

**DIJET**<sup>®</sup>

**DIE & MOLD SERIES**

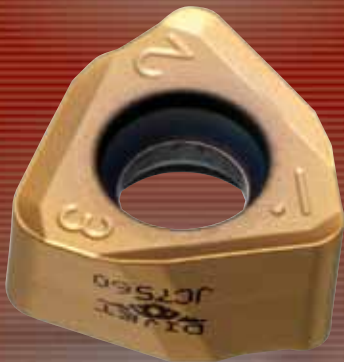
CATALOG NO. 10021A

**HIGH PERFORMANCE  
HIGH FEED MACHINING**

**SKS** **EXTREME**

# Next-generation high feed machining cutter

Improved insert strength of 1.5 times compared with conventional tool.



7.5mm  
Insert Thickness

- Double-sided insert (6 corners)
- New PVD coated grade "JC7560"



**Max.  $a_p=3\text{mm}$   $f_z=2\text{mm}$**

Possible high feed machining with  $f_z=2\text{mm/t}$  at Max. depth of cut ( $a_p$ )=3mm.

**DIJET INCORPORATED**

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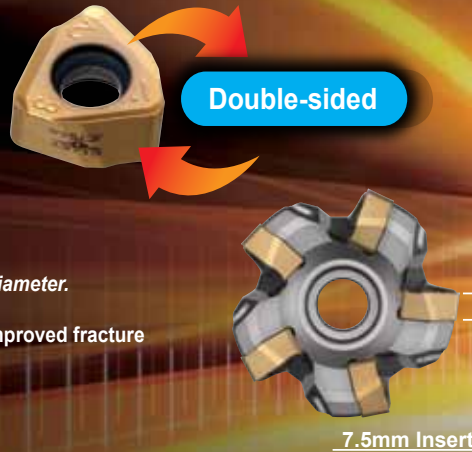


# SKS Extreme

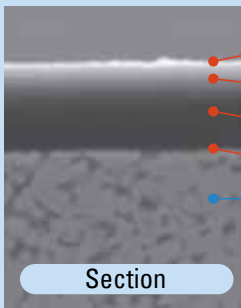
## Product Feature

### “SKS EXTREME” EXSKS type, next-generation high feed machining cutter

- Possible high feed machining with  $f_z=2\text{mm/t}$  at max. depth of cut ( $a_p$ )= $3\text{mm}$ .
- Economical double-sided insert (6 corners).
- Insert thickness of  $7.5\text{mm}$  has improved strength of 1.5 times when compared to conventional tool.
- Stable high feed machining possible with long reach over  $L/D=6$ .
- Excellent ramping and helical interpolation, and high efficient pocket milling.  
\*Max. ramping angle  $3^\circ$  is possible with  $2\ 1/2"$  ( $63\text{mm}$ ) diameter.
- Insert adopting new PVD coated grade “JC7560” with improved fracture toughness and achieving longer tool life.



### New PVD coated grade “JC7560” against thermal shock



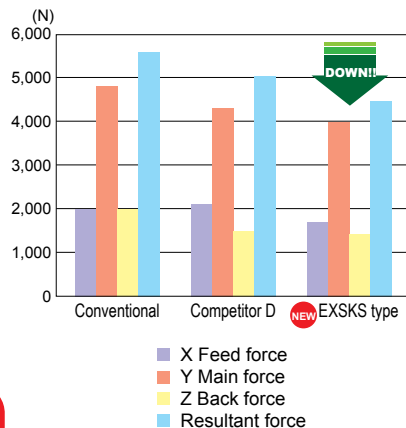
Ti-based nitride layer with excellent welding resistance & low friction
Al-Cr-based nitride layer improved oxidation & thermal resistance
Ti-Al-based nitride layer improved wear & thermal resistance
Layer improved adhesion
Substrate improved thermal crack resistance & thermal shock resistance

- In case of rough milling, JC7560 improved heat-fracture resistance & impact strength, and achieved longer tool life.

### Cutting Performance

#### Cutting force comparison

Tool Diameter:  $\Phi 63\text{mm}$   
Material: S50C  
 $V_c=150\text{m/min}$ ,  $f_z=1.5\text{mm/t}$ ,  
 $a_p=1.5\text{mm}$ ,  $a_e=40\text{mm}$



18% reduction from conventional tool,  
10% reduction from competitor D

Due to wedge-shape binding on the face of insert, only single screw needed to prevent movement and indexing easy.



Adopted GN surface-hardening treatment on thermal resistant high strength steel gives high hardness of over 65HRC and secures insert pocket and holder against thermal deformation which improves body durability and tool life by 30% or more.



