

SELECT CUTTING SPEED

Low-Carbon (<0,3% C) and Free-Machining Steels		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
P0/P1	KCPM25S	40	260	130	850
	KCU25S	30	200	100	680
Medium and High-Carbon Steels (>0,3% C)		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
P2	KCPM25S	20	180	60	590
	KCU25S	15	140	50	470
Alloy Steels and Tool Steels; <330 HB; <35 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
P3	KCPM25S	20	130	60	420
	KCU25S	15	100	50	330
Alloy Steels and Tool Steels; 350–450 HB; 35–48 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
P4	KCPM25S	10	130	30	425
	KCHS25S	10	130	30	425
	KCU25S	10	100	25	340
Ferritic, Martensitic, and PH Stainless Steels; <330 HB; <35 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
P5	KCPM25S	20	160	60	520
	KCU25S	15	130	50	410
Ferritic, Martensitic, and PH Stainless Steels; 350–450 HB; 35–48 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
P6	KCPM25S	10	100	30	330
	KCHS25S	10	100	30	330
	KCU25S	10	80	25	260

SELECT CUTTING SPEED

Austenitic Stainless Steels		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
M1	KCSM25S	30	180	100	590
	KCPM25S	30	180	100	590
	KCU25S	25	140	80	470

High Strength Austenitic Stainless and Cast Stainless Steels		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
M2	KCSM25S	20	140	60	460
	KCPM25S	20	140	60	460
	KCU25S	15	110	50	370

Duplex Stainless Steels (Ferritic and Austenitic Mixture)		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
M3	KCSM25S	20	110	60	360
	KCPM25S	20	110	60	360
	KCU25S	15	90	50	290

SELECT CUTTING SPEED

Iron-Based, Heat-Resistant Alloys; 160-260 HB; 25-48 HRC; 500-1200 MPa Tensile Strength

Material Group	Grade	m/min		SFM	
		MIN	MAX	MIN	MAX
S1	KCSM25S	10	100	30	330
	KCHS25S	10	100	30	330
	KCU25S	10	80	25	260

Cobalt-Based, Heat-Resistant Alloys; 250-450 HB; 25-48 HRC; 1000-1450 Tensile Strength

Material Group	Grade	m/min		SFM	
		MIN	MAX	MIN	MAX
S2	KCSM25S	10	60	30	200
	KCHS25S	10	60	30	200
	KCU25S	10	50	25	160

Nickel-Based, Heat-Resistant Alloys 160-450HB; <48 HRC; 600-1700 Tensile Strength

Material Group	Grade	m/min		SFM	
		MIN	MAX	MIN	MAX
S3	KCSM25S	10	100	30	330
	KCHS25S	10	100	30	330
	KCU25S	10	80	25	260

Titanium and Titanium Alloys 300-400 HB; 33-48 HRC; 900-1600 Tensile Strength

Material Group	Grade	m/min		SFM	
		MIN	MAX	MIN	MAX
S4	KCSM25S	10	100	30	330
	KCHS25S	10	100	30	330
	KCU25S	10	80	25	260

SELECT CUTTING SPEED

Hardened Materials; 44-48 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
H1	KCHS25S	10	90	30	290
	KCU25S	10	60	20	200

Hardened Materials; 48-55 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
H2	KCHS25S	10	90	30	290
	KCU25S	10	60	20	200

Hardened Materials; 55-60 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
H3	KCHS25S	10	80	30	260
	KCU25S	10	55	20	180

Hardened Materials; 60-66 HRC		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
H4	KCHS25S	10	60	30	200

SELECT CUTTING SPEED

Grey Cast Iron		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
K1	KCU25S	15	180	50	600
	KCPM25S	20	230	60	750
	KCHS25S	20	230	60	750

Low & Medium Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI)		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
K2	KCU25S	15	120	50	390
	KCPM25S	20	150	60	490
	KCHS25S	20	150	60	490

High Strength Ductile and Austempered Ductile Iron (ADI) and Malleable Cast Irons		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
K3	KCU25S	25	180	80	600
	KCPM25S	30	230	100	750
	KCHS25S	30	230	100	750

SELECT CUTTING SPEED

Low-Silicon Aluminum Alloys and Magnesium Alloys; Si12.2%		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
N2	KCU25S	60	440	200	1450
High-Silicone Aluminum and Magnesium Alloys; Si>12.2%		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
N3	KCU25S	30	290	100	950
Copper, Brass, Zinc-Based on a Machinability Index Range of 70-100		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
N4	KCU25S	40	390	130	1280
Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX
N5	KCU25S	40	290	130	950

