

RHINO GROOVE™



Insert Widths

.079" (2mm)

.118" (3mm)

Insert Lead Angles

6° and 15°

Maximum Groove Depth

Double End: .512" (13mm) per side

Single End: .639 (16mm) per side

Chip Breakers

C type - For general purpose and heavier feed rates

J type - For soft & gummy materials and lower feed rates

Grades

TT7220, TT9080, TT8020

Holders (Right and Left Hand)

Standard: .625", .750", 1.000"

Swiss: .500", .625", 12mm, 16mm



Optimized Parting and Grooving Line

RhinoGroove is an economical product series consisting of external holders and inserts that feature a shorter overall length. These inserts were specifically developed for strength, efficiency, economy and long tool life in shallow depth-of-cut parting and grooving.

When compared to the competition, and to Ingersoll's existing T-Clamp Ultra+ inserts, the RhinoGroove inserts' center of gravity promotes better stability in the pocket. This enables powerful clamping of the insert, which reduces vibration and keeps the insert straight while engaged in the work piece. Since vibration has the single greatest influence on tool life in parting and grooving, this design ensures that RhinoGroove will extend tool life.

In addition to exceptional performance in shorter groove applications, all RhinoGroove inserts are priced 30% lower than comparable longer inserts.

Features

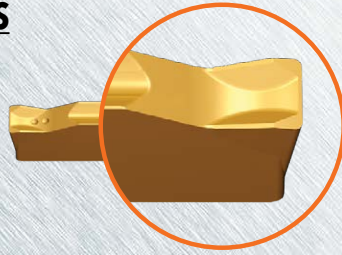
- Single and double-ended inserts, now available with 6° and 15° lead angles to reduce burrs
- Ideal for small component and shallow depth of cut parting & grooving
- Vibration minimized due to the insert's shorter length and improved center of gravity
- 30% lower price compared to longer parting & grooving inserts!
- Two chip breakers for optimal chip formation in multiple materials & conditions
- Three grade options (TT9080, TT7220 & TT8020) provide a solution for a wide variety of materials and applications



CHIP BREAKERS

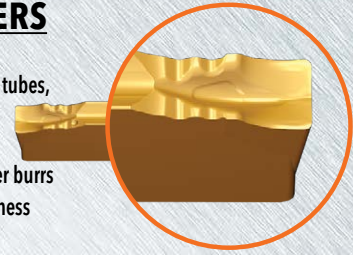
"C" CHIP BREAKERS

- For hard materials and tough applications
- For general applications on steel, alloy steel and stainless steel
- Medium-to-high feeds



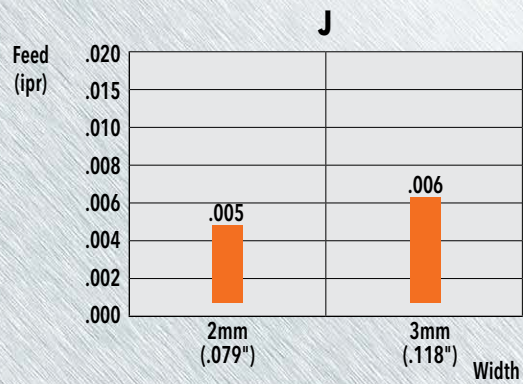
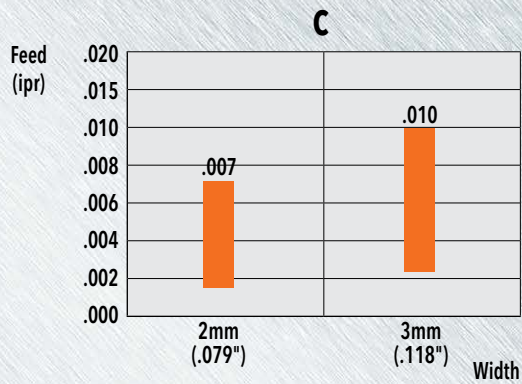
"J" CHIP BREAKERS