**INCH**

**METRIC**

# SKS Extreme

## FACE MILL

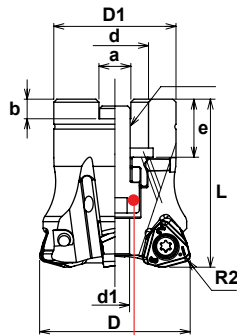
High Feed cutter with double sided insert

EXSK type

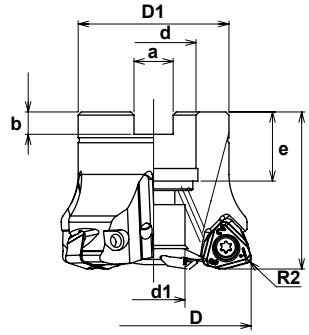
**G-Body**



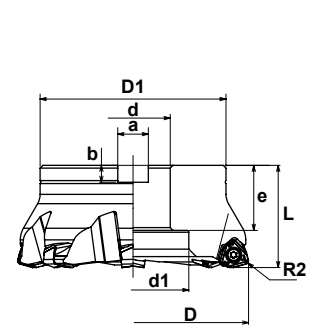
**Fig. 1**  
Through coolant hole



**Fig. 2**  
Through coolant hole



**Fig. 3**  
Without coolant hole



### Specifications - Inch

CATALOG NUMBER	STK	DIMENSIONS								FIG.	INSERT	Q	PARTS	
		D	L	d	D1	a	b	e	d1				Screw	Wrench
EXSKS-4200-75R	•	2.00	2.25	.750	1.77	.319	.196	.750	.378	1	WNMU090720ZER-PM	4	CSW-513H	A-20
EXSKS-5250-75R	•	2.50	2.00	.750	2.36	.319	.196	.750	.630	2		5		
EXSKS-6300-100R	•	3.00	2.00	1.00	2.85	.374	.236	.750	.827	2		6		
EXSKS-6300-125R	•	3.00	2.50	1.25	2.85	.500	.315	1.25	1.02	2		6		
EXSKS-7400-150R	•	4.00	2.25	1.50	3.78	.626	.393	1.50	1.19	2		7		
EXSKS-8500-150R	•	5.00	2.25	1.50	3.34	.626	.393	1.50	2.36	3		8		
EXSKS-9600-150R	•	6.00	2.25	1.50	3.93	.626	.393	1.50	2.36	3		9		

Note: All cutters are supplied without inserts.

### Specifications - Metric

CATALOG NUMBER	STK	DIMENSIONS								FIG.	INSERT	Q	PARTS	
		D	L	d	D1	a	b	e	d1				Screw	Wrench
EXSKS-4050R	•	50	55	22.225	40	8.4	5	19	9.6	1	WNMU090720ZER-PM	4	CSW-513H	A-20
EXSKS-4050R-22	•	50	55	22	40	10.4	6.3	19	9.6	1		4		
EXSKS-4052R-22	•	52	50	22	40	10.4	6.3	20	17	2		4		
EXSKS-5063R	•	63	50	22.225	48	8.4	5	20	17	2		5		
EXSKS-5063R-22	•	63	50	22	48	10.4	6.3	20	17	2		5		
EXSKS-5063R-27	•	63	50	27	48	12.4	7	22	20	2		5		
EXSKS-5066R-27	•	66	50	27	48	12.4	7	22	20	2		5		
EXSKS-6080R	•	60	70	31.75	65	12.7	8	32	26	2		6		
EXSKS-6080R-27	•	80	55	27	65	12.4	7	22	37	3		6		
EXSKS-7100R	•	100	70	31.75	70	12.7	8	32	26	3		7		
EXSKS-7100R-32	•	100	55	32	85	14.4	8	32	45	3		7		
EXSKS-8125R	•	125	63	37.1	100	15.9	10	35	60	3		8		
EXSKS-8125R-40	•	125	55	40	100	16.4	9	35	60	3		8		
EXSKS-9160R	•	160	63	50.8	100	19	11	43	75	3		9		
EXSKS-9160R-40	•	160	55	40	100	16.4	9	35	85	3		9		

Note: All cutters are supplied without inserts.

