

# PRODUCT NEWS

PN-E-005



High Feed Milling

# EXSKS SERIES

SERIES EXPANSION

### 05 type

- Facemill  $\phi 40 \sim \phi 63$
- Modular head  $\phi 20 \sim \phi 40$
- End Mill  $\phi 20 \sim \phi 32$

### 07 type

- Facemill  $\phi 50 \sim \phi 80$
- Modular head  $\phi 32 \sim \phi 42$
- End Mill  $\phi 32 \sim \phi 40$

### 09 type

- Facemill  $\phi 50 \sim \phi 160$



## EXSKS-05type



## EXSKS-07type



## EXSKS-09type

DIJET GmbH

[www.dijet.de](http://www.dijet.de)

## Features

# High-feed milling tools with double side inserts

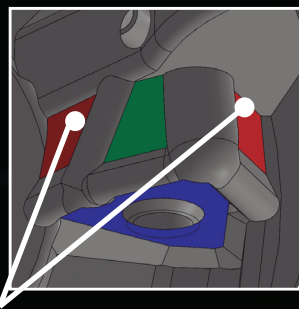
### Feature 1

Economical double-side insert (with 6 cutting edges)

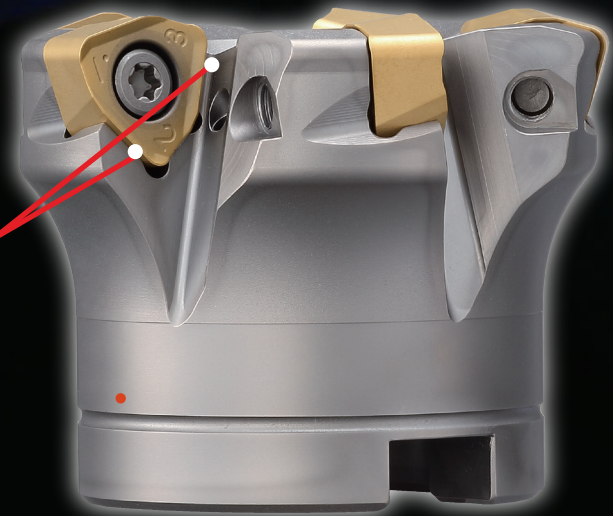


### Feature 2

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.



which achieve ultimate high-feed machining

## EXSKS-05 type



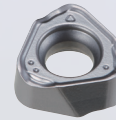
M3 size screw for firm clamping of inserts

MaxAp=1.5mm

W=4.8

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

**WNMU050320ZER-PM**

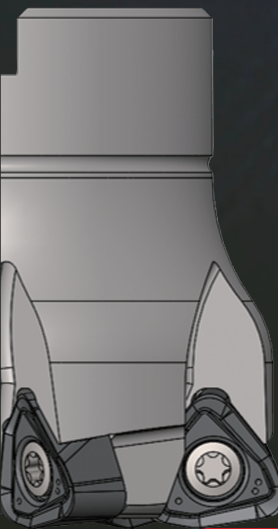


grade : JC8050  
JC8118

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

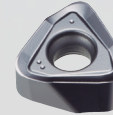


Adopted specifications which achieved both insert strength and sharpness. Stable high-feed machining is possible.

MaxAp=2mm

W=8.1

**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



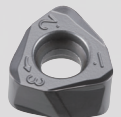
Lined up holders of big diameter. High-feed machining with bigger depth of cut is possible by adopting high-rigid inserts with larger thickness.

PM insert PL insert  
MaxAp=3mm (2mm)

W=8.2

**WNMU090828ZER-PL**

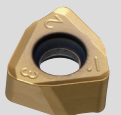
grade : JC8050 / JC8118



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.