- For soft materials, parting of tubes, small diameters and thin-walled parts
- Low cutting forces and smaller burrs
- Excellent machining straightness
- Low-to-medium feeds



RECOMMENDED FEED RANGE

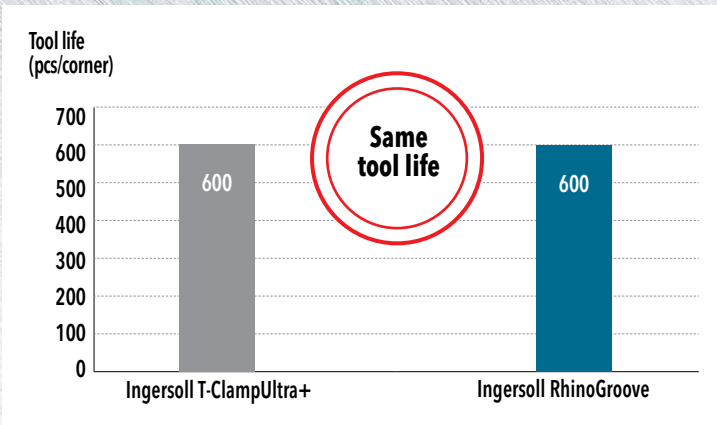
Material: SAE4140 (HB240)



Workpiece materials					
	Alloy steel	Austenitic stainless	High - Temp alloys	Nonferrous materials	Cast iron
High feed	C	C	C	C Brass	C
Low feed	J	J	J	J Aluminum	

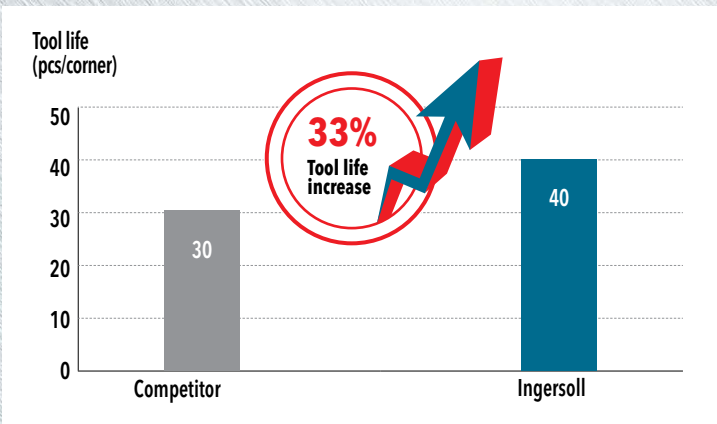
CASE STUDY 1

		Ingersoll	Ingersoll
Component		Adapter	
Workpiece material		AISI 1045 (S45C)	
Operation		External grooving	
Insert		TDC 3 TT7220	RDC 3 TT7220
Cutting speed	V (sfm)	360	360
Feed rate	f (ipr)	.003	.003
Depth of cut	ap (inch)	.315	.315
Coolant		Wet	Wet
Tool life (pcs/corner)		600	600



