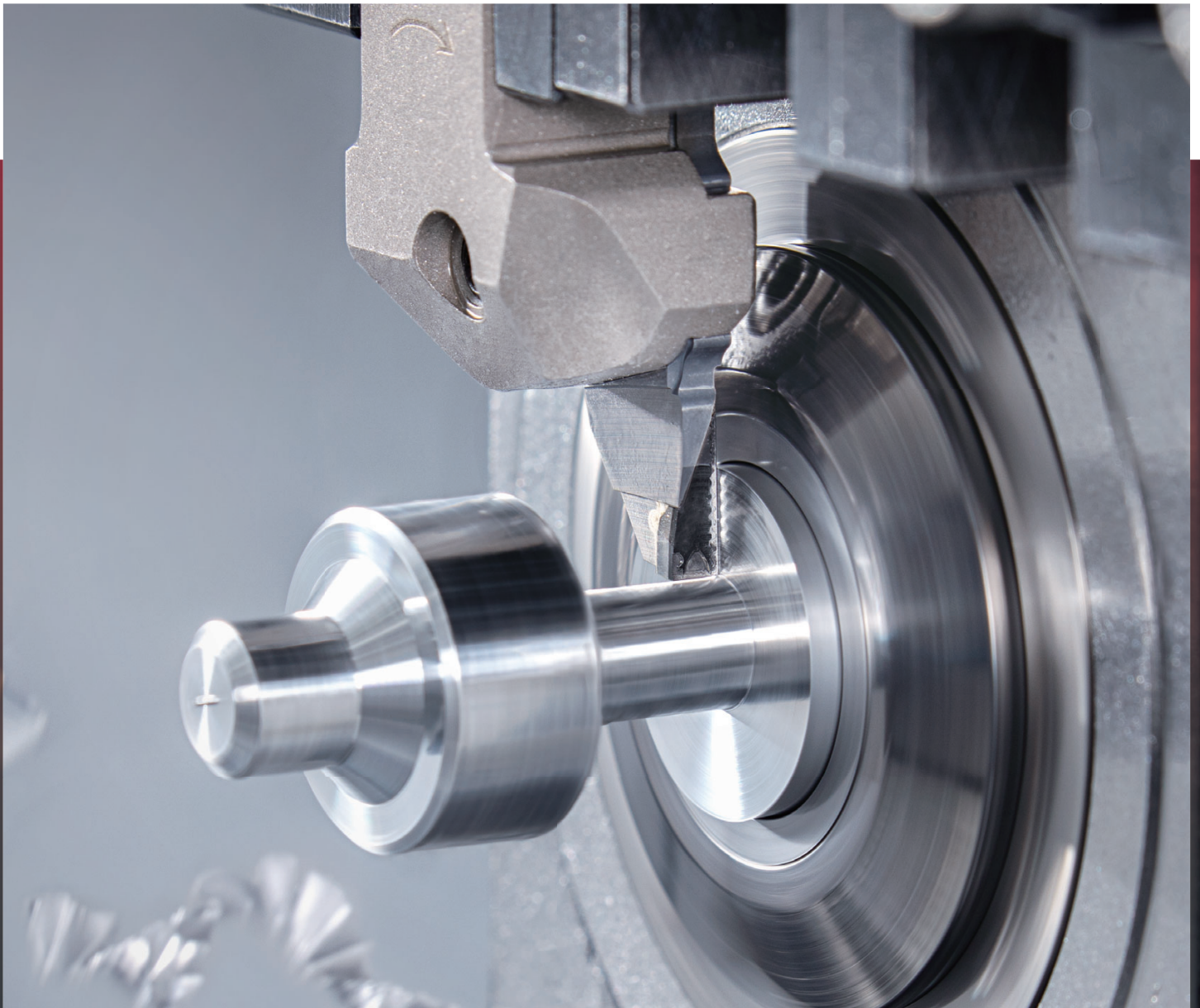


Parting off, Grooving, Threading Tools

DUO^{UST}**JCUT**

Tungaloy Report No. 504S2-US

PCD insert with 3D chipbreaker for machining aluminum parts

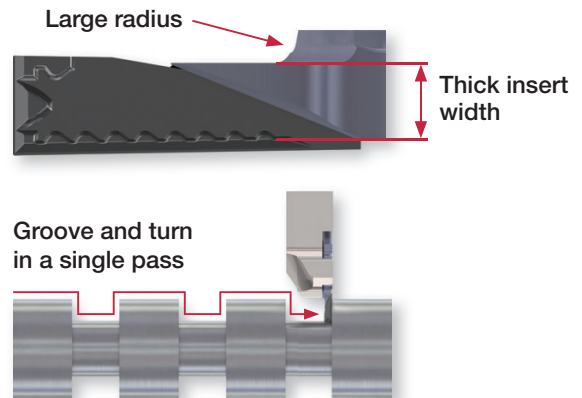




Dramatically improves the machining of aluminium spools for hydraulic valves

Extremely robust tool design

- Secure insert clamping and strong insert design of DuoJust-Cut prevents insert breakage when machining at high rates.
- Side-turning at up to 0.236" d.o.c. is possible.



