

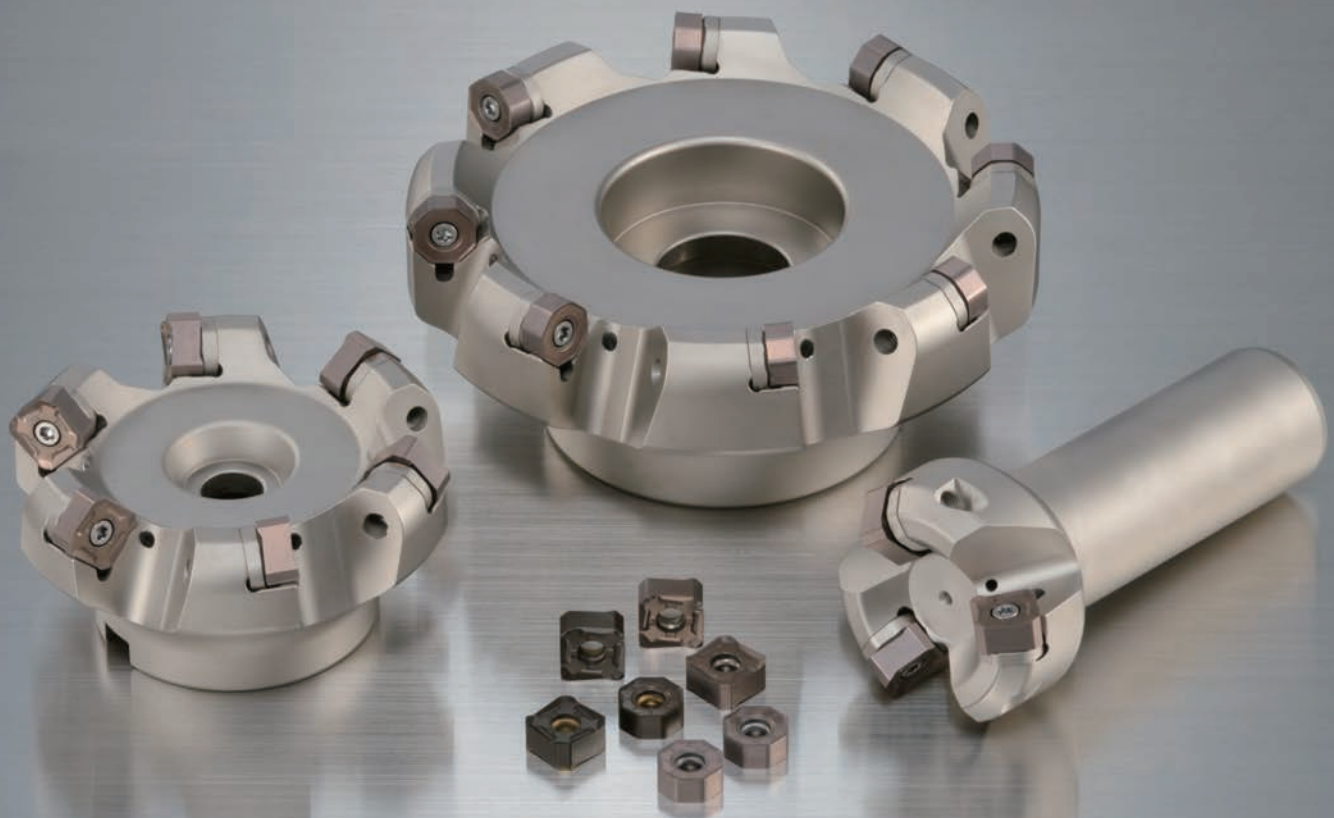
Milling Cutter for High-Efficient General Face Milling

**SEC-Sumi Dual Mill DGC series**

Rev. 10

# Original body design enables dual use of two different-shaped inserts

Up to 16 corners can be used for improved economy



Coated Carbide Grades for Exotic Alloy Milling

Expansion

**ACS2500/ACS3000 added to the DGC series lineup**



## General Features

SEC-Sumi Dual Mill DGC series employs double-sided inserts with up to 16 corners for excellent economy. This is a general-purpose cutter featuring high cutting edge strength for high-efficiency milling and a low-burr chipbreaker design that provides high machined surface quality.

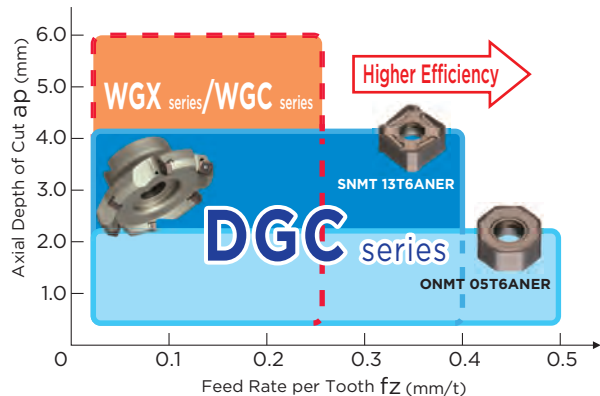


## Features

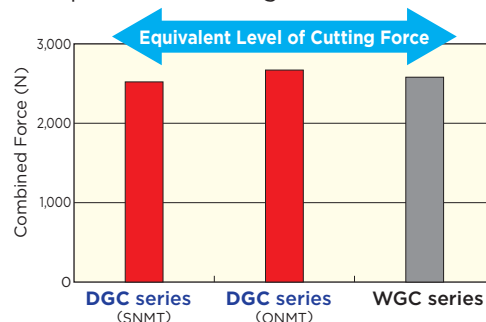
### Same cutting performance as single-sided inserts plus superior economy

Achieves levels of cutting edge sharpness and machined surface quality equivalent to single-sided cutters at a maximum depth of cut of  $a_p = 3\text{mm}$ .

