

Parting-off and front turning tools

DUO^{FORCE}**FCUT**

Tungaloy Report No. 556-US

New flexible turning tool series for CNC automatic lathes and cam-driven lathes





INDUSTRY 4.0
FEED the SPEED!



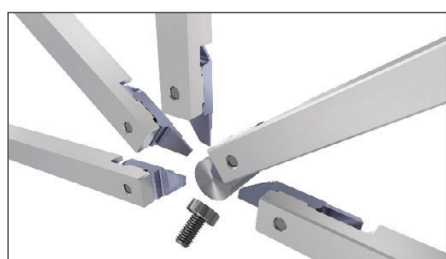
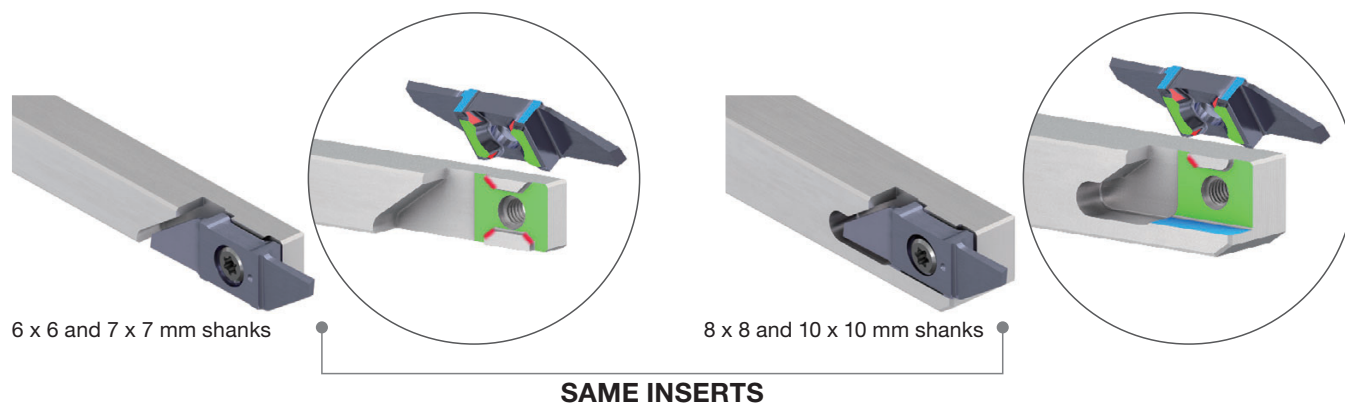
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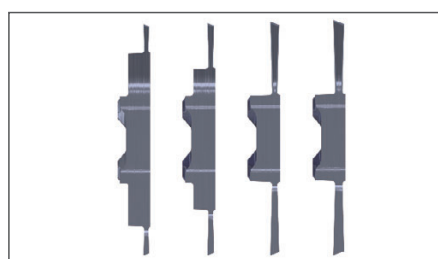
New flexible tool series with unique insert clamping system
Ideal for machining small parts of 0.472" (12 mm) or smaller diameters

Full lineup of shank sizes that can be used in cam-driven and CNC automatic lathes

- Minimum insert movement during machining thanks to the use of optimized screws
- Ground contact faces provide the insert with superior edge repeatability
- 6 x 6 to 10 x 10 mm shanks are available as standard
- Innovative insert clamping mechanism allows the use of the same insert with all toolholders of different sizes
- A flat toolholder design eliminates tool interference with the clamping unit, allowing free tool installations



