

**SKS EXTREME**

# High-feed milling tools with double side inserts which achieve ultimate high-feed machining

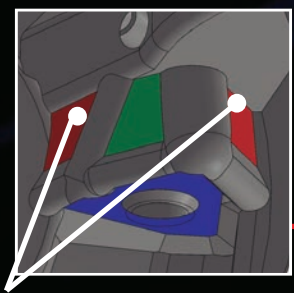
**Feature 1**

**Economical double-side insert (with 6 cutting edges)**

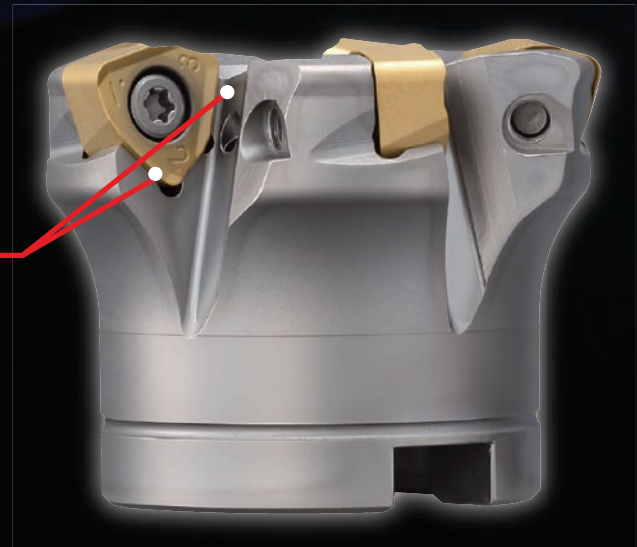


**Feature 2**

**Due to dovetail-shaped binding face, movement of inserts which occur by cutting force is prevented only single screw clamping**



**Dovetail-shaped**



**Feature 3**

**Application**

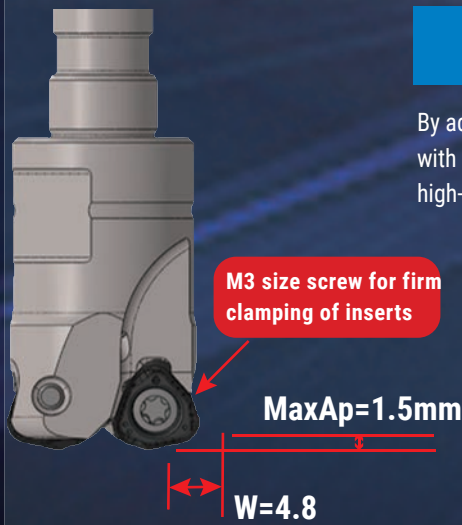
ISO	P					M					K				H		
	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	H01	H10	H20
Applicable range			JC8050					JC8050									
		JC8118									JC8118				JC8118		
			JC7560					JC7560									

Adopted 3 insert grades:

PVD coated grade "JC7560" improved fracture toughness & heat impact resistance.

PVD coated grade "JC8118" achieved longer tool life for mold steel, high hardened die steel less than 50HRC & cast iron.

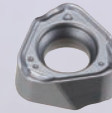
PVD coated grade "JC8050", that adopted carbide substrate with improved fracture toughness & coating layer can be widely applied for carbon steel, mold steel, & stainless steel.



## EXSKS-05 type

By adopting multi blade specification with small diameter, high-feed machining is possible.

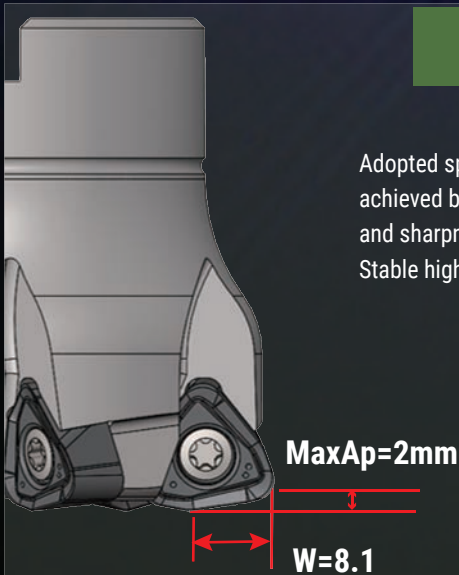
### WNMU050320ZER-PM



grade : JC8050  
JC8118

Optimal breaker for mold steel & High hardened steel less than 50HRC

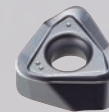
Coner radius for programming	Remains	Over cut
R2	0.59	0
R2.5	0.5	0
R3	0.41	0.13



## EXSKS-07type

Adopted specifications which achieved both insert strength and sharpness. Stable high-feed machining is possible.