#### Application Range for General Steel Machining



#### Comparison of Cutting Force

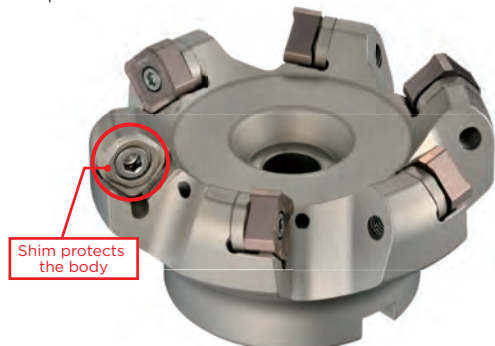


Work Material: SCM435 Tool:  $\phi 100$

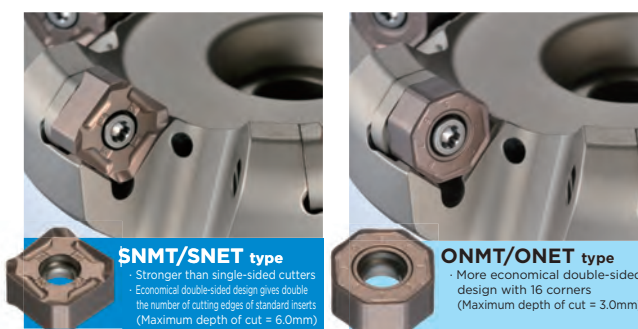
Cutting Conditions:  $v_c = 200\text{m/min}$ ,  $f_z = 0.3\text{mm/t}$ ,  $a_p = 3\text{mm}$ ,  $a_e = 85\text{mm}$

### Dual-purpose body features

Two types of inserts can be used with a single body depending on the milling application, to help reduce tool costs.



#### Use two types of insert for different applications



### Choose a tool to suit your application from a comprehensive lineup

Cutter Diameter:  $\phi 40\text{mm}$  to  $\phi 250\text{mm}$   
No. of Teeth: **3 to 10**  
Mounting: Metric/Inch

Cutter Diameter:  $\phi 50\text{mm}$  to  $\phi 250\text{mm}$   
No. of Teeth: **4 to 14**  
Mounting: Metric/Inch

Cutter Diameter:  $\phi 50\text{mm}$  to  $\phi 250\text{mm}$   
No. of Teeth: **5 to 18**  
Mounting: Metric/Inch

Cutter Diameter:  $\phi 40\text{mm}$  to  $\phi 63\text{mm}$   
No. of Teeth: **3 to 4**  
Mounting: Metric



**DGC 13000R(S)**  
Standard Pitch



**DGC M 13000R(S)**  
Fine Pitch



**DGC F 13000R(S)**  
Extra Fine Pitch



**DGC 13000EW**  
Shank Type

### General-purpose grade applicable to a wide range of work materials

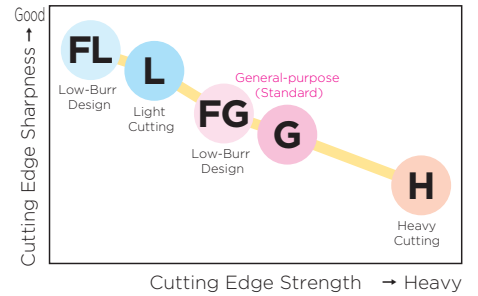
Featuring the ACU2500 grade, applicable to machining various materials including steel, stainless steel, and cast iron, across a broad range of applications.

## Chipbreaker Selection

Work Material	<b>P M K S</b>					<b>N</b>	<b>P K</b>
Applications	Light Cutting/ Burr Prevention	Light Cutting	General-purpose/ Burr Prevention	General-purpose	Heavy Cutting	Non-Ferrous Metal	Finishing Surface Roughness Emphasised
Features	Low Resistance With Chamfer	Low Resistance	Standard/ With Chamfer	Standard	High Strength	High Rake	Wiper
Chipbreaker	<b>FL type</b>	<b>L type</b>	<b>FG type</b>	<b>G type</b>	<b>H type</b>	<b>S type</b>	<b>W type</b>
Cutting Edge Cross Section							
Corner Inserts	8	16	8	16	8	8	8

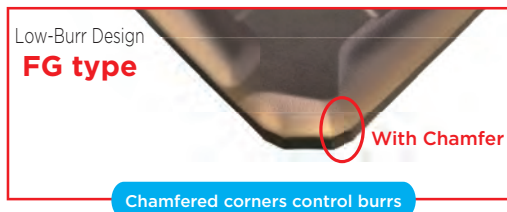
\*Can only be used in conjunction with 8 corner inserts

## Chipbreaker Selection Guide



### Improved machining quality

- FG type / FL type chipbreakers feature a chamfered corner to minimise burrs and provide excellent milling quality.



#### FG type



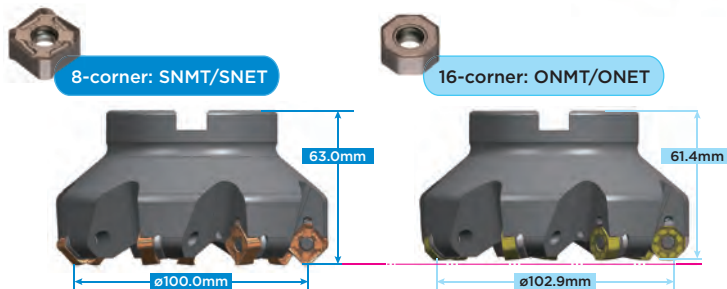
FG type chipbreakers with low-burr design enable high-quality milling with few burrs and minimal edge chipping

#### Competitor's Product



Work Material : SCM435  
Tool :  $\phi 100$   
Cutting Conditions :  $v_c = 200\text{m/min}$ ,  $f_z = 0.2\text{mm/t}$   
 $a_p = 3\text{mm}$ ,  $a_e = 85\text{mm}$

### Cutter Diameter and Cutting Edge Height



#### 16-corner Mounting Method

**!** Firmly align insert with guide faces, press down in the direction of the arrow, and tighten the screw to fix the insert.



**!** Note that while the 8-corner and 16-corner types can be used interchangeably on the same body, however they create different cutter diameters, cutting edge heights and maximum cutting depths.