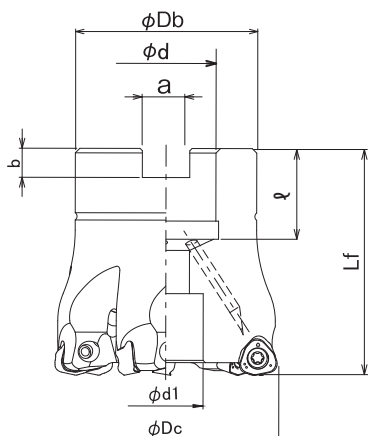
Coner radius for programming	Remains	Over cut
R3	1.41	0
R3.5	1.3	0
R4	1.19	0.025

## Line up

### 05 type



#### ● Facemill type

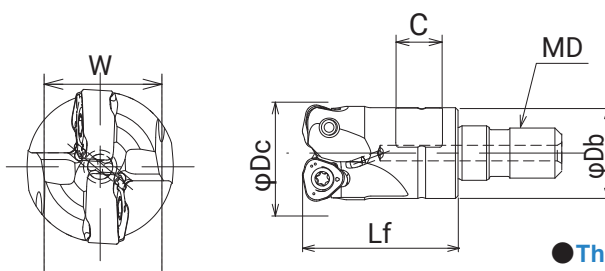


● Through coolant hole

Type	Cat. No.	Stock	No. of inserts	Dimensions (mm)								Set bolt	Weight (kg)	inserts
				φDc	Lf	φDb	φd	φd1	a	b	ℓ			
Metric Bore	EXSKS-5040R-05-16	●	5	40	45	35	16	13.5	8.4	5.8	19	M8	0.25	 WNMU050320ZER-PM
	EXSKS-7050R-05-22	●	7	50	50	40	22	16.5	10.4	6.3	20	M10	0.39	
	EXSKS-7052R-05-22	●	7	52	50	40	22	16.5	10.4	6.3	20	M10	0.41	
	EXSKS-8063R-05-22	□	8	63	50	48	22	17	10.4	6.3	20	M10	0.65	

Note ) All cutters are supplied without inserts or wrenches.

#### ● Modular head type



● Through coolant hole

Cat. No.	Stock	No. of inserts	Dimensions (mm)						inserts
			φDc	Lf	φDb	MD	C	W	
MEX-2020-05-M10	●	2	20	30	18	M10	9	14	 WNMU050320ZER-PM
MEX-2021-05-M10	□	2	21	30	18	M10	9	14	
MEX-3025-05-M12	●	3	25	35	23	M12	11	19	
MEX-3026-05-M12	□	3	26	35	23	M12	11	19	
MEX-3028-05-M12	□	3	28	28	23	M12	11	19	
MEX-4030-05-M16	□	4	30	43	27	M16	12	22	
MEX-4032-05-M16	●	4	32	43	29	M16	12	22	
MEX-4033-05-M16	□	4	33	43	29	M16	12	22	
MEX-4035-05-M16	●	4	35	43	29	M16	12	22	
MEX-5040-05-M16	●	5	40	43	32	M16	14	26	

Note ) All cutters are supplied without inserts or wrenches.

