TOOL SELECTION GUIDE - STEELS

Step 1 - Select the insert geometry

Cutting Parameters

Metric				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FPS	0.04	0.05	0.25	1
-MPS	0.11	0.16	0.5	3.6

Metric				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FFS	0.02	0.13	0.12	1.26
-LFS	0.02	0.19	0.15	2.7
-PPS	0.01	0.06	0.1	4.5
-FPS	0.04	0.05	0.25	1
-MPS	0.11	0.16	0.5	3.6

Inch				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FPS	0.0016	0.002	0.0098	0.039
-MPS	0.0043	0.006	0.0197	0.142

Inch				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FFS	0.0008	0.005	0.0047	0.050
-LFS	0.0008	0.007	0.0059	0.106
-PPS	0.0004	0.002	0.0039	0.177
-FPS	0.0016	0.002	0.0098	0.039
-MPS	0.0043	0.006	0.0197	0.142

Step 2 - Select the grade

Negative Insert Geometry		
Cutting Condition	-FPS	-MPS
heavily interrupted cut	KTP25S	KTP25S
lightly interrupted cut	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	KTP25S	KTP25S
smooth cut, pre-turned surface	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	KTP25S	KTP25S

Positive Insert Geometry					
Cutting Condition	-FFS	-LFS	-PPS	-FPS	-MPS
heavily interrupted cut	-	-	-	KTP25S	KTP25S
lightly interrupted cut	-	**KCP20S** KCM25S	-	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	-	**KCP20S** KCM25S	**KCP20S** KCM25S KCS25S KTP25S	KTP25S	KTP25S
smooth cut, pre-turned surface	**KCM25S** KCS25S	**KCP20S** KCM25S KCS25S	**KCP20S** KCM25S KCS25S KTP25S	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	**KCM25S** KCS25S	**KCP20S** KCM25S KCS25S	**KCP20S** KCM25S KCS25S KTP25S	KTP25S	KTP25S

NOTE: **Bold** is first choice when showing multiple grades.

Step 3 - Select the cutting speed

Low-Carbon (<0,3% C) and Free-Machining Steel		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P0/P1	KCP20S	50	**165**	274	165	**540**	900
	KTP25S	122	**216**	351	400	**710**	1150

Medium- and High-Carbon Steels (>0,3% C)		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P2	KCP20S	50	**149**	250	165	**490**	820
	KTP25S	122	**204**	312	400	**670**	1025

Alloy Steels and Tool Steels; <330 HB; <35 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P3	KCP20S	50	**110**	165	165	**360**	540
	KTP25S	122	**189**	274	400	**620**	900

Alloy Steels and Tool Steels; 350–450 HB; 35–48 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P4	KCP20S	50	**101**	149	165	**330**	490
	KTP25S	107	**152**	189	350	**500**	620

Ferritic, Martensitic, and PH Stainless Steels; <330 HB; <35 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P5	KCS25S	53	**75**	107	175	**245**	350
	KCM25S	43	**64**	85	140	**210**	280
	KTP25S	122	**155**	204	400	**510**	670

Ferritic, Martensitic, and PH Stainless Steels; 350–450 HB; 35–48 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P6	KCS25S	50	**70**	101	165	**230**	330
	KCM25S	40	**59**	79	130	**195**	260
	KTP25S	116	**146**	183	380	**480**	600

WIPER TECHNOLOGY

Step 1 - Select the insert geometry

Cutting Parameters

Metric				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.05	0.14	0.5	2.5
-MWS	0.14	0.49	0.56	3.2

Metric				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.05	0.14	0.5	2.5
-MWS	0.14	0.49	0.56	3.2

Inch				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.002	0.006	0.020	0.098
-MWS	0.006	0.019	0.022	0.126

Inch				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.002	0.006	0.020	0.098
-MWS	0.006	0.019	0.022	0.126

Step 2 - Select the grade

Negative Insert Geometry		
Cutting Condition	-FWS	-MWS
heavily interrupted cut	KTP25S	KTP25S
lightly interrupted cut	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	KTP25S	KTP25S
smooth cut, pre-turned surface	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	KTP25S	KTP25S

Positive Insert Geometry		
Cutting Condition	-FWS	-MWS
heavily interrupted cut	KTP25S	KTP25S
lightly interrupted cut	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	KTP25S	KTP25S
smooth cut, pre-turned surface	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	KTP25S	KTP25S