Body Shape (Example: With Cutter Diameter of  $\phi 100\text{mm}$ )

Insert	Cutter Dia. DC (mm)	Cutting Edge Height LF (mm)	Max. Depth of Cut APMX (mm)
SNMT/SNET	100.0	63.0	6.0
ONMT/ONET	102.9	61.4	3.0

### Recommended Cutting Conditions (SNMT/SNET)

ISO	Work Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Depth of Cut $a_p$ (mm)	Insert Grade
<b>P</b>	General Steel	180 to 280 HB	150-200-250	0.10-0.25-0.40	< 4	ACU2500
	Mild Steel	$\leq 180\text{HB}$	180-250-350	0.10-0.30-0.45	< 4	ACP200
	Die Steel	200 to 220 HB	100-150-200	0.15-0.25-0.35	< 4	ACP300
<b>M</b>	Stainless Steel	—	160-200-250	0.15-0.23-0.30	< 3	ACU2500 ACS2500 ACS3000 ACM300
<b>K</b>	Cast Iron	250HB	100-200-250	0.10-0.25-0.40	< 5	ACU2500 ACK200 ACK300
<b>N</b>	Non-Ferrous Metal	—	500-750-1,000	0.15-0.23-0.30	< 3	DL1000
<b>S</b>	Exotic Alloy	—	30-50-80	0.10-0.20-0.30	< 3	ACU2500 ACS2500 ACS3000 ACM300

**Note** The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

### Recommended Cutting Conditions (ONMT/ONET)

ISO	Work Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Depth of Cut $a_p$ (mm)	Insert Grade
<b>P</b>	General Steel	180 to 280 HB	150-200-250	0.10-0.30-0.50	< 2	ACU2500
	Mild Steel	$\leq 180\text{HB}$	180-250-350	0.10-0.50-0.50	< 2	ACP200
	Die Steel	200 to 220 HB	100-150-200	0.15-0.25-0.30	< 2	ACP300
<b>M</b>	Stainless Steel	—	160-200-250	0.15-0.23-0.30	< 2	ACU2500 ACS2500 ACS3000 ACM300
<b>K</b>	Cast Iron	250HB	100-200-250	0.10-0.30-0.50	< 2	ACU2500 ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30-50-80	0.10-0.20-0.30	< 2	ACU2500 ACS2500 ACS3000 ACM300

**Note** The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

### Precautions When Using Wiper Inserts with Holes



- When mounting the wiper insert, attach it as shown in Fig 1. When mounted as shown in Fig 2, normal machined surface roughness cannot be obtained.
- The wiper insert has a single corner specification.



## Grade Application Range

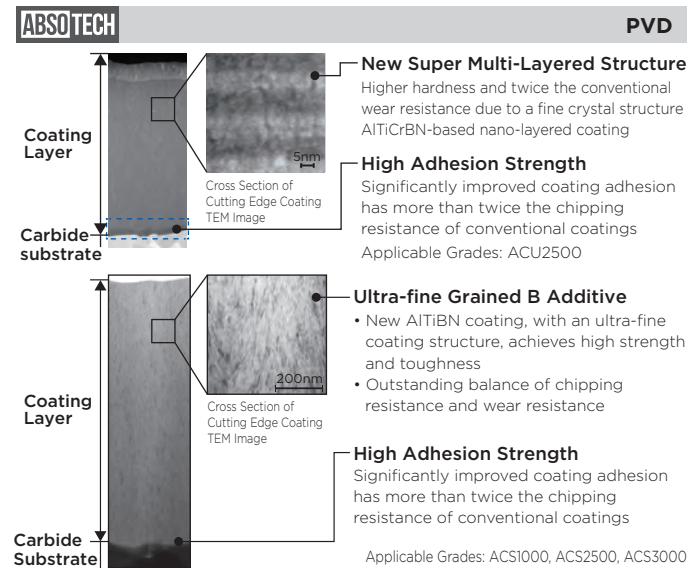
The wide lineup of grades now includes grades for exotic alloy **ACS2500/ACS3000**, supporting various work materials!

Work Material		Finishing to Light Cutting	Medium Cutting	Rough to Heavy Cutting
<b>P</b> Steel	Coated Carbide	<b>ACU2500</b>		
		<b>ACP100</b>	<b>ACP200</b>	
	Cermat			<b>ACP300</b>
			<b>T4500A</b>	
<b>M</b> Stainless Steel	Coated Carbide	<b>ACU2500</b>		
		<b>ACS2500</b>		
	Coated Carbide		<b>ACS3000</b>	
		<b>ACM200</b>	<b>ACM300</b>	
<b>S</b> Exotic Alloy	Coated Carbide			
	Coated Carbide	<b>ACU2500</b>		
		<b>ACK200</b>	<b>ACK300</b>	
<b>K</b> Cast Iron	Coated Carbide			
	Coated Carbide			
<b>N</b> Non-Ferrous Metal	Coated Carbide	<b>DL1000</b>		
	Cemented Carbide		<b>H1</b>	
			<b>EH520</b>	

The letters "C" and "P" at the end of each grade indicate the coating type. ▽ : CVD ▲ : PVD

## Grade Features

New coating technology that realises absolute stability ABSOTECH™ (Absolute Technology)



### **ACP200/ACP300/ACK300/ACM300**

#### NEW SUPER ZX COAT

Realises superb stability due to a carbide substrate optimised for steel, cast iron, and stainless steel with a highly chipping-resistant coating.

### **ACP100/ACK200/ACM200**

#### SUPER FF COAT

Realises superb stability in high-efficiency machining due to a carbide substrate optimised for steel, cast iron, and stainless steel with a highly wear-resistant coating.

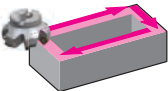
### **DL1000**

#### AURORA Coat (DLC (Diamond-like Carbon))

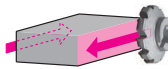
Second only to diamond in terms of hardness, this flat and smooth coating has a low coefficient of friction and provides excellent adhesion resistance to deliver better machined surface quality.



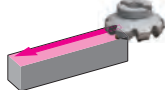
## Application Examples

	Component/Work Material		Automotive Component/Cast Steel	
	Tool	Cat. No.	DGC series	Conventional Tool
	Tool	Body	DGCM13080R (ø80)	ø80
		Insert	SNMT13T6ANER-G (8 Corners)	Single-Sided (4 Corners)
		Number of Teeth	6	6
		Insert Grade	ACP200	PVD Grade
		Number of Teeth	6	6
Cutting Conditions	Cutting Conditions	Cutting Speed (m/min)	160	160
		Feed Rate per Tooth (mm/t)	0.31	0.31
		Feed Rate (mm/min)	1,184	1,184
		Axial Depth of Cut (mm)	3	3
		Cutting Width (mm)	60	60
		Number of Workpieces (pcs/corner)	2	2
		Dry/Wet	Wet	Wet


Can be used under the same conditions as the single-sided inserts. Improves tool economy by doubling the number of cutting edges.