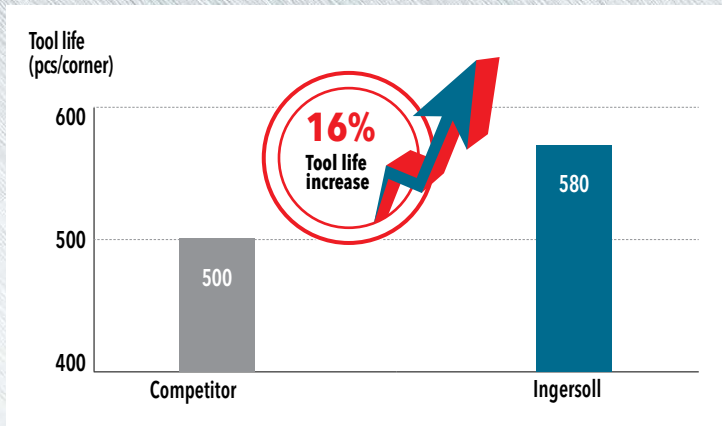
CASE STUDY 2

		Competitor	Ingersoll
Component		Pipe	
Workpiece material		AISI 304 (SUS 304)	
Operation		Parting	
Insert		Single type PVD coated	RDC 3 TT7220
Cutting speed	V (sfm)	350	350
Feed rate	f (ipr)	.003	.003
Depth of cut	ap (inch)	.256	.256
Coolant		Wet	Wet
Tool life (pcs/corner)		30	40



CASE STUDY 3

		Competitor	Ingersoll
Component		Car shaft	
Workpiece material		AISI 1025 (S525C)	
Operation		External grooving	
Insert		Triangular type PVD coated	RDC 3 TT7220
Cutting speed	V (sfm)	770	770
Feed rate	F (ipr)	.003	.003
Depth of cut	ap (inch)	.060	.060
Coolant		Wet	Wet
Tool life (pcs/corner)		500	580