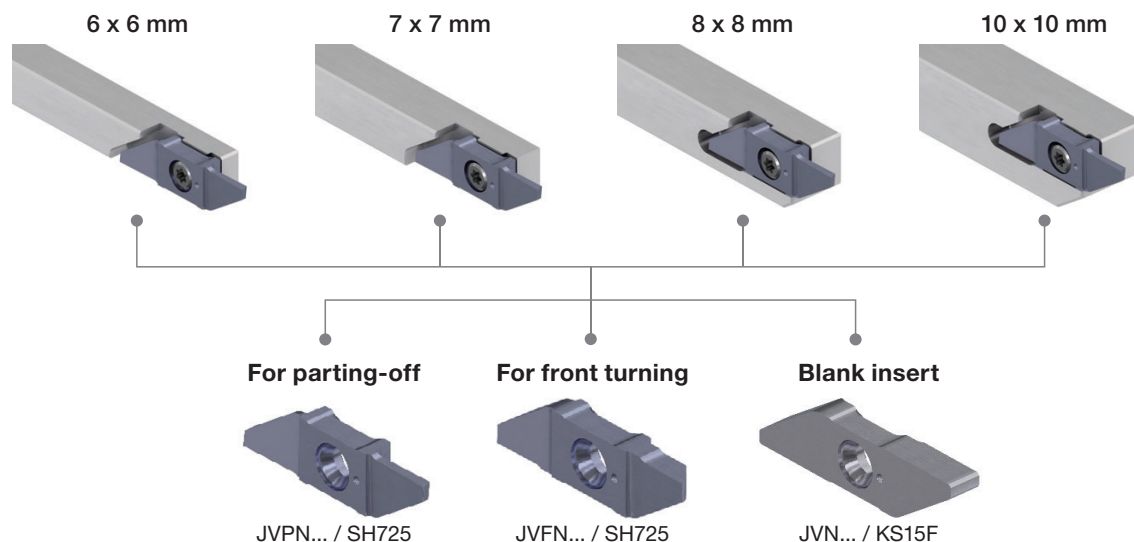
For turrets with radial tool arrangements



Groove widths available from 0.020 to 0.039"

Applicable for a wide range of applications

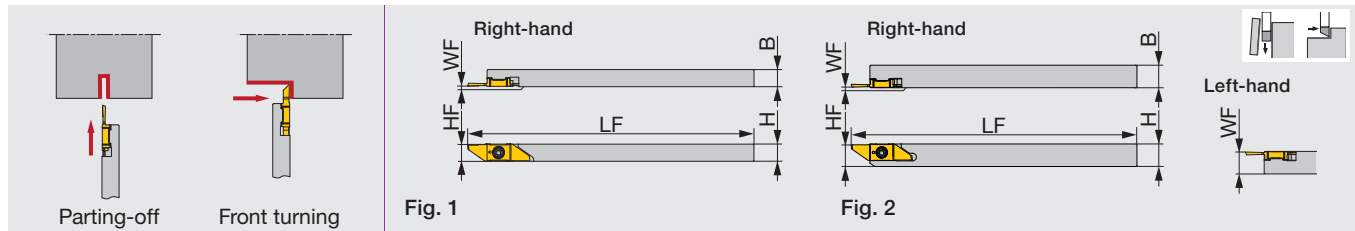
- Inserts for parting-off and front turning are available as standard
- Blank inserts are also available for customers to freely fabricate them into the desired groove profiles
- Even when the cutting edge is fractured during machining, the other unused cutting edge is securely protected by unique clamping system
- Right-hand & left-hand inserts



TOOLHOLDERS

JSXXR/L

Parting-off and front turning toolholders



Metric	H	B	LF	HF	WF ⁽¹⁾	Insert	Torque*	Fig.
JSXXL0606X05	6	6	120	5.6	5.8	JV*N..., JVN...	1.3	1
JSXXR/L0707X05	7	7	120	6.6	0.2/6.8	JV*N..., JVN...	1.3	1
JSXXR/L0808F05	8	8	85	7.7	0.2/7.8	JV*N..., JVN...	1.3	2
JSXXR/L0808H05	8	8	100	7.7	0.2/7.8	JV*N..., JVN...	1.3	2
JSXXR/L1010H05	10	10	100	9.7	0.2/9.8	JV*N..., JVN...	1.3	2

Torque*: Recommended clamping torque (N-m)