Please scan the QR code for recommended cutting conditions



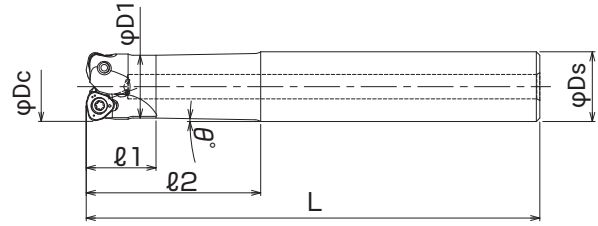


# 05 type

## End Mill type



● Through coolant hole

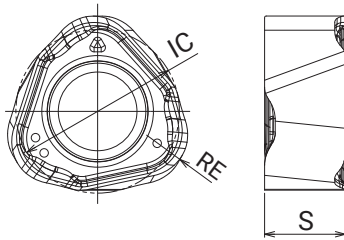


Cat. No.	Stock	No. of inserts	Dimensions (mm)							inserts
			φDc	ℓ1	ℓ2	L	φD1	φDs	θ°	
EXSKS-2020-05-50-S20	●	2	20	20	50	130	18	20	1	WNMU050320ZER-PM
EXSKS-2020-05-80-S20	□	2	20	20	80	160	18	20	0.5	
EXSKS-2021-05-50-S20	□	2	21	20	50	130	18	20	1	
EXSKS-2021-05-80-S20	□	2	21	20	80	160	18	20	0.5	
EXSKS-3025-05-60-S25	●	3	25	25	60	140	23	25	1	
EXSKS-3025-05-100-S25	□	3	25	25	100	180	23	25	0.5	
EXSKS-3026-05-60-S25	□	3	26	25	60	140	23	25	1	
EXSKS-3026-05-100-S25	□	3	26	25	100	180	23	25	0.5	
EXSKS-4032-05-70-S32	●	4	32	30	70	150	29	32	1.5	
EXSKS-4032-05-120-S32	□	4	32	30	120	200	29	32	0.5	

Parts	
Clamp screw  TSW-307H	Wrench (not be included)  A-10
Clamp screw TSW-307H	Recommended torque (N·m) 2.1

Note ) All cutters are supplied without inserts or wrenches.

## Inserts



Cat. No.	Tolerance	PVD coated		Dimensions (mm)		
		JC8118	JC8050	RE	IC	S
WNMU050320ZER-PM	M	●	●	2	7.7	3.9

Note) 10 inserts per case.

● Each grade shows different mark around the hole for tool proof.

JC8050

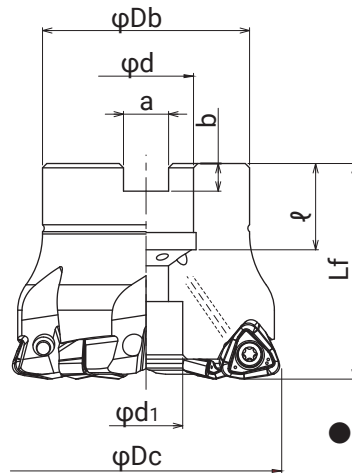
JC8118



## Line up

### 07 type

#### ● Facemill type



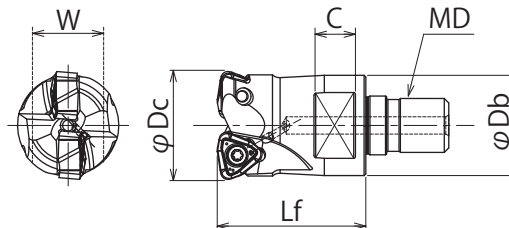
● Through coolant hole



Type	Cat. No.	Stock	No. of inserts	Dimensions (mm)								Set bolt	Weight (kg)	inserts
				φDc	Lf	φDb	φd	φd1	a	b	ℓ			
Metric Bore	EXSKS-5050R-07-22	●	5	50	50	40	22	16.5	10.4	6.3	20	M10	0.38	 WNMU070620ZER-PM
	EXSKS-5052R-07-22	●	5	52	50	40	22	16.5	10.4	6.3	20	M10	0.40	
	EXSKS-6063R-07-22	●	6	63	50	48	22	17	10.4	6.3	20	M10	0.64	
	EXSKS-7080R-07-27	●	7	80	55	65	27	20	12.4	7	22	M12X1.75X35★	1.23	

Note ) 1. All cutters are supplied without inserts or wrenches.  
 2. ★ mark shows : these cutter bodies are equipped with the set bolt because of the specified bolt size.  
 Except for these cutter bodies, please use the set bolt equipped with arbor.