Step 3 - Select the cutting speed

Low-Carbon (<0,3% C) and Free-Machining Steel		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P0/P1	KTP25S	122	**216**	351	400	**710**	1150

Medium- and High-Carbon Steels (>0,3% C)		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P2	KTP25S	122	**204**	312	400	**670**	1025

Alloy Steels and Tool Steels; <330 HB; <35 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P3	KTP25S	122	**189**	274	400	**620**	900

Alloy Steels and Tool Steels; 350–450 HB; 35–48 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P4	KTP25S	107	**152**	189	350	**500**	620

Ferritic, Martensitic, and PH Stainless Steels; <330 HB; <35 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P5	KTP25S	122	**155**	204	400	**510**	670

Ferritic, Martensitic, and PH Stainless Steels; 350–450 HB; 35–48 HRC		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
P6	KTP25S	116	**146**	183	380	**480**	600

TOOL SELECTION GUIDE - STAINLESS STEELS

Step 1 - Select the insert geometry

Metric				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FPS	0.04	0.05	0.25	1
-MPS	0.11	0.16	0.5	3.6

Metric				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FFS	0.02	0.13	0.12	1.26
-LFS	0.02	0.19	0.15	2.7
-PPS	0.01	0.06	0.1	4.5
-FPS	0.04	0.05	0.25	1
-MPS	0.11	0.16	0.5	3.6

Inch				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FPS	0.0016	0.002	0.0098	0.039
-MPS	0.0043	0.006	0.0197	0.142

Inch				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FFS	0.0008	0.005	0.0047	0.050
-LFS	0.0008	0.007	0.0059	0.106
-PPS	0.0004	0.002	0.0039	0.177
-FPS	0.0016	0.002	0.0098	0.039
-MPS	0.0043	0.006	0.0197	0.142

Step 2 - Select the grade

Negative Insert Geometry		
Cutting Condition	-FPS	-MPS
heavily interrupted cut	KTP25S	KTP25S
lightly interrupted cut	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	KTP25S	KTP25S
smooth cut, pre-turned surface	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	KTP25S	KTP25S

NOTE: **Bold** is first choice when showing multiple grades.

Negative Insert Geometry					
Cutting Condition	-FFS	-LFS	-PPS	-FPS	-MPS
heavily interrupted cut	-	-	-	KTP25S	KTP25S
lightly interrupted cut	-	**KCM25S** KCS25S	-	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	-	**KCM25S** KCS25S	**KCM25S**/KCS25S KTP25S	KTP25S	KTP25S
smooth cut, pre-turned surface	**KCM25S** KCS25S	**KCM25S** KCS25S	**KCM25S**/KCS25S KTP25S	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	**KCM25S** KCS25S	**KCM25S** KCS25S	**KCM25S**/KCS25S KTP25S	KTP25S	KTP25S

Step 3 - Select the cutting speed

Austenitic Stainless Steel		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
M1	**KCM25S**	40	**59**	101	130	**195**	330
	KCS25S	59	**101**	149	195	**330**	490
	KTP25S	94	**130**	186	310	**425**	610

High Strength Austenitic Stainless and Cast Stainless Steels		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
M2	**KCM25S**	40	**59**	101	130	**195**	330
	KCS25S	59	**101**	149	195	**330**	490
	KTP25S	91	**125**	180	300	**410**	590

Duplex Stainless Steel (Ferritic and Austenitic Mixture)		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
M3	**KCM25S**	40	**79**	160	130	**260**	525
	KCS25S	50	**101**	180	165	**330**	590
	KTP25S	91	**122**	180	300	**400**	590

WIPER TECHNOLOGY

Step 1 - Select the insert geometry

Cutting Parameters

Metric				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.05	0.14	0.5	2.5
-MWS	0.14	0.49	0.56	3.2

Metric				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.05	0.14	0.5	2.5
-MWS	0.14	0.49	0.56	3.2

Inch				
Negative Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.002	0.006	0.020	0.098
-MWS	0.006	0.019	0.022	0.126

Inch				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FWS	0.002	0.006	0.020	0.098
-MWS	0.006	0.019	0.022	0.126

Step 2 - Select the grade

Negative Insert Geometry		
Cutting Condition	-FWS	-MWS
heavily interrupted cut	KTP25S	KTP25S
lightly interrupted cut	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	KTP25S	KTP25S
smooth cut, pre-turned surface	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	KTP25S	KTP25S

