

TS200 & TS300

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Tungaloy Report No. 535-US

SiAlON Ceramic inserts & holders
for super alloy turning



INDUSTRY 4.0
FEED the SPEED!



ACCELERATED MACHINING

TurnLine

TS200 & TS300

TUNGALOY



The optimum solution for high speed turning
of high temperature alloys

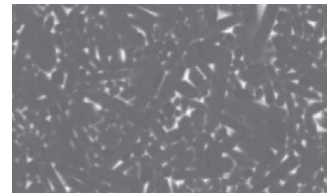
Highly reliable holders and **SiAlON inserts** for high temperature alloy turning

New SiAlON grade inserts for high reliability

These two new ceramic grades are characterized by their excellent toughness and anti-chipping capabilities.

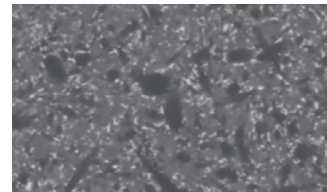
TS200

- Superior wear resistance due to high chemical stability
- Superior flank and notch wear resistance



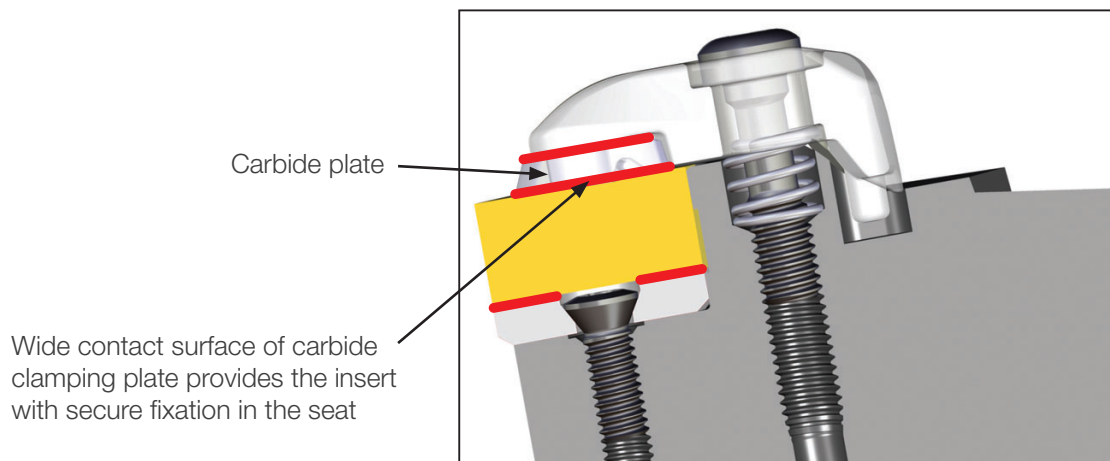
TS300

- Extreme toughness allows for higher feed and greater depth of cut machining
- Suitable for scaling and roughing applications

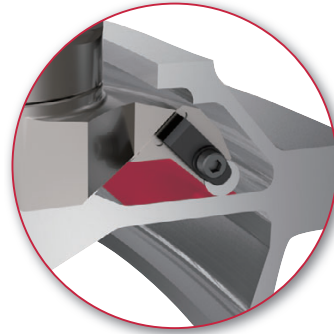
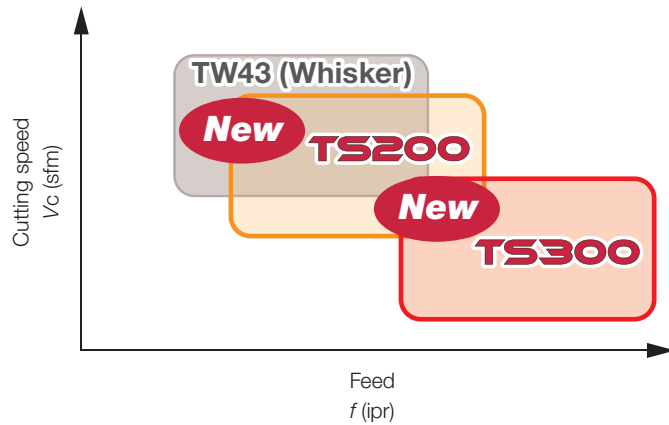


T type holder — Provides secure clamping of ceramic insert

Insert clamp is equipped with carbide plate that is designed to securely fix ceramic insert in place, while also preventing the insert from breaking during demanding machining.