	Component/Work Material		Machine Component/S50C	
	Tool	Cat. No.	DGC series	Conventional Tool
	Tool	Body	DGCM13160R (ø160)	ø160
		Insert	SNMT13T6ANER-FG (8 Corners)	Single-Sided (8 Corners)
		Number of Teeth	10	10
		Insert Grade	ACP200	PVD Grade
		Number of Teeth	10	10
Cutting Conditions	Cutting Conditions	Cutting Speed (m/min)	133	133
		Feed Rate per Tooth (mm/t)	0.132	0.132
		Feed Rate (mm/min)	350	350
		Axial Depth of Cut (mm)	2.5	2.5
		Cutting Time	287min	287min
		Dry/Wet	Dry	Dry
		Dry/Wet	Dry	Dry


Reduces burrs and achieves higher milling quality compared to conventional tools.

	Component/Work Material		Machine Component/Cast Steel	
	Tool	Cat. No.	DGC series	Conventional Tool
	Tool	Body	DGCM13125R (ø125)	ø125
		Insert	ONMT05T6ANER-G (16 Corners)	Double-Sided (8 Corners)
		Number of Teeth	8	8
		Insert Grade	ACP200	PVD Grade
		Number of Teeth	8	8
Cutting Conditions	Cutting Conditions	Cutting Speed (m/min)	160	160
		Feed Rate per Tooth (mm/t)	0.29	0.29
		Feed Rate (mm/min)	945	945
		Axial Depth of Cut (mm)	2.5	2.5
		Dry/Wet	Dry	Dry

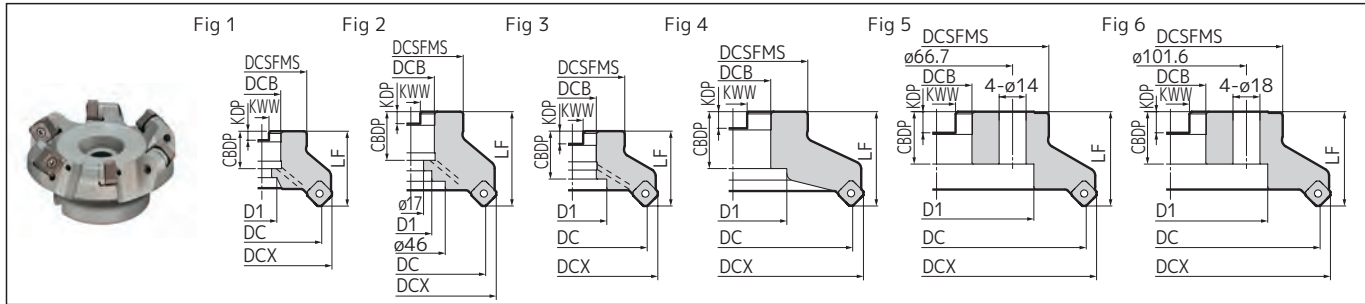
Reduces tool costs by doubling the number of cutting edges.

	Component/Work Material		Machine Component/Stainless Steel	
	Tool	Cat. No.	DGC series	Conventional Tool
	Tool	Body	DGC13100R (ø100)	ø100
		Insert	SNMT13T6ANER-G (8 Corners)	Single-Sided (4 Corners)
		Number of Teeth	5	5
		Insert Grade	ACM300	PVD Grade
		Number of Teeth	5	5
Cutting Conditions	Cutting Conditions	Cutting Speed (m/min)	150	150
		Feed Rate per Tooth (mm/t)	0.15	0.15
		Feed Rate (mm/min)	360	360
		Axial Depth of Cut (mm)	2.0	2.0
		Dry/Wet	Wet	Wet

Doubles the number of cutting edges and provides over 3 times longer tool life per corner compared to conventional tools.

	Component/Work Material		Machine Component/Cast Iron	
	Tool	Cat. No.	DGC series	Conventional Tool
	Tool	Body	DGCM13125R (ø125)	ø125
		Insert	SNMT13T6ANER-G (8 Corners)	Double-Sided (8 Corners)
		Number of Teeth	8	8
		Insert Grade	ACU2500	PVD Grade
		Number of Teeth	8	8
Cutting Conditions	Cutting Conditions	Cutting Speed (m/min)	157	157
		Feed Rate per Tooth (mm/t)	0.12	0.12
		Feed Rate (mm/min)	384	384
		Axial Depth of Cut (mm)	2.5	2.5
		Number of Workpieces (pcs/corner)	480	480
		Dry/Wet	Wet	Wet

Drastically reduced cutting edge failure with the same output. Able to continue use, longer tool life.



## Body (Standard Pitch)

Dimensions (mm)

