



GrooveLine



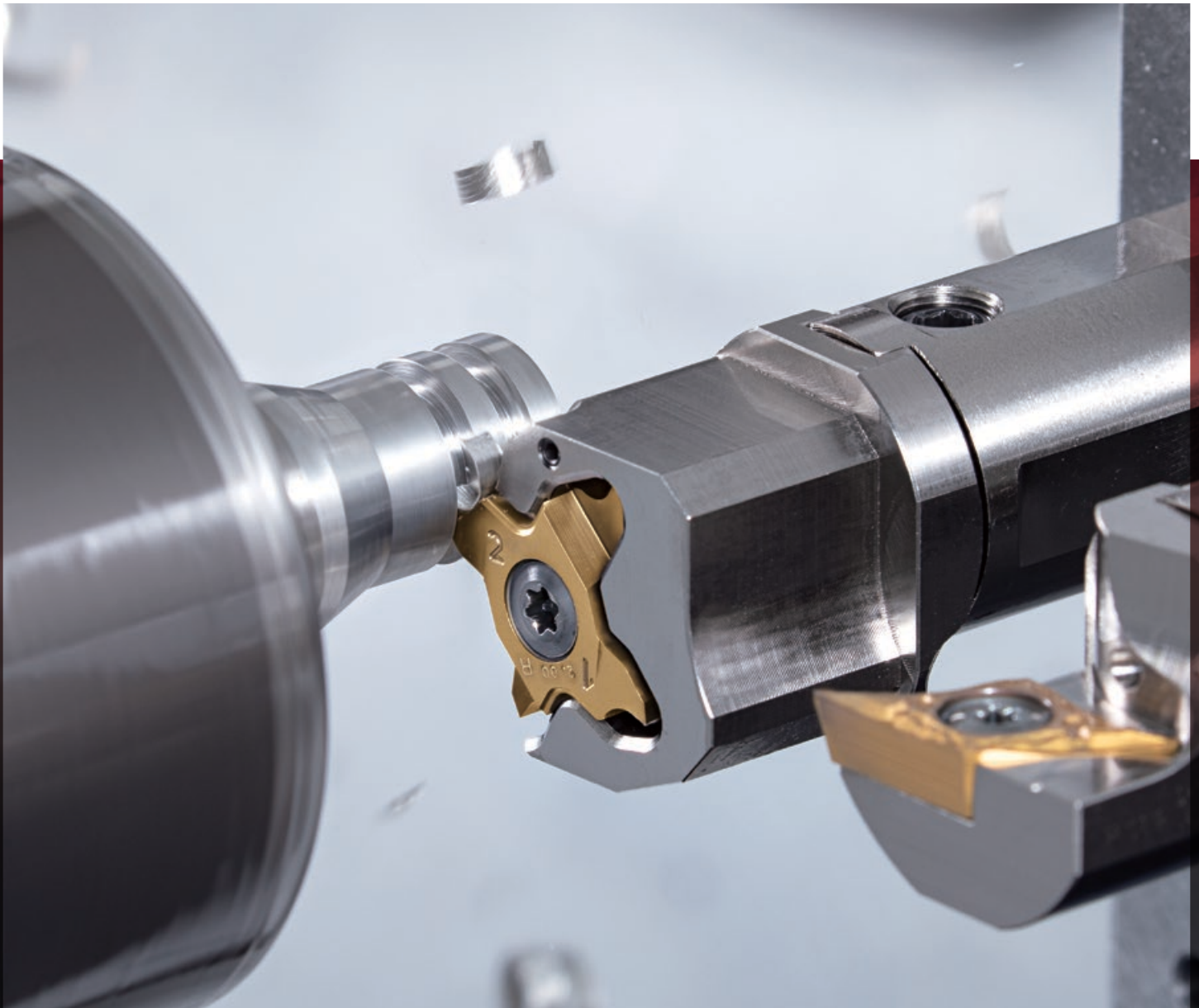
For more information

High precision grooving tool

TETRAMCUT

Tungaloy Report No. 416S8-US

Introducing the latest PVD grade **SH7025**



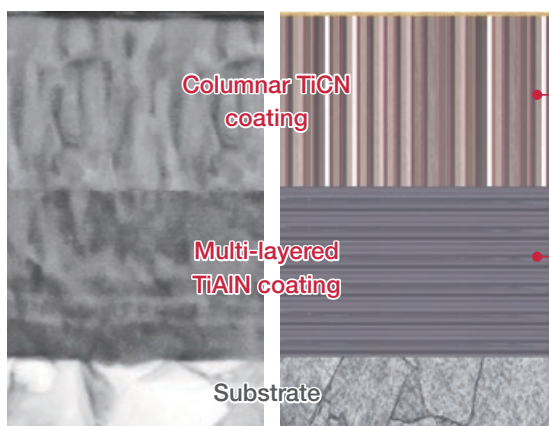
SH7025 - the latest PVD insert grade for superior surface quality and process security



SH7025

- The latest grade with sharp cutting edge designed for small part machining.
- A combination of a columnar-structured TiCN coating and multilayered TiAlN coating provides superior surface quality and process security.