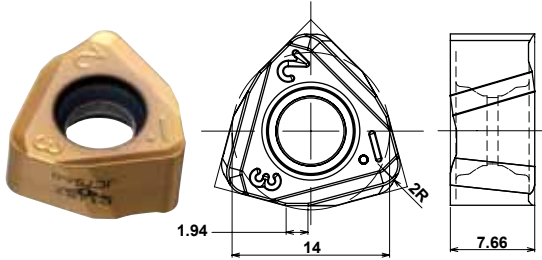


# SKS Extreme

INCH

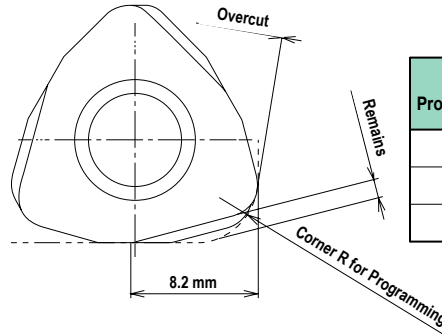
METRIC

## INSERT



Catalog Number	Tolerance	PVD Coated	
		JC7560	JC8118
WNUMU090720ZER-PM	M	•	•

### Definition of Corner Shape for Programming

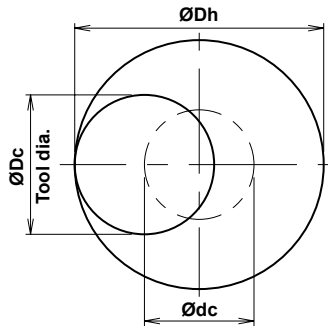
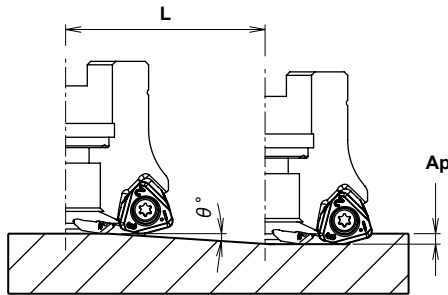


Corner R for Programming (mm)	Over cut (mm)	Remains (mm)
R3.0	0	1.41
R3.5	0	1.30
R4.0	0.025	1.19

### Recommended Data for Profile Milling

- Ramping

- Helical interpolation



- Calculation of tool pass dia.

$$\text{Tool pass dia. } \varnothing D_c = \text{Bore dia. } \varnothing D_h - \text{Tool Dia. } \varnothing D_c$$

- Depth of cut per one circuit should not exceed max. depth of cut Ap
- Down cutting is recommended, so tool pass rotation should be counterclockwise

- In case of ramping and helical interpolation, apply 70% or less feed speed from standard cutting table.
- In case of drilling, apply 50% or less Z axis feed from standard cutting condition table.
- Long consecutive chips may come out in case of drilling, confirm safe operating conditions.

	CATALOG NUMBER	TOOL DIA.	EFFECTIVE CUTTING DIA.	MAX. DEPTH OF CUT: AP	RAMPING		HELICAL INTERPOLATION		MAX. DRILLING DEPTH: Z
					MAX. ANGLE	TOTAL CUTTING LENGTH AT MAX. AP: L	MIN BORE DIA.: Dh	MAX BORE DIA.: Dh	
METRIC	EXSKS-*050	50	33.7	3	2°24'	71.6	68	96	2
	EXSKS-*052	52	35.7	3	2°24'	71.6	72	100	2
	EXSKS-*063	63	46.7	3	3°	57.3	94	122	2
	EXSKS-*066	66	49.7	3	2°42'	63.7	100	128	2
	EXSKS-*080	80	63.6	3	2°18'	74.7	128	156	2
	EXSKS-*100	100	83.6	3	1°42'	101.1	168	196	2
	EXSKS-*125	125	108.5	3	1°18'	132.2	218	246	2
	EXSKS-*160	160	143.5	3	1°	171.9	288	316	2
INCH	EXSKS-*200	2"	1.36"	.12"	2°24'	2.82"	2.74"	3.84"	.08"
	EXSKS-*250	2.5"	1.86"	.12"	3°	2.26"	3.74"	4.84"	.08"
	EXSKS-*300	3"	2.36"	.12"	2°18'	2.94"	4.74"	5.84"	.08"
	EXSKS-*400	4"	3.35"	.12"	1°42'	3.98"	6.74"	7.84"	.08"
	EXSKS-*500	5"	4.35"	.12"	1°18'	5.20"	8.74"	9.84"	.08"
	EXSKS-*600	6"	5.35"	.12"	1°	6.77"	10.74"	11.84"	.08"