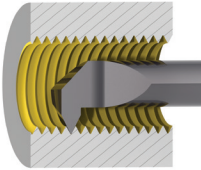

FEED RATE & DEPTH OF CUT

METRIC

INCH

	Applications	Feed Rate (mm/rev)		Depth of Cut (mm)		Feed Rate (in/rev)		Depth of Cut (in)	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
High-Performance Boring & Profiling KCPM25S KCSM25S KCHS25S		0.005	0.25	0.005	0.77	0.0002	0.0098	0.0002	0.0303
Boring & Profiling KCU25S		0.005	0.08	0.005	0.5	0.0002	0.0031	0.0002	0.0202
Internal Grooving KCU25S		0.01	0.03	0.03	0.05	0.0004	0.0012	0.0012	0.0202
Face Grooving KCU25S		0.02	0.05	0.03	0.05	0.0008	0.0021	0.0012	0.0202

THREADING SPEED & NUMBER OF PASSES

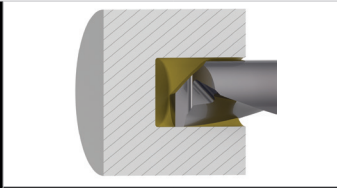
Internal Threading KCU25S									
		P0	P1	P2	P3	P4	M	K	N
Material		P0	P1	P2	P3	P4	M	K	N
m/min		160	140	120	90	70	90	100	300
SFM		520	460	390	290	230	290	330	980
Thread Pitch		Number of passes							
mm	TPI								
0.5	48	5	5	5	5	8	8	5	5
0.8	32	6	6	6	6	8	8	6	6
1	24	7	7	7	7	8	8	7	7
1.25	20	8	8	8	8	10	10	8	8
1.5	16	10	10	10	10	12	12	10	10
1.75	14	12	12	12	12	14	14	12	12
2	12	13	13	13	13	15	15	13	13
2.5	10	15	15	16	16	18	18	16	15
3	8	16	16	17	17	20	20	17	16
4	6	18	18	19	19	22	22	19	18
5	5	20	20	21	21	24	24	21	20
6	4	22	22	23	23	26	26	23	22

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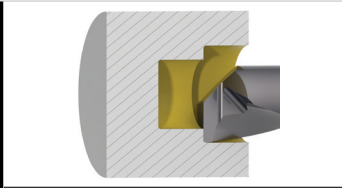


FEED RATE DRILLING & TURNING **METRIC**

Drilling (metric) Multi-Function KCU25S		Feed Rate (mm/rev)	
		MIN	MAX
MF Insert Size (mm)	Drilling Depth (mm)		
∅ ≤ 3	10	0.0025	0.0125
	13	0.0025	0.0100
∅ 3 - 4	15	0.005	0.030
	20	0.005	0.015
∅ 4 - 5	15	0.005	0.040
	25	0.005	0.020
∅ 5 - 6	15	0.005	0.030
	30	0.005	0.020
∅ 6 - 7	20	0.005	0.035
	35	0.005	0.025
∅ 7 - 8	25	0.005	0.040
	40	0.005	0.030

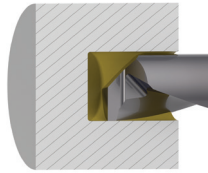


Turning (metric) Multi-Function KCU25S		Feed Rate (mm/rev)	
		MIN	MAX
MF Insert Size (mm)	Turning Depth (mm)		
∅ ≤ 3	10	0.005	0.070
	13	0.005	0.050
∅ 3 - 4	15	0.010	0.100
	20	0.005	0.100
∅ 4 - 5	15	0.010	0.100
	25	0.005	0.100
∅ 5 - 6	15	0.010	0.100
	30	0.005	0.100
∅ 6 - 7	20	0.010	0.100
	35	0.010	0.100
∅ 7 - 8	25	0.010	0.100
	40	0.010	0.100

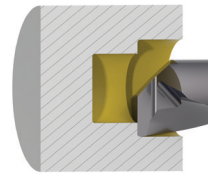


FEED RATE DRILLING & TURNING **INCH**

Drilling (inch) Multi-Function KCU25S		Feed Rate (in/rev)	
		MIN	MAX
MF Insert Size (in)	Drilling Depth (in)		
Ø ≤ 0.12	0.39	0.0001	0.0005
	0.51	0.0001	0.0004
Ø 0.12 - 0.16	0.59	0.0002	0.0012
	0.79	0.0002	0.0006
Ø 0.16 - 0.19	0.59	0.0002	0.0016
	0.98	0.0002	0.0008
Ø 0.19 - 0.24	0.59	0.0002	0.0012
	1.18	0.0002	0.0008
Ø 0.24 - 0.28	0.79	0.0002	0.0014
	1.38	0.0002	0.0010
Ø 0.28 - 0.31	0.98	0.0002	0.0016
	1.57	0.0002	0.0012