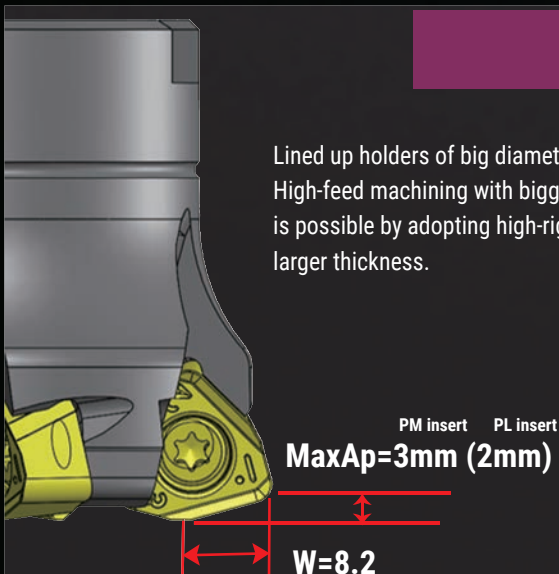
### WNMU070620ZER-PM



grade : JC8050  
JC8118

Optimal breaker for mold steel & High hardened steel less than 50HRC

Coner radius for programming	Remains	Over cut
R3	0.80	0
R3.5	0.73	0.06
R4	0.66	0.21



## EXSKS-09type

Lined up holders of big diameter. High-feed machining with bigger depth of cut is possible by adopting high-rigid inserts with larger thickness.

### WNMU090828ZER-PL

grade: JC8050 / JC8118

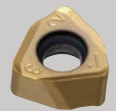
Suitable for machining shapes such as pocket milling with ap = 0.6 mm to ap = 1.2 mm. The composite shape of the straight and radius cutting edges reduces fluctuations in cutting resistance during corner machining, realizing stable machining and extending tool life.



### WNMU090720ZER-PM

grade : JC8050/JC8118/JC7560

Suitable for face milling of ap=1.4mm or more and shape machining such as pocket machining.

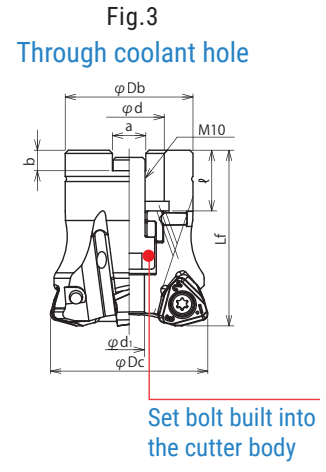
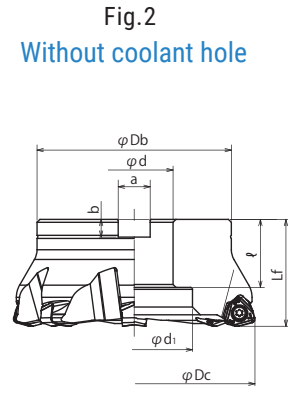
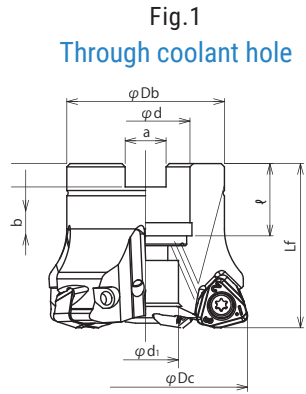