	Cat. No.	Stock	Dia. DC	Max. Dia. DCX	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CDBP	Bolt D1	Number of Teeth	Weight (kg)	Fig
Metric	<b>DGC 13040RS</b>	●	40(42.9)	54(50.8)	36	40(38.44)	<b>16</b>	8.4	5.6	18	13.5	3	0.3	1
	<b>13050RS</b>	●	50(52.9)	64(60.8)	40	40(38.44)	<b>22</b>	10.4	6.3	20	18	3	0.4	1
	<b>13063RS</b>	●	63(65.9)	77(73.8)	50	40(38.44)	<b>22</b>	10.4	6.3	20	18	4	0.5	1
	<b>13080RS</b>	●	80(82.9)	94(90.8)	60	50(48.44)	<b>27</b>	12.4	7	25	20	4	1.2	1
	<b>13100RS</b>	●	100(102.9)	114(110.8)	70	50(48.44)	<b>32</b>	14.4	8.5	32	46	5	1.6	3
	<b>13125RS</b>	●	125(127.9)	139(135.8)	80	63(61.44)	<b>40</b>	16.4	9.5	29	52	6	2.8	1
	<b>13160RS</b>	●	160(162.9)	174(170.8)	100	63(61.44)	<b>40</b>	16.4	9.5	29	88	7	4.5	5
	<b>13200RS</b>	●	200(202.9)	214(210.8)	130	63(61.44)	<b>60</b>	25.7	14	35	130	8	7.1	6
Inch	<b>13250RS</b>	●	250(252.9)	264(260.8)	130	63(61.44)	<b>60</b>	25.7	14	35	160	10	10.6	6
	<b>DGC 13080R</b>	●	80(82.9)	94(90.8)	60	50(48.44)	<b>25.4</b>	9.5	6	25	20	4	1.2	1
	<b>13100R</b>	●	100(102.9)	114(110.8)	70	63(61.44)	<b>31.75</b>	12.7	8	32.5	28	5	2.2	2
	<b>13125R</b>	●	125(127.9)	139(135.8)	80	63(61.44)	<b>38.1</b>	15.9	10	35.5	55	6	2.8	1
	<b>13160R</b>	●	160(162.9)	174(170.8)	100	63(61.44)	<b>50.8</b>	19.1	11	38	72	7	4.5	4
	<b>13200R</b>	●	200(202.9)	214(210.8)	130	63(61.44)	<b>47.625</b>	25.4	14	35	130	8	7.1	6
	<b>13250R</b>	●	250(252.9)	264(260.8)	130	63(61.44)	<b>47.625</b>	25.4	14	35	150	10	11.0	6

() indicates value for ONMT/ONET type inserts.

Inserts are sold separately. Sizes ø160mm and above do not have coolant holes.

For mounting the ø80 and ø100mm sized cutters marked with \* to an arbor, use a JIS B1176 hex socket bolt (ø80: M12 x 30 to 35mm, ø100: M16 x 40 to 45mm).

## Insert

Dimensions (mm)

Grade Classification		Coated Carbide										Cemented Carbide	DLC	Cermet			
Process	High-speed/Light Cutting																
	Medium Cutting																
	Roughing																
Cat. No.		ACU2500	ACP100	ACP200	ACP300	ACK200	ACK300	ACS1000	ACS2500	ACS3000	ACM200	ACM300	H1	EH520	DL1000	T4500A	Fig
SNMT 13T6ANER-L		●	●	●	●	●	●						—		—	—	1
13T6ANER-G		●	●	●	●	●	●		●	●				●	—	—	1
13T6ANER-H		●	●	●	●	●	●						—	—	—	—	1
13T6ANER-FL		●	●	●	●	●	●						—	—	—	—	2
13T6ANER-FG		●	●	●	●	●	●		●	●			—	—	—	—	2
SNET 13T6ANER-L											▲	▲					1
13T6ANER-G									●	●	▲	▲					1
13T6ANER-FL											▲	▲					2
13T6ANER-FG											▲	▲					2
13T6ANFR-S													●		●		1
XNEU 13T6ANER-W		●		●			●									●	3
ONMT 05T6ANER-L		●	●	●	●	●	●						—		—	—	4
05T6ANER-G		●	●	●	●	●	●		●	●					—	—	4
ONET 05T6ANER-L											▲	▲					4
05T6ANER-G											▲	▲					4

Fig 1 8-cornered

Fig 2 8-cornered

Fig 3 Wiper Insert

Fig 4 16-cornered

Wiper inserts can only be used in combination with 8-cornered inserts (SNMT/SNET).

Fig 1 8-cornered

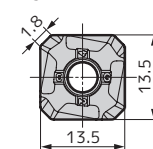


Fig 2 8-cornered

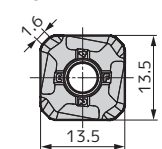


Fig 3 Wiper Insert

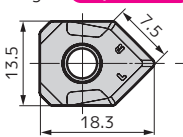
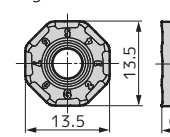


Fig 4 16-cornered

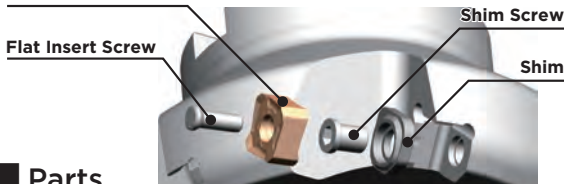


Wiper inserts can only be used in combination with 8-cornered inserts (SNMT/SNET).

The ACP100 and ACK200 may vary in colour or lustre, but these variations do not affect the performance. Refer to P.3 "Precautions When Using Wiper Inserts With Holes" (Mounting Precautions).

Recommended Cutting Conditions **P.3**

### Insert



## Identification Code

**DGC 13 040 R S**

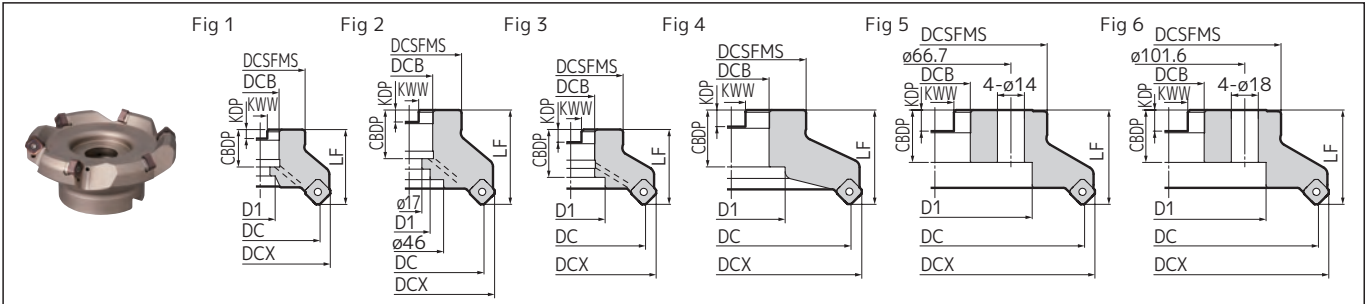
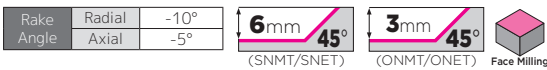
Series Code      Insert Size      Dia.      Feed Direction      Metric Bore

## Parts

Applicable Cutter	Shim	Shim Screw	Wrench	Flat Insert Screw	Integrated Wrench	Detachable Wrench	Anti-seizure Cream	Flat Insert Screw (*)
DC ø40 to 125	DGCS13R	BW0609F	LH040	BFTX0412IP	<b>3.0</b>	—	—	—
Other than above	—	—	—	—	TRDR15IP	HPS1015	TRB15IP	SUMI-P
						—	—	—

\*Insert corners can be changed simply by loosening the screw. Only applies to ø80mm size DGC/DGCM types.