Outer layer TiN coating



Cross sectional micrograph

Cross sectional diagram

For high surface quality

Built-up edge resistant TiCN coating improves surface finish quality.

For extremely long tool life

Wear-resistant columnar-structured TiCN coating ensures long tool life.

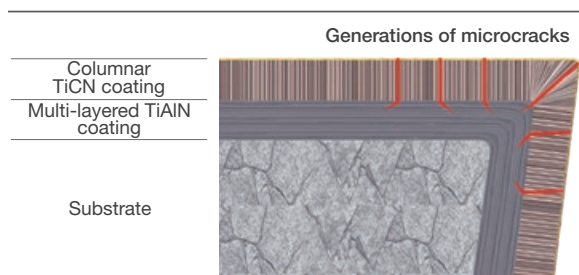
For superior process security

Chipping-resistant multi-layered TiAlN coating provides process security.

Superior process security

Chipping-resistant multi-layered TiAlN coating provides process security.

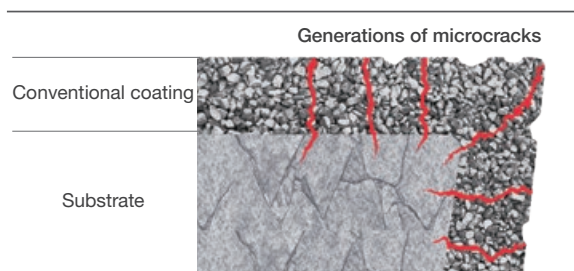
SH7025



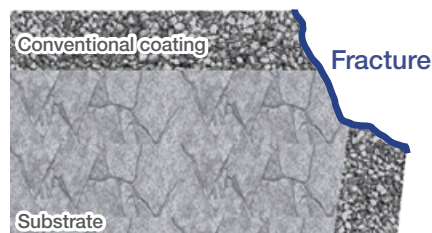
TiAlN coating prevents cracks from further propagation



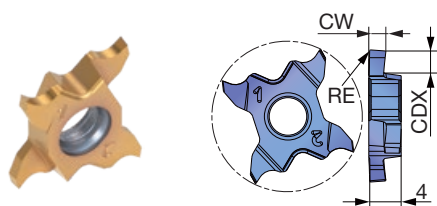
Conventional



Crack reaches the substrate causing catastrophic failure



TCP18R/L-F



Right-hand (R) shown.

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

★ : First choice

Designation	Right hand	Left hand	CW±0.02	RE	Coated												CDX
					SH7025												
TCP18R033F-005	✓		0.013	0.0020	●												0.031
TCP18R043F-005	✓		0.017	0.0020	●												0.047
TCP18R050F-005	✓		0.020	0.0020	●												0.047
TCP18R075F-005	✓		0.030	0.0020	●												0.079
TCP18R095F-005	✓		0.037	0.0020	●												0.079
TCP18R100F-005	✓		0.039	0.0020	●												0.079
TCP18R100F-010	✓		0.039	0.0039	●												0.079
TCP18R120F-005	✓		0.047	0.0020	●												0.079
TCP18R120F-010	✓		0.047	0.0039	●												0.079
TCP18R125F-005	✓		0.049	0.0020	●												0.079
TCP18R125F-010	✓		0.049	0.0039	●												0.079
TCP18R140F-010-35	✓		0.055	0.0039	●												0.138
TCP18R145F-005-35	✓		0.057	0.0020	●												0.138
TCP18R145F-010-35	✓		0.057	0.0039	●												0.138
TCP18R150F-005-35	✓		0.059	0.0020	●												0.138
TCP18R150F-010-35	✓		0.059	0.0039	●												0.138
TCP18R175F-005-35	✓		0.069	0.0020	●												0.138
TCP18R175F-010-35	✓		0.069	0.0039	●												0.138
TCP18R200F-005-35	✓		0.079	0.0020	●												0.138
TCP18R200F-010-35	✓		0.079	0.0039	●												0.138
TCP18R250F-010-35	✓		0.098	0.0039	●												0.138
TCP18R300F-010-35	✓		0.118	0.0039	●												0.138
TCP18L033F-005		✓	0.013	0.0020	●												0.031
TCP18L043F-005		✓	0.017	0.0020	●												0.047
TCP18L050F-005		✓	0.020	0.0020	●												0.047
TCP18L075F-005		✓	0.030	0.0020	●												0.079
TCP18L095F-005		✓	0.037	0.0020	●												0.079
TCP18L100F-010		✓	0.039	0.0039	●												0.079
TCP18L120F-010		✓	0.047	0.0039	●												0.079
TCP18L125F-010		✓	0.049	0.0039	●												0.079
TCP18L145F-010-35		✓	0.057	0.0039	●												0.138
TCP18L150F-010-35		✓	0.059	0.0039	●												0.138
TCP18L175F-010-35		✓	0.069	0.0039	●												0.138
TCP18L200F-010-35		✓	0.079	0.0039	●												0.138
TCP18L250F-010-35		✓	0.098	0.0039	●												0.138
TCP18L300F-010-35		✓	0.118	0.0039	●												0.138