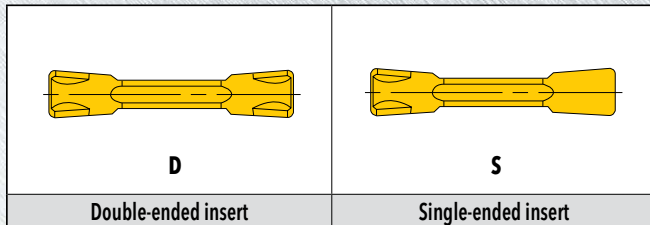


INSERT DESIGNATION SYSTEM

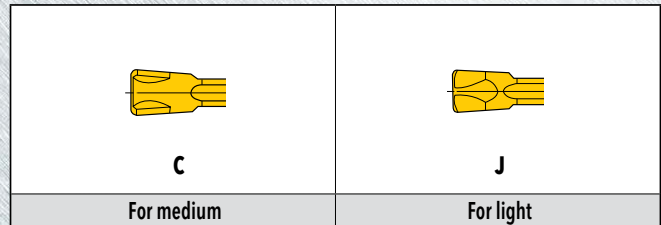


1 RhinoGroove

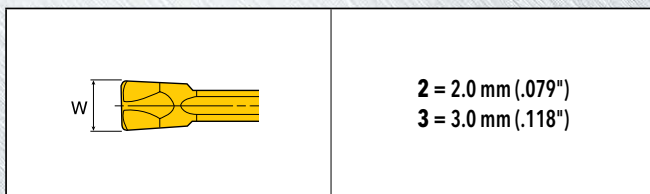
2 Cutting edge type



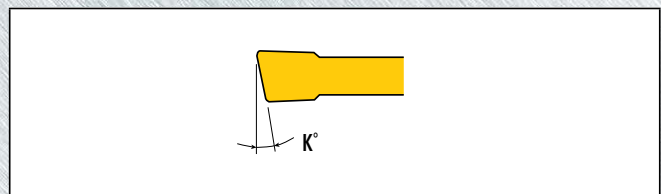
3 Chip breaker type



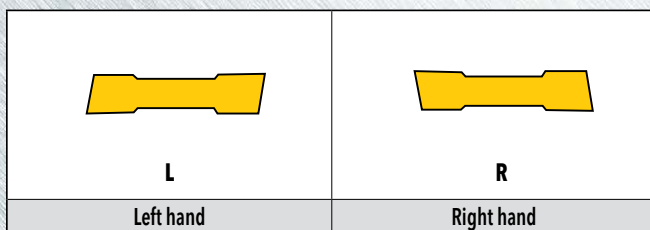
4 Width of insert



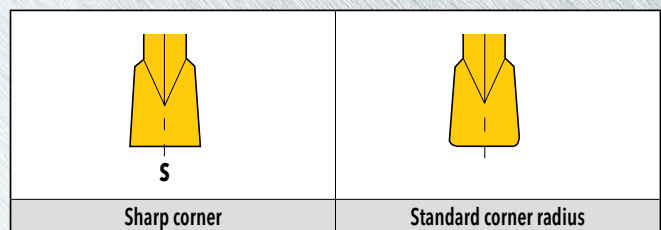
5 Lead angle



6 Hand of insert



7 Corner type



HOLDER DESIGNATION SYSTEM

R **G** **E** **R** **25.4** - **3** **T16**

1 2 3 4 5 6 7

1 RhinoGroove

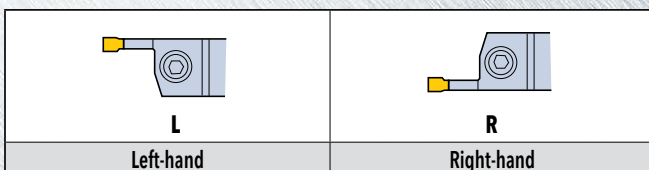
2 Application type

G Grooving

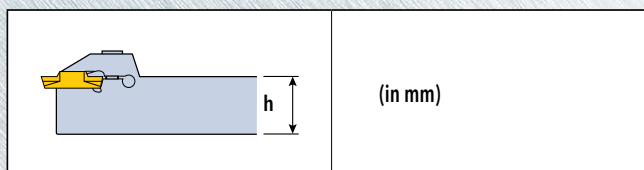
3 Machining type

E External parting and grooving

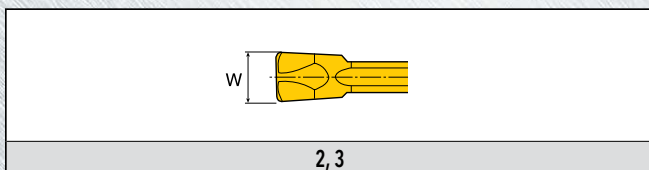
4 Hand of holder



5 Shank height



6 Insert size

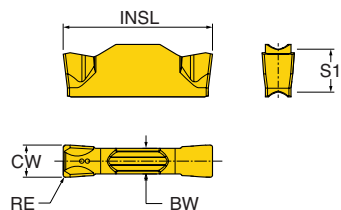


7 Maximum depth of cut*


Tmax 16mm

*Indicates clearance of holder. Actual maximum depth of cut is also dependent on inserts.

RSC Single-ended Inserts for Parting and Grooving with "C" Type Chip Breaker

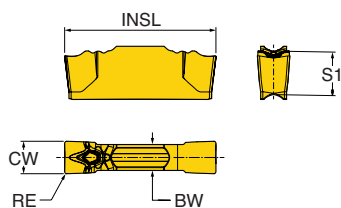


Size	Dimensions (inch)				
	CW±.002 Cutting Width	RE Corner Radius	BW Body Width	INSL Insert Length	S1 Insert Thickness
2	.079 (2mm)	.008	.067	.551	.157
3	.118 (3mm)	.008	.094	.551	.157


Insert	Part Number	SSC Insert Seat Size	Feed (ipr)	PVD coated		
				TT9080	TT7220	TT8020
	RSC 2	2	.002 - .007	•	•	•
	RSC 3	3	.003 - .010	•	•	•

•: Standard items

RSJ Single-ended Inserts for Parting and Grooving with "J" Type Chip Breaker

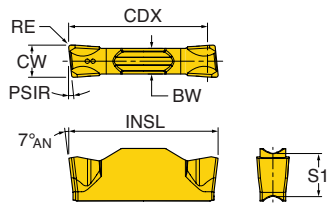


Size	Dimensions (inch)				
	CW±.002 Cutting Width	RE Corner Radius	BW Body Width	INSL Insert Length	S1 Insert Thickness
2	.079 (2mm)	.008	.067	.551	.157
3	.118 (3mm)	.008	.094	.551	.157

