

Milling Cutter for General Face Milling

# WGX Type



- Top performance parameters
- Highest quality
- Stable and long tool life



 **SUMITOMO**

CARBIDE - CBN - DIAMOND

# Wavemill Series WGX Type



## General Features

The Wavemill WGX Type employs unique chipbreaker design to provide lower cutting resistance and higher quality surface finishes than conventional tools.

## Series

Type	Cat. No.	Cutter	No. of Teeth
Standard Pitch	WGX 13000RS	Ø40 ~ Ø250	3 ~ 10
Medium Pitch	WGXM 13000RS	Ø50 ~ Ø250	4 ~ 14
Fine Pitch	WGXF 13000RS	Ø50 ~ Ø250	5 ~ 24
Endmill Type	WGX 13000EW	Ø32 ~ Ø63	3 ~ 5

Inner coolant available for  $D_c \leq \text{Ø}125\text{mm}$

## Characteristics

### Stable Cutting

Special chipbreaker designed for WGX enables lower cutting forces.

### High Quality

Improved run-out precision and unique wiper edge shape ensure excellent surface finish quality. Optimised chamfer edge reduces burr and edge chipping.

### Long Tool Life

Features high precision technology that reduces insert run-out variation and a new coating to provide stable and long tool life.

## Insert Shape Characteristics

Unique wiper edge shape for improved surface roughness

General-purpose G type chipbreaker

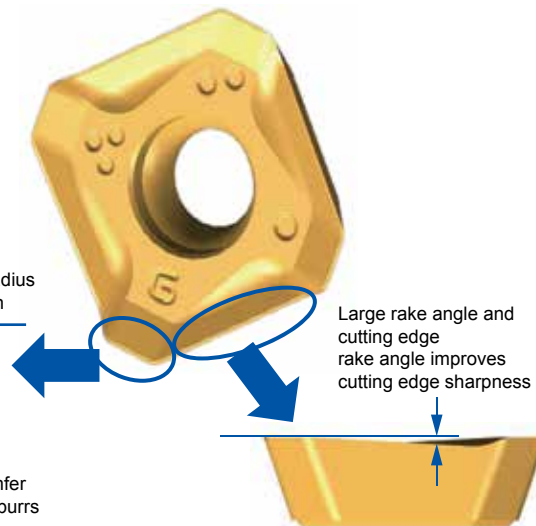


Optimal nose radius for high strength

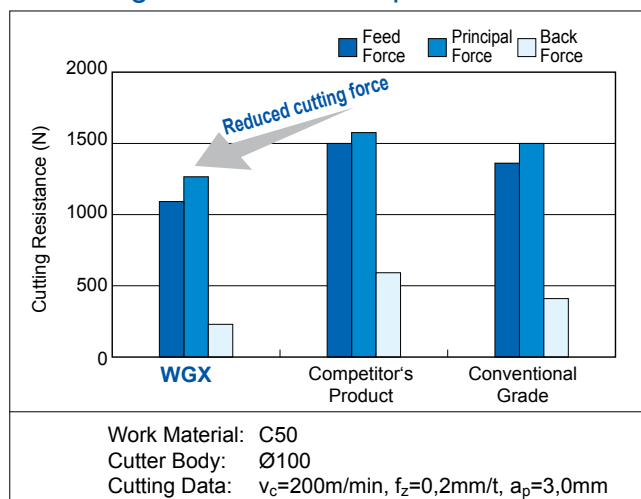
Low-burr design FG type chipbreaker



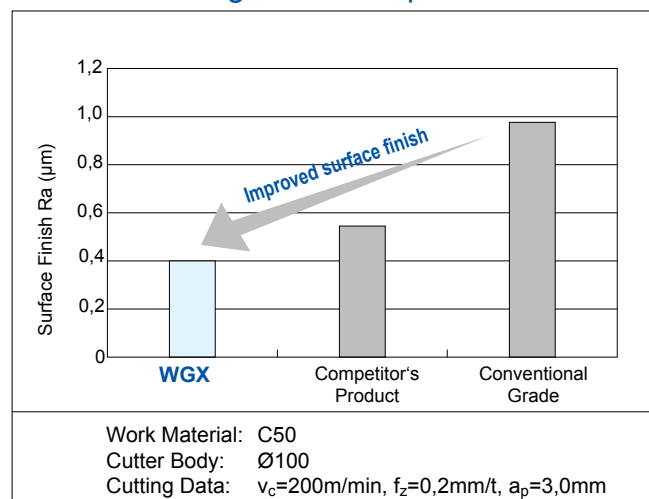
Optimised chamfer shape reduces burrs on cutting edge