Recommended Tightening Torque (N·m)    ● mark: Standard stocked item    ● mark: Standard stocked item (expanded item)    ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)    Blank: Made-to-order item    — mark: Not available



## Body (Fine Pitch)

Dimensions (mm)

Cat. No.	Stock	Dia. DC	Max. Dia. DCX	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CDBP	Bolt D1	Number of Teeth	Weight (kg)	Fig
<b>DGCM 13050RS</b>	●	50(52.9)	64(60.8)	40	40(38.44)	22	10.4	6.3	20	18	4	0.3	1
<b>13063RS</b>	●	63(65.9)	77(73.8)	50	40(38.44)	22	10.4	6.3	20	18	5	0.5	1
<b>13080RS</b>	●	80(82.9)	94(90.8)	60	50(48.44)	27	12.4	7	25	20	6	1.1	1
<b>13100RS</b>	●	100(102.9)	114(110.8)	70	50(48.44)	32	14.4	8.5	32	46	7	1.5	3
<b>13125RS</b>	●	125(127.9)	139(135.8)	80	63(61.44)	40	16.4	9.5	29	52	8	2.8	1
<b>13160RS</b>	●	160(162.9)	174(170.8)	100	63(61.44)	40	16.4	9.5	29	88	10	4.6	5
<b>13200RS</b>	●	200(202.9)	214(210.8)	130	63(61.44)	60	25.7	14	35	130	12	7	6
<b>13250RS</b>	●	250(252.9)	264(260.8)	130	63(61.44)	60	25.7	14	35	160	14	10.5	6
<b>DGCM 13080R</b>	●	80(82.9)	94(90.8)	60	50(48.44)	25.4	9.5	6	25	20	6	1.1	1
<b>13100R</b>	●	100(102.9)	114(110.8)	70	63(61.44)	31.75	12.7	8	32.5	28	7	2.2	2
<b>13125R</b>	●	125(127.9)	139(135.8)	80	63(61.44)	38.1	15.9	10	35.5	55	8	2.8	1
<b>13160R</b>	●	160(162.9)	174(170.8)	100	63(61.44)	50.8	19.1	11	38	72	10	4.6	4
<b>13200R</b>	●	200(202.9)	214(210.8)	130	63(61.44)	47.625	25.4	14	35	130	12	7	6
<b>13250R</b>	●	250(252.9)	264(260.8)	130	63(61.44)	47.625	25.4	14	35	150	14	11.0	6

( ) indicates value for ONMT/ONET type inserts. Inserts are sold separately. Sizes ø160mm and above do not have coolant holes.

For mounting the ø80 and ø100mm sized cutters marked with \* to an arbor, use a JIS B1176 hex socket bolt (ø80: M12 x 30 to 35mm, ø100: M16 x 40 to 45mm).

## Insert

Dimensions (mm)

Grade Classification		Coated Carbide										Cemented Carbide	DLC	Cermet			
Process	High-speed/Light Cutting																
	Medium Cutting																
	Roughing																
Cat. No.		ACU2500	ACP100	ACP200	ACP300	ACK200	ACK300	ACS1000	ACS2500	ACS3000	ACM200	ACM300	H1	EH520	DL1000	T4500A	Fig
SNMT 13T6ANER-L		●	●	●	●	●	●						—		—	—	1
13T6ANER-G		●	●	●	●	●	●		●	●			●		—	●	1
13T6ANER-H		●	●	●	●	●	●						—		—	—	1
13T6ANER-FL		●	●	●	●	●	●						—		—	—	2
13T6ANER-FG		●	●	●	●	●	●		●	●			—		—	—	2
SNET 13T6ANER-L											▲	▲					1
13T6ANER-G									●	●	▲	▲					1
13T6ANER-FL											▲	▲					2
13T6ANER-FG											▲	▲					2
13T6ANFR-S													●		●		1
XNEU 13T6ANEN-W		●		●			●									●	3
ONMT 05T6ANER-L		●	●	●	●	●	●						—		—	—	4
05T6ANER-G		●	●	●	●	●	●		●	●			—		—	—	4
ONET 05T6ANER-L											▲	▲					4
05T6ANER-G											▲	▲					4

Fig 1 8-cornered

Fig 2 8-cornered

Fig 3 Wiper Insert

Fig 4 16-cornered

Wiper inserts can only be used in combination with 8-cornered inserts (SNMT/SNET).

Fig 1 8-cornered

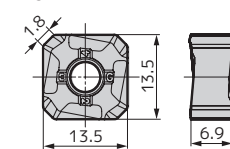


Fig 2 8-cornered

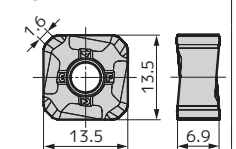


Fig 3 Wiper Insert

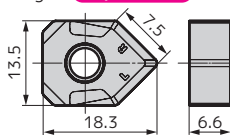
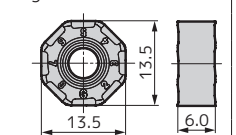


Fig 4 16-cornered



Wiper inserts can only be used in combination with 8-cornered inserts (SNMT/SNET).

The ACP100 and ACK200 may vary in colour or lustre, but these variations do not affect the performance. Refer to P.3 "Precautions When Using Wiper Inserts With Holes" (Mounting Precautions).

