

# TETRA<sup>FORCE</sup>CUT

Tungaloy Report No. 416S3-G

TetraForce-Cut **TCL38 insert** for  
deep grooving and parting processes





For more information

- Unique insert clamping method provides high repeatability and stability for effective deep grooving and parting applications
- Light cutting geometry ensures consistent chip control for reduced chatter
- Efficient multi-edged insert solution for OD grooving and parting applications exceeding 6.4 mm in cutting depth
- Economical 4-edge insert
- Precision coolant delivery ensures effective chip removal during deep grooving

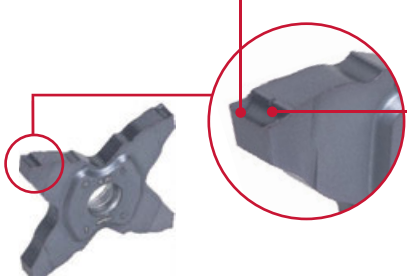


## CUTTING PERFORMANCE

### Chipbreaker features

#### Large positive rake angle

Provides sharp cutting edge and low cutting force that eliminate burr formation and chatter



#### Large dimple on the rake face

Ensures reliable chip removal during a low feed motion

### CHP type toolholders for high-pressure coolant

The coolant is supplied to the cutting edge providing good chip control and long tool life



### Chip control



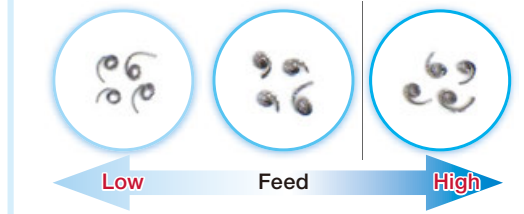
## GROOVING AND PARTING

**P**

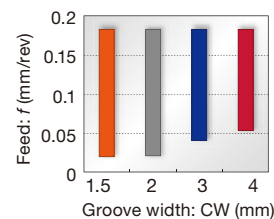
Carbon steel  
(S45C / C45)

$V_c = 160$  m/min  
CDX = 9 mm

TCL38 (CW = 2 mm)



Standard feed



**M**

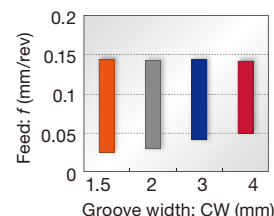
Stainless steel  
(SUS304 / X5CrNi18-9)

$V_c = 120$  m/min  
CDX = 9 mm

TCL38 (CW = 2 mm)

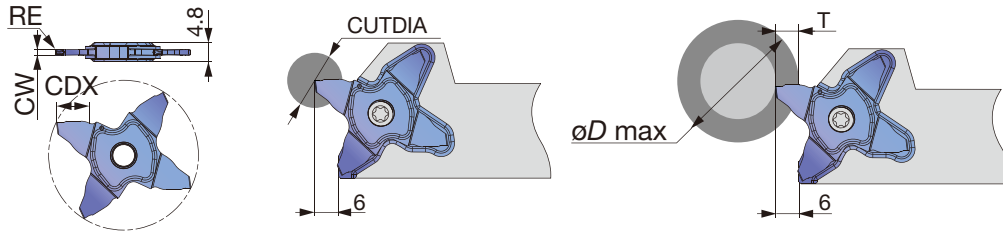


Standard feed



**New**

**TCL38**



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

★ : First choice

Designation	CW±0.02	RE	Coated AH7025	CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)					
						T ≤ 5	T ≤ 6	T ≤ 7	T ≤ 8	T ≤ 9	T ≤ 10
						TCL38-150-020	1.5	0.2	●	9	18
TCL38-200-020	2	0.2	●	9	18	∞	950	315	190	45	-
TCL38-300-020	3	0.2	●	10	20	∞	950	315	190	130	50
TCL38-400-030	4	0.3	●	10	20	∞	950	315	190	130	50

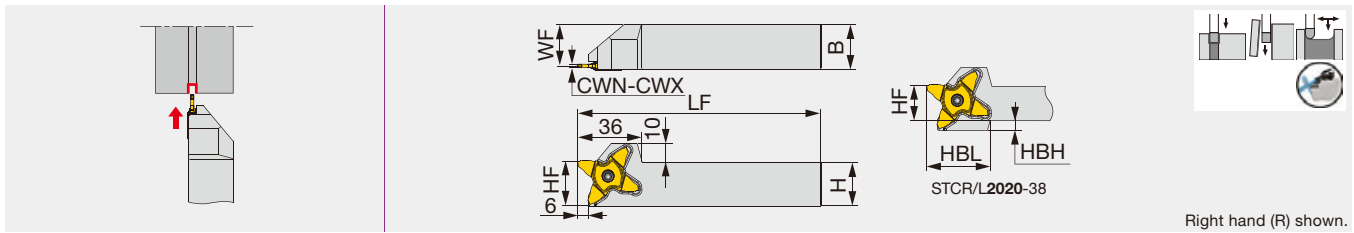
5 pieces per package

● : New

**New**

**STCR/L-38 (-CHP)**

External grooving and parting toolholder



Designation	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
STCR/L2020-38	1.5	4	20	20	120	20	18.1	5	35	TCL38...	2.5
STCR/L2525-38	1.5	4	25	25	135	25	23.1	-	-	TCL38...	2.5
STCR/L3232-38	1.5	4	32	32	135	32	30.1	-	-	TCL38...	2.5
STCR/L2525-38-CHP	1.5	4	25	25	135	25	23.1	-	-	TCL38...	2.5

\*Torque: Recommended clamping torque (N·m)

**SPARE PARTS**

Designation	Screw	Wrench
STCR****-38 (-CHP)	SR16-212-01397L	T-2010/5
STCL****-38 (-CHP)	SR16-212-01397	T-2010/5

**STANDARD CUTTING CONDITIONS**

ISO	Workpiece materials	Grades	Cutting speed Vc (m/min)	Feed: f (mm/rev)
				Grooving, Parting TCL38
<b>P</b>	Carbon steel (S45C / C45, etc.)	AH7025	80 - 180	0.03 - 0.18
	Alloy steel (SCM435 / 34CrMo4, etc.)	AH7025	50 - 180	0.03 - 0.18
<b>M</b>	Alloy steel (SCM435 / 34CrMo4, etc.)	AH7025	50 - 150	0.03 - 0.14
<b>K</b>	Grey cast iron (FC250 / 250 / GG25, etc.)	AH7025	50 - 180	0.03 - 0.14
	Ductile cast iron (FCD400 / 400-15 / GGG400, etc.)	AH7025	50 - 120	0.03 - 0.14
<b>S</b>	Titanium alloys (Ti-6Al-4V, etc.)	AH7025	30 - 60	0.03 - 0.14
	Superalloys (Inconel718, etc.)	AH7025	20 - 50	0.03 - 0.14

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