INCH

# SKS Extreme

## Recommended Cutting Conditions - Inch

Work Materials	Insert Grade	Overhung Length $l$ (inch)	Tool Diameter (inch)											
			2				2.5				3			
			No. of Teeth 4N				No. of Teeth 5N				No. of Teeth 6N			
			AP (inch)	N (r.p.m.)	Vf (i.p.m.)	M.R.R. Q(inch <sup>3</sup> /min)	AP (inch)	N (r.p.m.)	Vf (i.p.m.)	M.R.R. Q(inch <sup>3</sup> /min)	AP (inch)	N (r.p.m.)	Vf (i.p.m.)	M.R.R. Q(inch <sup>3</sup> /min)
Carbon Steel (C50, C55) Below 250HB	JC7560 (JC8118)	6	.079	950	299	33.0	.079	750	295	40.7	.079	600	283	46.9
		8	.059	800	252	20.8	.071	680	268	33.2	.071	540	255	38
		10	.039	650	154	8.5	.059	600	236	24.4	.071	480	227	33.7
		12	.024	650	102	3.4	.039	550	217	14.6	.059	440	208	25.8
		14	-	-	-	-	.024	550	162	6.7	.039	440	208	17.2
		16	-	-	-	-	.016	550	108	3.0	.024	440	156	7.7
Die Steel (1.2344, 1.2379) Below 255HB	JC7560 (JC8118)	6	.079	950	299	33.0	.079	750	295	40.7	.079	600	283	46.9
		8	.059	800	252	20.8	.071	680	268	33.2	.071	540	255	38
		10	.039	650	154	8.5	.059	600	236	24.4	.071	480	227	33.7
		12	.024	650	102	3.4	.039	550	217	14.6	.059	440	208	25.8
		14	-	-	-	-	.024	550	162	6.7	.039	440	208	17.2
		16	-	-	-	-	.016	550	108	3.0	.024	440	156	7.7
Mold Steel (1.2311, P20) 30-35HRC	JC7560 (JC8118)	6	.079	830	261	28.8	.079	650	256	35.3	.079	520	246	40.6
		8	.059	700	220	18.2	.071	580	228	28.3	.071	470	222	33
		10	.039	570	135	7.4	.059	520	205	21.2	.071	420	198	29.5
		12	.024	570	90	3.0	.039	460	181	12.5	.059	360	170	21.1
		14	-	-	-	-	.024	460	136	5.6	.039	360	170	14.1
		16	-	-	-	-	.016	460	91	2.5	.024	360	128	6.3
Mold Steel (1.2311, P20) 38-43HRC	JC8118	6	.059	700	110	9.1	.059	550	108	11.2	.059	430	102	12.6
		8	.039	600	94	5.2	.047	500	98	8.1	.047	390	92	9.1
		10	.028	490	77	3.0	.039	440	87	6.0	.047	340	80	8
		12	.016	490	39	0.9	.028	380	75	3.6	.039	300	71	5.9
		14	-	-	-	-	.020	380	75	2.6	.028	300	71	4.1
		16	-	-	-	-	-	-	-	-	.016	300	71	2.3
Mold Steel (1.2311, P20) 42-52HRC	JC8118	6	.059	510	80	6.6	.059	400	79	8.1	.059	320	76	9.4
		8	.039	460	72	4.0	.047	360	71	5.9	.047	290	69	6.8
		10	.028	420	66	2.6	.039	320	63	4.3	.047	260	61	6.1
		12	.016	420	33	7.0	.028	280	55	2.7	.039	220	52	4.3
		14	-	-	-	-	.020	280	55	1.9	.028	220	52	3
		16	-	-	-	-	-	-	-	-	.016	220	52	1.7
Gray Cast Iron (GG25, GG30) Below 300HB	JC7560 (JC8118)	6	.098	950	299	41.2	.098	750	295	50.9	.098	600	283	58.6
		8	.079	800	252	27.8	.079	680	268	36.9	.079	540	255	42.2
		10	.059	650	154	12.7	.059	600	236	24.4	.079	480	227	37.5
		12	.039	650	102	5.6	.039	550	217	14.9	.059	440	208	25.8
		14	-	-	-	-	.024	550	162	6.7	.039	440	208	17.2
		16	-	-	-	-	.016	550	108	3.0	.024	440	156	7.7
Nodular Cast Iron (GGG50, GGG70) Below 300HB	JC8118	6	.098	950	299	41.2	.098	750	295	50.9	.098	600	283	58.6
		8	.079	800	252	27.8	.079	680	268	36.9	.079	540	255	42.2
		10	.059	650	154	12.7	.059	600	236	24.4	.079	480	227	37.5
		12	.039	650	102	5.6	.039	550	217	14.9	.059	440	208	25.8
		14	-	-	-	-	.024	550	162	6.7	.039	440	208	17.2
		16	-	-	-	-	.016	550	108	3.0	.024	440	156	7.7
Stainless Steel Below 250HB	JC7560	6	.079	950	224	24.7	.079	750	221	30.5	.079	600	213	35.2
		8	.059	800	189	15.6	.071	680	201	24.9	.071	540	191	28.5
		10	.039	650	102	5.6	.059	600	177	18.3	.071	480	170	25.3
		12	.024	650	102	3.4	.039	550	130	9.0	.059	440	156	19.3
		14	-	-	-	-	.024	550	108	4.5	.039	440	125	10.3
		16	-	-	-	-	.016	550	108	3.0	.024	440	105	5.2

AP: Depth of cut, N: Spindle speed, Vf: Speed feed, Pc: Net power consumption

Notes:

1. The figures should be adjusted according to the machine and work rigidity.
2. If chattering occurs, reduce the DOC (AP) or RPM by 30% and keep the feed per tooth the same.
3. If machine does not have enough power, the DOC (AP) or spindle speed should be reduced by 30%.
4. Use air instead of coolant.