Coner radius for programming	Remains	Over cut
R3	1.41	0
R3.5	1.3	0
R4	1.19	0.025

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**EXSKS/MEX Type**

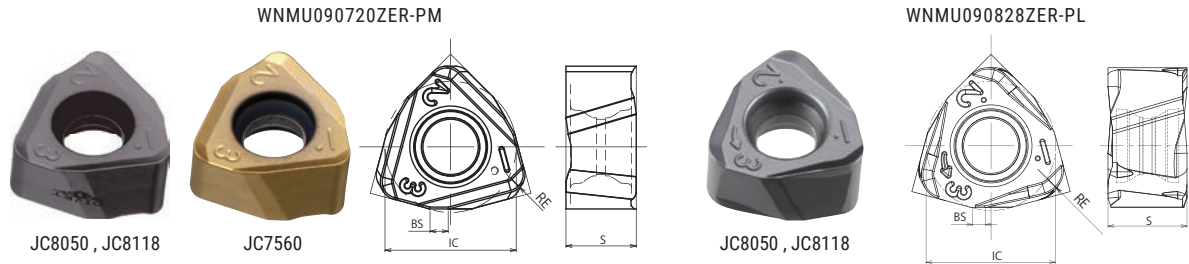
- EXSKS-09 Type
- Facemill Type



Cat.No.	Stock	No. of inserts	Dimensions (mm)								Arbor set bolt	Weight (kg)	Fig.	Inserts 
			φDc	Lf	φDb	φd	φd1	a	b	ℓ				
EXSKS-3050R-22	□	3	50	55	40	22	9.6	10.4	6.3	19	M10×1.5×25	0.4	3	WNMU090720ZER-PM WNMU090828ZER-PL
EXSKS-4050R-22	●	4	50	55	40	22	9.6	10.4	6.3	19	M10×1.5×25	0.3	3	
EXSKS-4052R-22	●	4	52	50	40	22	17	10.4	6.3	20	M10	0.4	1	
EXSKS-4063R-22	□	4	63	50	48	22	17	10.4	6.3	20	M10	0.5	1	
EXSKS-5063R-22	●	5	63	50	48	22	17	10.4	6.3	20	M10	0.5	1	
EXSKS-5063R-27	●	5	63	50	48	27	20	12.4	7	22	M12×1.75×30	0.5	1	
EXSKS-5066R-27	●	5	66	50	48	27	20	12.4	7	22	M12×1.75×30	0.5	1	
EXSKS-6080R-27	●	6	80	55	65	27	37	12.4	7	22	M12×1.75×40	0.9	1	
EXSKS-7100R-32	●	7	100	70	85	32	26	14.4	8	32	M16×2×45	1.9	1	
EXSKS-8125R-40	●	8	125	70	100	40	32	16.4	9	35	M20×2.5×45	3.9	1	
EXSKS-9160R-40	●	9	160	55	100	40	85	16.4	9	35	M20	3.9	2	

**SKS EXTREME** **EXSKS/MEX Type**

■ **Insert**

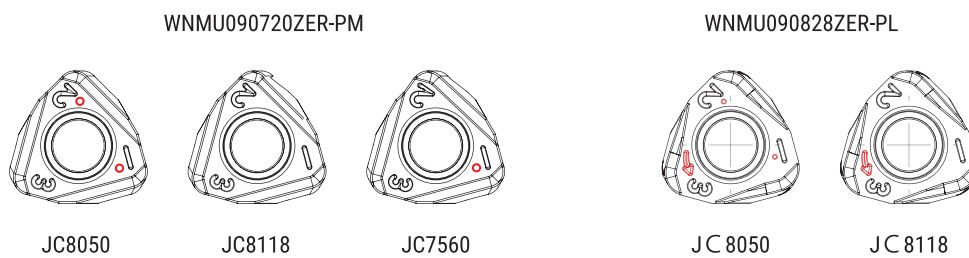


Cat.No.	Tolerance	PVD coated			Dimensions (mm)			
		JC8118	JC8050	JC7560	IC	S	BS	RE
WNMU090720ZER-PM	M	●	●	●	14	7.66	1.94	2
WNMU090828ZER-PL	M	●	●		13.91	8.66	1.37	2.8

Note: When using PL inserts, tool dia. will be smaller than PM insert.  
 In case dia.  $\phi 100$  holder, tool dia. is 0.06mm smaller.  
 In case dia.  $\phi 125$  holder, tool dia. is 0.11mm smaller.  
 In case dia.  $\phi 160$  holder, tool dia. is 0.15mm smaller

