PRODUCT NEWS

PN-E-004

SERIES EXPANSION

DIJET®

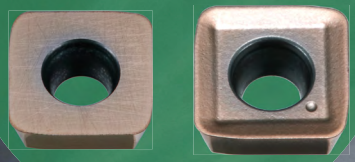
For heat resistant alloy, titanium alloy, and hardened stainless steel

SKS-GII Type 09

SKG09/MSG09 type

- Bore type : ø40 ~ ø80
- Modular type : ø20 ~ ø42
- Shank type : ø25 ~ ø42

New grade
“DS217”, “DS250”



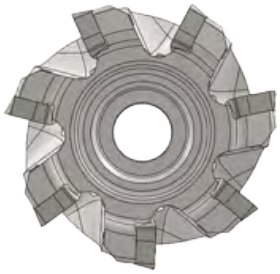
DIJET GmbH

www.dijet.de

Specifically designed for high-efficiency machining of difficult-to-cut materials

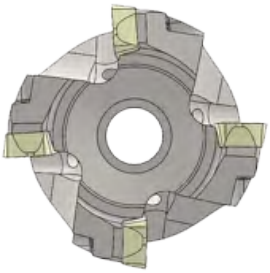
Feature 1 **Multi-edge design for high-efficiency machining.**

SKG-09 type



7 inserts
SKG-7050R-09-22

Conventional

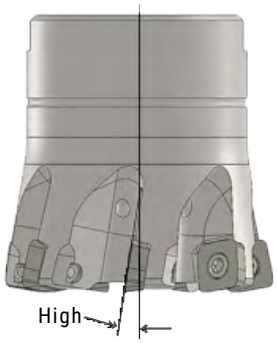


4 inserts
SKG-4050R-10-22

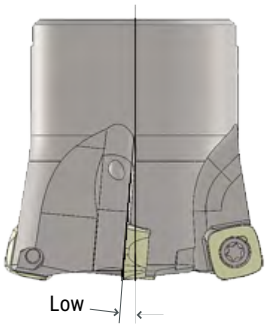
Achieved Max ap=0.9 mm even if difficult-to-cut materials such as titanium alloy , stainless steel, and heat-resistant alloy.

Feature 2 **Optimized cutting edge design for sharpness and low cutting resistance. Ideal for difficult-to-cut materials.**

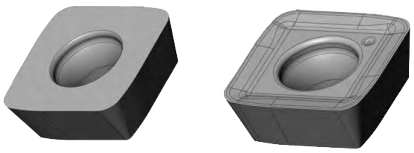
SKG-09 type



Conventional

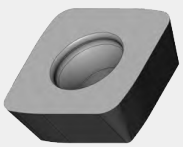


Feature 3 **Precision-ground insert with 4 cutting edges ensures excellent run-out accuracy and longer tool life.**

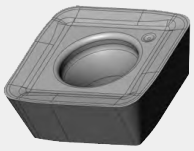


Feature 4 Insert Lineup

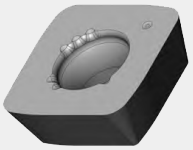
Wear resistance ⟷ Fracture resistance



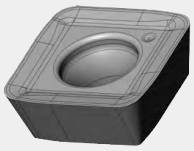
SDEW090312ZER
(JC7518/**DS217**/DS118)



SDET090312ZDER-SM
(DS118)



SDEW090312ZER
(JC7550/**DS250**/DS150)



SDET090312ZDER-SM
(JC7550/**DS250**/DS150)

● Application

※ SDSS (Super Duplex Stainless Steel)

Insert		Titanium alloy	Inconel	SUS630	SUS316	※ SDSS
SDEW090312ZER	(JC7518)			◎	☆	◎
SDEW090312ZER	(JC7550)			●	◎	●
SDEW090312ZER	(DS217)	◎	◎	◎	☆	◎
SDEW090312ZER	(DS250)			●	◎	●
SDEW090312ZER	(DS118)	◎				
SDEW090312ZER	(DS150)	●				
SDET090312ZDER-SM	(JC7550)			●	●	●
SDET090312ZDER-SM	(DS250)			●	●	●
SDET090312ZDER-SM	(DS150)	●				
SDET090312ZDER-SM	(DS118)	●				

◎ : First Choice ● : Unstable machining ☆ : Light load machining

Feature 5 DS2 coating

- Advanced PVD technology provides high durability and superior surface smoothness.
- New multilayer technology achieves both high hardness and strong adhesion.
- Provides excellent tool life, especially when machining stainless steel.

