



For more information

High precision grooving tool

TETRA^{ORCE}**CUT**

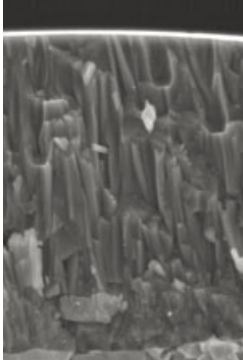
Tungaloy Report No. 416S10-G

Introducing **AH8005** and **AH6235** PVD grade and **NS9530** cermet grade inserts



New insert grades for expanded application coverage

AH8005



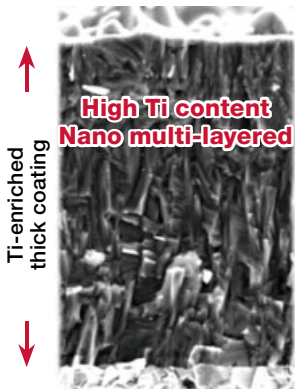
PVD grade with high-Al nano-multilayer (AlTiN) coating

- Coating hardness increased by 20%
- A multi-layered coating structure impedes micro-crack propagation, reducing insert failures
- Enhanced adhesion strength between the coating and carbide substrate layer

Newly developed substrates

- Extremely wear resistant
- Provides long tool life and stable machining

AH6235



PVD grade with high fracture toughness

Ti-enriched coating

- Thick Ti-enriched PVD coating for enhanced thermal shock resistance
- Reduced crater wear

High Ti-content nano-structured multilayer coating

The outer layer consists of a high Ti-content nano-structured multilayer made possible by Tungaloy's latest coating technology. Its high hardness and nano structure provides the grade with a good balance of wear and fracture resistance, enhancing tool life and predictability.

Dedicated carbide substrate

AH6235 incorporates a tough substrate that provides process security during interrupted machining. This tough substrate provides the grade with added reliability during interrupted cuts.

NS9530

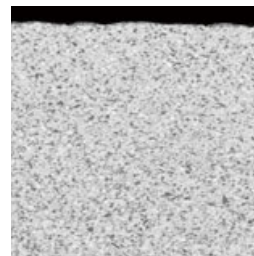
Cermet grade with unique post-surface treatment technology

- Tough and smooth top layer
Creates the ideal balance of hardness and toughness due to the controlled crystal composition

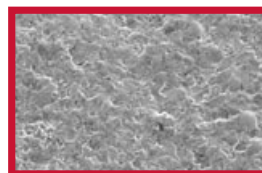


Consists of incredible fracture and wear resistance
Allows exceptionally stable machining!

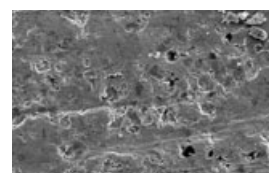
- Drastically improved microscopic roughness
Effectively reduces chip welding on edges, improving surface finish. Enhances wear resistance