Screw	Torque(N.m)	Wrench
CSW-513H	5.5	A-20

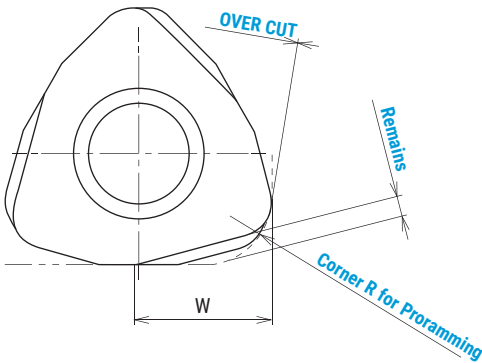
**GRADE MARKING**



**SKS EXTREME**

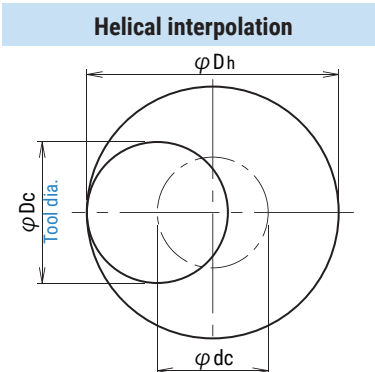
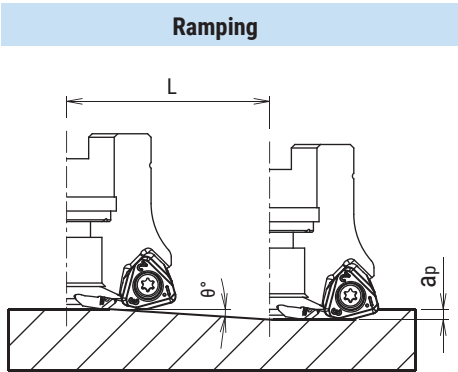
**EXSKS/MEX Type**

■ EXSKS-09 type : Definition of corner shape for programming



Insert	W	Corner radius for programming	Remains	Over cut
WNMU090720ZER-PM	8.2	R3.0	1.41	0
		R3.5	1.30	0
		R4.0	1.19	0.025
Insert	W	Corner radius for programming	Remains	Over cut
WNMU090828ZER-PL	8.4	R3.0	1.18	0
		R3.5	1.06	0
		R4.0	0.95	0.010

**Attention for profile milling**



● Calculation of tool pass dia.

$$\varphi dc = \varphi Dh - \varphi Dc$$

Tool pass dia.    Bore dia.    Tool dia.

- 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.
- To obtain a flat bottom surface when helical milling, it requires to remove "the uncut part" in the center of the work material at a final pass.

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

**WNMU090720ZER-PM**

Cat. No.	Tool dia. (mm)	EFF. Cutting dia. (mm)	Max. depth of cut (mm) ap	Ramping		Helical interpolation			Max. drilling depth Z (mm)
				Max. ramping angle $\theta^\circ$	Total cutting length at Max ap	Min. bore dia. Dh min (mm)	Max. bore dia. Dh min (mm)	Dh min (mm)	
EXSKS-*050	50	33	3	2.5	69	73	96	81	1.1
EXSKS-*052	52	35	3	2.4	72	77	100	85	1.2
EXSKS-*063	63	46	3	1.8	96	99	122	107	1.2
EXSKS-*066	66	49	3	1.7	102	105	128	113	1.2
EXSKS-*080	80	63	3	1.3	133	133	156	141	1.3
EXSKS-*100	100	83	3	1	172	173	196	181	1.3
EXSKS-*125	125	108	3	0.9	191	223	246	231	1.3
EXSKS-*160	160	143	3	0.7	246	293	316	301	1.7

**WNMU090828ZER-PL**

Cat. No.	Tool dia. (mm)	EFF. Cutting dia. (mm)	Max. depth of cut (mm) ap	Ramping		Helical interpolation			Max. drilling depth Z (mm)
				Max. ramping angle $\theta^\circ$	Total cutting length at Max ap	Min. bore dia. Dh min (mm)	Max. bore dia. Dh min (mm)	Dh min (mm)	
EXSKS-*050	50	33	2	2.3	50	74	96	82	1
EXSKS-*052	52	35	2	2.2	53	78	100	86	1
EXSKS-*063	63	46	2	1.8	64	100	122	108	1.2
EXSKS-*066	66	49	2	1.7	68	106	128	114	1.2
EXSKS-*080	80	63	2	1.3	89	134	156	142	1.3
EXSKS-*100	99.94	83	2	1	115	174	195	182	1.3
EXSKS-*125	124.89	108	2	0.9	128	224	245	232	1.4
EXSKS-*160	159.85	142	2	0.7	164	294	315	302	1.6