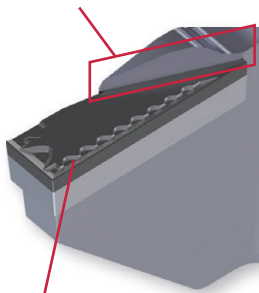
Chip control

- All-round chipbreaker geometry allows effective chip breaking regardless of the insert's depth of cut thanks to its 3D laser-etched style on the rake for small D.O.C and wall style for large D.O.C.

Chip control comparison (side turning)

Wall chipbreaker

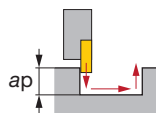
For chip control at high D.O.C.



3D chipbreaker

For chip control at low D.O.C.

Insert : JXDX12R20F DX110
 Workpiece material : 6061
 Barstock diameter : $\varnothing 0.630''$
 Cutting speed : $V_c = 656 \text{ sfm}$
 Coolant : Oil
 Machine : Swiss lathe



DUOJUST CUT

Depth of cut: ap (in)	0.236				
	0.197				
	0.157				
	0.118				
	0.079				
	0.039				
		0.05	0.003	0.004	0.006
Feed: f (ipr)					

Competitor

PCD insert with chipbreaker

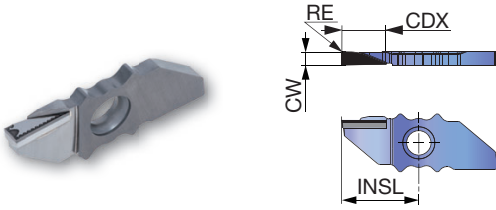
Depth of cut: ap (in)	0.236	Parameters out of the recommendations			
	0.197	Parameters out of the recommendations			
	0.157				PCD edge broken
	0.118				
	0.079				
	0.039				
		0.05	0.003	0.004	0.006
Feed: f (ipr)					

Excellent surface quality

- With submicron-sized diamond grains with very strong bonding, DX110 provides better surface finish and longer tool life than carbide inserts.

INSERTS

JXDX**R-F (PCD insert)



P	Steel						
M	Stainless						
K	Cast iron						
N	Non-ferrous	★					
S	Superalloys						
H	Hard materials						

★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	PCD				CDX (in)	INSL (in)
					DX110					
JXDX12R20F	R	2	0.079	< 0.0039	●				0.236	0.492
JXDX12R25F	R	2.5	0.098	< 0.0039	●				0.256	0.492
JXDX16R25F	R	2.5	0.098	< 0.0039	●				0.276	0.571

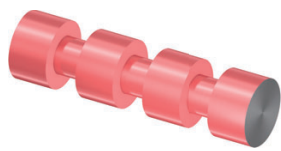
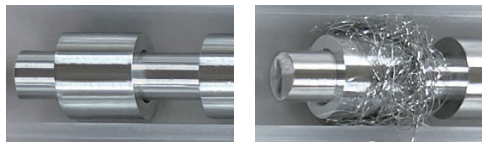
● : New product
Package quantity = 1 pc.

STANDARD CUTTING CONDITIONS

For aluminum and non-ferrous metal PCD insert

ISO	Workpiece materials	Grade	Operation	Cutting speed Vc (sfm)	Feed f (ipr)	Depth of cut ap (in)
N	Aluminum alloys 5056, 6061, etc.	DX110	Grooving	328 - 984	0.0012 - 0.0059	-
			Turning	328 - 984	0.0012 - 0.0059	< 0.236"

PRACTICAL EXAMPLES

Workpiece type		Spool
Toolholder		JSXXR1212X09
Insert		JXDX12R20F
Grade		DX110
Workpiece material		6061
		
Cutting conditions	Cutting speed: Vc (sfm)	984
	Feed : f (ipr)	0.002
	Depth of cut : ap (in)	0.197
	Machining	Grooving, Turning (in a single pass)
	Coolant	Oil
Results		 <p>DUOJUST CUT Competitor PCD insert without chipbreaker</p> <p>Chip entanglements were common with the competitor's inserts. Featuring 3D laser-etched chipbreaker, DuoJust-Cut PCD insert improved chip control, eliminated chip entanglements.</p>

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