● Properties of DIJET PVD coating

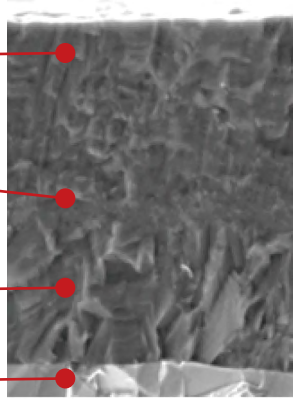
	DS2 Coating	**DS1** Coating	**JC7500** Coating
Composition	TiAlSiN	TiB_2	AlTiCrN
Hardness (GPa)	36 – 38	33 – 35	27 – 28
Oxidation temperature (℃)	1100 –1200	900 –1000	1000 –1100
Coefficient of friction (N)	0.3	0.4	0.5

Nano-composite layer
Provides high hardness and excellent wear resistance

Multilayer coating technology
Reduces cracking

Advanced Adhesion Layer
Developed with the latest PVD coating technology

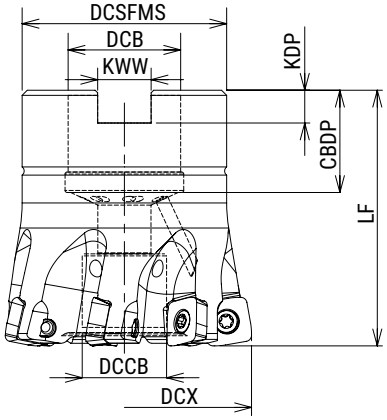
Carbide substrate



SKG09/MSG09 type

SKG09 TYPE Bore Type

Through coolant hole | G - Body | Face Milling | Copy Milling | Pocket Milling | Helical Interpolation | Plunge Milling



Cat.No.	Stock	No. of inserts	Dimensions (mm)								Arbor set bolt	Weight (kg)	Insert
			DCX	LF	DCSFMS	DCB	DCCB	KWW	KDP	CBDP			
SKG-5040R-09-16	●	5	40	40	37	16	13.5	8.4	5.6	18	M8	0.21	SDEW090312ZER SDET090312ZDER-SM
SKG-7050R-09-22	●	7	50	50	40	22	16.5	10.4	6.3	20	M10	0.35	
SKG-7052R-09-22	●	7	52	50	40	22	16.5	10.4	6.3	20	M10	0.37	
SKG-8063R-09-22	●	8	63	50	48	22	17	10.4	6.3	20	M10	0.58	
SKG-8066R-09-27	●	8	66	50	50	27	20	12.4	7	22	M12X1.75X30★	0.60	
SKG-9080R-09-27	●	9	80	50	60	27	20	12.4	7	22	M12X1.75X30★	0.97	

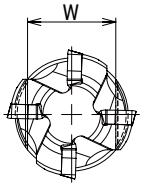
All cutters are supplied without inserts or wrench.