# SKS Extreme

**INCH**

## Recommended Cutting Conditions - Inch

Work Materials	Insert Grade	Overhung Length $l$ (inch)	Tool Diameter (inch)											
			4				5				6			
			No. of Teeth 7N				No. of Teeth 8N				No. of Teeth 9N			
			AP (inch)	N (r.p.m.)	Vf (i.p.m.)	M.R.R. Q(inch <sup>3</sup> /min)	AP (inch)	N (r.p.m.)	Vf (i.p.m.)	M.R.R. Q(inch <sup>3</sup> /min)	AP (inch)	N (r.p.m.)	Vf (i.p.m.)	M.R.R. Q(inch <sup>3</sup> /min)
Carbon Steel (C50, C55) Below 250HB	JC7560 (JC8118)	6	.079	480	265	58.3	.079	380	239	66.0	.079	300	213	70.3
		8	.079	430	237	52.3	.079	340	214	59	.079	270	191	63.3
		10	.079	380	209	46.2	.079	300	189	52.1	.079	240	170	56.2
		12	.059	350	193	31.9	.079	280	176	48.6	.079	220	156	51.6
		14	.059	350	193	31.9	.059	280	176	36.5	.079	220	156	51.6
		16	.039	350	193	21.3	.059	280	176	36.5	.059	220	156	38.7
Die Steel (1.2344, 1.2379) Below 255HB	JC7560 (JC8118)	6	.079	480	265	58.3	.079	380	239	66	.079	300	213	70.3
		8	.079	430	237	52.3	.079	340	214	59	.079	270	191	63.3
		10	.079	380	209	46.2	.079	300	189	52.1	.079	240	170	56.2
		12	.059	350	193	31.9	.079	280	176	48.6	.079	220	156	51.6
		14	.059	350	193	31.9	.059	280	176	36.5	.079	220	156	51.6
		16	.039	350	193	21.3	.059	280	176	36.5	.059	220	156	38.7
Mold Steel (1.2311, P20) 30-35HRC	JC7560 (JC8118)	6	.079	410	226	49.8	.079	330	208	57.3	.079	260	184	60.9
		8	.079	370	204	45	.079	300	189	52.1	.079	230	163	53.9
		10	.079	330	182	40.1	.079	260	164	45.1	.079	210	149	49.2
		12	.059	280	154	25.5	.079	230	145	39.9	.079	180	128	42.2
		14	.059	280	154	25.5	.059	230	145	29.9	.079	180	128	42.2
		16	.039	280	154	17	.059	230	145	29.9	.059	180	128	31.6
Mold Steel (1.2311, P20) 38-43HRC	JC8118	6	.059	350	96	15.9	.059	280	88	18.2	.059	220	78	19.3
		8	.059	310	85	14.1	.059	250	79	16.3	.059	200	71	17.6
		10	.047	280	77	10.2	.059	220	69	14.3	.059	180	64	15.8
		12	.039	250	69	7.6	.059	200	63	13	.059	150	53	13.2
		14	.039	250	69	7.6	.039	200	63	8.7	.059	150	53	13.2
		16	.028	250	69	5.3	.039	200	63	8.7	.039	150	53	8.8
Mold Steel (1.2311, P20) 42-52HRC	JC8118	6	.059	250	69	11.4	.059	200	63	13	.059	160	57	14.1
		8	.059	230	63	10.5	.059	180	57	11.7	.059	150	53	13.2
		10	.047	200	55	7.3	.059	160	50	10.4	.059	130	46	11.4
		12	.039	180	50	5.5	.059	140	44	9.4	.059	110	39	9.7
		14	.039	180	50	5.5	.039	140	44	6.1	.059	110	39	9.7
		16	.028	180	50	3.8	.039	140	44	6.1	.039	110	39	6.4
Gray Cast Iron (GG25, GG30) Below 300HB	JC7560 (JC8118)	6	.098	480	265	72.9	.098	380	239	82.5	.098	300	213	87.9
		8	.098	430	237	65.3	.098	340	214	73.8	.098	270	191	79.1
		10	.079	380	209	46.2	.098	300	189	65.1	.098	240	170	70.3
		12	.079	350	193	42.5	.079	280	176	48.6	.098	220	156	64.4
		14	.059	350	193	31.9	.059	280	176	36.5	.079	220	156	51.6
		16	.039	350	193	21.3	.059	280	176	36.5	.059	220	156	38.7
Nodular Cast Iron (GGG50, GGG70) Below 300HB	JC8118	6	.098	480	265	72.9	.098	380	238	82.5	.098	300	213	87.9
		8	.098	430	237	65.3	.098	340	214	73.8	.098	270	191	79.1
		10	.079	380	209	46.2	.098	300	189	65.1	.098	240	170	70.3
		12	.079	350	193	42.5	.079	280	176	48.3	.098	220	156	64.4
		14	.059	350	193	31.9	.059	280	176	36.5	.079	220	156	51.6
		16	.039	350	193	21.3	.059	280	176	35.5	.059	220	156	38.7
Stainless Steel Below 250HB	JC7560	6	.079	480	198	43.7	.079	380	180	49.2	.079	300	159	52.7
		8	.079	430	178	39.2	.079	340	161	44.3	.079	270	144	47.5
		10	.079	380	157	34.6	.079	300	142	39.1	.079	240	128	42.2
		12	.059	350	145	23.9	.079	280	132	36.5	.079	220	117	38.7
		14	.059	350	145	23.9	.059	280	132	27.3	.079	220	117	38.7
		16	.039	350	145	15.9	.059	280	132	27.3	.059	220	117	29

