Member IMC Group Tungaloy INDUSTRY 4.0

GrooveLine

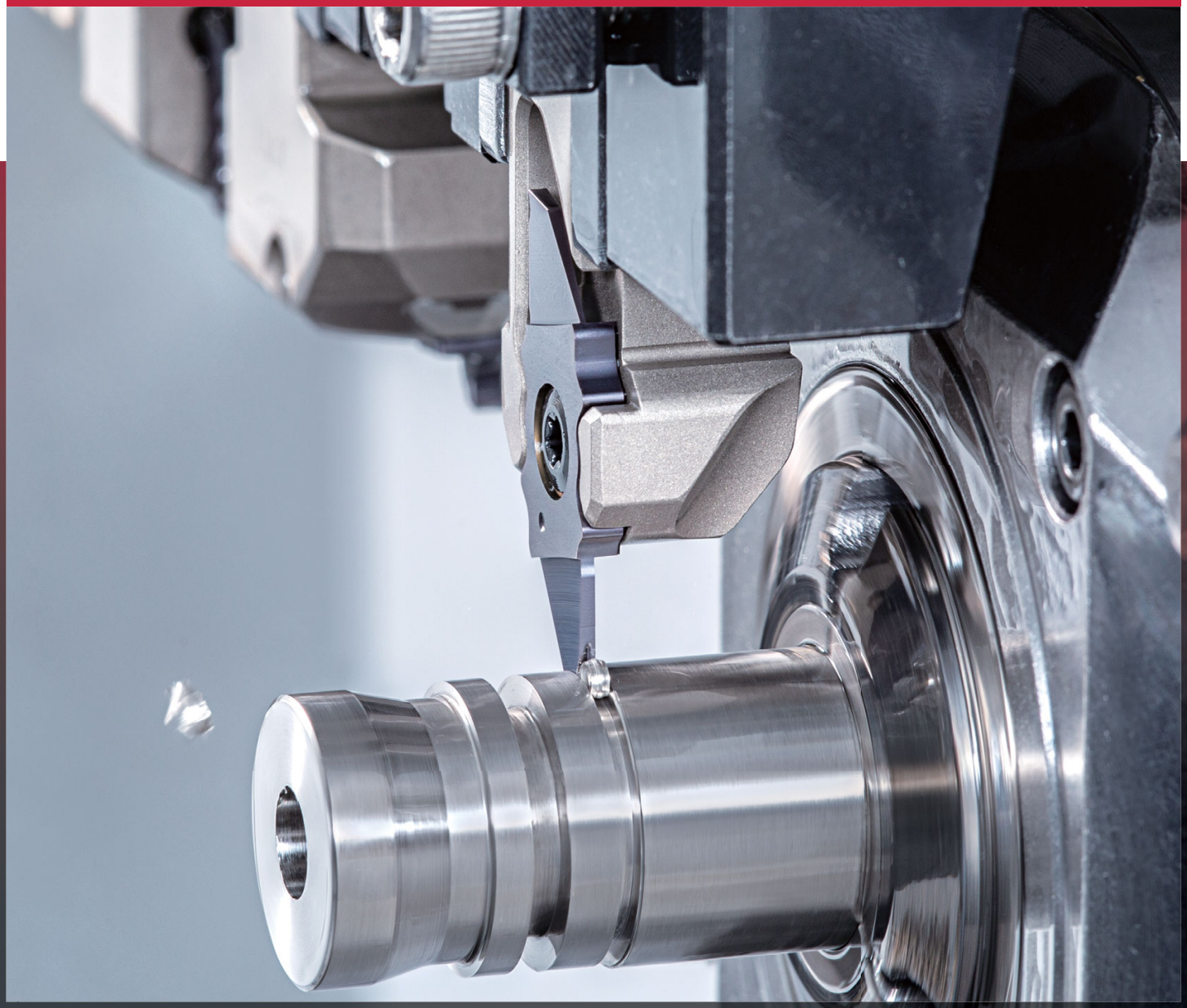
For more information

Parting off, Grooving, Threading Tools

DUOJCUT UST

Tungaloy Report No. 504-US

Addition of 0.024" (0.6 mm) and 0.031" (0.8 mm) width inserts with pressed-in 3D chipbreakers



TUNGALOY ADDFORCE ACCELERATED LINES

INDUSTRY 4.0
FEED the SPEED!

TUNGALOY ADDFORCE GROOVE

ACCELERATED PARTING AND GROOVING

DUOJUST CUT

Parting-off, grooving and threading tool series with rigid insert clamping.

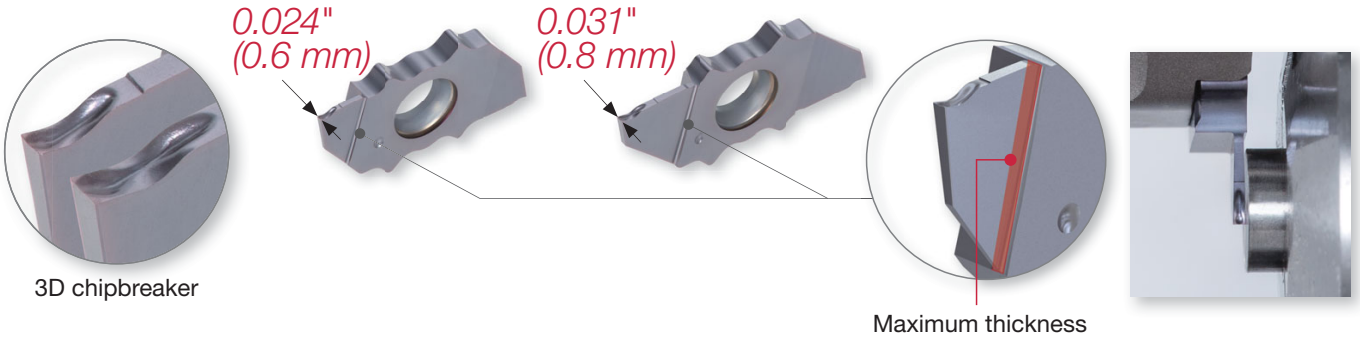
Perfect for machining bar stock of ø0.787" (ø20 mm) or smaller

DUOJUST-CUT

New

0.024" (0.6 mm) and 0.031" (0.8 mm) width insert with pressed-in 3D chipbreaker

- Provides reduced material waste and low cutting forces during parting-off operations
- Robust insert design withstands repeating bar feeder pressures, allowing the toolholder to be used for workpiece positioning.



Chip forms and surface quality

3D chipbreaker	Ground chipbreaker

No chip scratch

Scratches due to chip re-cutting

M

Toolholder	: JSXXL083	Groove width	: CW = 0.059"
Insert	: JXPS12L15F SH725	Machining	: Parting-off (ø0.472")
Workpiece material	: 304	Coolant	: Oil
Cutting speed	: *Vc* = 328 sfm	Machine	: Swiss lathe
Feed	: *f* = 0.001 ipr		

A wide variety of parting-off insert sizes

- The same holder can carry four different sizes of inserts.
- Optimum insert sizes are available for all parting diameters, ensuring stability.