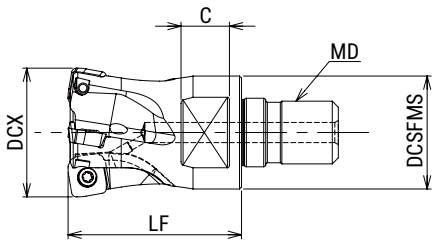
● : Stocked Items

Screw	Torque(N.m)	Wrench
DSW-307H	2.1	A-10

MSG09 TYPE Modular Type

Through coolant hole





Cat.No.	Stock	No. of inserts	Dimensions (mm)						Parts	Insert
			DCX	LF	DCSFMS	MD	C	W		
MSG-2020-09-M10	●	2	20	30	19	M10	9	14	DSW-306H	SDEW090312ZER SDET090312ZDER-SM
MSG-2022-09-M10	○	2	22	30	19	M10	9	14	DSW-307H	
MSG-3025-09-M12	●	3	25	35	23	M12	11	19	DSW-307H	
MSG-4028-09-M12	○	4	28	35	23.6	M12	11	19	DSW-307H	
MSG-4032-09-M16	●	4	32	43	28	M16	12	22	DSW-307H	
MSG-5035-09-M16	●	5	35	43	29	M16	12	22	DSW-307H	
MSG-5040-09-M16	●	5	40	43	32	M16	14	26	DSW-307H	
MSG-5042-09-M16	●	5	42	43	32	M16	14	26	DSW-307H	

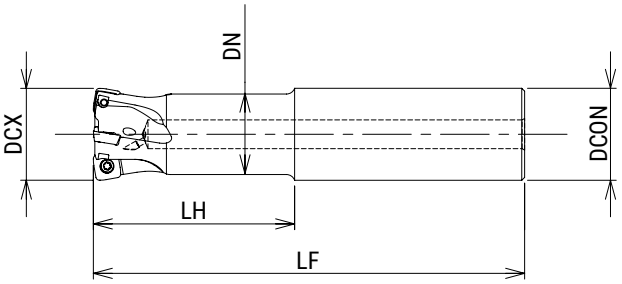
All cutters are supplied without inserts or wrench.

● : Stocked Items ○ : Stock in Japan

Screw	Torque(N.m)	Wrench
DSW-306H	1.8	A-10
DSW-307H	2.1	A-10

SKG09 TYPE Shank Type

Through coolant hole | Face Milling | Copy Milling | Pocket Milling | Helical Interpolation

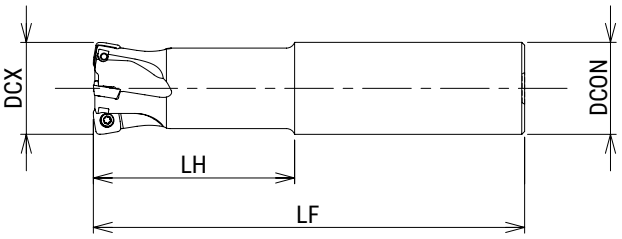


Cat.No.	Stock	No. of inserts	Dimensions (mm)					Insert
			DCX	LH	LF	DN	DCON	
SKG-3025-60-09-S25	○	3	25	60	140	23	25	SDEW090312ZER SDET090312ZDER-SM
SKG-3025-100-09-S25	○	3	25	100	180	23	25	
SKG-4032-70-09-S32	○	4	32	70	150	28	32	
SKG-4032-120-09-S32	○	4	32	120	200	28	32	
SKG-5035-70-09-S32	○	5	35	70	150	31	32	
SKG-5035-120-09-S32	○	5	35	120	200	31	32	
SKG-5040-45-09-S32	○	5	40	45	150	31.6	32	
SKG-5040-45E-09-S32	○	5	40	45	220	31.6	32	

All cutters are supplied without inserts or wrench.

○ : Stock in Japan

Screw	Torque(N.m)	Wrench
DSW-307H	2.1	A-10



Cat.No.	Stock	No. of inserts	Dimensions (mm)				Insert
			DCX	LH	LF	DCON	
SKGS-3025-09-30-S25+A	※	3	25	30	100	25	SDEW090312ZER SDET090312ZDER-SM
SKGS-4032-09-35-S32+A	※	4	32	35	120	32	
SKGS-5035-09-35-S32+A	※	5	35	35	120	32	
SKGS-5040-09-35-S32+A	※	5	40	35	120	32	
SKGS-5042-09-35-S32+A	※	5	42	35	120	32	

All cutters are supplied without inserts or wrench.