APPLICATION RANGE (high temperature alloys)



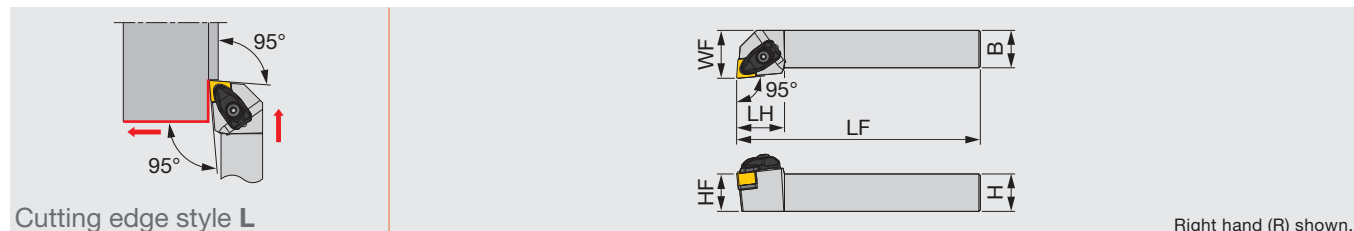
TS200: High speed finishing
TS300: Scaling and roughing

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Grades	Cutting speed V_c (sfm)	Feed f (ipr)	Depth of cut a_p (in)
S	Ni-based super alloys	TS200	656 - 1148	0.004 - 0.016	0.004 - 0.079
		TS300	492 - 820	0.004 - 0.008	0.004 - 0.079
	Co-based super alloys	TS200	656 - 1148	0.004 - 0.016	0.004 - 0.079
		TS300	492 - 820	0.004 - 0.008	0.004 - 0.079

TCLNR/L-F

Toolholder with carbide clamping plate, with 95° approach angle, for negative 80° rhombic ceramic inserts without hole



Metric	H	B	LF	LH	HF	WF	RE**	Insert
TCLNR/L2525M1204-F	25	25	150	32	25	32	0.8	CNGN1204...
TCLNR/L2525M1207-F	25	25	150	32	25	32	0.8	CNGN1207...

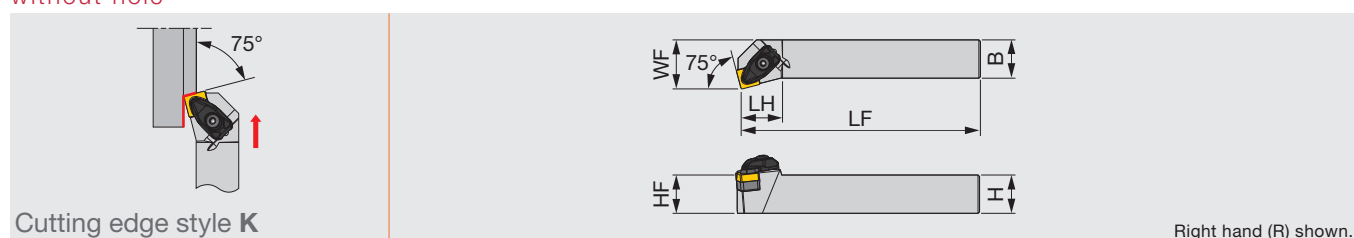
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
TCLNR/L2525M1204-F	DCLS-4F	DLS-4A	TSC-44	BH-40050-A	DSP-4A	T-15F	P-3
TCLNR/L2525M1207-F	DCLS-4F	DLS-4A	TSC-42	BH-40050-A	DSP-4A	T-15F	P-3

TSKNR/L-F

Toolholder with carbide clamping plate, with 75° approach angle, for negative square ceramic inserts without hole



Metric	H	B	LF	LH	HF	WF	RE**	Insert
TSKNR/L2525M1207-F	25	25	150	27	25	32	0.8	SNGN1207...

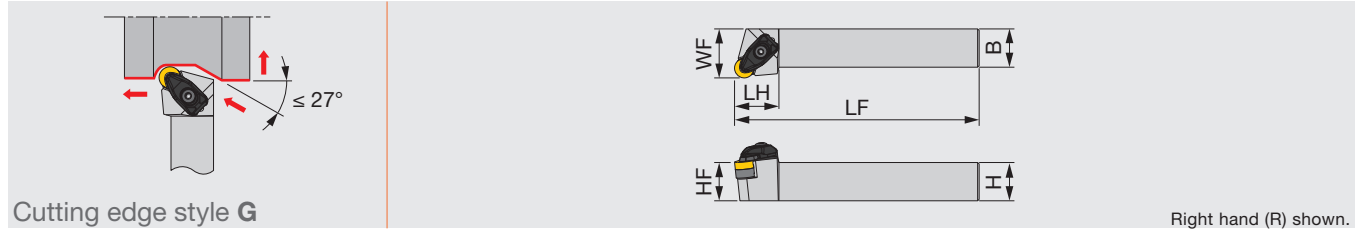
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
TSKNR/L2525M1207-F	DCLS-4F	DLS-4A	TSS-42	BH-40050-A	DSP-4A	T-15F	P-3