5 pieces per package

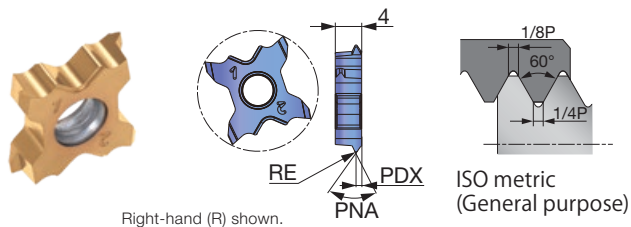
- : New product

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

★: First choice

Designation	Left hand	CW±0.02	RE	Coated										CDX	DAXN	
				SH7025												
TCF18L050F-005	✓	0.020	0.0020	●											0.039	0.236
TCF18L100F-005	✓	0.039	0.0020	●											0.098	0.236
TCF18L150F-005	✓	0.059	0.0020	●											0.098	0.236
TCF18L200F-005	✓	0.079	0.0020	●											0.118	0.236
TCF18L250F-005	✓	0.098	0.0020	●											0.118	0.236

TCT18R-ISO (Full profile threading insert)



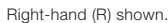
P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★: First choice

Designation	Right hand	RE	Coated										Pitch (mm)	PDX	PNA
			SH7025												
TCT18FR-05ISO	✓	0.0024	●										0.5	0.014	60°
TCT18FR-07ISO	✓	0.0035	●										0.7	0.018	60°
TCT18FR-075ISO	✓	0.0035	●										0.75	0.020	60°
TCT18FR-08ISO	✓	0.0039	●										0.8	0.020	60°

TETRAMINI-CUT

TCT18R-60 (Threading insert)



★: First choice

5 pieces per package

●: New product

STANDARD CUTTING CONDITIONS

TCP18R/L-F

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)	Feed f (ipr)
P	Low carbon steel S15C, S20C, etc. C15, C20, etc.	SH7025	260 - 590	0.001 - 0.004
	Carbon steels, Alloy steel S55C, SCM440, etc. C55, 42CrMoS4, etc.	SH7025	260 - 590	0.001 - 0.004
	Prehardened steel NAK80, PX5, etc.	SH7025	260 - 590	0.001 - 0.004
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	SH7025	160 - 394	0.001 - 0.004
K	Grey cast iron FC250, 250, etc. FC300, 300, etc.	SH7025	160 - 590	0.001 - 0.004
	Ductile cast iron FCD400, FCD600, etc. 400-15, 600-3, etc.	SH7025	160 - 590	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	SH7025	60 - 260	0.001 - 0.004
	Superalloys Inconel718, etc.	SH7025	60 - 260	0.001 - 0.004

STANDARD CUTTING CONDITIONS

TCF18L (face grooving)

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)	Feed f (ipr)
P	Low carbon steel S15C, S20C, etc. C15, C20, etc.	SH7025	98 - 328	0.0004 - 0.0016
	Carbon steels, Alloy steel S55C, SCM440, etc. C55, 42CrMoS4, etc.	SH7025	98-328	0.0004 - 0.0016
	Prehardened steel NAK80, PX5, etc.	SH7025	98-328	0.0004 - 0.0016
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	SH7025	98-328	0.0004 - 0.0016
K	Grey cast iron FC250, 250, etc. FC300, 300, etc.	SH7025	98-328	0.0004 - 0.0016
	Ductile cast iron FCD400, FCD600, etc. 400-15, 600-3, etc.	SH7025	98-328	0.0004 - 0.0016
S	Titanium alloys Ti-6Al-4V, etc.	SH7025	66-131	0.0004 - 0.0016
	Superalloys Inconel718, etc.	SH7025	33-98	0.0004 - 0.0016

TCT18FR-ISO / TCT18FR (threading)

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)	Pitch (in)	TPI
P	Low carbon steel S15C, S20C, etc. C15, C20, etc.	SH7025	190 - 490	0.031 - 0.118	32-8
	Carbon steels, Alloy steel S55C, SCM440, etc. C55, 42CrMoS4, etc.	SH7025	190 - 490	0.031 - 0.118	32-8
	Prehardened steel NAK80, PX5, etc.	SH7025	190 - 490	0.031 - 0.118	32-8
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	SH7025	160 - 260	0.031 - 0.118	32-8
K	Grey cast iron FC250, 250, etc. FC300, 300, etc.	SH7025	160 - 320	0.031 - 0.118	32-8
	Ductile cast iron FCD400, FCD600, etc. 400-15, 600-3, etc.	SH7025	160 - 320	0.031 - 0.118	32-8
S	Titanium alloys Ti-6Al-4V, etc.	SH7025	90 - 320	0.031 - 0.118	32-8
	Superalloys Inconel718, etc.	SH7025	90 - 320	0.031 - 0.118	32-8



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