※ : To be discontinued

Screw	Torque(N.m)	Wrench
DSW-307H	2.1	A-10

SKG09/MSG09 type

SKG/MSG09 TYPE

Insert

Fig. 1

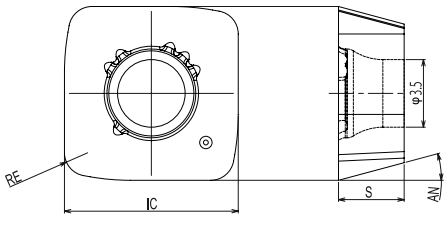
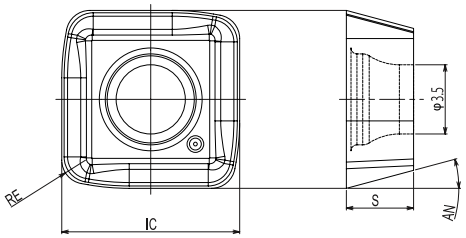


Fig. 2

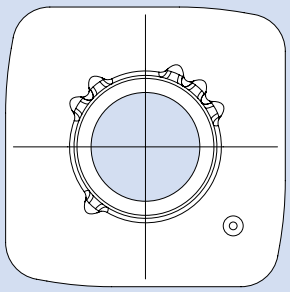


Cat.No.	Tolerance	PVD Coating						Dimensions (mm)				Fig.
		DS118	DS150	JC7518	DS217	DS250	JC7550	RE	IC	S	AN	
SDEW090312ZER	E	●	●	●	●	●	●	1.2	9	3.4	15°	1
SDET090312ZDER-SM	E	●	●			●	●	1.2	9	3.4	15°	2

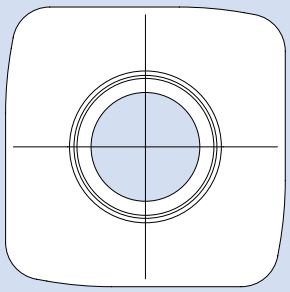
Note) 10 inserts per case.

● NEW ● : Stocked Items

GRADE MARKING



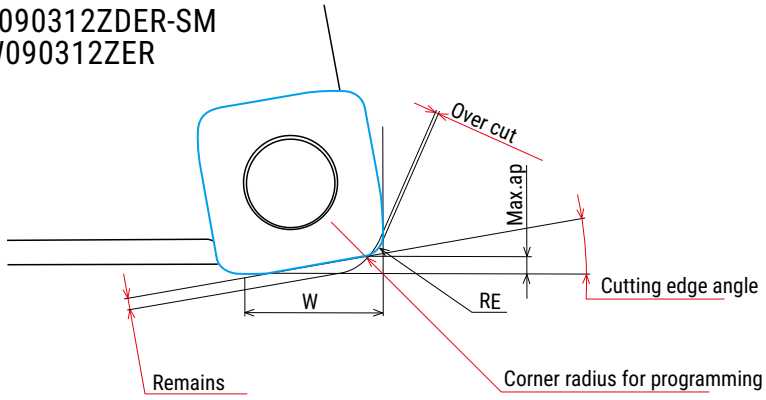
JC7550/DS250/DS150



JC7518/DS217/DS118

■ Definition of corner shape for programming

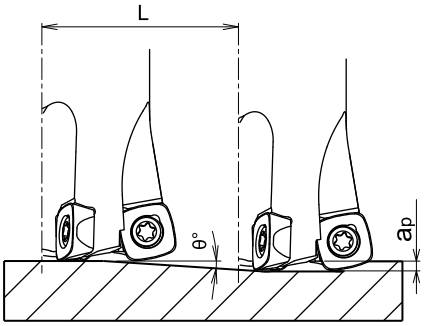
■ SDET090312ZDER-SM
SDEW090312ZER



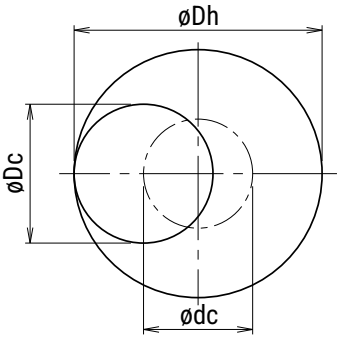
Corner radius for programming	Remains	Over cut	Max.ap	W	Cutting edge angle	Actual corner RE
1.5	0.81	0	0.9	7.1	10°	1.2
2.0 (Standard)	0.73	0				
2.5	0.65	0.08				