Insert	Part Number	SSC Insert Seat Size	Feed (ipr)	PVD coated		
				TT9080	TT7220	TT8020
	RSJ 2	2	.0015 - .005	•	•	•
	RSJ 3	3	.0015 - .006	•	•	•

•: Standard items

RDC Double-ended Inserts for Parting and Grooving with "C" Type Chip Breaker

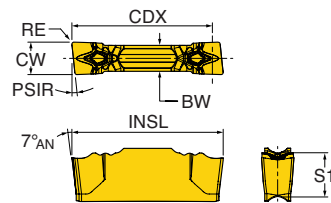


Size	Dimensions (inch)						
	CW±.002 Cutting Width	RE Corner Radius	BW Body Width	INSL Insert Length	PSIR Lead Angle	S1 Insert Thickness	CDX Cutting Depth Max.
2 (..R)	.079 (2mm)	.008	.067	.551	0-6	.157	.512
2 RS	.079 (2mm)	.0008	.067	.535	15	.157	.512
3 (..R)	.118 (3mm)	.008	.094	.551	0-15	.157	.512

Insert	Part Number	SSC Insert Seat Size	Feed (ipr)	PVD coated		
				TT9080	TT7220	TT8020
	RDC 2	2	.002 - .007	•	•	•
	NEW RDC 2-6R	2	.001 - .006	•	•	•
	NEW RDC 2-15R	2	.001 - .006	•	•	•
	NEW RDC 2-15RS	2	.001 - .005	•		
	RDC 3	3	.003 - .010	•	•	•
	NEW RDC 3-6R	3	.002 - .007	•	•	•
	NEW RDC 3-15R	3	.002 - .007			•

•: Standard items

RDJ Double-ended Inserts for Parting and Grooving with "J" Type Chip Breaker

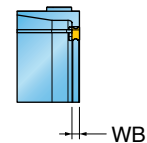
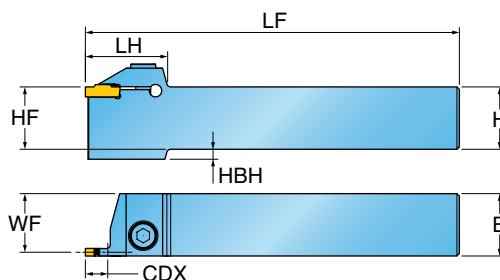


Size	Dimensions (inch)						
	CW±.002 Cutting Width	RE Corner Radius	BW Body Width	INSL Insert Length	PSIR Lead Angle	S1 Insert Thickness	CDX Cutting Depth Max.
2 (..R)	.079 (2mm)	.008	.067	.551	0-15	.157	.512
2 RS	.079 (2mm)	.0008	.067	.535	15	.157	.512
3 (..R)	.118 (3mm)	.008	.094	.551	0-15	.157	.512
3 RS	.118 (3mm)	.0008	.094	.535	6-15	.157	.512

Insert	Part Number	SSC Insert Seat Size	Feed (ipr)	PVD coated		
				TT9080	TT7220	TT8020
	RDJ 2	2	.002 - .007	•	•	•
	NEW RDJ 2-6R	2	.001 - .003	•		•
	NEW RDJ 2-15R	2	.001 - .003	•		•
	NEW RDJ 2-15RS	2	.001 - .003	•	•	•
	RDJ 3	3	.003 - .010	•	•	•
	NEW RDJ 3-6R	3	.001 - .005	•	•	•
	NEW RDJ 3-6RS	3	.001 - .004			•
	NEW RDJ 3-15R	3	.001 - .005	•		•
	NEW RDJ 3-15RS	3	.001 - .004	•	•	•

•: Standard items

RGER/L External Holders for Parting and Grooving





Right-hand shown.