Regular-type toolholder

Toolholder for sub-spindle

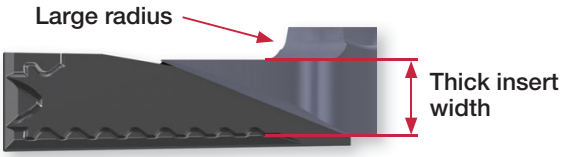
Max. parting dia.	ø0.236" (ø6mm)	ø0.472" (ø12 mm)	ø0.630" (ø16 mm)	ø0.787" (ø20 mm)
3D chipbreaker	New JXPS06	JXPS12	JXPS16	JXPS20
Ground chipbreaker	JXPG06	JXPG12	JXPG16	JXPG20

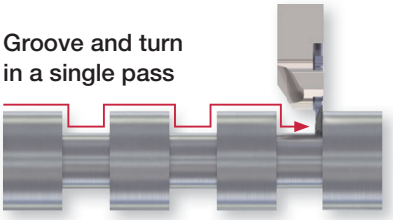
New

PCD insert with 3D laser-etched chipbreaker for huge improvement of aluminum spool machining

Extremely robust tool design

- Secure insert clamping and strong insert design of **DuoJust-Cut** prevents insert breakage when machining at high rates.
- Side-turning of up to 0.236" (6 mm) depth of cut is possible.



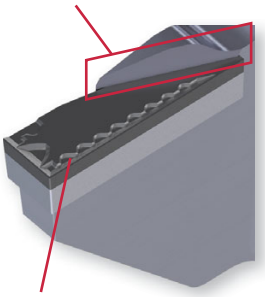


Chip control

- 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 depth of cut and the wall chipbreaker for large depth of cut.

■ Chip control comparison (for side turning)

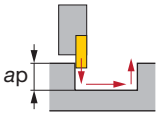
Wall chipbreaker
For chip control at large depth of cut

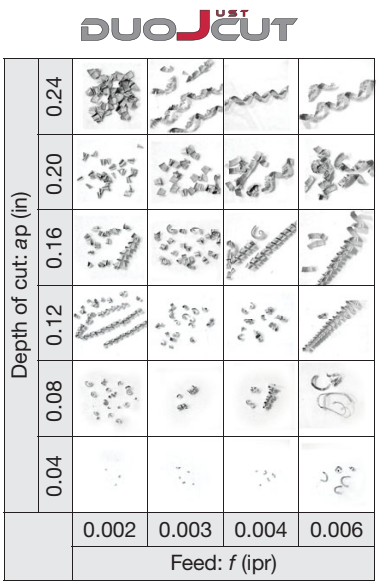


3D chipbreaker
For chip control at low depth of cut

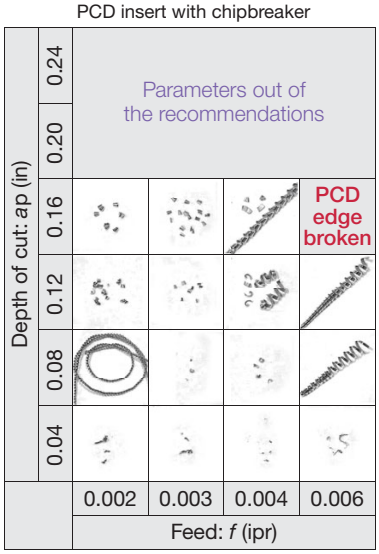
N

Insert	: JXDX12R20F DX110
Workpiece material	: 6061
Barstock diameter	: ø0.630"
Cutting speed	: *Vc* = 656 sfm
Coolant	: Oil
Machine	: Swiss lathe





Competitor
PCD insert with chipbreaker



Excellent surface quality

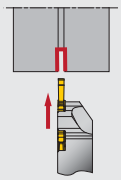
- With submicron-sized diamond grains with very strong bonding, **DX110** provides better surface finish and longer tool life than carbide inserts.

DUOJUST-CUT

TOOLHOLDERS

JSXXR/L

Parting-off and grooving toolholders



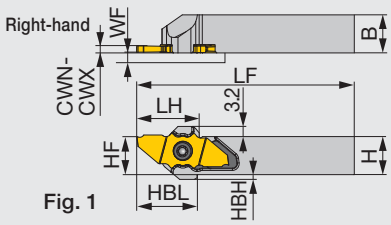


Fig. 1

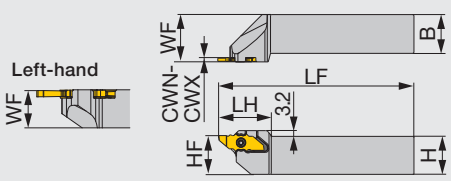


Fig. 2

Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF*	LH**	HF	WF	HBL**	HBH	Insert	Torque	Fig.
JSXXR/L063	0.024	0.098	0.375	0.375	4.750	0.774	0.375	0.008/0.367	0.748	0.12	JX*G06...,12...,16...,20...	0.890	1
JSXXR/L083	0.024	0.098	0.500	0.500	4.750	0.774	0.500	0.008/0.492	0.748	0.06	JX*G06...,12...,16...,20...	0.890	1
JSXXR/L103	0.024	0.098	0.625	0.625	4.750	0.774	0.625	0.008/0.617	-	-	JX*G06...,12...,16...,20...	0.890	1
New JSXXR/L123	0.024	0.098	0.750	0.750	3.950	0.886	0.75	0.008/0.742	-	-	JX*G06...,12...,16...,20...	0.890	1
New JSXXR/L163	0.024	0.098	1.000	1.000	5.350	1.339	1.000	1.250	-	-	JX*G06...,12...,16...,20...	0.890	2

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1010X09	0.6	2.5	10	10	120	19.65	10	0.2/9.8	19	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09	0.6	2.5	12	12	85	19.65	12	0.2/11.8	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09	0.6	2.5	12	12	120	19.65	12	0.2/11.8	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09	0.6	2.5	16	16	120	19.65	16	0.2/15.8	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2020H09	0.6	2.5	20	20	100	22.5	20	0.2/19.8	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2525Z09	0.6	2.5	25	25	135	34	25	30	-	-	JX**06...,12...,16..., 20...	1.2	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20...inserts, and 0.157" (4 mm) shorter for JX**06... insert.
(2) 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 (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

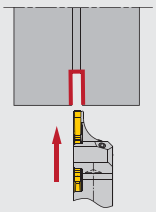
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...	CSTC-4L100DL	T-1008/5
JSXXL...	CSTC-4L100DR	T-1008/5

JSXXR/L-F/H/X-CHP

TUNGTURN JET

Parting-off toolholders with high pressure coolant capability, for swiss lathes



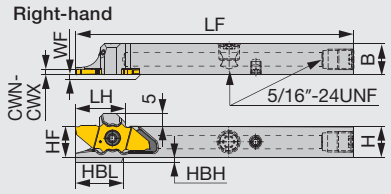


Fig. 1

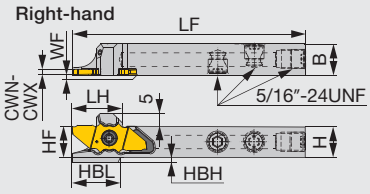
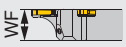