#### ● Modular head type



● Through coolant hole



Cat. No.	Stock	No. of inserts	Dimensions (mm)						inserts
			φDc	Lf	φDb	MD	C	W	
MEX-2032-07-M16	●	2	32	43	29	M16	12	22	 WNMU070620ZER-PM
MEX-3035-07-M16	●	3	35	43	29	M16	12	22	
MEX-4040-07-M16	●	4	40	43	32	M16	14	26	
MEX-4042-07-M16	●	4	42	43	32	M16	14	26	

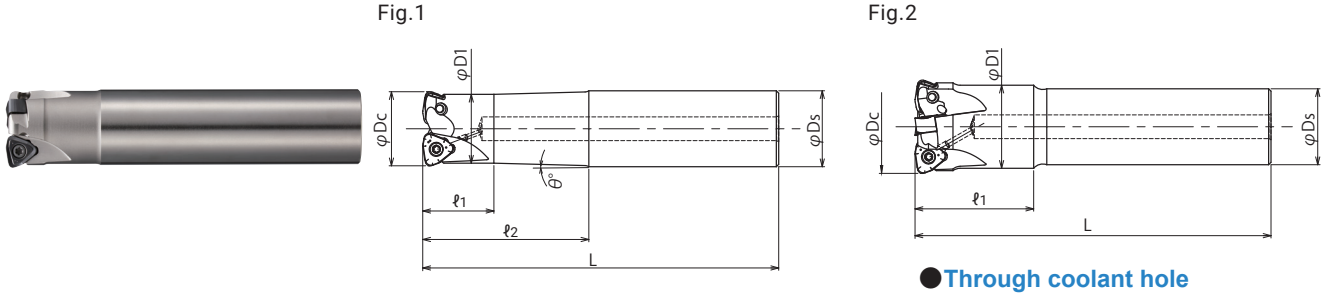
Note ) All cutters are supplied without inserts or wrenches.

Please scan the QR code for recommended cutting conditions



# 07 type

## End Mill type

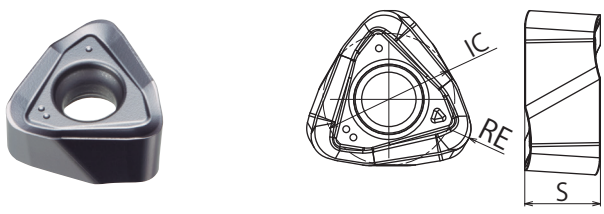


● Through coolant hole

Cat. No.	Stock	No. of inserts	Dimensions (mm)							Fig.	inserts
			φDc	ℓ1	ℓ2	L	φD1	φDs	θ°		
EXSKS-2032-07-70-S32	<input type="checkbox"/>	2	32	30	70	150	29	32	15°	1	 WNMU070620ZER-PM
EXSKS-2032-07-120-S32	<input type="checkbox"/>	2	32	30	120	200	29	32	06°	1	
EXSKS-3035-07-40-S32	<input type="checkbox"/>	3	35	40	-	150	31	32	-	2	
EXSKS-3035-07-40L-S32	<input type="checkbox"/>	3	35	40	-	200	31	32	-	2	
EXSKS-4040-07-50-S32	<input type="checkbox"/>	4	40	50	-	150	35	32	-	2	
EXSKS-4040-07-50L-S32	<input type="checkbox"/>	4	40	50	-	200	35	32	-	2	

Note ) All cutters are supplied without inserts or wrenches.

### Inserts



Cat. No.	Tolerance	PVD coated		Dimensions (mm)		
		JC8050	JC8118	RE	IC	S
WNMU070620ZER-PM	M	●	●	2	11.2	6.4

Note) 10 inserts per case.

### Parts

Parts	
Clamp screw  TSW-410H	Wrench (not be included)  A-15
Clamp screw	Recommended torque (N·m)
TSW-410H	3.5

● Each grade shows different mark around the hole for tool proof.