**SKS EXTREME****EXSKS/MEX Type**

- Recommended cutting conditions
- EXSKS09 Type

Material	Grade	Tool dia.(mm)														
		50					50/52					63				
		3N					4N					4N				
		ℓ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)	ℓ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)	ℓ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)
Carbon steel (S50C, S55C) below 250HB	JC7560 JC8050 (JC8118)	~150	2	950	5,700	9.3	~150	2	950	7,600	12.4	~150	2	750	6,000	12.3
		200	1.5	800	4,800	5.9	200	1.5	800	6,400	7.8	200	1.8	680	5,440	10.0
		250	1	650	2,925	2.4	250	1	650	3,900	3.2	250	1.5	600	4,800	7.4
		300	0.6	650	1,950	1.0	300	0.6	650	2,600	1.3	300	1	550	4,400	4.5
		350	—	—	—	—	350	—	—	—	—	350	0.6	550	3,300	2.0
400	—	—	—	—	400	—	—	—	—	400	0.4	550	2,200	0.9		
Tool & die steel (SKD61, SKD11) below 255HB	JC7560 JC8050 (JC8118)	~150	2	950	5,700	9.3	~150	2	950	7,600	12.4	~150	2	750	6,000	12.3
		200	1.5	800	4,800	5.9	200	1.5	800	6,400	7.8	200	1.8	680	5,440	10.0
		250	1	650	2,925	2.4	250	1	650	3,900	3.2	250	1.5	600	4,800	7.4
		300	0.6	650	1,950	1.0	300	0.6	650	2,600	1.3	300	1	550	4,400	4.5
		350	—	—	—	—	350	—	—	—	—	350	0.6	550	3,300	2.0
400	—	—	—	—	400	—	—	—	—	400	0.4	550	2,200	0.9		
Mold steel (HPM7, PX5, P20) 30-36 HRC	JC7560 JC8050 (JC8118)	~150	2	830	4,980	9.2	~150	2	830	6,640	12.3	~150	2	650	5,200	12.2
		200	1.5	700	4,200	5.9	200	1.5	700	5,600	7.8	200	1.8	580	4,640	9.8
		250	1	570	2,565	2.4	250	1	570	3,420	3.2	250	1.5	520	4,160	7.3
		300	0.6	570	1,710	1.0	300	0.6	570	2,280	1.3	300	1	460	3,680	4.3
		350	—	—	—	—	350	—	—	—	—	350	0.6	460	2,760	1.9
400	—	—	—	—	400	—	—	—	—	400	0.4	460	1,840	0.9		
Mold steel (NAK80, HPM1, P21) 38-43HRC	JC8118 (JC8050)	~150	1.5	700	2,100	5.1	~150	1.5	700	2,800	6.8	~150	1.5	550	2,200	6.8
		200	1	600	1,800	2.9	200	1	600	2,400	3.9	200	1.2	500	2,000	4.9
		250	0.7	490	1,470	1.7	250	0.7	490	1,960	2.2	250	1	440	1,760	3.6
		300	0.4	490	735	0.5	300	0.4	490	980	0.6	300	0.7	380	1,520	2.2
		350	—	—	—	—	350	—	—	—	—	350	0.5	380	1,520	1.6
400	—	—	—	—	400	—	—	—	—	400	—	—	—	—		
Hardened die steel (SKD61, DAC, DHA) 42-52HRC	JC8118	~150	1.5	510	1,530	5.0	~150	1.5	510	2,040	6.6	~150	1.5	400	1,600	6.6
		200	1	460	1,380	3.0	200	1	460	1,840	4.0	200	1.2	360	1,440	4.7
		250	0.7	420	1,260	1.9	250	0.7	420	1,680	2.5	250	1	320	1,280	3.5
		300	0.4	420	630	0.5	300	0.4	420	840	0.7	300	0.7	280	1,120	2.1
		350	—	—	—	—	350	—	—	—	—	350	0.5	280	1,120	1.5
400	—	—	—	—	400	—	—	—	—	400	—	—	—	—		
Grey cast iron (FC250, FC300) below 300HB	JC8118	~150	2.5	950	5,700	9.3	~150	2.5	950	7,600	12.4	~150	2.5	750	6,000	12.3
		200	2	800	4,800	6.2	200	2	800	6,400	8.3	200	2	680	5,440	8.9
		250	1.5	650	2,925	2.9	250	1.5	650	3,900	3.8	250	1.5	600	4,800	5.9
		300	1	650	1,950	1.3	300	1	650	2,600	1.7	300	1	550	4,400	3.6
		350	—	—	—	—	350	—	—	—	—	350	0.6	550	3,300	1.6
400	—	—	—	—	400	—	—	—	—	400	0.4	550	2,200	0.7		
Nodular cast iron (FCD500, FCD700) below 300HB	JC8118	~150	2.5	950	5,700	9.3	~150	2.5	950	7,600	12.4	~150	2.5	750	6,000	12.3
		200	2	800	4,800	6.2	200	2	800	6,400	8.3	200	2	680	5,440	8.9
		250	1.5	650	2,925	2.9	250	1.5	650	3,900	3.8	250	1.5	600	4,800	5.9
		300	1	650	1,950	1.3	300	1	650	2,600	1.7	300	1	550	4,400	3.6
		350	—	—	—	—	350	—	—	—	—	350	0.6	550	3,300	1.6
400	—	—	—	—	400	—	—	—	—	400	0.4	550	2,200	0.7		
Stainless steel (SUS304) below 250HB	JC8050 (JC7560)	~150	2	950	4,275	11.1	~150	2	950	5,700	14.8	~150	2	750	4,500	14.7
		200	1.5	800	3,600	7.0	200	1.5	800	4,800	9.4	200	1.8	680	4,080	12.0
		250	1	650	1,950	2.5	250	1	650	2,600	3.4	250	1.5	600	3,600	8.8
		300	0.6	650	1,950	1.5	300	0.6	650	2,600	2.0	300	1	550	2,640	4.3
		350	—	—	—	—	350	—	—	—	—	350	0.6	550	2,200	2.2
400	—	—	—	—	400	—	—	—	—	400	0.4	550	2,200	1.4		