Fig. 2

Left-hand



Inch	CWN	CWX	H	B	WF	LF**	HF	HBH	LH**	HBL**	Insert	Torque
JSXXR/L083X-CHP	0.024	0.098	0.500	0.500	0.008/0.492	4.750	0.500	0.051	0.764	0.736	JX*G06...,12...,16..., 20...	0.890
JSXXR/L103X-CHP	0.024	0.098	0.625	0.625	0.008/0.617	4.750	0.625	0	0.764	0	JX*G06...,12...,16..., 20...	0.890
JSXXR/L083F-CHP	0.024	0.098	0.500	0.500	0.008/0.492	3.344	0.500	0.051	≤ 0.764	0.736	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF(2)	HBL(1)	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP(3)	0.6	2.5	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09-CHP	0.6	2.5	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-CHP(3)	0.6	2.5	12	12	120	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-CHP(3),(4)	0.6	2.5	16	16	120	19.4	16	0.2	18.7	2.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-CHP(3)	0.6	2.5	16	16	120	19.4	16	0.2/15.8	18.7	-	JX**06...,12...,16..., 20...	1.2	1

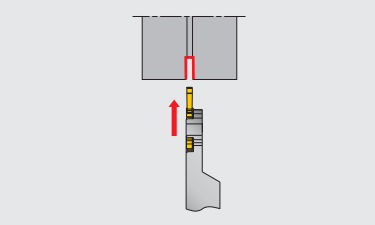
Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX**16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 4 mm shorter for JX**06... insert.
(2) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

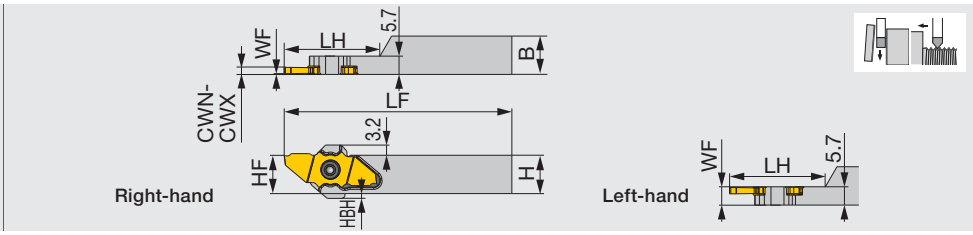
SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**F...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**H/X...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**H/X...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

JSXXR/L-S

Parting-off toolholders, for swiss lathes (for sub spindle)





Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L063-S	0.024	0.098	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX*G06...,12...,16..., 20...	0.890
JSXXR/L083-S	0.024	0.098	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF(2)	HBH	Insert	Torque*
JSXXR/L1010X09-S	0.6	2.5	10	10	120	26	10	0.2/5.5	3	JX**06...,12...,16...(3)	1.2
JSXXR/L1212F09-S	0.6	2.5	12	12	85	26	12	0.2/5.5	1.5	JX**06...,12...,16...(3)	1.2
JSXXR/L1212X09-S	0.6	2.5	12	12	120	30	12	0.2/5.5	1.5	JX**06...,12...,16...(3)	1.2
JSXXR/L1616X09-S	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) and LH (Head Length) values shown above are true with JX**16... insert. Both LF and LH will be 0.079" (2 mm) shorter than the above value with JX**12... and JX**20... inserts; 4 mm shorter with JX**06... insert.
(2) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(3) JX**20... insert will not fit.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

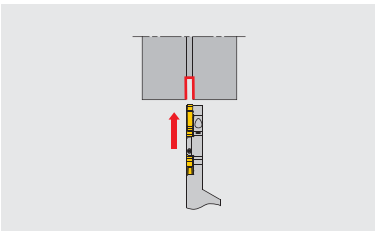
SPARE PARTS

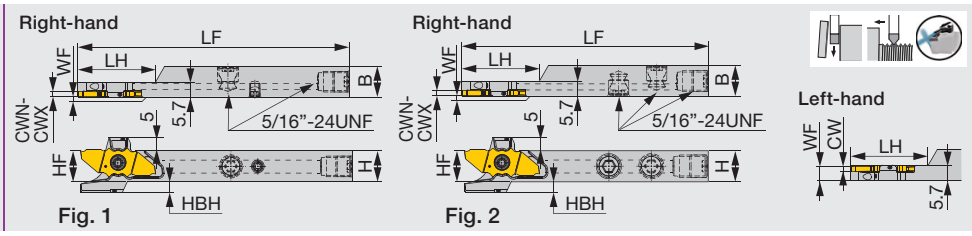
Designation	Clamping screw	Wrench
JSXXR***-S	CSTC-4L055DL	T-1008/5
JSXXL***-S	CSTC-4L055DR	T-1008/5

JSXXR/L-F/X-S-CHP

TUNGTURN TJET

Parting-off toolholders with high pressure coolant capability, for swiss lathes (for sub spindle)





Metric	CWN	CWX	H	B	LF(1)	LH(1)	HF	WF(2)	HBH	Insert	Torque*	Fig.
JSXXR1212F09-S-CHP(4)	0.6	2.5	12	12	85	26	12	0.2	4	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212F09B-S-CHP	0.6	2.5	12	12	85	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	2
JSXXR/L1212X09-S-CHP(3),(4)	0.6	2.5	12	12	120	30	12	0.2/5.5	4	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09B-S-CHP(3)	0.6	2.5	12	12	120	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2	1
JSXXR1616X09-S-CHP(3),(4)	0.6	2.5	16	16	120	30	16	0.2	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09B-S-CHP(3)	0.6	2.5	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2	1

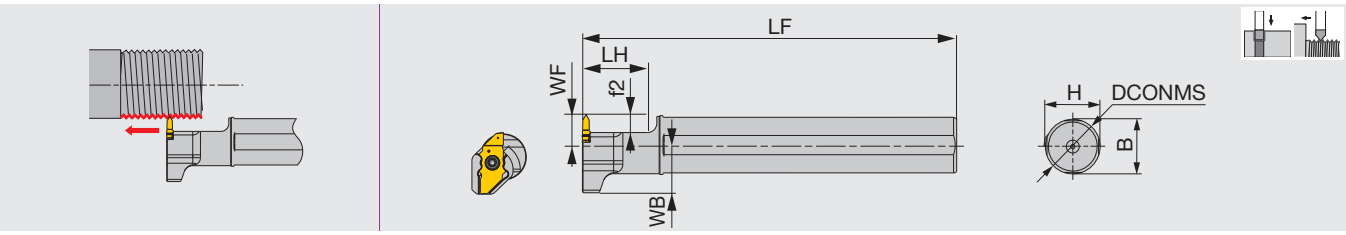
Torque: Recommended clamping torque: lbs·ft (*N·m)
(1) LF (Functional Length) and LH (Head Length) values shown above are true with JX**16... insert. Both LF and LH will be 0.079" (2 mm) shorter than the above value with JX**12... and JX**20... inserts; 4 mm shorter with JX**06... insert.
(2) The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
(3) Compatible to the direct internal coolant supply system without the use of external coolant hose.
(4) To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR**F...	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXL**F...	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	-	-
JSXXR**X...	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL**X...	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

JS-SXXL09

Round shanks, for threading



Metric	DCONMS	H	B	LF	LH	WB	WF(1)	f2(1)	Insert	Torque*
JS19G-SXXL09	19.05	18	18	90	21	15.43	10	6	JX**06,12*R	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	10	6	JX**06,12*R	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	10	6	JX**06,12*R	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	10	6	JX**06,12*R	1.2
JS22X-SXXL09	22	21	21	120	21	15.4	10	6	JX**06,12*R	1.2
JS25H-SXXL09	25	24	24	100	21	15.4	10	6	JX**06,12*R	1.2
JS254X-SXXL09	25.4	24	24	120	21	15.4	10	6	JX**06,12*R	1.2

*Torque: Recommended clamping torque (N·m)
(1) When using JX..06... insert, both WF and f2 sizes will be 2 mm shorter than the values provided above.