Turning (inch) Multi-Function KCU25S		Feed Rate (in/rev)	
		MIN	MAX
MF Insert Size (in)	Turning Depth (in)		
Ø ≤ 0.12	0.39	0.0002	0.0028
	0.51	0.0002	0.0020
Ø 0.12 - 0.16	0.59	0.0004	0.0039
	0.79	0.0002	0.0039
Ø 0.16 - 0.19	0.59	0.0004	0.0039
	0.98	0.0002	0.0039
Ø 0.19 - 0.24	0.59	0.0004	0.0039
	1.18	0.0002	0.0039
Ø 0.24 - 0.28	0.79	0.0004	0.0039
	1.38	0.0004	0.0039
Ø 0.28 - 0.31	0.98	0.0004	0.0039
	1.57	0.0004	0.0039



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DRILLING & TURNING MULTI-FUNCTION



		Drilling				Turning			
		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Low-Carbon (<0,3% C) and Free-Machining Steels									
P0/P1	KCU25S	80	110	260	360	80	260	260	850
Medium- and High-Carbon Steels (>0,3% C)									
P2	KCU25S	70	90	230	290	70	230	230	750
Alloy Steels and Tool Steels; <330 HB; <35 HRC									
P3	KCU25S	50	70	160	230	50	180	160	590
Alloy Steels and Tool Steels; 350–450 HB; 35–48 HRC									
P4	KCU25S	50	60	160	200	50	150	160	490
Ferritic, Martensitic, and PH Stainless Steels; <330 HB; <35 HRC									
P5	KCU25S	50	60	160	200	50	160	160	520
Ferritic, Martensitic, and PH Stainless Steels; 350–450 HB; 35–48 HRC									
P6	KCU25S	30	40	100	130	30	100	100	330

DRILLING & TURNING MULTI-FUNCTION



		Drilling				Turning			
		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Austenitic Stainless Steels									
M1	KCU25S	50	70	160	230	50	180	160	590
High Strength Austenitic Stainless and Cast Stainless Steels									
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
M2	KCU25S	40	60	130	200	40	140	130	460
Duplex Stainless Steels (Ferritic and Austenitic Mixture)									
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
M3	KCU25S	30	50	100	160	30	110	100	360

DRILLING & TURNING MULTI-FUNCTION



		Drilling				Turning			
		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Iron-Based, Heat-Resistant Alloys; 160-260 HB; 25-48 HRC; 500-1200 Tensile Strength									
S1	KCU25S	20	30	60	100	20	80	60	260
Cobalt-Based, Heat-Resistant Alloys; 250-450 HB; 25-48 HRC; 1000-1450 Tensile Strength									
S2	KCU25S	20	30	60	100	20	60	60	200
Nickel-Based, Heat-Resistant Alloys 160-450HB; <48 HRC; 600-1700 Tensile Strength									
S3	KCU25S	30	40	100	130	30	100	100	330
Titanium and Titanium Alloys 300-400 HB; 33-48 HRC; 900-1600 Tensile Strength									
S4	KCU25S	30	40	100	130	30	100	100	330

DRILLING & TURNING MULTI-FUNCTION



		Drilling				Turning			
Hardened Materials; 44-48 HRC		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
H1	KCU25S	*	*	*	*	30	90	100	300
Hardened Materials; 48-55 HRC		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
H2	KCU25S	*	*	*	*	20	60	60	200

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DRILLING & TURNING MULTI-FUNCTION



Grey Cast Iron		Drilling				Turning			
Material Group	Grade	m/min		SFM		m/min		SFM	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
K1	KCU25S	70	90	230	300	70	230	230	750
Low & Medium Strength Ductile Irons and Compacted Graphite Irons (CGI)		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
K2	KCU25S	50	60	160	200	50	150	160	490
High Strength Ductile and Austempered Ductile Iron and Malleable Cast Irons		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
K3	KCU25S	60	80	200	260	60	190	200	620

DRILLING & TURNING MULTI-FUNCTION - KCU25S



Wrought Aluminum Alloys		Drilling				Turning			
Material Group	Grade	m/min		SFM		m/min		SFM	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
N1	KCU25S	90	110	290	360	160	540	520	1770
Low-Silicon Aluminum Alloys and Magnesium Alloys; Si<12.2%		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
N2	KCU25S	70	90	230	290	130	440	430	1440
High-Silicon Aluminum and Magnesium Alloys; Si>12.2%		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
N3	KCU25S	20	60	60	200	30	290	100	950
Copper, Brass, Zinc-Based on a Machinability Index Range of 70-100		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
N4	KCU25S	60	80	200	260	120	390	390	1280
Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass		m/min		SFM		m/min		SFM	
Material Group	Grade	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
N5	KCU25S	50	70	160	230	100	330	330	1080

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