## Note

1. Please adjust cutting conditions according to machine rigidity or work rigidity. (the above table is guide for cutting on a #50 BT machine.)
2. In case of chatter occurring, recommended to reduce a<sub>p</sub> or rpm and keep feed per tooth.
3. a<sub>p</sub> should be reduced when using on low rigidity machine.
4. Use air blow.
5. a<sub>p</sub> ≤ 2mm when using PL insert.

**SKS EXTREME**

**EXSKS/MEX Type**

- Recommended cutting conditions
- EXSKS09 Type

Material	Grade	Tool dia.(mm)														
		63/66					80					100				
		5N					6N					7N				
		ℓ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)	ℓ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)	ℓ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)
Carbon steel (S50C, S55C) below 250HB	JC7560 JC8050 (JC8118)	~150	2	750	7,500	15.4	~150	2	600	7,200	18.7	~150	2	480	6,720	21.8
		200	1.8	680	6,800	12.5	200	1.8	540	6,480	15.2	200	2	430	6,020	19.6
		250	1.5	600	6,000	9.2	250	1.8	480	5,760	13.5	250	2	380	5,320	17.3
		300	1	550	5,500	5.6	300	1.5	440	5,280	10.3	300	1.5	350	4,900	11.9
		350	0.6	550	4,125	2.5	350	1	440	5,280	6.9	350	1.5	350	4,900	11.9
		400	0.4	550	2,750	1.1	400	0.6	440	3,960	3.1	400	1	350	4,900	8.0
Tool & die steel (SKD61, SKD11) below 255HB	JC7560 JC8050 (JC8118)	~150	2	750	7,500	15.4	~150	2	600	7,200	18.7	~150	2	480	6,720	21.8
		200	1.8	680	6,800	12.5	200	1.8	540	6,480	15.2	200	2	430	6,020	19.6
		250	1.5	600	6,000	9.2	250	1.8	480	5,760	13.5	250	2	380	5,320	17.3
		300	1	550	5,500	5.6	300	1.5	440	5,280	10.3	300	1.5	350	4,900	11.9
		350	0.6	550	4,125	2.5	350	1	440	5,280	6.9	350	1.5	350	4,900	11.9
		400	0.4	550	2,750	1.1	400	0.6	440	3,960	3.1	400	1	350	4,900	8.0
Mold steel (HPM7, PX5, P20) 30-36 HRC	JC7560 JC8050 (JC8118)	~150	2	650	6,500	15.2	~150	2	520	6,240	18.5	~150	2	410	5,740	21.3
		200	1.8	580	5,800	12.2	200	1.8	470	5,640	15.1	200	2	370	5,180	19.2
		250	1.5	520	5,200	9.1	250	1.8	420	5,040	13.5	250	2	330	4,620	17.2
		300	1	460	4,600	5.4	300	1.5	360	4,320	9.6	300	1.5	280	3,920	10.9
		350	0.6	460	3,450	2.4	350	1	360	4,320	6.4	350	1.5	280	3,920	10.9
		400	0.4	460	2,300	1.1	400	0.6	360	3,240	2.9	400	1	280	3,920	7.3
Mold steel (NAK80, HPM1, P21) 38-43HRC	JC8118 (JC8050)	~150	1.5	550	2,750	8.4	~150	1.5	430	2,580	10.1	~150	1.5	350	2,450	11.9
		200	1.2	500	2,500	6.1	200	1.2	390	2,340	7.3	200	1.5	310	2,170	10.6
		250	1	440	2,200	4.5	250	1.2	340	2,040	6.4	250	1.2	280	1,960	7.6