Improved toughness
by 25% at the top
layer

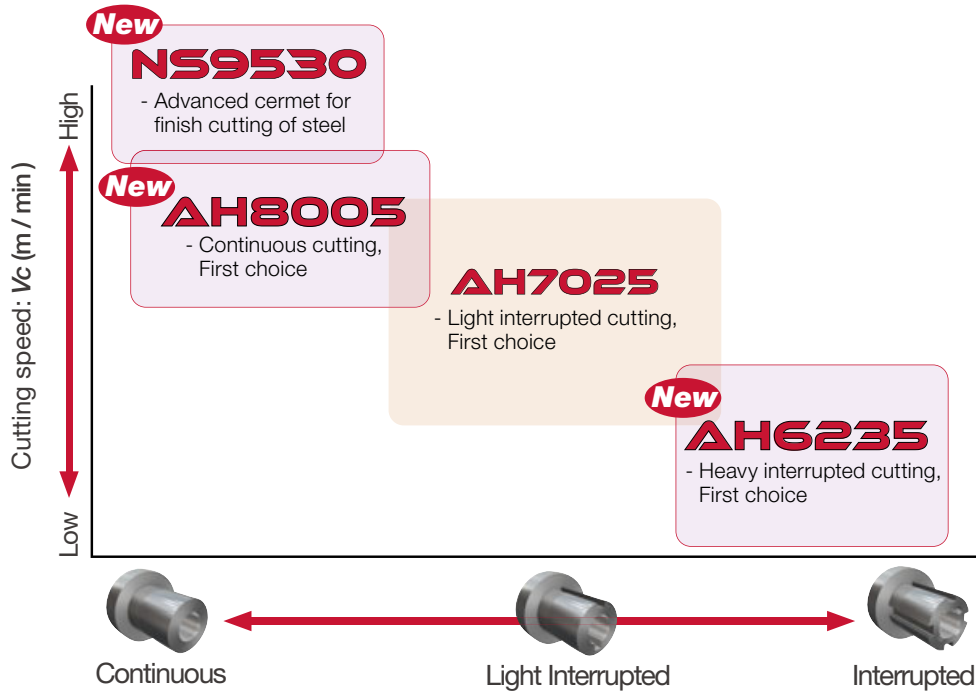


NS9530



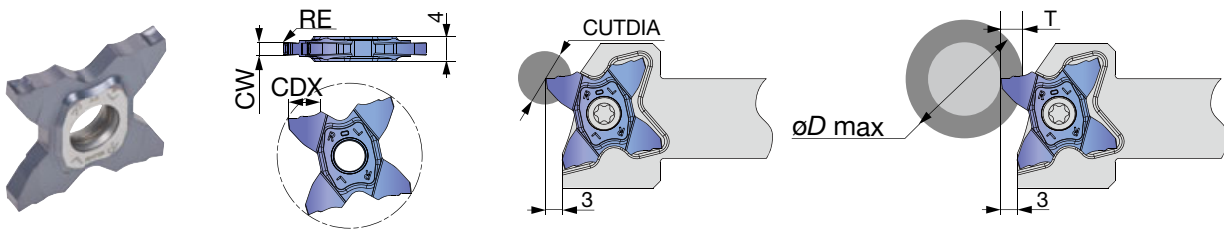
Conventional

APPLICATION AREA



INSERTS

New TCL27 (for grooving and parting off)



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

★ : First choice

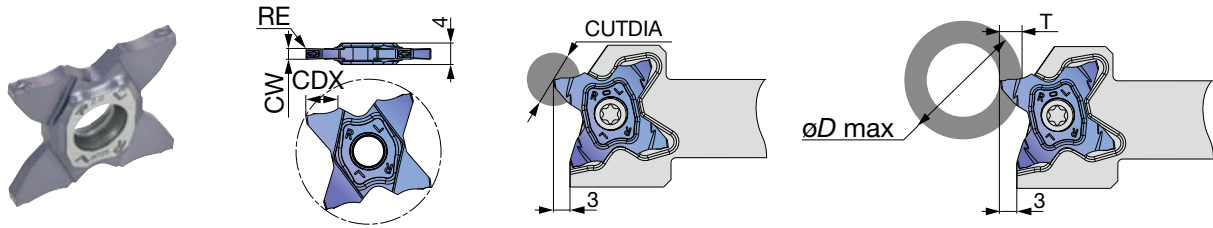
Designation	CW±0.02	RE	Coated			CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)									
			AH7025	AH8005	AH6235			T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4
TCL27-150-015	1.5	0.15	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCL27-200-020	2	0.2	●	●	●	6.4	12.8	∞	600	280	180	130	105	85	60	50	30
TCL27-250-020	2.5	0.2	●	●	●	6.4	12.8	∞	600	280	180	130	105	85	60	50	30
TCL27-300-020	3	0.2	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55

5 pieces per package

● : New product

● : Line up

New TCS27 (for grooving and parting off)



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

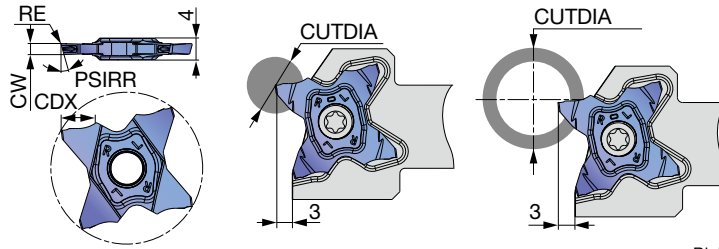
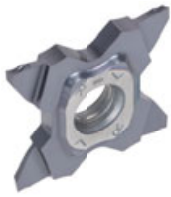
★ : First choice