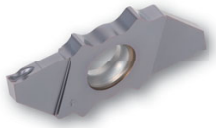
SPARE PARTS

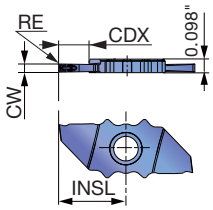
Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L100DL	T-1008/5

INSERTS

JXPS**R/L-F (with 3D chipbreaker, sharp edge)

New





Right-hand (R) shown.

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

★ : First choice

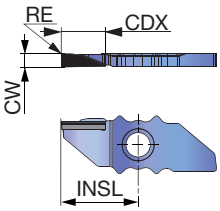
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)
JXPS06R06F	R	0.6	0.024	0.002	●	0.236	0.138	0.413
JXPS06L06F	L	0.6	0.024	0.002	●	0.236	0.138	0.413
JXPS12R08F	R	0.8	0.031	0.002	●	0.472	0.256	0.492
JXPS12L08F	L	0.8	0.031	0.002	●	0.472	0.256	0.492
JXPS12R10F	R	1	0.039	0.002	●	0.472	0.256	0.492
JXPS12L10F	L	1	0.039	0.002	●	0.472	0.256	0.492
JXPS12R15F	R	1.5	0.059	0.002	●	0.472	0.256	0.492
JXPS12L15F	L	1.5	0.059	0.002	●	0.472	0.256	0.492
JXPS16R15F	R	1.5	0.059	0.002	●	0.630	0.335	0.571
JXPS16L15F	L	1.5	0.059	0.002	●	0.630	0.335	0.571
JXPS20R20F	R	2	0.079	0.002	●	0.787	0.413	0.650
JXPS20L20F	L	2	0.079	0.002	●	0.787	0.413	0.650

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : New
● : Line-up

JXDX**R-F (PCD insert)

New



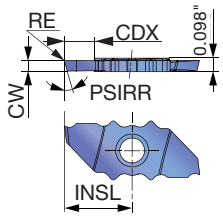
P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	PCD DX110	CDX (in)	INSL (in)
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

JXPG**R/L-F (Sharp edge)



Right-hand (R) shown.

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

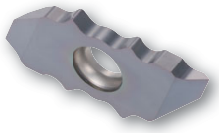
★ : First choice

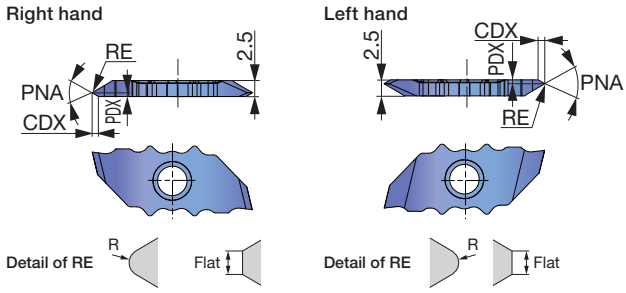
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725								CUTDIA (in)	CDX* (in)	INSL (in)	PSIRR/L**
JXPG06R10F	R	1	0.039	0.002	●								0.236	0.138	0.413	0°
JXPG06L10F	L	1	0.039	0.002	●								0.236	0.138	0.413	0°
JXPG06R15F	R	1.5	0.059	0.002	●								0.236	0.138	0.413	0°
JXPG06L15F	L	1.5	0.059	0.002	●								0.236	0.138	0.413	0°
JXPG06R10F-15	R	1	0.039	0.002	●								0.236	0.138	0.413	15°
JXPG06L10F-15	L	1	0.039	0.002	●								0.236	0.138	0.413	15°
JXPG06R15F-15	R	1.5	0.059	0.002	●								0.236	0.138	0.413	15°
JXPG06L15F-15	L	1.5	0.059	0.002	●								0.236	0.138	0.413	15°
JXPG12R15F	R	1.5	0.059	0.002	●								0.472	0.256	0.492	0°
JXPG12L15F	L	1.5	0.059	0.002	●								0.472	0.256	0.492	0°
JXPG12R20F	R	2	0.079	0.002	●								0.472	0.256	0.492	0°
JXPG12L20F	L	2	0.079	0.002	●								0.472	0.256	0.492	0°
JXPG12R15F-15	R	1.5	0.059	0.002	●								0.472	0.256	0.492	15°
JXPG12L15F-15	L	1.5	0.059	0.002	●								0.472	0.256	0.492	15°
JXPG12R20F-15	R	2	0.079	0.002	●								0.472	0.256	0.492	15°
JXPG12L20F-15	L	2	0.079	0.002	●								0.472	0.256	0.492	15°
JXPG16R15F	R	1.5	0.059	0.002	●								0.630	0.335	0.571	0°
JXPG16L15F	L	1.5	0.059	0.002	●								0.630	0.335	0.571	0°
JXPG16R20F	R	2	0.079	0.002	●								0.630	0.335	0.571	0°
JXPG16L20F	L	2	0.079	0.002	●								0.630	0.335	0.571	0°
JXPG16R15F-15	R	1.5	0.059	0.002	●								0.630	0.335	0.571	15°
JXPG16L15F-15	L	1.5	0.059	0.002	●								0.630	0.335	0.571	15°
JXPG16R20F-15	R	2	0.079	0.002	●								0.630	0.335	0.571	15°
JXPG16L20F-15	L	2	0.079	0.002	●								0.630	0.335	0.571	15°
JXPG20R15F	R	1.5	0.059	0.002	●								0.787	0.413	0.650	0°
JXPG20L15F	L	1.5	0.059	0.002	●								0.787	0.413	0.650	0°
JXPG20R20F	R	2	0.079	0.002	●								0.787	0.413	0.650	0°
JXPG20L20F	L	2	0.079	0.002	●								0.787	0.413	0.650	0°
JXPG20R15F-15	R	1.5	0.059	0.002	●								0.787	0.413	0.650	15°
JXPG20L15F-15	L	1.5	0.059	0.002	●								0.787	0.413	0.650	15°
JXPG20R20F-15	R	2	0.079	0.002	●								0.787	0.413	0.650	15°
JXPG20L20F-15	L	2	0.079	0.002	●								0.787	0.413	0.650	15°

*Max grooving depth (CDX) varies depending on workpiece diameters.
**PSIRL for Left-hand insert.