## Cutting Resistance Comparison



## Surface Roughness Comparison



# Wavemill Series WGX(M/F) 13000RS Type

## General Milling of Steel and Cast Iron

### Body – Shell Type



Rake Angle	Radial	-20° ~ -24°	
	Axial	20° ~ 22°	

Fig. 1

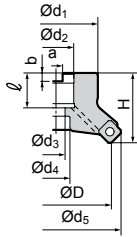


Fig. 2

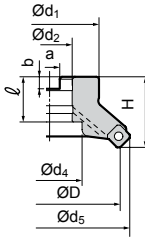


Fig. 3

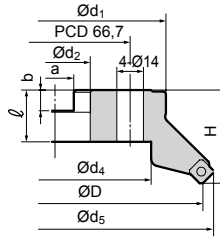
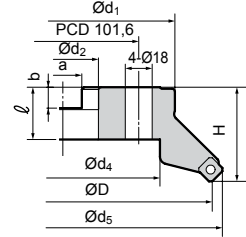


Fig. 4



Inner coolant available for  $D_c \leq \varnothing 125\text{mm}$

### Body – Dimensions

#### ● Type: WGX, Standard Pitch

Cat. No.	Stock	Dimension (mm)				Mounting						No. of Teeth	Weight (kg)	Fig.
		$\varnothing D$	$\varnothing d_5$	$\varnothing d_1$	H	$\varnothing d_2$	$\varnothing d_4$	$\varnothing d_3$	a	b	$\ell$			
WGX 13040 RS	●	40	52	32	40	16	14,0	9,0	8,4	5,6	18	3	0,3	1
WGX 13050 RS	●	50	62	40	40	22	18,0	11,0	10,4	6,3	20	3	0,4	1
WGX 13063 RS	●	63	76	50	40	22	18,0	11,0	10,4	6,3	20	4	0,6	1
WGX 13080 RS	●	80	93	55	50	27	20,0	13,5	12,4	7,0	25	4	1,2	1
WGX 13100 RS	●	100	113	70	50	32	46,0	-	14,4	8,5	32	5	1,6	2
WGX 13125 RS	●	125	138	80	63	40	52,0	29,0	16,4	9,5	29	6	2,8	1
WGX 13160 RS	●	160	173	130	63	40	88,0	-	16,4	9,5	29	7	4,5	3
WGX 13200 RS	●	200	213	150	63	60	130,0	-	25,7	14,0	35	8	7,1	4
WGX 13250 RS	□	250	263	190	63	60	160,0	-	25,7	14,0	35	10	11,2	4

#### ● Type: WGXM, Medium Pitch

Cat. No.	Stock	Dimension (mm)				Mounting						No. of Teeth	Weight (kg)	Fig.
		$\varnothing D$	$\varnothing d_5$	$\varnothing d_1$	H	$\varnothing d_2$	$\varnothing d_4$	$\varnothing d_3$	a	b	$\ell$			
WGXM 13050 RS	●	50	62	40	40	22	18,0	11,0	10,4	6,3	20	4	0,4	1
WGXM 13063 RS	●	63	77	50	40	22	18,0	11,0	10,4	6,3	20	5	0,6	1
WGXM 13080 RS	●	80	94	55	50	27	20,0	13,5	12,4	7,0	25	6	1,1	1
WGXM 13100 RS	●	100	114	70	50	32	46,0	-	14,4	8,5	32	7	1,6	2
WGXM 13125 RS	●	125	139	80	63	40	52,0	29,0	16,4	9,5	29	8	2,8	1
WGXM 13160 RS	●	160	174	130	63	40	88,0	-	16,4	9,5	29	10	4,5	3
WGXM 13200 RS	●	200	214	150	63	60	130,0	-	25,7	14,0	35	12	7,0	4
WGXM 13250 RS	□	250	264	190	63	60	160,0	-	25,7	14,0	35	14	11,1	4