TRGNR/L-F

Toolholder with carbide clamping plate, with 90° approach angle, for negative round ceramic inserts without hole



Metric	H	B	LF	LH	HF	WF	RE**	Insert
TRGNR/L2525M1207-F	25	25	150	29	25	32	6.35	RNGN1207...

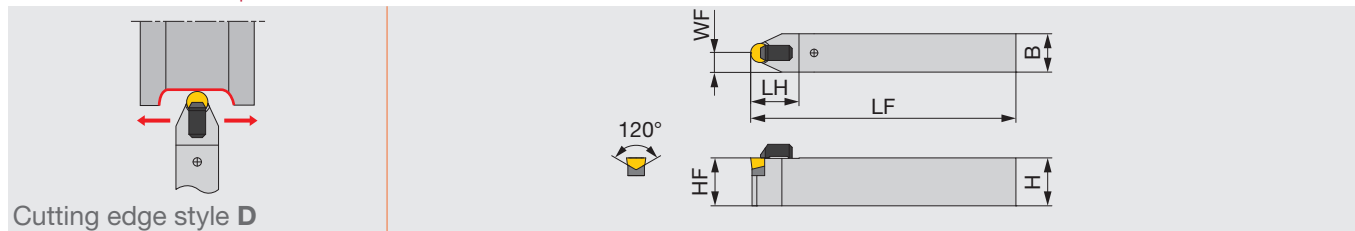
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
TRGNR/L2525M1207-F	DCLS-4F	DLS-4A	S-43	BH-M5X0.8X0.8	DSP-4A	T-15F	P-3

TRDCN

Toolholder with carbide clamping plate, with 45° approach angle, for positive round ceramic inserts with V-bottom shape



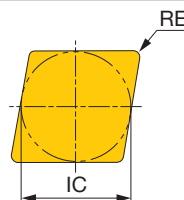
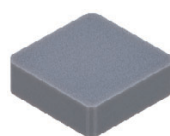
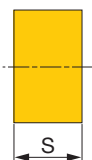
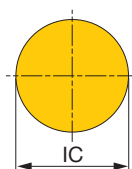
Metric	H	B	LF	LH	HF	WF	RE**	Insert
TRDCN3225P09-120	32	25	170	30	32	12.5	4.76	RCGX090700
TRDCN3225P12-120	32	25	170	32	32	12.5	6.35	RCGX120700

**RE: Standard corner radius

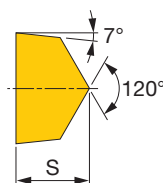
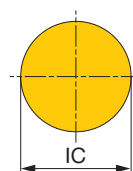
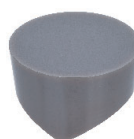
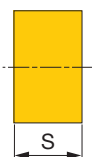
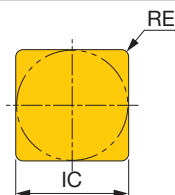
SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Wrench 1	Wrench 2
TRDCN3225P09-120	BCL6-20A	BH-M6X1X25	CBRS-09	BH-M2.5X0.45X10	P-4	P-1.5
TRDCN3225P12-120	BCL6	BH-M6X1X25	CBRS-12	BH-M2.5X0.45X10	P-4	P-1.5

RNGN-E/T1



RCGX-E/T1



★ : First choice

* Types of cutting edge preparations

● : Line up

PRACTICAL EXAMPLES

Workpiece type		Aircraft part
Toolholder		CRGNL2525M1207
Insert		RNGN120700-E
Grade		TS200
Workpiece material		INCONEL718
		 
Cutting conditions	Cutting speed: V_c (sfm)	TS200: 656, Competitor: 689
	Feed : f (ipr)	0.008
	Depth of cut : a_p (in)	0.059
	Machining	External turning
	Coolant	Wet
	Machine	Vertical lathe
	Tool life	1 pc/corner
Results		 Reduced cycle time! TS200 Competitor
		TS200 is capable of high speed turning, contributing to high-efficiency turning.

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