(1) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

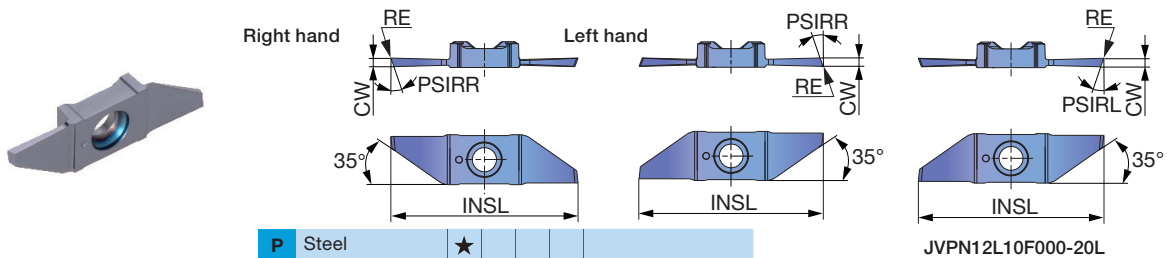
Note: Use the right-hand insert (JV***R...) for a right-hand holder (JSXXR...); the left-hand insert (JV***L...) for a left-hand holder (JSXXL...).

SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...05	CSTB-2.5L054DL	T-7F
JSXXL...05	CSTB-2.5L054DR	T-7F

INSERTS

JVPN**R/L (For parting-off)



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

★ : First choice

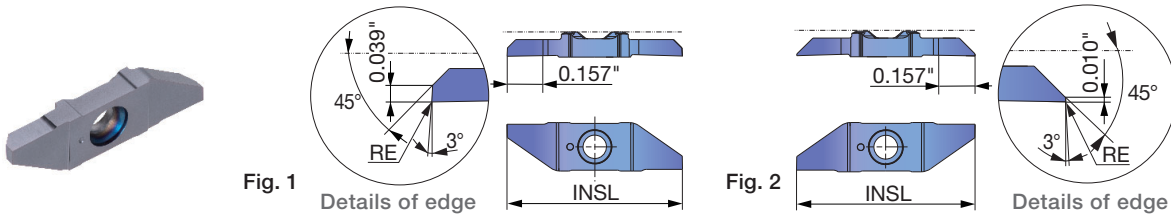
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated			CUTDIA (in)	INSL (in)	PSIRR	PSIRL
					SH725						
JVPN04R05F000-20	R	0.5	0.020	0	●			0.157	0.843	20°	-
JVPN04L05F000-20	L	0.5	0.020	0	○			0.157	0.843	20°	-
JVPN04R05F005-20	R	0.5	0.020	0.05	●			0.157	0.839	20°	-
JVPN04L05F005-20	L	0.5	0.020	0.05	○			0.157	0.839	20°	-
JVPN07R06F000-20	R	0.6	0.024	0	●			0.276	0.843	20°	-
JVPN07L06F000-20	L	0.6	0.024	0	○			0.276	0.843	20°	-
JVPN07R06F005-20	R	0.6	0.024	0.05	●			0.276	0.843	20°	-
JVPN07L06F005-20	L	0.6	0.024	0.05	○			0.276	0.843	20°	-
JVPN12R08F000-20	R	0.8	0.031	0	●			0.472	0.850	20°	-
JVPN12L08F000-20	L	0.8	0.031	0	○			0.472	0.850	20°	-
JVPN12R08F005-20	R	0.8	0.031	0.05	●			0.472	0.846	20°	-
JVPN12L08F005-20	L	0.8	0.031	0.05	○			0.472	0.846	20°	-
JVPN12R10F000-20	R	1	0.039	0	●			0.472	0.854	20°	-
JVPN12L10F000-20	L	1	0.039	0	○			0.472	0.854	20°	-
JVPN12R10F005-20	R	1	0.039	0.05	●			0.472	0.854	20°	-
JVPN12L10F005-20	L	1	0.039	0.05	○			0.472	0.854	20°	-
JVPN12L10F000-20L	L	1	0.039	0	○			0.472	0.854	-	20°