		300	0.7	380	1,900	2.7	300	1	300	1,800	4.7	300	1	250	1,750	5.7
		350	0.5	380	1,900	1.9	350	0.7	300	1,800	3.3	350	1	250	1,750	5.7
		400	—	—	—	—	400	0.4	300	1,800	1.9	400	0.7	250	1,750	4.0
Hardened die steel (SKD61, DAC, DHA) 42-52HRC	JC8118	~150	1.5	400	2,000	8.2	~150	1.5	320	1,920	10.0	~150	1.5	250	1,750	11.4
		200	1.2	360	1,800	5.9	200	1.2	290	1,740	7.2	200	1.5	230	1,610	10.5
		250	1	320	1,600	4.4	250	1.2	260	1,560	6.5	250	1.2	200	1,400	7.3
		300	0.7	280	1,400	2.7	300	1	220	1,320	4.6	300	1	180	1,260	5.5
		350	0.5	280	1,400	1.9	350	0.7	220	1,320	3.2	350	1	180	1,260	5.5
		400	—	—	—	—	400	0.4	220	1,320	1.8	400	0.7	180	1,260	3.8
Grey cast iron (FC250, FC300) below 300HB	JC8118	~150	2.5	750	7,500	15.4	~150	2.5	600	7,200	18.7	~150	2.5	480	6,720	21.8
		200	2	680	6,800	11.1	200	2	540	6,480	13.5	200	2.5	430	6,020	19.6
		250	1.5	600	6,000	7.4	250	2	480	5,760	12.0	250	2	380	5,320	13.8
		300	1	550	5,500	4.5	300	1.5	440	5,280	8.2	300	2	350	4,900	12.7
		350	0.6	550	4,125	2.0	350	1	440	5,280	5.5	350	1.5	350	4,900	9.6
		400	0.4	550	2,750	0.9	400	0.6	440	3,960	2.5	400	1	350	4,900	6.4
Nodular cast iron (FCD500, FCD700) below 300HB	JC8118	~150	2.5	750	7,500	15.4	~150	2.5	600	7,200	18.7	~150	2.5	480	6,720	21.8
		200	2	680	6,800	11.1	200	2	540	6,480	13.5	200	2.5	430	6,020	19.6
		250	1.5	600	6,000	7.4	250	2	480	5,760	12.0	250	2	380	5,320	13.8
		300	1	550	5,500	4.5	300	1.5	440	5,280	8.2	300	2	350	4,900	12.7
		350	0.6	550	4,125	2.0	350	1	440	5,280	5.5	350	1.5	350	4,900	9.6
		400	0.4	550	2,750	0.9	400	0.6	440	3,960	2.5	400	1	350	4,900	6.4
Stainless steel (SUS304) below 250HB	JC8050 (JC7560)	~150	2	750	5,625	18.4	~150	2	600	5,400	22.5	~150	2	480	5,040	26.2
		200	1.8	680	5,100	15.0	200	1.8	540	4,860	18.2	200	2	430	4,515	23.5
		250	1.5	600	4,500	11.1	250	1.8	480	4,320	16.2	250	2	380	3,990	20.7
		300	1	550	3,300	5.4	300	1.5	440	3,960	12.4	300	1.5	350	3,675	14.3
		350	0.6	550	2,750	2.7	350	1	440	3,168	6.6	350	1.5	350	3,675	14.3
		400	0.4	550	2,750	1.8	400	0.6	440	2,640	3.3	400	1	350	3,675	9.6

Note

1. Please adjust cutting conditions according to machine rigidity or work rigidity. (the above table is guide for cutting on a #50 BT machine.)
2. In case of chatter occurring, recommended to reduce a<sub>p</sub> or rpm and keep feed per tooth.
3. a<sub>p</sub> should be reduced when using on low rigidity machine.
4. Use air blow.
5. a<sub>p</sub> ≤ 2mm when using PL insert.