■ Recommended Data for Profile Milling

Ramping



Helical interpolation



● Calculation of tool pass dia.

$$ødc = øDh - øDc$$

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, tool pass rotation should be counterclockwise

● In case of ramping and helical interpolation, apply 70% or less feed (Vf) from standard cutting condition table.

Tool dia.	Effective cutting dia.	Max.depth of cut : ap	Ramping		Helical interpolation	
			Max.ramping angle θ	Total cutting length at Max.ap : L(mm)	Min.Bore dia. (mm)	Max.Bore dia. (mm)
20	5.6	0.9	1°	51.6	27	38
22	7.7	0.9	1°	51.6	31	42
25	10.7	0.9	1°	51.6	37	48
28	13.7	0.9	1°	51.6	43	54
32	17.6	0.9	1°	51.6	51	62
35	20.6	0.9	1°	51.6	57	68
40	25.7	0.9	1°	51.6	67	78
42	27.7	0.9	1°	51.6	71	82
50	35.6	0.9	1°	51.6	87	98
52	37.6	0.9	1°	51.6	91	102
63	48.7	0.9	0°45'	68.8	113	124
66	51.7	0.9	0°45'	68.8	119	130
80	65.7	0.9	0°30'	103.1	147	158

■Recommended Cutting Conditions - SKG09/MSG09 type -

Material	Insert	Grade	*Vc* (m/min)	*fz* (mm/t)	ap (mm)	ae (mm)
Carbon Steel below 250HB	SDET09**–SM (SDEW09**)	JC7550 (JC7518)	150 - 180	1.0 - 1.2	0.3 - 0.8	0.6 Dc
Tool & Die Steel below 255HB	SDET09**–SM (SDEW09**)	JC7550 (JC7518)	125 - 150	1.0 - 1.2	0.3 - 0.8	0.6 Dc
Mold Steel 30-36HRC	SDET09**–SM (SDEW09**)	JC7550 (JC7518)	125 - 150	1.0 - 1.2	0.3 - 0.8	0.6 Dc
Austenitic Stainless Steel	SDEW09** (SDET09**–SM)	DS250 DS217	125 - 150	0.8 - 1.0	0.3 - 0.8	0.6 Dc
Martensitic Stainless Steel	SDEW09** (SDET09**–SM)	DS250 DS217	155 - 190	0.8 - 1.0	0.3 - 0.8	0.6 Dc
Precipitation Hardening Stainless Steel	SDEW09** (SDET09**–SM)	DS217 (DS250)	85 - 100	0.6 - 0.7	0.3 - 0.8	0.6 Dc
Super Duplex Stainless Steel	SDEW09** (SDET09**–SM)	DS217 DS250	60 - 70	0.4 - 0.5	0.3 - 0.8	0.4~0.6 Dc
Titanium Alloy	SDEW09** (SDET09**–SM)	DS118 (DS150)	50 - 60	0.5 - 0.6	0.3 - 0.8	0.6 Dc
Heat Resistant Alloy	SDEW09** (SDET09**–SM)	DS217 (DS250)	25 - 30	0.5 - 0.6	0.2 - 0.5	0.4~0.6 Dc

Note)

1. Please adjust cutting conditions according to machine rigidity or work rigidity.
   (the above table is guide for cutting on a BT50 machine.)
2. In case of chatter ocurring, 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. Wet cutting is recommended for machining Super Duplex, Titanium Alloy, Heat Resistant Alloy.

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