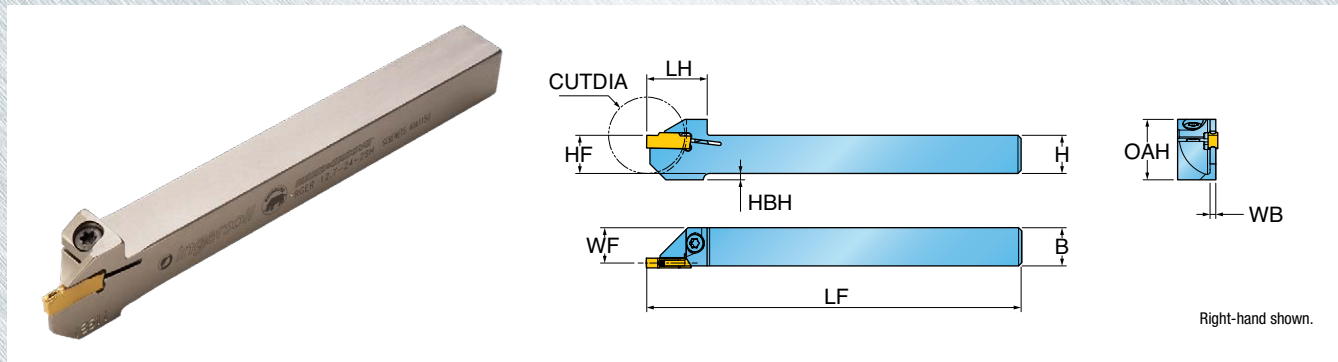
Part Number	SSC Insert Seat Size	Dimensions (inch)								Insert
		H / HF Shank Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	WB Blade Width	HBH Head Bottom Offset Height	CDX Cutting Depth Max*	
RGER/L 15.9-2T16	2	0.625	0.625	4.5	0.590	1.38	0.071	0.157	0.630	RDC2 / RDJ2 RSC2 / RSJ2
RGER/L 19-2T16	2	0.750	0.750	5.0	0.715	1.38	0.071	-	0.630	
RGER/L 25.4-2T16	2	1.000	1.000	6.0	0.965	1.38	0.071	-	0.630	
RGER/L 15.9-3T16	3	0.625	0.625	4.5	0.578	1.38	0.094	0.157	0.630	RDC3 / RDJ3 RSC3 / RSJ3
RGER/L 19-3T16	3	0.750	0.750	5.0	0.703	1.38	0.094	-	0.630	
RGER/L 25.4-3T16	3	1.000	1.000	6.0	0.953	1.38	0.094	-	0.630	

*When using double-ended insert, CDX= .512"

Spare Parts

Designation	Screw	Wrench	Torque (in-lbs)
			
RGER/L 15.9-2T16	SHM6X1X20	L-W5	70
RGER/L 19-2T16	SHM6X1X20		
RGER/L 25.4-2T16	SHM6X1X25		
RGER/L 15.9-3T16	SHM6X1X20		
RGER/L 19-3T16	SHM6X1X20		
RGER/L 25.4-3T16	SHM6X1X25		

RGER/L-SH External Holders for Parting and Grooving on Swiss Type Lathe



INCH

Part Number	SSC Insert Seat Size	Dimensions (inch)									Insert
		H / HF Shank Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	OAH Overall Height	WB Blade Width	HBH Head Bottom Offset Height	CUTDIA Parting Dia. Max	
RGER/L 12.7-24-2SH	2	0.500	0.500	5.0	0.465	0.748	0.776	0.071	0.157	0.945	RDC2 / RDJ2 RSC2 / RSJ2
RGER/L 15.9-24-2SH	2	0.625	0.625	5.0	0.590	0.945	0.822	0.071	-	0.945	