● : Line-up

JXTG12FR/L-60 (For Threading / Sharp edge)





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

★ : First choice

Designation	HAND	RE (in)	Coated SH725	TPI Thread per inch	PDX (in)	CDX (in)	PNA
JXTG12FR-60A-000	R	Flat 0.002 max	●	64 - 127	0.010	0.016	60°
JXTG12FL-60A-000	L	Flat 0.002 max	●	64 - 127	0.010	0.016	60°
JXTG12FR-60B-000	R	Flat 0.002 max	●	64 - 127	0.089	0.016	60°
JXTG12FL-60B-000	L	Flat 0.002 max	●	64 - 127	0.089	0.016	60°
JXTG12FR-60A-005	R	R 0.002	●	25 - 64	0.024	0.039	60°
JXTG12FL-60A-005	L	R 0.002	●	25 - 64	0.024	0.039	60°
JXTG12FR-60B-005	R	R 0.002	●	25 - 64	0.075	0.039	60°
JXTG12FL-60B-005	L	R 0.002	●	25 - 64	0.075	0.039	60°
JXTG12FR-60N-010	R	R 0.004	●	16 - 25	0.049	0.081	60°
JXTG12FL-60N-010	L	R 0.004	●	16 - 25	0.049	0.081	60°

● : Line-up

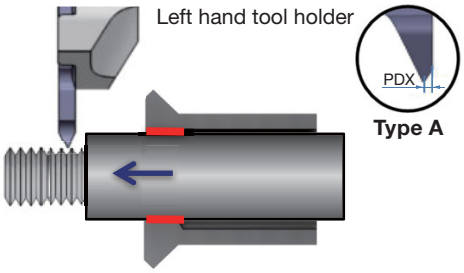
EDGE ORIENTATION AND DESCRIPTION OF THREADING INSERTS

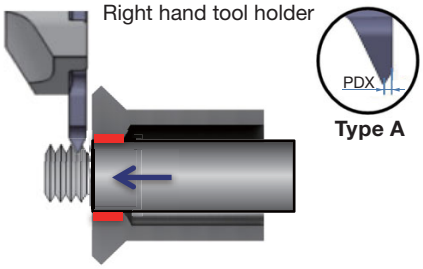
	Edge Orientation		
	Type A	Type B	Type N
Right hand	a > b	a < b	a = b
Left hand	a > b	a < b	a = b

JXTG 12 F R - 60 A - 005

- JXTG: Insert shape
- 12: Insert size
- F: F: sharp edge
- R: Hand
- 60: Thread angle
- A: Edge orientation
- 005: Corner radius

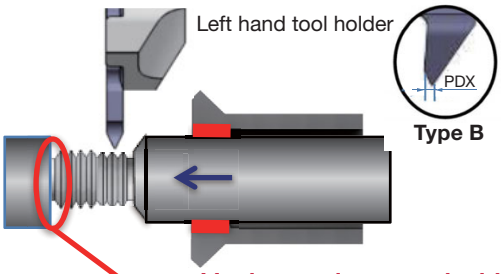
WHEN TO USE TYPE A THREADING INSERT OR TYPE B

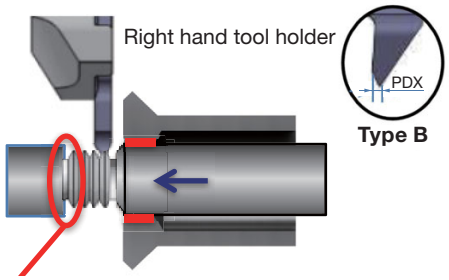




Threading close to the wall

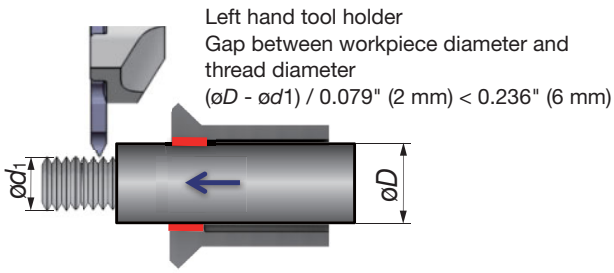
Threading operation following back-turning

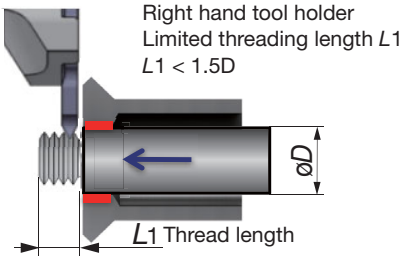




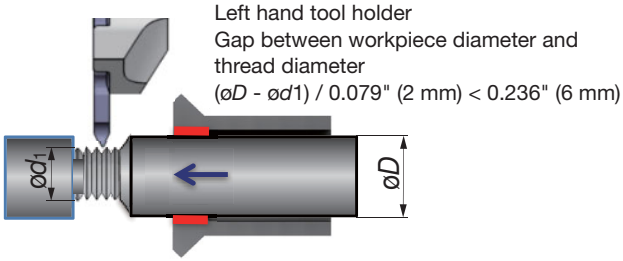
Undercutting needed in previous process

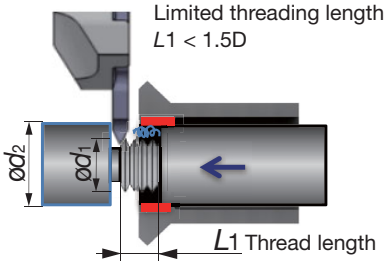
THREADING WORKPIECE IN MAIN SPINDLE





Threading operation following back-turning





STANDARD CUTTING CONDITIONS

Parting, Grooving

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 656	0.00039 - 0.0020
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 656	0.00039 - 0.0020
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 656	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
	Copper alloy 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

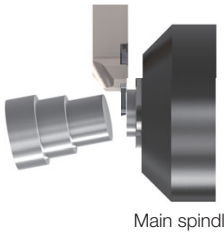
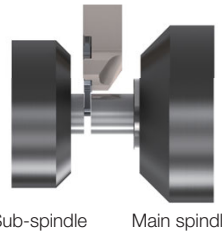
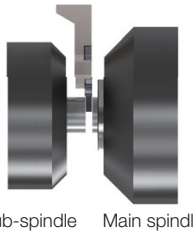
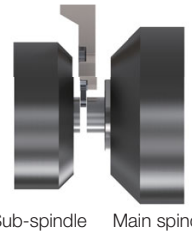
For aluminum and non-ferrous metal PCD insert

ISO	Workpiece materials	Grades	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	-
		DX110	Turning	328 - 984	0.0012 - 0.0059	< 0.236"

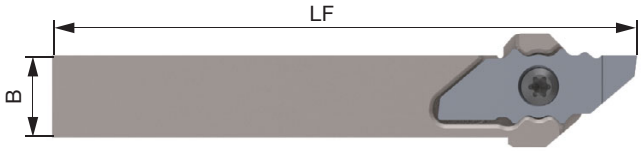
Threading

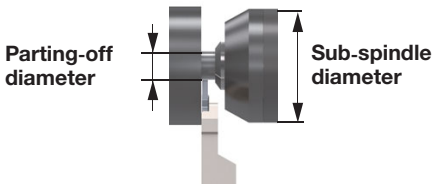
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)
P	Low carbon steels 1015, etc.	SH725	164 - 656
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 656
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656
M	Stainless steels 304, etc.	SH725	164 - 656
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656
	Copper alloy C2600, C280C, etc.	SH725	328 - 656
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262
	Superalloys Inconel718, etc.	SH725	98 - 262