Recommended Cutting Conditions **P.3**

### Insert



### Identification Code

**DGC M 13 050 R S**  
 Series Code Fine Pitch Insert Size Dia. Feed Metric Bore

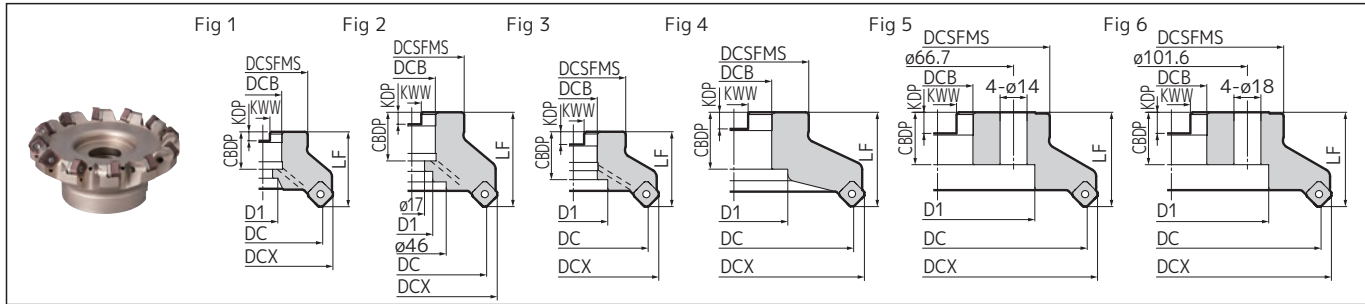
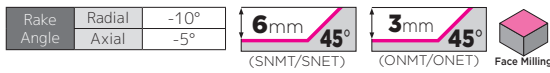
### Parts

Applicable Cutter	Shim	Shim Screw	Wrench	Flat Insert Screw	Integrated Wrench	Detachable Wrench	Anti-seizure Cream	Flat Insert Screw (*)
DC ø50 to 125	DGCS13R	BW0609F	LH040	BFTX0412IP	—	HPS1015	TRB15IP	BFTX0418IP
Other than above					TRDR15IP	—	—	

\*Insert corners can be changed simply by loosening the screw. Only applies to ø80mm size DGC/DGCM types.

Recommended Tightening Torque (N·m) ● mark: Standard stocked item ● mark: Standard stocked item (expanded item) ▲ Mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability) Blank: Made-to-order item — mark: Not available





## Body (Extra Fine Pitch)

Dimensions (mm)

Cat. No.	Stock	Dia. DC	Max. Dia. DCX	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CBDP	Bolt D1	Number of Teeth	Weight (kg)	Fig
<b>Metric</b>													
<b>DGCF 13050RS</b>	●	50(52.9)	64(60.8)	40	40(38.44)	22	10.4	6.3	20	18	5	0.3	1
<b>13063RS</b>	●	63(65.9)	77(73.8)	50	40(38.44)	22	10.4	6.3	20	18	6	0.5	1
<b>13080RS</b>	●	80(82.9)	94(90.8)	60	50(48.44)	27	12.4	7	25	20	8	1.1	1
<b>13100RS</b>	●	100(102.9)	114(110.8)	70	50(48.44)	32	14.4	8.5	32	46	10	1.4	3
<b>13125RS</b>	●	125(127.9)	139(135.8)	80	63(61.44)	40	16.4	9.5	29	52	12	2.7	1
<b>13160RS</b>	●	160(162.9)	174(170.8)	100	63(61.44)	40	16.4	9.5	29	88	14	4.4	5
<b>13200RS</b>	●	200(202.9)	214(210.8)	130	63(61.44)	60	25.7	14	35	130	16	6.9	6
<b>13250RS</b>	●	250(252.9)	264(260.8)	130	63(61.44)	60	25.7	14	35	160	18	10.4	6
<b>Inch</b>													
<b>DGCF 13080R</b>	●	80(82.9)	94(90.8)	60	50(48.44)	25.4	9.5	6	25	20	8	1.1	1
<b>13100R</b>	●	100(102.9)	114(110.8)	70	63(61.44)	31.75	12.7	8	32.5	28	10	2.1	2
<b>13125R</b>	●	125(127.9)	139(135.8)	80	63(61.44)	38.1	15.9	10	35.5	55	12	2.7	1
<b>13160R</b>	●	160(162.9)	174(170.8)	100	63(61.44)	50.8	19.1	11	38	72	14	4.4	4
<b>13200R</b>	●	200(202.9)	214(210.8)	130	63(61.44)	47.625	25.4	14	35	130	16	6.9	6
<b>13250R</b>	●	250(252.9)	264(260.8)	130	63(61.44)	47.625	25.4	14	35	150	18	10.9	6

( ) indicates value for ONMT/ONET type inserts. Inserts are sold separately. Sizes ø160mm and above do not have coolant holes.

For mounting the ø80 and ø100mm sized cutters marked with \* to an arbor, use a JIS B1176 hex socket bolt (ø80: M12 x 30 to 35mm, ø100: M16 x 40 to 45mm).

## Insert

Dimensions (mm)

Grade Classification		Coated Carbide										Cemented Carbide	DLC	Cermet			
Process	High-speed/Light Cutting																
	Medium Cutting																
	Roughing																
Cat. No.		ACU2500	ACP100	ACP200	ACP300	ACK200	ACK300	ACS1000	ACS2500	ACS3000	ACM200	ACM300	H1	EH520	DL1000	T4500A	Fig
SNMT 13T6ANER-L		●	●	●	●	●	●						—		—	—	1
13T6ANER-G		●	●	●	●	●	●		●	●			●		—	—	1
13T6ANER-H		●	●	●	●	●	●						—		—	—	1
13T6ANER-FL		●	●	●	●	●	●						—		—	—	2
13T6ANER-FG		●	●	●	●	●	●		●	●			—		—	—	2
SNET 13T6ANER-L											▲	▲					1
13T6ANER-G									●	●	▲	▲					1
13T6ANER-FL											▲	▲					2
13T6ANER-FG											▲	▲					2
13T6ANFR-S													●		●		1
XNEU 13T6ANEN-W		●		●			●									●	3
ONMT 05T6ANER-L		●	●	●	●	●	●						—		—	—	4
05T6ANER-G		●	●	●	●	●	●		●	●			—		—	—	4
ONET 05T6ANER-L											▲	▲					4
05T6ANER-G											▲	▲					4

Fig 1 8-cornered

Fig 2 8-cornered

Fig 3 Wiper Insert

Fig 4 16-cornered

Wiper inserts can only be used in combination with 8-cornered inserts (SNMT/SNET).