## Line up

09 type

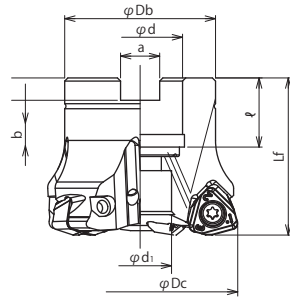


### ● Facemill type

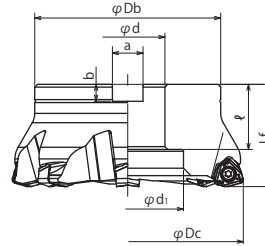
**G-Body**



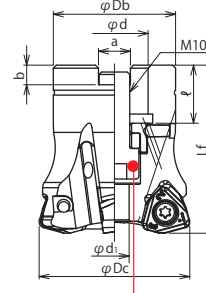
● Fig.1  
Through coolant hole




● Fig.2  
Without coolant hole



● Fig.3  
Through coolant hole



Set bolt built into the cutter body

Type	Cat. No.	Stock	No. of inserts	Dimensions (mm)								Set bolt	Weight (kg)	Fig.	inserts
				$\phi Dc$	$Lf$	$\phi Db$	$\phi d$	$\phi d1$	a	b	$\ell$				
Metric Bore	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	

Note ) 1. All cutters are supplied without inserts or wrenches.  
 2. ★ mark shows : these cutter bodies are equipped with the set bolt because of the specified bolt size.  
 Except for these cutter bodies, please use the set bolt equipped with arbor.

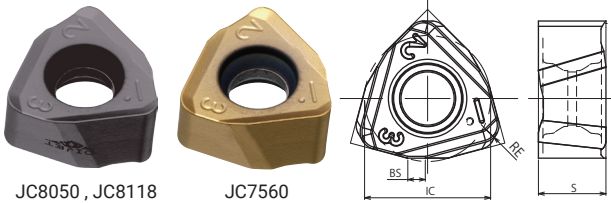
Please scan the QR code for recommended cutting conditions



# 09 type

## ● Inserts

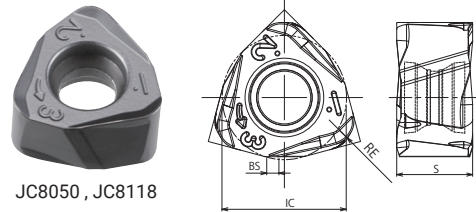
WNMU090720ZER-PM



JC8050, JC8118

JC7560

WNMU090828ZER-PL



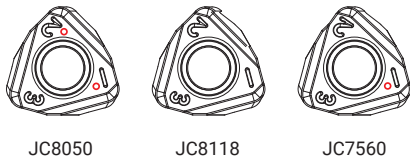
JC8050, JC8118

Cat. No.	Tolerance	PVD coated			Dimensions (mm)			
		JC8050	JC8118	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 ) 1. 10 inserts per cage.  
 2. When using PL inserts, tool dia. will be smaller than the 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.

● Each grade shows different mark around the hole for tool proof.

WNMU090720ZER-PM

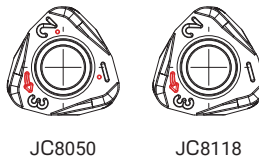


JC8050

JC8118

JC7560

WNMU090828ZER-PL



JC8050

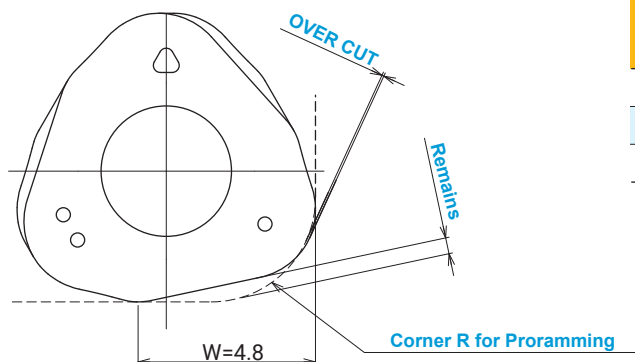
JC8118

## ● Parts

Parts	
Clamp screw	Wrench (not be included)
CSW-513H	A-20
Clamp screw	Recommended torque (N·m)
CSW-513H	5.5