HOW TO SELECT TOOLS

	Large diameter machining of workpiece with rigidity		Small diameter machining of workpiece with short overhang	
			Sub-spindle tooling	
	Main-spindle tooling	Sub-spindle tooling	Workpiece with long overhang at the side of sub-spindle for the process after parting-off	Short workpiece with low rigidity
Application	 Position of parting-off is at the side of the main spindle	 Position of parting-off is at the side of the sub-spindle	 Position of parting-off is at the side of the main spindle	 Position of parting-off is at the side of the sub-spindle
Toolholder	R-hand (JSXXR type)	L-hand (JSXXL type)	R-hand (JSXXR-S type)	L-hand (JSXXL-S type)
Insert	Right-hand insert with lead angle to remove center core (JXPG**R***-15 type)	Left-hand insert (JXP***L*** type)	Right-hand insert (JXP***R*** type)	Left-hand insert (JXP***L*** type)

HOW TO SELECT TOOLHOLDERS FOR SUB-SPINDLE



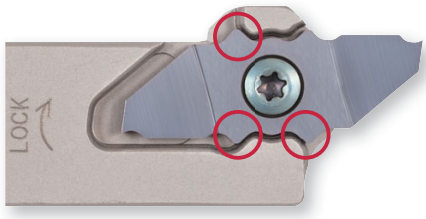


Sub-spindle dia.	Parting-off dia.	B	LF	Insert	Toolholder
ø1.575	- ø0.236	0.375	4.514	JSXXR/L1010X09-S	JSXXR/L063-S
ø1.575	- ø0.236	0.500	4.514	JSXXR/L1212F09-S	JSXXR/L083-S
ø1.575	- ø0.472	0.375	4.593	JSXXR/L1010X09-S	JSXXR/L063-S
ø1.575	- ø0.472	0.500	4.593	JSXXR/L1212F09-S	JSXXR/L083-S
ø1.575	- ø0.63	0.375	4.750	JSXXR/L1010X09-S	JSXXR/L063-S
ø1.575	- ø0.63	0.500	4.750	JSXXR/L1212F09-S	JSXXR/L083-S
ø1.575	- ø0.787	0.500	3.423	JSXXR/L1212F09B-S-CHP	JSXXR/L083F-S-CHP
ø1.969	- ø0.236	0.500	4.514	JSXXR/L1212X09-S	JSXXR/L083-S
ø1.969	- ø0.236	0.625	4.514	JSXXR/L1616X09-S	JSXXR/L103X-S-CHP
ø1.969	- ø0.472	0.500	4.593	JSXXR/L1212X09-S	JSXXR/L083-S
ø1.969	- ø0.472	0.625	4.593	JSXXR/L1616X09-S	JSXXR/L103X-S-CHP
ø1.969	- ø0.63	0.500	4.750	JSXXR/L1212F09-S	JSXXR/L083-S
ø1.969	- ø0.63	0.500	4.750	JSXXR/L1212X09-S	JSXXR/L083-S
ø1.969	- ø0.63	0.625	4.750	JSXXR/L1616X09-S	JSXXR/L103X-S-CHP
ø1.969	- ø0.787	0.500	3.423	JSXXR/L1212F09B-S-CHP	JSXXR/L083F-S-CHP
ø1.969	- ø0.787	0.500	4.829	JSXXR/L1212X09B-S-CHP	JSXXR/L083X-S-CHP
ø1.969	- ø0.787	0.625	4.829	JSXXR/L1616X09-S	JSXXR/L103X-S-CHP

UNIQUE CLAMPING SYSTEM

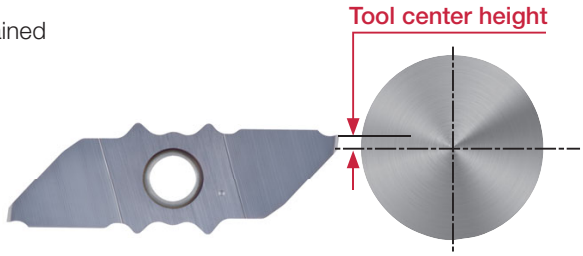
The unused cutting edge is always protected due to the innovative clamping system.
Even if the first cutting edge is chipped, the other unused cutting edge can be used because the insert is clamped in the center.

Insert is secured at 3 points

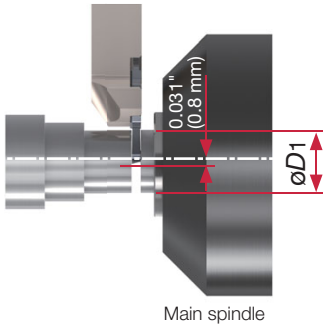
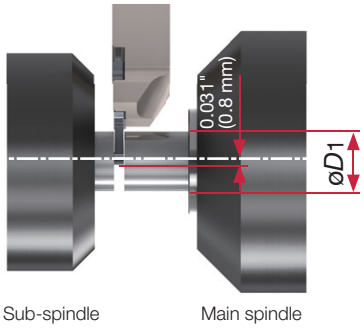


ADJUSTMENT OF TOOL CENTER HEIGHT

When parting off bars, it is essential that the center height is maintained to a tolerance of ±0.004" (0.1 mm) for maximum tool life.



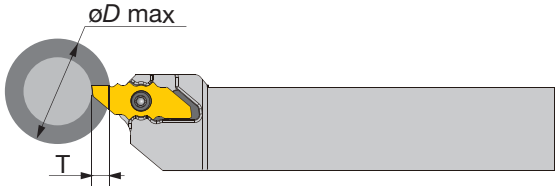
MAX. PARTING-OFF DIA. & DEPTH

Main-spindle tooling	Sub-spindle tooling
	

There will be no tool-workpiece interference when parting off the workpiece with the cutting edge position apart from the workpiece center by 0.031" (0.8 mm) or more.
*øD*1 = Max. parting-off dia.

Maximum grooving depths (T) in relation to workpiece diameters (*øD* max) without interference

Maximum grooving depth (T) is limited relative to workpiece diameter (*øD* max) to avoid interference between workpiece and insert.

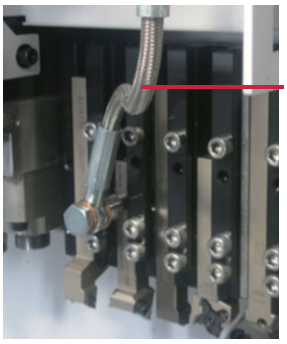


Grooving depths (T) and workpiece diameters (*øD* max) for each insert

Designation	T≤0.039	T≤0.079	T≤0.098	T≤0.118	T≤0.138	T≤0.157	T≤0.197	T≤0.217	T≤0.236	T≤0.256	T≤0.276	T≤0.295	T≤0.315	T≤0.335	T≤0.354	T≤0.374	T≤0.394	T≤0.413
JXPG06...	∞	∞	7.874	2.362	1.181	-	-	-	-	-	-	-	-	-	-	-	-	-
JXPG12...	∞	∞	∞	∞	∞	∞	∞	3.937	2.362	1.378	-	-	-	-	-	-	-	-
JXPG16...	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	7.874	3.543	1.969	0.984	-	-	-	-
JXPG20...	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	7.874	3.15	1.969	0.984