AP: Depth of cut, N: Spindle speed, Vf: Speed feed, Pc: Net power consumption

Notes:

1. The figures should be adjusted according to the machine and work rigidity.
2. If chattering occurs, reduce the DOC (AP) or RPM by 30% and keep the feed per tooth the same.
3. If machine does not have enough power, the DOC (AP) or spindle speed should be reduced by 30%.
4. Use air instead of coolant.

**METRIC****SKS Extreme****Recommended Cutting Conditions - Metric**

Work Materials	Insert Grade	Overhung Length $l$ (mm)	Tool Diameter (mm)											
			50/52				63/66				80			
			No. of Teeth 4N				No. of Teeth 5N				No. of Teeth 6N			
			AP (mm)	N (min <sup>-1</sup> )	Vf (mm/min)	Pc (kW)	AP (mm)	N (min <sup>-1</sup> )	Vf (mm/min)	Pc (kW)	AP (mm)	N (min <sup>-1</sup> )	Vf (mm/min)	Pc (kW)
Carbon Steel (C50, C55) (S50, S55C) Below 250HB	JC7560 (JC8118)	150	2	950	7,600	12.4	2	750	7,500	15.4	2	600	7,200	18.7
		200	1.5	800	6,400	7.8	1.8	680	6,800	12.5	1.8	540	6,480	15.2
		250	1	650	3,900	3.2	1.5	600	6,000	9.2	1.8	480	5,760	13.5
		300	0.6	650	2,600	1.3	1	550	5,500	5.6	1.5	440	5,280	10.3
		350	-	-	-	-	0.6	550	4,125	2.5	1	440	5,280	6.9
		400	-	-	-	-	0.4	550	2,750	1.1	0.6	440	3,960	3.1
Die Steel (1.2344, 1.2379) (SKD61, SKD11) Below 255HB	JC7560 (JC8118)	150	2	950	7,600	12.4	2	750	7,500	15.4	2	600	7,200	18.7
		200	1.5	800	6,400	7.8	1.8	680	6,800	12.5	1.8	540	6,480	15.2
		250	1	650	3,900	3.2	1.5	600	6,000	9.2	1.8	480	5,760	13.5
		300	0.6	650	2,600	1.3	1	550	5,500	5.6	1.5	440	5,280	10.3
		350	-	-	-	-	0.6	550	4,125	2.5	1	440	5,280	6.9
		400	-	-	-	-	0.4	550	2,750	1.1	0.6	440	3,960	3.1
Mold Steel (1.2311, P20) (HPM7, PX5, P20) 30-35HRC	JC7560 (JC8118)	150	2	830	6,640	12.3	2	650	6,500	15.2	2	520	6,240	18.5
		200	1.5	700	5,600	7.8	1.8	580	5,800	12.2	1.8	470	5,640	15.1
		250	1	570	3,420	3.2	1.5	520	5,200	9.1	1.8	420	5,040	13.5
		300	0.6	570	2,280	1.3	1	460	4,600	5.4	1.5	360	4,320	9.6
		350	-	-	-	-	0.6	460	3,450	2.4	1	360	4,320	6.4
		400	-	-	-	-	0.4	460	2,300	1.1	0.6	360	3,240	2.9
Mold Steel (1.2311, P20) (NAK80, HPM1, P21) 38-43HRC	JC8118	150	1.5	700	2,800	6.8	1.5	550	2,750	8.4	1.5	430	2,580	10.1
		200	1	600	2,400	3.9	1.2	500	2,500	6.1	1.2	390	2,340	7.3
		250	0.7	490	1,960	2.2	1	440	2,200	4.5	1.2	340	2,040	6.4
		300	0.4	490	980	.06	0.7	380	1,900	2.7	1	300	1,800	4.7
		350	-	-	-	-	0.5	380	1,900	1.9	0.7	300	1,800	3.3
		400	-	-	-	-	-	-	-	0.4	300	1,800	1.9	
Mold Steel (1.2311, P20) (SKD61, DAC, DHA) 42-52HRC	JC8118	150	1.5	510	2,040	6.6	1.5	400	2,000	8.2	1.5	320	1,920	10
		200	1	460	1,840	4.0	1.2	360	1,800	5.9	1.2	290	1,740	7.2
		250	0.7	420	1,980	2.5	1	320	1,600	4.4	1.2	260	1,560	6.5
		300	0.4	420	840	0.7	0.7	280	1,400	2.7	1	220	1,320	4.6
		350	-	-	-	-	0.5	280	1,400	1.9	0.7	220	1,320	3.2
		400	-	-	-	-	-	-	-	0.4	220	1,320	1.8	
Gray Cast Iron (GG25, GG30) (FC250, FC300) Below 300HB	JC7560 (JC8118)	150	2.5	950	7,600	12.4	2.5	750	7,500	15.4	2.5	600	7,200	18.7
		200	2	800	6,400	8.3	2	680	6,800	11.1	2	540	6,480	13.5
		250	1.5	650	3,900	3.8	1.5	600	6,000	7.4	2	480	5,760	12
		300	1	650	2,600	1.7	1	550	5,500	4.5	1.5	440	5,280	8.2
		350	-	-	-	-	0.6	550	4,125	2.0	1	440	5,280	5.5
		400	-	-	-	-	0.4	550	2,750	0.9	0.6	440	3,960	2.5
Nodular Cast Iron (GGG50, GGG70) (FCD500, FCD700) Below 300HB	JC8118	150	2.5	950	7,600	12.4	2.5	750	7,500	15.4	2.5	600	7,200	18.7
		200	2	800	6,400	8.3	2	680	6,800	11.1	2	540	6,480	13.5
		250	1.5	650	3,900	3.8	1.5	600	6,000	7.4	2	480	5,760	12
		300	1	650	260	1.7	1	550	5,500	4.5	1.5	440	5,280	8.2
		350	-	-	-	-	0.6	550	4,125	2.0	1	440	5,280	5.5
		400	-	-	-	-	0.4	550	2,750	0.9	0.6	440	3,960	2.5
Stainless Steel (SUS304) Below 250HB	JC7560	150	2	950	5,700	14.8	2	750	5,625	18.4	2	600	5,400	22.5
		200	1.5	800	4,800	9.4	1.8	680	5,100	15.0	1.8	540	4,860	18.2
		250	1	650	2,600	3.4	1.5	600	4,500	11.1	1.8	480	4,320	16.2
		300	0.6	650	2,600	2.0	1	550	3,300	5.4	1.5	440	3,960	12.4
		350	-	-	-	-	0.6	550	2,750	2.7	1	440	3,168	6.6
		400	-	-	-	-	0.4	550	2,750	1.8	0.6	440	2,640	3.3