Designation	CW±0.02	RE	Coated			CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)										
			AH7025	AH8005	AH6235			T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4	
TCS27-075-010	0.75	0.1	●	●	●	2.5	5	∞	-	-	-	-	-	-	-	-	-	-
TCS27-100-006	1	0.06	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-	-
TCS27-100-010	1	0.1	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-	-
TCS27-125-010	1.25	0.1	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-	-
TCS27-125-020	1.25	0.2	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-	-
TCS27-150-010	1.5	0.1	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-	-
TCS27-150-020	1.5	0.2	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-	-
TCS27-157-015	1.57	0.15	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-	-
TCS27-170-010	1.7	0.1	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-	-
TCS27-175-010	1.75	0.1	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-	-
TCS27-175-020	1.75	0.2	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-	-
TCS27-178-018	1.78	0.18	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-	-
TCS27-185-020	1.85	0.2	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-	-
TCS27-196-015	1.96	0.15	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-	-
TCS27-200-010	2	0.1	●	●	●	6.4	12.8	∞	600	280	180	130	105	85	60	50	30	30
TCS27-200-020	2	0.2	●	●	●	6.4	12.8	∞	600	280	180	130	105	85	60	50	30	30
TCS27-222-015	2.22	0.15	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-	-
TCS27-230-020	2.3	0.2	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-	-
TCS27-239-015	2.39	0.15	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-	-
TCS27-247-020	2.47	0.2	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-	-
TCS27-250-010	2.5	0.1	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-	-
TCS27-250-030	2.5	0.3	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-	-
TCS27-270-010	2.7	0.1	●	●	●	6.2	12.4	∞	600	280	180	135	105	95	85	78	-	-
TCS27-287-020	2.87	0.2	●	●	●	6.2	12.4	∞	600	280	180	135	105	95	85	78	-	-
TCS27-300-020	3	0.2	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55	55
TCS27-300-030	3	0.3	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55	55
TCS27-300-040	3	0.4	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55	55
TCS27-315-015	3.15	0.15	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	68	68
TCS27-318-020	3.18	0.2	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	68	68

5 pieces per package

● : New product
● : Line up

New TCS27-R/L (for parting off)



Right hand (R) shown.

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

★ : First choice

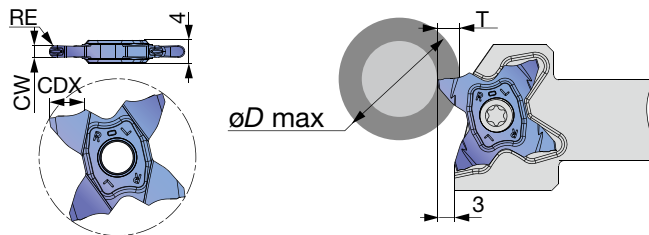
Designation	HAND	CW±0.02	RE	Coated			CDX	PSIRL	PSIRR	Max. parting off dia. CUTDIA	
				AH7025	AH8005	AH6235				Solid bar	Tube
TCS27-100-15R	R	1	0.06	●	●	●	3.5	0°	15°	7	600
TCS27-100-15L	L	1	0.06	●	●	●	3.5	15°	0°	7	600
TCS27-150-6R	R	1.5	0.06	●	●	●	5.7	0°	6°	11.4	35
TCS27-150-6L	L	1.5	0.06	●	●	●	5.7	6°	0°	11.4	35
TCS27-150-15R	R	1.5	0.06	●	●	●	5.7	0°	15°	11.4	35
TCS27-150-15L	L	1.5	0.06	●	●	●	5.7	15°	0°	11.4	35
TCS27-200-6R	R	2	0.1	●	●	●	6.4	0°	6°	12.8	30
TCS27-200-6L	L	2	0.1	●	●	●	6.4	6°	0°	12.8	30
TCS27-200-15R	R	2	0.1	●	●	●	6.4	0°	15°	12.8	30
TCS27-200-15L	L	2	0.1	●	●	●	6.4	15°	0°	12.8	30

5 pieces per package

● : New product

● : Line up

New TCS27 (for grooving and profiling, full R)



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

★ : First choice

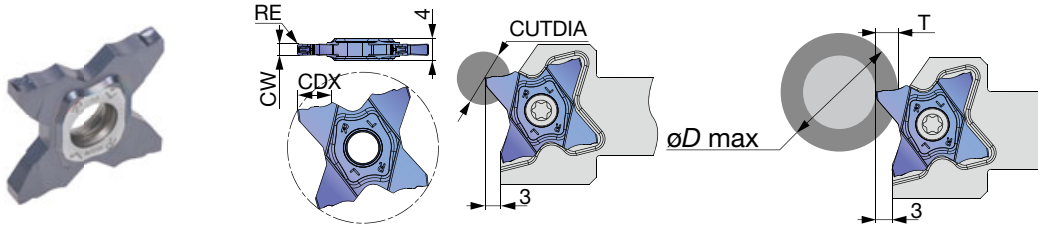
Designation	CW±0.02	RE	Coated			CDX	Relation of groove depth (T) and Max. diameter (øD max)										
			AH7025	AH8005	AH6235		T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4	
TCS27-157-079	1.57	0.79	●	●	●	3	∞	-	-	-	-	-	-	-	-	-	-
TCS27-200-100	2	1	●	●	●	3	∞	-	-	-	-	-	-	-	-	-	-
TCS27-239-120	2.39	1.2	●	●	●	5.7	∞	600	280	180	130	50	35	-	-	-	-
TCS27-300-150	3	1.5	●	●	●	6.4	∞	600	280	180	135	105	95	85	78	55	-