○ : Will be released in November 2022

● : Line up

INSERTS

JVFN45R/L (For front turning)



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

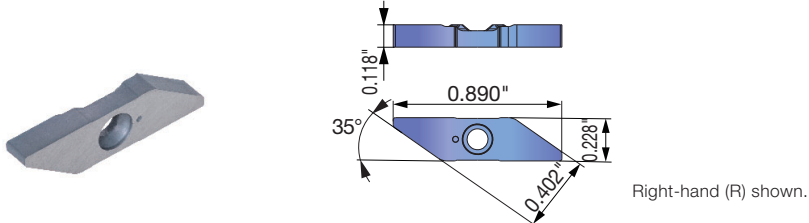
★ : First choice

Designation	HAND	RE (in)	Coated						INSL (in)	Fig.
			SH725							
JVFN45R0310F	R	0	●						0.827	1
JVFN45L0302FL	L	0	○						0.827	2

○ : Will be released in November 2022

● : Line up

JVNR/L (Semi-finished blanks)



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

★ : First choice

Designation	HAND		Uncoated					
			KS15F					
JVNR30	R	●						
JVNL30	L	●						

● : Line up

STANDARD CUTTING CONDITIONS

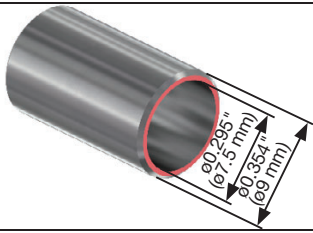
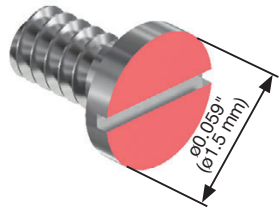
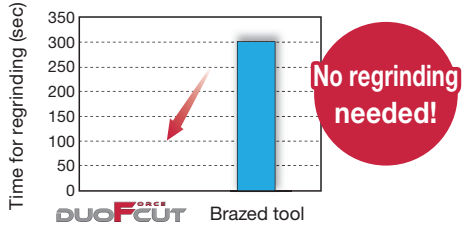
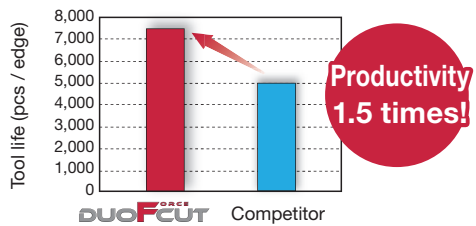
Parting-off

ISO	Workpiece materials	Grade	Cutting speed V _c (sfm)	Feed f (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 591	0.00039 - 0.0020
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 591	0.00039 - 0.0020
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 591	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 394	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020

Front turning

ISO	Workpiece materials	Grade	Cutting speed V _c (sfm)	Feed f (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 591	0.00039 - 0.0012
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 591	0.00039 - 0.0012
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 591	0.00039 - 0.0012
M	Stainless steels 304, etc.	SH725	164 - 394	0.00039 - 0.0012
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0012
	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0012
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0012
	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0012

PRACTICAL EXAMPLES

Workpiece type		Engine part	Timepiece part
Toolholder		JSXXR0707X05	JSXXR0808H05
Insert		JVPN12R10F000-20	JVPN12R08F000-20
Grade		SH725	SH725
Workpiece material		S31603	W1A-91/2
			
Cutting conditions	Cutting speed: Vc (sfm)	246	164
	Feed : f (ipr)	0.001	0.00039
	Groove width : CW (in)	0.039	0.031
	Machining	Parting-off	Parting-off
	Coolant	Oil	Oil
Results			
		The use of an indexable DuoForceCut tool eliminated the extra costs and lead times for regrinding of brazed tools.	DuoForceCut provided high part quality thanks to its tool rigidity, enabling 1.5 times tool life.



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Oct. 2022 (TJ)