AP: Depth of cut, N: Spindle speed, Vf: Speed feed, Pc: Net power consumption

Notes:

1. The figures should be adjusted according to the machine and work rigidity.
2. If chattering occurs, reduce the DOC (AP) or RPM by 30% and keep the feed per tooth the same.
3. If machine does not have enough power, the DOC (AP) or spindle speed should be reduced by 30%.
4. Use air instead of coolant.



# SKS Extreme

**METRIC**

## Recommended Cutting Conditions - Metric

Work Materials	Insert Grade	Overhung Length $l$ (mm)	Tool Diameter (mm)											
			100				125				160			
			No. of Teeth 7N				No. of Teeth 8N				No. of Teeth 9N			
			AP (mm)	N (min <sup>-1</sup> )	Vf (mm/min)	Pc (kW)	AP (mm)	N (min <sup>-1</sup> )	Vf (mm/min)	Pc (kW)	AP (mm)	N (min <sup>-1</sup> )	Vf (mm/min)	Pc (kW)
Carbon Steel (C50, C55) (S50, S55C) Below 250HB	JC7560 (JC8118)	150	2	480	6,720	21.8	2	380	6,080	24.7	2	300	5,400	28.1
		200	2	430	6,020	19.3	2	340	5,440	22.1	2	270	4,860	25.3
		250	2	380	5,320	17.3	2	300	4,800	19.5	2	240	4,320	22.5
		300	1.5	350	4,900	11.9	2	280	4,480	18.2	2	220	3,960	20.6
		350	1.5	350	4,900	11.9	1.5	280	4,480	13.7	2	220	3,960	20.6
		400	1	350	4,900	8.0	1.5	280	4,480	13.7	1.5	220	3,960	15.4
Die Steel (1.2344, 1.2379) (SKD61, SKD11) Below 255HB	JC7560 (JC8118)	150	2	480	6,720	21.8	2	380	6,080	24.7	2	300	5,400	28.1
		200	2	430	6,020	19.6	2	340	5,440	22.1	2	270	4,860	25.3
		250	2	380	5,320	17.3	2	300	4,800	19.5	2	240	4,320	22.5
		300	1.5	350	4,900	11.9	2	280	4,480	18.2	2	220	3,960	20.6
		350	1.5	350	4,900	11.9	1.5	280	4,480	13.7	2	220	3,960	20.6
		400	1	350	4,900	8.0	1.5	280	4,480	13.7	1.5	220	3,960	15.4
Mold Steel (1.2311, P20) (HPM7, PX5, P20) 30-35HRC	JC7560 (JC8118)	150	2	410	5,740	21.3	2	330	5,280	24.5	2	260	4,680	27.8
		200	2	370	5,180	19.2	2	300	4,800	22.3	2	230	4,140	24.6
		250	2	330	4,620	17.2	2	260	4,160	19.3	2	210	3,780	22.5
		300	1.5	280	3,920	10.9	2	230	3,680	17.1	2	180	3,240	19.3
		350	1.5	280	3,920	10.9	1.5	230	3,680	12.8	2	180	3,240	19.3
		400	1	280	3,920	7.3	1.5	230	3,680	12.8	1.5	180	3,240	14.4
Mold Steel (1.2311, P20) (NAK80, HPM1, P21) 38-43HRC	JC8118	150	1.5	350	2,450	11.9	1.5	280	2,240	13.7	1.5	220	1,980	15.4