Spare Parts

Designation	Screw	Wrench	Torque (in-lbs)
	RGER/L 12.7-24-2SH	SM40-115-00	
RGER/L 15.9-24-2SH			

METRIC

Part Number	SSC Insert Seat Size	Dimensions (mm)									Insert
		H / HF Shank Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	OAH Overall Height	WB Blade Width	HBH Head Bottom Offset Height	CUTDIA Parting Dia. Max	
RGER/L 12-24-2SH	2	12	12	125	11.1	19	19	1.8	2	24	RDC2 / RDJ2 RSC2 / RSJ2
RGER/L 16-24-2SH	2	16	16	125	15.1	24	21	1.8	-	24	
RGER/L 12-24-3SH	3	12	12	125	10.8	19	19	2.4	2	24	RDC2 / RDJ2 RSC2 / RSJ2
RGER/L 16-24-3SH	3	16	16	125	14.8	24	21	2.4	-	24	

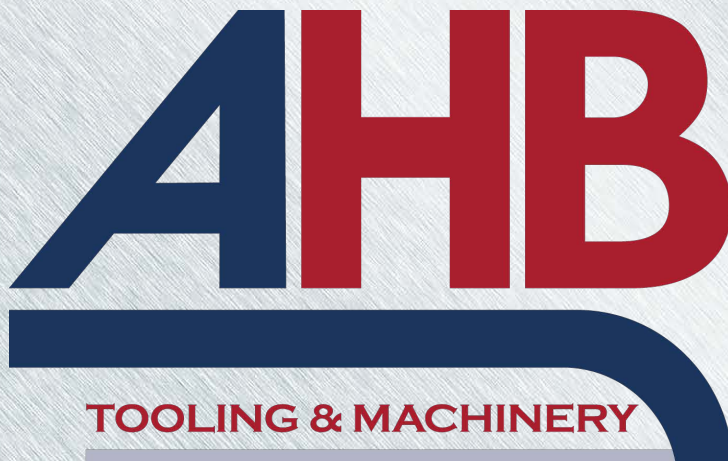
Spare Parts

Designation	Screw	Wrench	Torque (in-lbs)
	RGER/L 12-24-2SH	SM40-115-00	
RGER/L 16-24-2SH			
RGER/L 12-24-3SH	SM40-115-00	T15	17.7
RGER/L 16-24-3SH			

RECOMMENDED CUTTING SPEEDS (SFM)

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Cutting speed Vc(sfm)		
						TT9080 TT7220	TT8020	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	460-820	260-390
		>=0.25%C	Annealed	650	190	2	425-720	260-360
		<0.55%C	Quenched and tempered	850	250	3	295-650	230-295
		>=0.55%C	Annealed	750	220	4	330-720	230-330
		>=0.55%C	Quenched and tempered	1000	300	5	230-560	130-230
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	600	200	6	295-390	230-330	
			930	275	7	260-560	165-230	
		Quenched and tempered	1000	300	8	230-425	130-200	
			1200	350	9	165-395	100-165	
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	200-460	165-260	
		Quenched and tempered	1100	325	11	165-230	100-200	
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	230-560	260-390	
		Martensitic	820	240	13	200-495	200-295	
		Austenitic	600	180	14	295-590	200-295	
K	Gray cast iron (GG)	Ferritic		160	15	330-750		
		Pearlitic		250	16	295-590		
	Cast iron nodular (GGG)	Ferritic		180	17	625-980		
		Pearlitic		260	18	390-720		
	Malleable cast iron	Ferritic		130	19	390-820		
		Pearlitic		230	20	330-690		
S	High temp. alloys	Fe based	Annealed		200	31	130-230	
			Cured		280	32	100-165	
		Ni or Co based	Annealed		250	33	100-130	
			Cured		350	34	50-80	
	Titanium, Ti alloys	Cast			320	35	50-100	
				Rm 400		36	295-625	
				Rm 1050		37	100-200	

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ High temp. alloys



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