Positive Insert Geometry		
Cutting Condition	-FWS	-MWS
heavily interrupted cut	KTP25S	KTP25S
lightly interrupted cut	KTP25S	KTP25S
varying depth of cut, casting, or forging skin	KTP25S	KTP25S
smooth cut, pre-turned surface	KTP25S	KTP25S
smooth cut, high precision / tight tolerance	KTP25S	KTP25S

Step 3 - Select the cutting speed

Austenitic Stainless Steel		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
M1	KTP25S	94	**130**	186	310	**425**	610

High Strength Austenitic Stainless and Cast Stainless Steels		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
M2	KTP25S	91	**125**	180	300	**410**	590

Duplex Stainless Steel (Ferritic and Austenitic Mixture)		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
M3	KTP25S	91	**122**	180	300	**400**	590

TOOL SELECTION GUIDE - NON-FERROUS

Step 1 - Select the insert geometry

Cutting Parameters

Metric				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-PPS	0.01	0.06	0.1	4.5

Inch				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-PPS	0.0004	0.002	0.0039	0.177

Step 2 - Select the grade

Positive Insert Geometry	
Cutting Condition	-PPS
heavily interrupted cut	-
lightly interrupted cut	KN10S
varying depth of cut, casting, or forging skin	KN10S
smooth cut, pre-turned surface	KN10S
smooth cut, high precision / tight tolerance	KN10S

NOTE: **Bold** is first choice when showing multiple grades.

Step 3 - Select the cutting speed

Wrought Aluminum Alloys		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
N1	KN10S	198	**488**	616	650	**1600**	2020

Low-Silicon Aluminum Alloys and Magnesium Alloys; Si12.2%		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
N2	KN10S	101	**451**	600	330	**1480**	1970

Copper, Brass, Zinc-Based on a Machinability Index Range of 70-100		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
N4	KN10S	107	**259**	366	350	**850**	1200

Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
N5	KN10S	101	**149**	351	330	**490**	1150

TOOL SELECTION GUIDE - HEAT RESISTANT ALLOYS & TITANIUM ALLOYS

Step 1 - Select the insert geometry

Cutting Parameters

Metric				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FFS	0.02	0.13	0.12	1.26
-LFS	0.02	0.19	0.15	2.7
-PPS	0.01	0.06	0.1	4.5

Inch				
Positive Insert Geometry				
	min feed	min DOC	max feed	max DOC
-FFS	0.0008	0.005	0.0047	0.050
-LFS	0.0008	0.007	0.0059	0.106
-PPS	0.0004	0.002	0.0039	0.177

Step 2 - Select the grade

Positive Insert Geometry			
Cutting Condition	-FFS	-LFS	-PPS
heavily interrupted cut	-	-	-
lightly interrupted cut	-	**KCS25S**/KCM25S	-
varying depth of cut, casting, or forging skin	-	**KCS25S**/KCM25S	**KCS25S**/KCM25S
smooth cut, pre-turned surface	**KCS25S**/KCM25S	**KCS25S**/KCM25S	**KCS25S**/KCM25S/KN10S
smooth cut, high precision / tight tolerance	**KCS25S**/KCM25S	**KCS25S**/KCM25S	**KCS25S**/KCM25S/KN10S

NOTE: **Bold** is first choice when showing multiple grades.

Step 3 - Select the cutting speed

Iron-Based, Heat-Resistant Alloys; 160-260 HB; 25-48 HRC; 500-1200 Mpa Tensile Strength		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
S1	KN10S	9	**30**	76	30	**100**	250
	KCS25S	40	**79**	140	130	**260**	460
	KCM25S	9	**40**	61	30	**130**	200

Cobalt-Based, Heat-Resistant Alloys; 250-450 HB; 25-48 HRC; 1000-1450 Tensile Strength		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
S2	KN10S	9	**34**	76	30	**110**	250
	KCS25S	40	**79**	140	130	**260**	460
	KCM25S	9	**30**	61	30	**100**	200

Nickel-Based, Heat-Resistant Alloys 160-450HB; <48 HRC; 600-1700 Tensile Strength		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
S3	KN10S	9	**40**	76	30	**130**	250
	KCS25S	40	**79**	140	130	**260**	460
	KCM25S	9	**40**	61	30	**130**	200

Titanium and Titanium Alloys 300-400 HB; 33-48 HRC; 900-1600 Tensile Strength		m/min			SFM		
material group	grade	MIN	START	MAX	MIN	START	MAX
S4	KN10S	9	**46**	76	30	**150**	250
	KCS25S	40	**79**	140	130	**260**	460