		200	1.5	310	3,170	10.6	1.5	250	2,000	12.2	1.5	200	1,800	14
		250	1.2	280	1,960	7.6	1.5	220	1,760	10.7	1.5	180	1,620	12.6
		300	1	250	1,750	5.7	1.5	200	1,600	9.8	1.5	150	1,350	10.5
		350	1	250	1,750	5.7	1	200	1,600	6.5	1.5	150	1,350	10.5
		400	0.7	250	1,750	4.0	1	200	1,600	6.5	1	150	1,350	7
Mold Steel (1.2311, P20) (SKD61, DAC, DHA) 42-52HRC	JC8118	150	1.5	250	1,750	11.4	1.5	200	1,600	13.0	1.5	160	1,440	15
		200	1.5	230	1,610	10.5	1.5	180	1,440	11.7	1.5	150	1,350	14
		250	1.2	200	1,400	7.3	1.5	160	1,280	10.4	1.5	130	1,170	12.2
		300	1	180	1,260	5.5	1.5	140	1,120	9.1	1.5	110	990	10.3
		350	1	180	1,260	5.5	1	140	1,120	6.1	1.5	110	990	10.3
		400	0.7	180	1,260	3.8	1	140	1,120	6.1	1	110	990	6.9
Gray Cast Iron (GG25, GG30) (FC250, FC300) Below 300HB	JC7560 (JC8118)	150	2.5	480	6,720	21.8	2.5	380	6,080	24.7	2.5	300	5,400	28.1
		200	2.5	430	5,020	19.6	2.5	340	5,440	22.1	2.5	270	4,860	25.3
		250	2	380	5,320	13.8	2.5	300	4,800	19.5	2.5	240	4,320	22.5
		300	2	350	4,900	12.7	2	280	4,480	14.6	2.5	220	3,960	20.6
		350	1.5	350	4,900	9.6	1.5	280	4,480	10.9	2	220	3,960	16.5
		400	1	350	4,900	6.4	1.5	280	4,480	10.9	1.5	220	3,960	12.4
Nodular Cast Iron (GGG50, GGG70) (FCD500, FCD700) Below 300HB	JC8118	150	2.5	480	6,720	21.8	2.5	380	6,080	24.7	2.5	300	5,400	28.1
		200	2.5	430	6,020	19.6	2.5	340	5,440	22.1	2.5	270	4,860	25.3
		250	2	380	5,320	13.8	2.5	300	4,800	19.5	2.5	240	4,320	22.5
		300	2	350	4,900	12.7	2	280	4,480	14.6	2.5	220	3,960	20.6
		350	1.5	350	4,900	9.6	1.5	280	4,480	10.9	2	220	3,960	16.5
		400	1	350	4,900	6.4	1.5	280	4,480	10.9	1.5	220	3,960	12.4
Stainless Steel (SUS304) Below 250HB	JC7560	150	2	480	5,040	26.2	2	380	4,560	29.6	2	300	4,050	33.7
		200	2	430	4,515	23.5	2	340	4,080	26.5	2	270	3,645	30.3
		250	2	380	3,990	20.7	2	300	3,600	23.4	2	240	3,240	27
		300	1.5	350	3,678	14.3	2	280	3,360	21.8	2	220	3,970	24.7
		350	1.5	350	3,675	14.3	1.5	280	3,360	16.4	2	220	2,970	24.7
		400	1	350	3,675	9.6	1.5	280	3,360	16.4	1.5	220	2,970	18.5

AP: Depth of cut, N: Spindle speed, Vf: Speed feed, Pc: Net power consumption

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