5 pieces per package

● : New product

● : Line up

New TCM27 (for grooving and parting off)



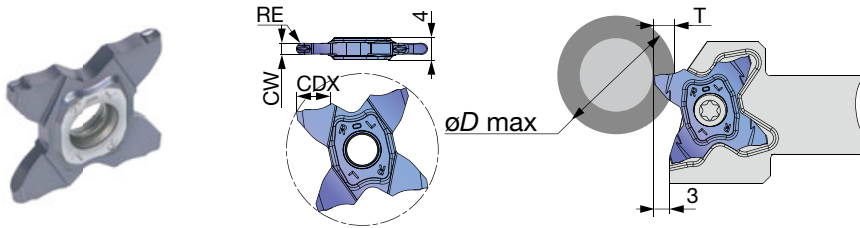
P	Steel	★	★	★
M	Stainless	★	★	★
K	Cast iron	★	★	★
N	Non-ferrous			
S	Superalloys	★	★	
H	Hard materials			

★ : First choice

Designation	CW±0.02	RE	Coated			CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)									
			AH7025	AH8005	AH6235			T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4
TCM27-150-010	1.5	0.1	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCM27-150-020	1.5	0.2	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCM27-157-015	1.57	0.15	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	
TCM27-170-010	1.7	0.1	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	
TCM27-175-010	1.75	0.1	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	
TCM27-175-020	1.75	0.2	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	
TCM27-178-018	1.78	0.18	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	
TCM27-185-020	1.85	0.2	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	
TCM27-196-015	1.96	0.15	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	
TCM27-200-010	2	0.1	●	●	●	6.4	12.8	∞	600	280	180	130	105	85	60	50	30
TCM27-200-020	2	0.2	●	●	●	6.4	12.8	∞	600	280	180	130	105	85	60	50	30
TCM27-222-015	2.22	0.15	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-
TCM27-230-020	2.3	0.2	●	●	●	3.5	7	∞	600	-	-	-	-	-	-	-	-
TCM27-239-015	2.39	0.15	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCM27-247-020	2.47	0.2	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCM27-250-010	2.5	0.1	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCM27-250-030	2.5	0.3	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCM27-270-010	2.7	0.1	●	●	●	6.2	12.4	∞	600	280	180	135	105	95	85	78	-
TCM27-287-020	2.87	0.2	●	●	●	6.2	12.4	∞	600	280	180	135	105	95	85	78	-
TCM27-300-020	3	0.2	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55
TCM27-300-030	3	0.3	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55
TCM27-300-040	3	0.4	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55
TCM27-315-015	3.15	0.15	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	68
TCM27-318-020	3.18	0.2	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	68

5 pieces per package
 ● : New product
 ● : Line up

New TCM27 (for grooving and profiling, full R)



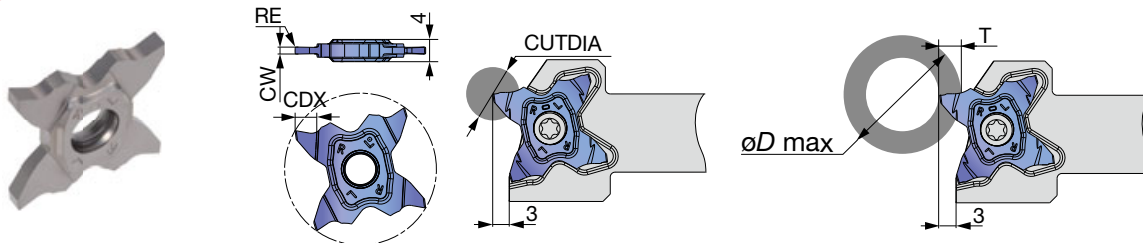
P	Steel	★	★	★
M	Stainless	★	★	★
K	Cast iron	★	★	★
N	Non-ferrous			
S	Superalloys	★	★	
H	Hard materials			

★ : First choice

Designation	CW±0.02	RE	Coated			CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)									
			AH7025	AH8005	AH6235			T≤3	T≤3.5	T≤4	T≤4.5	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4
			TCM27-157-079	1.57	0.79			●	●	●	3	6	∞	-	-	-	-
TCM27-200-100	2	1	●	●	●	3	6	∞	-	-	-	-	-	-	-	-	-
TCM27-239-120	2.39	1.2	●	●	●	5.7	11.4	∞	600	280	180	130	50	35	-	-	-
TCM27-300-150	3	1.5	●	●	●	6.4	12.8	∞	600	280	180	135	105	95	85	78	55