## 05 type

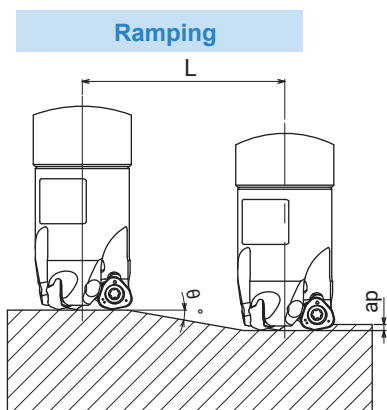
### Definition of corner shape for programming(in case of using 05 type)



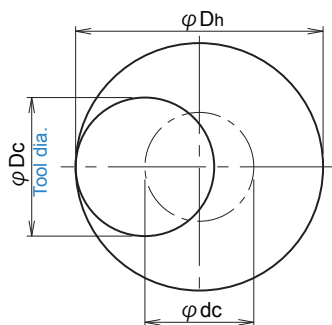
Corner radius for programming	Remains	Over cut
R2.0	0.59	0
R2.5 ( standard )	0.5	0
R3.0	0.41	0.13

(mm)

### Attention for profile milling



### Helical interpolation



#### • 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.

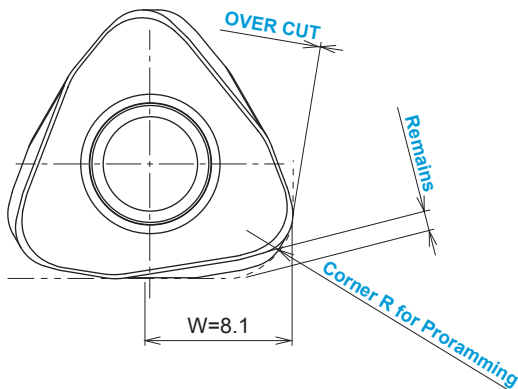
○ Long consecutive chips may come out in case of drilling, confirm the safe condition sufficiently.

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 θ°	Total cutting length at Max. ap	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (mm)	Dh min (mm)	
EXSKS-*020/MEX-*020	20	10	1.5	2.8	31	28	36	31	0.4
EXSKS-*021/MEX-*021	21	11	1.5	2.6	34	30	38	33	0.4
EXSKS-*025/MEX-*025	25	15	1.5	1.8	48	38	46	41	0.4
EXSKS-*026/MEX-*026	26	16	1.5	1.7	51	40	48	43	0.4
EXSKS-*028/MEX-*028	28	18	1.5	1.5	58	44	52	47	0.4
MEX-*030	30	20	1.5	1.3	67	48	56	51	0.4
EXSKS-*032/MEX-*032	32	22	1.5	1.2	72	52	60	55	0.4
MEX-*033	33	23	1.5	1.1	79	54	62	57	0.4
MEX-*035	35	25	1.5	1	86	58	66	61	0.4
EXSKS-*040/MEX-*040	40	30	1.5	0.8	108	68	76	71	0.4
EXSKS-*050	50	40	1.5	0.6	144	88	96	91	0.4
EXSKS-*052	52	42	1.5	0.6	144	92	100	95	0.4
EXSKS-*063	63	53	1.5	0.5	172	114	122	117	0.4



## 07 type

### Definition of corner shape for programming(in case of using 07 type)

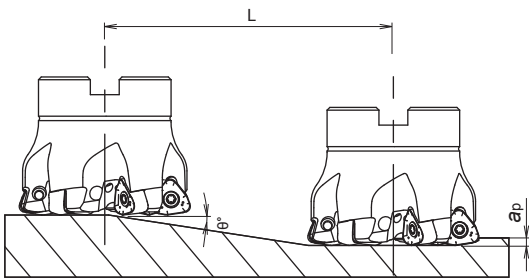


Corner radius for programming	Remains	Over cut
R3.0 (Standard)	0.8	0
R3.5	0.73	0.06
R4.0	0.66	0.21

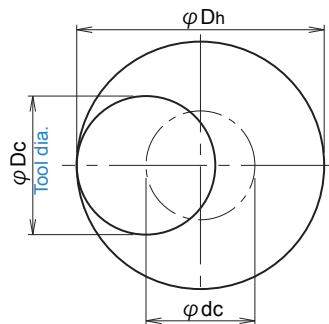
(mm)