The ACP100 and ACK200 may vary in colour or lustre, but these variations do not affect the performance.

Refer to P.3 "Precautions When Using Wiper Inserts With Holes" (Mounting Precautions).

Recommended Cutting Conditions **P.3**

### Insert



## Identification Code

**DGC F 13 050 R S**

Series Code Extra Fine Pitch Insert Size Dia. Feed Metric Direction Bore

## Parts

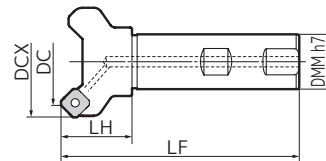
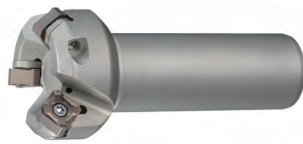
Applicable Cutter	Shim	Shim Screw	Wrench	Flat Insert Screw	Integrated Wrench	Detachable Wrench	Anti-seizure Cream	Flat Insert Screw (*)
DC ø50 to 125	DGCS13R	BW0609F	LH040	BFTX0412IP	<b>Nm 3.0</b>	—	—	—
Other than above	—	—	—	—	TRDR15IP	HPS1015	TRB15IP	SUMI-P
	—	—	—	—	—	—	—	—

\*Insert corners can be changed simply by loosening the screw. Only applies to ø80mm size DGC/DGCM types.

**Nm** Recommended Tightening Torque (N·m) ● mark: Standard stocked item ● mark: Standard stocked item (expanded item) ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability) Blank: Made-to-order item — mark: Not available

Rake Angle	Radial	-10°	6mm	45°	3mm	45°	Face Milling
	Axial	-5°	(SNMT/SNET)	(ONMT/ONET)			

Fig 1



## Body (Shank type)

Dimensions (mm)

Cat. No.	Stock	Dia. DC	Max. Dia. DCX	Shank DMM	Head LH	Overall Length LF	Number of Teeth	Weight (kg)	Fig
DGC 13040EW	●	40(42.9)	54(50.8)	32	40(38.44)	125	3	0.7	1
13050EW	●	50(52.9)	64(60.8)	32	40(38.44)	125	3	0.9	1
13063EW	●	63(65.9)	77(73.8)	32	40(38.44)	125	4	1.1	1

( ) indicates value for ONMT/ONET type inserts.

Inserts are sold separately.

## Insert

Dimensions (mm)

Grade Classification		Coated Carbide										Cemented Carbide	DLC	Cermet	Fig		
Process	High-speed/Light Cutting																
	Medium Cutting																
	Roughing																
Cat. No.		ACU2500	ACP100	ACP200	ACP300	ACK200	ACK300	ACS1000	ACS2500	ACS3000	ACM200	ACM300	H1	EH520	DL1000	T4500A	
SNMT 13T6ANER-L		●	●	●	●	●	●						—		—	—	1
13T6ANER-G		●	●	●	●	●	●		●	●			—	●	—	●	1
13T6ANER-H		●	●	●	●	●	●						—	—	—	—	1
13T6ANER-FL		●	●	●	●	●	●						—	—	—	—	2
13T6ANER-FG		●	●	●	●	●	●		●	●			—	—	—	—	2
SNET 13T6ANER-L											▲	▲					1
13T6ANER-G									●	●	▲	▲					1
13T6ANER-FL											▲	▲					2
13T6ANER-FG											▲	▲					2
13T6ANFR-S													●		●		1
XNEU 13T6ANEN-W		●		●			●									●	3
ONMT 05T6ANER-L		●	●	●	●	●	●						—		—	—	4
05T6ANER-G		●	●	●	●	●	●		●	●			—		—	—	4
ONET 05T6ANER-L											▲	▲					4
05T6ANER-G											▲	▲					4

Fig 1 8-cornered

Fig 2 8-cornered

Fig 3 Wiper Insert

Fig 4 16-cornered

Wiper inserts can only be used in combination with 8-cornered inserts (SNMT/SNET).

Fig 1 8-cornered

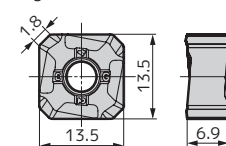


Fig 2 8-cornered

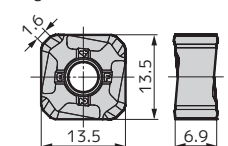


Fig 3 Wiper Insert

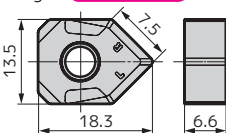
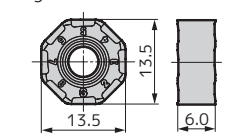


Fig 4 16-cornered

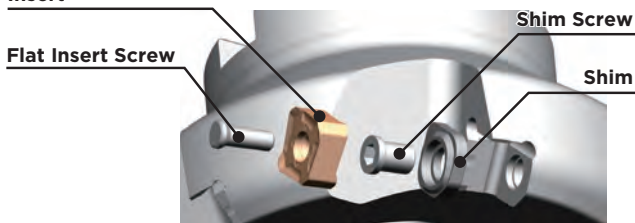


Wiper inserts can only be used in combination with 8-cornered inserts (SNMT/SNET).

The ACP100 and ACK200 may vary in colour or lustre, but these variations do not affect the performance. Refer to P.3 "Precautions When Using Wiper Inserts With Holes" (Mounting Precautions).

Recommended Cutting Conditions **P.3**

## Insert



## Identification Code

**DGC 13 040 EW**

Series Code Insert Size Dia. Shank type

## Parts

Shim	Shim Screw	Wrench	Flat Insert Screw	Wrench	Anti-seizure Cream
DGCS13R	BW0609F	LH040	BFTX0412IP	3.0	TRDR151P

# MEMO

A large rectangular area filled with a uniform grid of small dots, intended for handwritten notes or a drawing.



# MEMO

A large rectangular area filled with a uniform grid of small dots, intended for writing or drawing. The grid consists of 20 columns and 30 rows of dots.



- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.

#### < SAFETY NOTES >

- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.

- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.



# Sumitomo Electric Industries, Ltd.

## Hardmetal Division

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<https://www.sumitool.com/global>