5 pieces per package
 ● : New product
 ● : Line up

New TCG27 (for grooving and parting off)



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

★ : First choice

Designation	CW±0.02	RE	Cermet		CDX	CUTDIA	Relation of groove depth (T) and Max. diameter (øD max)									
			NS9530				T≤3	T≤3.5	T≤4	T≤5	T≤5.5	T≤5.7	T≤6	T≤6.2	T≤6.4	
			TCG27-125-020	1.25			0.2	●		3.5	7	∞	600	-	-	-
TCG27-150-020	1.5	0.2	●		5.7	11.4	∞	600	280	130	50	35	-	-	-	-
TCG27-175-020	1.75	0.2	●		5.7	11.4	∞	600	280	130	50	35	-	-	-	-
TCG27-200-020	2	0.2	●		6.4	12.8	∞	600	280	130	105	85	60	50	30	
TCG27-230-020	2.3	0.2	●		6.4	12.8	∞	600	280	130	105	85	60	50	30	
TCG27-250-030	2.5	0.3	●		6.4	12.8	∞	600	280	130	105	85	60	50	30	
TCG27-265-030	2.65	0.3	●		6.4	12.8	∞	600	280	130	105	85	60	50	30	
TCG27-280-030	2.8	0.3	●		6.4	12.8	∞	600	280	130	105	95	85	78	55	
TCG27-300-030	3	0.3	●		6.4	12.8	∞	600	280	135	105	95	85	78	55	

5 pieces per package
 ● : New product

STANDARD CUTTING CONDITIONS

TCL27, TCS27, TCM27, TCG27

ISO	Workpiece materials	Grades	Cutting speed Vc (m/min)	Feed: f (mm/rev)						Depth of cut for profiling (with full radius insert)		
				Grooving, Parting off				Parting off (with hand)			Profiling (with full radius insert)	
				TCL27	TCS27	TCM27	TCG27	TCS27	TCS27		TCM27	
P	Carbon steel S45C / C45, etc.	AH8005	100 - 300									
		AH7025	100 - 200	0.03 - 0.12	0.05 - 0.15	0.05 - 0.25	0.03 - 0.1	0.04 - 0.12	0.05 - 0.1	0.05 - 0.15	0.5	
		AH6235	80 - 120									
		NS9530	120 - 250									
	Alloy steel SCM435 / 34CrMo4, etc.	AH8005	80 - 250									
		AH7025	50 - 180	0.03 - 0.12	0.05 - 0.15	0.05 - 0.25	0.03 - 0.1	0.04 - 0.12	0.05 - 0.1	0.05 - 0.15	0.5	
		AH6235	50 - 100									
		NS9530	100 - 200									
M	Stainless steel SUS304 / X5CrNi18-9, etc.	AH8005	100 - 150									
		AH7025	80 - 120	0.03 - 0.12	0.05 - 0.15	0.05 - 0.2	0.03 - 0.1	0.04 - 0.12	0.05 - 0.1	0.05 - 0.15	0.5	
		AH6235	50 - 120									
K	Grey cast iron FC250 / 250, etc.	AH8005	80 - 250									
		AH7025	50 - 180	0.03 - 0.12	0.05 - 0.15	0.05 - 0.25	0.03 - 0.1	0.04 - 0.12	0.05 - 0.1	0.05 - 0.15	0.5	
		AH6235	50 - 100									
		NS9530	50 - 180									
	Ductile cast iron FCD400 / 400-15, etc.	AH8005	80 - 180									
		AH7025	50 - 120	0.03 - 0.12	0.05 - 0.15	0.05 - 0.2	0.03 - 0.1	0.04 - 0.12	0.05 - 0.1	0.05 - 0.15	0.5	
		AH6235	50 - 80									
		NS9530	50 - 180									
S	Titanium alloys Ti-6Al-4V, etc.	AH8005	50 - 70	0.03 - 0.12	0.05 - 0.15	0.05 - 0.15	0.03 - 0.1	0.04 - 0.12	0.05 - 0.1	0.05 - 0.1	0.5	
		AH7025	30 - 60									
	Superalloys Inconel718, etc.	AH8005	40 - 60	0.03 - 0.12	0.05 - 0.15	0.05 - 0.15	0.03 - 0.1	0.04 - 0.12	0.05 - 0.1	0.05 - 0.1	0.5	
		AH7025	20 - 50									



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