Tube-less design streamlines tool setup
Through-coolant supply enables high productivity

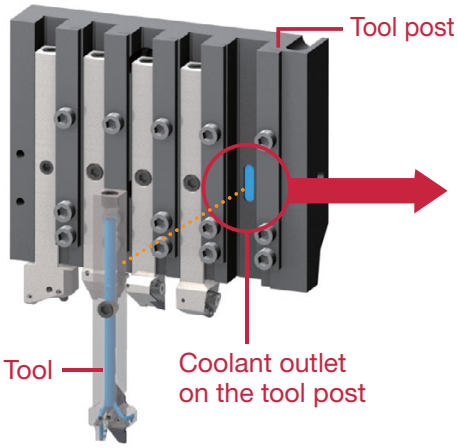
External coolant tube

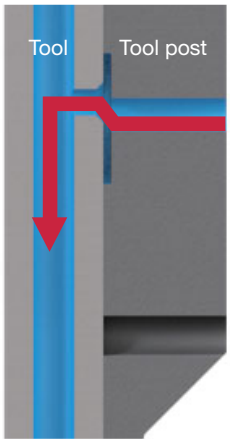


Through-coolant supply

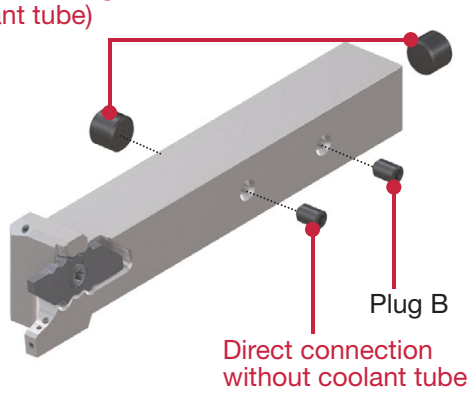
No need for coolant tube setup. Eliminates chip entanglement on tubes and streamlines tool replacements.

■ Coolant is supplied from the tool post directly to the tools





Plug A
(for connecting an external coolant tube)

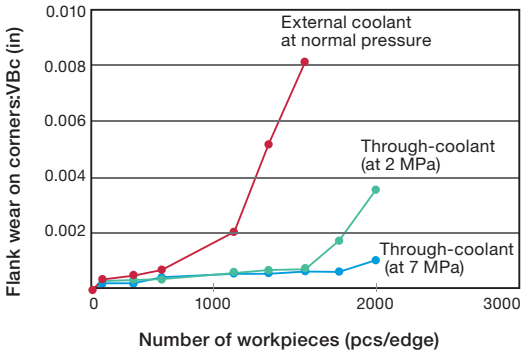


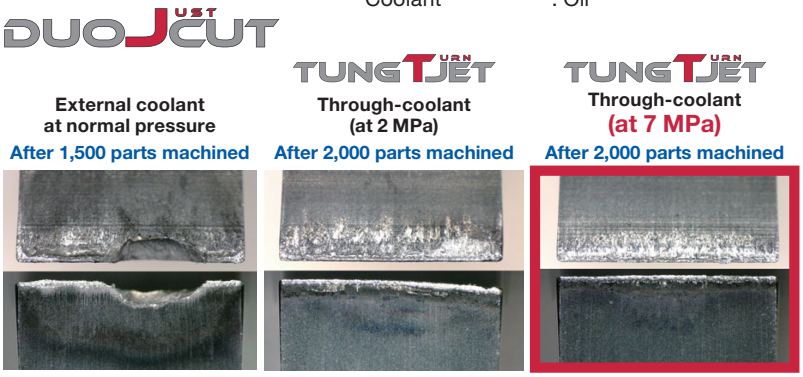
Use a non-coolant-through tool when coolant supply is not needed through the tool.

■ Tool wear reduction with **TungTurn-Jet**

M Stainless steel: Parting-off (304)

Workpiece material	: 304
Toolholder	: JSXXL083X-CHP
Insert	: JXPG16L20F SH725
Cutting speed	: *Vc* = 328 sfm
Feed	: *f* = 0.001 ipr
Coolant	: Oil





PARTS FOR COOLANT HOSE

Connecting hose

Fig.1

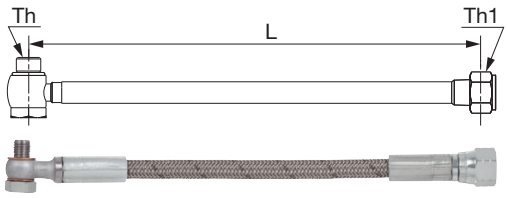
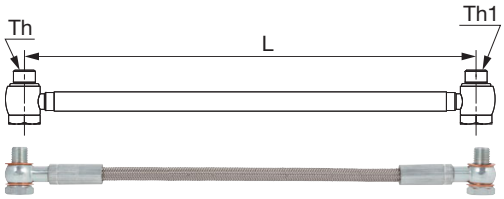
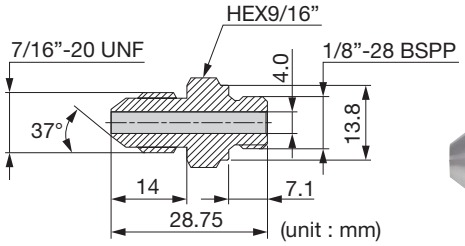


Fig.2



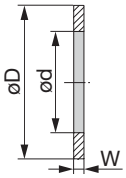
Designation	Length L (mm)	Screw Th	Screw Th1	Max. pressure (Mpa)	Fig.
CHP-HOSE-G1/8-7/16-200BS	200	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-G1/8-7/16-250BS	250	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-5/16-7/16-200BS	200	5/16"-24UNF	7/16"-20 UNF	20	1
CHP-HOSE-5/16-G1/8-200BS	200	5/16"-24UNF	G1/8"-28 BSPP	20	1
CHP-HOSE-G1/8-G1/8-200BB	200	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2
CHP-HOSE-G1/8-G1/8-250BB	250	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2

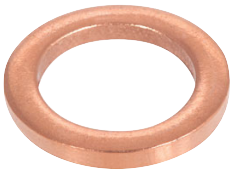
Connector



Designation
CHP-NIPPLE-G1/8-7/16UNF

Seal washer

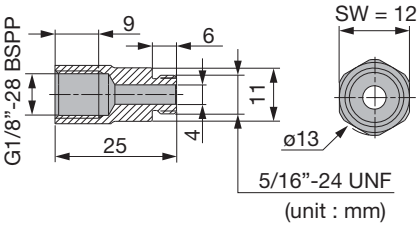




Designation	øD	ød	W
CHP-COPPER-SEAL1/8	15	10	1
CHP-COPPER-SEAL5/16	11.9	8.15	1.35
CHP-COPPER-SEAL5/16-2.5	9.4	8	2.5