**SKS EXTREME****EXSKS/MEX Type**

## ■ Recommended cutting conditions

## ● EXSKS09 Type

Material	Grade	Tool dia.(mm)									
		125					160				
		8N					9N				
		φ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)	φ (mm)	a <sub>p</sub> (mm)	n (min <sup>-1</sup> )	V <sub>f</sub> (mm/min)	P <sub>c</sub> (kW)
Carbon steel (S50C, S55C) below 250HB	JC7560 JC8050 (JC8118)	~150	2	380	6,080	24.7	~150	2	300	5,400	28.1
		200	2	340	5,440	22.1	200	2	270	4,860	25.3
		250	2	300	4,800	19.5	250	2	240	4,320	22.5
		300	2	280	4,480	18.2	300	2	220	3,960	20.6
		350	1.5	280	4,480	13.7	350	2	220	3,960	20.6
		400	1.5	280	4,480	13.7	400	1.5	220	3,960	15.4
Tool & die steel (SKD61, SKD11) below 255HB	JC7560 JC8050 (JC8118)	~150	2	380	6,080	24.7	~150	2	300	5,400	28.1
		200	2	340	5,440	22.1	200	2	270	4,860	25.3
		250	2	300	4,800	19.5	250	2	240	4,320	22.5
		300	2	280	4,480	18.2	300	2	220	3,960	20.6
		350	1.5	280	4,480	13.7	350	2	220	3,960	20.6
		400	1.5	280	4,480	13.7	400	1.5	220	3,960	15.4
Mold steel (HPM7, PX5, P20) 30-36 HRC	JC7560 JC8050 (JC8118)	~150	2	330	5,280	24.5	~150	2	260	4,680	27.8
		200	2	300	4,800	22.3	200	2	230	4,140	24.6
		250	2	260	4,160	19.3	250	2	210	3,780	22.5
		300	2	230	3,680	17.1	300	2	180	3,240	19.3
		350	1.5	230	3,680	12.8	350	2	180	3,240	19.3
		400	1.5	230	3,680	12.8	400	1.5	180	3,240	14.4
Mold steel (NAK80, HPM1, P21) 38-43HRC	JC8118 (JC8050)	~150	1.5	280	2,240	13.7	~150	1.5	220	1,980	15.4
		200	1.5	250	2,000	12.2	200	1.5	200	1,800	14.0
		250	1.5	220	1,760	10.7	250	1.5	180	1,620	12.6
		300	1.5	200	1,600	9.8	300	1.5	150	1,350	10.5
		350	1	200	1,600	6.5	350	1.5	150	1,350	10.5
		400	1	200	1,600	6.5	400	1	150	1,350	7.0
Hardened die steel (SKD61, DAC, DHA) 42-52HRC	JC8118	~150	1.5	200	1,600	13.0	~150	1.5	160	1,440	15.0
		200	1.5	180	1,440	11.7	200	1.5	150	1,350	14.0
		250	1.5	160	1,280	10.4	250	1.5	130	1,170	12.2
		300	1.5	140	1,120	9.1	300	1.5	110	990	10.3
		350	1	140	1,120	6.1	350	1.5	110	990	10.3
		400	1	140	1,120	6.1	400	1	110	990	6.9
Grey cast iron (FC250, FC300) below 300HB	JC8118	~150	2.5	380	6,080	24.7	~150	2.5	300	5,400	28.1
		200	2.5	340	5,440	22.1	200	2.5	270	4,860	25.3
		250	2.5	300	4,800	19.5	250	2.5	240	4,320	22.5
		300	2	280	4,480	14.6	300	2.5	220	3,960	20.6
		350	1.5	280	4,480	10.9	350	2	220	3,960	16.5
		400	1.5	280	4,480	10.9	400	1.5	220	3,960	12.4
Nodular cast iron (FCD500, FCD700) below 300HB	JC8118	~150	2.5	380	6,080	24.7	~150	2.5	300	5,400	28.1
		200	2.5	340	5,440	22.1	200	2.5	270	4,860	25.3
		250	2.5	300	4,800	19.5	250	2.5	240	4,320	22.5
		300	2	280	4,480	14.6	300	2.5	220	3,960	20.6
		350	1.5	280	4,480	10.9	350	2	220	3,960	16.5
		400	1.5	280	4,480	10.9	400	1.5	220	3,960	12.4
Stainless steel (SUS304) below 250HB	JC8050 (JC7560)	~150	2	380	4,560	29.6	~150	2	300	4,050	33.7
		200	2	340	4,080	26.5	200	2	270	3,645	30.3
		250	2	300	3,600	23.4	250	2	240	3,240	27.0
		300	2	280	3,360	21.8	300	2	220	2,970	24.7
		350	1.5	280	3,360	16.4	350	2	220	2,970	24.7
		400	1.5	280	3,360	16.4	400	1.5	220	2,970	18.5

## Note

1. Please adjust cutting conditions according to machine rigidity or work rigidity. (the above table is guide for cutting on a #50 BT machine.)
2. In case of chatter occurring, recommended to reduce ap or rpm and keep feed per tooth.
3. ap should be reduced when using on low rigidity machine.
4. Use air blow.
5. ap ≤ 2mm when using PL insert.