### Attention for profile milling

#### Ramping



#### Helical interpolation



#### ● 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.

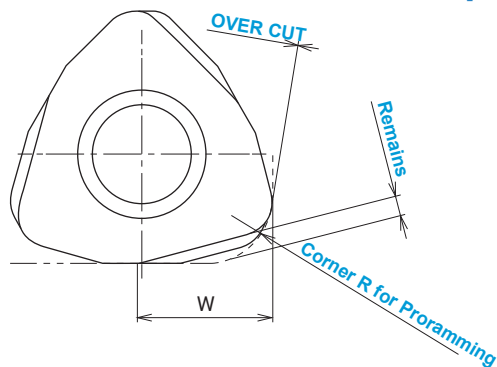
○ In case of ramping and helical interpolation, apply 70% or less feed speed from standard cutting condition table.

○ 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.

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 θ°	Total cutting length at Max. ap	Min. bore dia Dh min (mm)	Max. bore dia Dh max (mm)	Dh min (mm)	
EXSKS-032/MEX-032	32	15	2	2.2	53	41	60	48	0.5
EXSKS-035/MEX-035	35	18	2	2.1	55	47	66	54	0.5
EXSKS-040/MEX-040	40	23	2	2	58	57	76	64	0.5
MEX-042	42	25	2	1.8	64	61	80	68	0.5
EXSKS-050	50	33	2	1.5	77	77	96	84	0.5
EXSKS-052	52	35	2	1.2	96	81	100	88	0.5
EXSKS-063	63	46	2	1	115	103	122	110	0.5
EXSKS-080	80	63	2	0.8	144	137	156	144	0.5

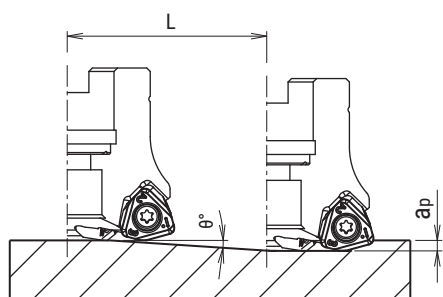
## Definition of corner shape for programming(in case of using 09 type)



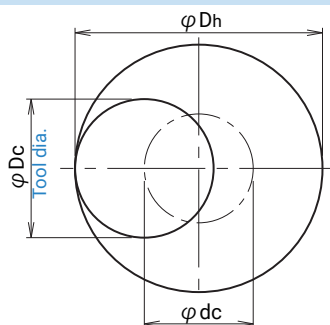
Insert	W	Corner radius for programming	Remains	Over cut
WNUM090720ZER-PM	8.2	R3.0	1.41	0
		R3.5	1.30	0
		R4.0	1.19	0.025
Insert	W	Corner radius for programming	Remains	Over cut
WNUM090828ZER-PL	8.4	R3.0	1.18	0
		R3.5	1.06	0
		R4.0	0.95	0.010

## Attention for profile milling

### Ramping



### Helical interpolation



#### ● 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.

### WNUM090720ZER-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 θ°	Total cutting length at Max. ap	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (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

### WNUM090828ZER-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 θ°	Total cutting length at Max. ap	Min. bore dia. Dh min (mm)	Max. bore dia. Dh max (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

**HEADQUARTER**  
 DIJET Industrial Co.Ltd.  
 2-1-18, Kami-Higashi,  
 Hirano-ku, Osaka 547-0002, Japan  
 PHONE +81-6-6791-6781  
 FAX +81-6-6793-1221  
 www.dijet.co.jp

**MAIN OFFICE EUROPE**  
 DIJET GmbH  
 Immemannstraße 9  
 40210 Düsseldorf, Germany  
 PHONE +49-211-5008820  
 FAX +49-211-5008823  
 www.dijet.de



JQA-2089 JQA-EM1580