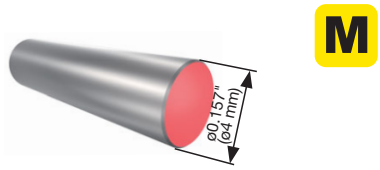
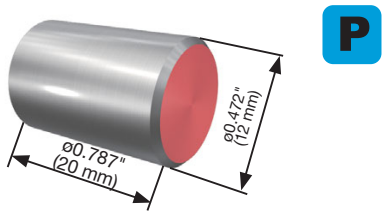
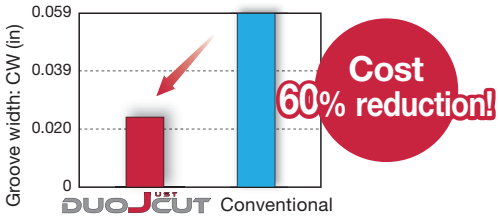
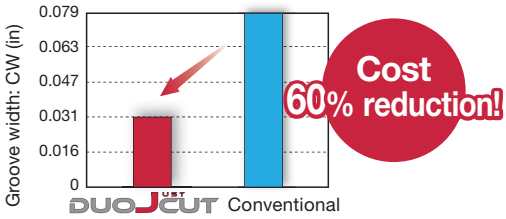
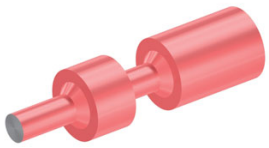
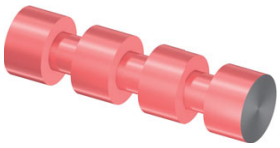
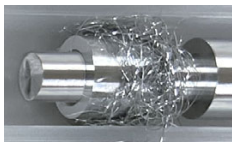
(unit : mm)

Connector for small lathe with seal washer

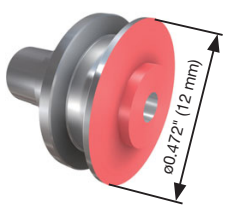


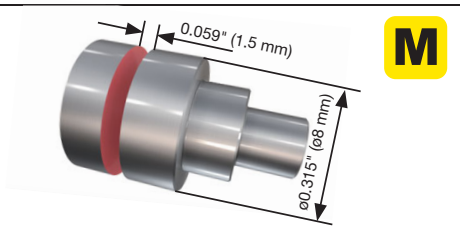
Designation
CHP-CONECTOR5/16-G1/8

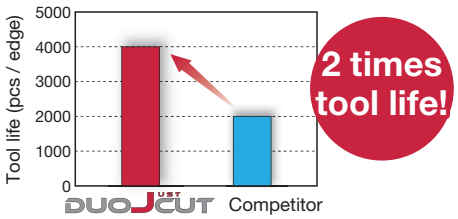
PRACTICAL EXAMPLES

	Workpiece type	**Pin**	**Electric part**
	Toolholder	JSXXR063	JSXXR083
	Insert	New JXPS06R06F	New JXPS12R08F
	Grade	SH725	SH725
	Workpiece material	S30400 	Bearing steel 
Cutting conditions	**Cutting speed: *Vc* (sfm)**	115	361
Cutting conditions	**Feed : *f* (ipr)**	0.001	0.001
Cutting conditions	**Groove width : CW (in)**	0.024	0.031
Cutting conditions	**Machining**	Parting-off	Parting-off
Cutting conditions	**Coolant**	Oil	Oil
	Results	 0.024" (0.6 mm) width insert can reduce 60% of material usage, compared to the conventional 0.059"(1.5 mm) width insert.	 Changing from 0.079" (2 mm) width insert to new 0.031" (0.8 mm) width **DuoJust-Cut** insert provided significant reduction of bar stock consumption without increasing the cutting parameters.
	Workpiece type	**Spool**	**Spool**
	Toolholder	JSXXR083	JSXXR083
	Insert	New JXDX12R20F	New JXDX12R20F
	Grade	DX110	DX110
	Workpiece material	7057 	6061 
Cutting conditions	**Cutting speed: *Vc* (sfm)**	328	984
Cutting conditions	**Feed : *f* (ipr)**	0.002	0.002
Cutting conditions	**Groove width : CW (in)**	0.157	0.197
Cutting conditions	**Machining**	Grooving, Turning (in a single pass)	Grooving, Turning (in a single pass)
Cutting conditions	**Coolant**	Oil	Oil
	Results	The customer used **DuoJust-Cut**'s new PCD-tipped grooving insert with laser-etched chipbreaker to eliminate chip associated issues in the unmanned production lines. As the result, machine downtime was eliminated, enabling lights-out production.	DUOJUST-CUT  Competitor PCD insert without chipbreaker **DuoJust-Cut**'s new PCD-tipped grooving insert improved chip control and eliminated chip entanglements thanks to its laser-etched chipbreaker.

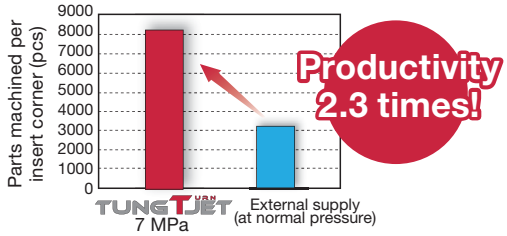
Workpiece type	Hydraulic component	Injection parts
Toolholder	JSXXL083-S	JSXLR083X-CHP
Insert	JXPG16L20F	JXPG16R15F
Grade	SH725	SH725
Workpiece material	S30400	S30400
Cutting conditions: Cutting speed: *Vc* (sfm)	246	394
Cutting conditions: Feed : *f* (ipr)	0.001	0.002
Cutting conditions: Groove width : CW (in)	0.079	0.098
Cutting conditions: Machining	Parting-off	Parting-off
Cutting conditions: Coolant	Oil	Oil
Results		





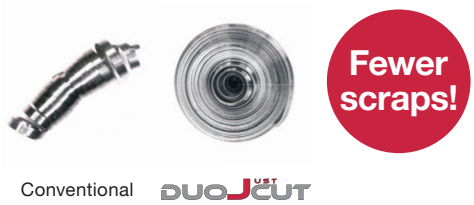


DuoJust-Cut doubles tool life and provides excellent surface finish due to highly rigid insert clamping.

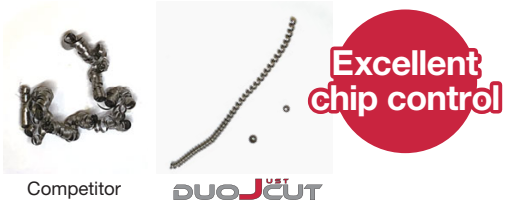


TungTurn-Jet's high pressure, through-coolant supply system has improved the tool life by 230% over the external coolant supply method, while reducing tool wear.

Workpiece type	Motor component	Optical part
Toolholder	JSXXR063	JSXXR063-S
Insert	JXPS12R15F	JXPS16R15F
Grade	SH725	SH725
Workpiece material	1045	S30400
Cutting conditions: Cutting speed: *Vc* (sfm)	230	246
Cutting conditions: Feed : *f* (ipr)	0.001	0.0004
Cutting conditions: Groove width : CW (in)	0.059	0.059
Cutting conditions: Machining	Parting-off	Parting-off
Cutting conditions: Coolant	Oil	Oil
Results		



DuoJust-Cut's JXPS geometry has provided consistent chip forming, eliminating chip entangling on the workpiece when used with the sub-spindle. The result: part scraps have been significantly reduced.



DuoJust-Cut's JXPS geometry has provided effective chip control, enabling superior surface integrity.

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