#### ● Type: WGXF, Fine Pitch

Cat. No.	Stock	Dimension (mm)				Mounting						No. of Teeth	Weight (kg)	Fig.
		$\varnothing D$	$\varnothing d_5$	$\varnothing d_1$	H	$\varnothing d_2$	$\varnothing d_4$	$\varnothing d_3$	a	b	$\ell$			
WGXF 13050 RS	●	50	62	40	40	22	18,0	11,0	10,4	6,3	20	5	0,4	1
WGXF 13063 RS	●	63	77	50	40	22	18,0	11,0	10,4	6,3	20	6	0,6	1
WGXF 13080 RS	●	80	94	55	50	27	20,0	13,5	12,4	7,0	25	8	1,1	1
WGXF 13100 RS	●	100	114	70	50	32	46,0	-	14,4	8,5	32	10	1,5	2
WGXF 13125 RS	●	125	139	80	63	40	52,0	29,0	16,4	9,5	29	12	2,7	1
WGXF 13160 RS	●	160	174	130	63	40	88,0	-	16,4	9,5	29	16	4,5	3
WGXF 13200 RS	●	200	214	150	63	60	130,0	-	25,7	14,0	35	20	6,9	4
WGXF 13250 RS	□	250	264	190	63	60	160,0	-	25,7	14,0	35	24	11,0	4

□ Delivery on request

● Euro stock

Inserts are not included.

Note: Please use screw according to JIS B1176 for securing  $\varnothing 80/\varnothing 100$  cutter to the arbor ( $\varnothing 80 \Rightarrow M12 \times 30$  to 35mm,  $\varnothing 100 \Rightarrow M16 \times 40$  to 45mm)

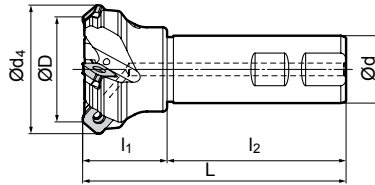
### Identification Details

<b>WGX</b>	<b>M</b>	<b>13</b>	<b>050</b>	<b>R</b>	<b>S</b>
Cutter Series	M: Medium F: Fine	Insert Size	Cutter Diameter	Direction	Metric

# Wavemill Series WGX 13000EW Type

## General Milling of Steel and Cast Iron

### ■ Body – Shank Type



Rake Angle	Radial	-20° ~ 24°	
	Axial	20° ~ 22°	

### ■ Body – Dimensions

Cat. No.	Stock	Dimension (mm)						No. of Teeth
		ØD	Ød <sub>4</sub>	Ød	l <sub>1</sub>	l <sub>2</sub>	L	
WGX 13032 EW	○	32	44	32	40	85	125	3
WGX 13040 EW	○	40	52	32	40	85	125	3
WGX 13050 EW	○	50	62	32	40	85	125	4
WGX 13063 EW	○	63	76	32	40	85	125	5

○ Japan stock      Inserts are not included. Ø32mm size does not have seats.

### ■ Identification Details

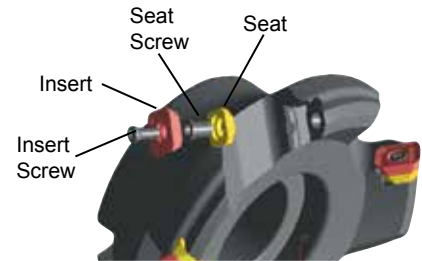
<b>WGX</b>	<b>13</b>	<b>032</b>	<b>EW</b>
Cutter Series	Insert Size	Cutter Diameter	Endmill Type Weldon

### ■ Inserts + Grades

**P** Steel      **K** Cast Iron      **M** Stainless Steel      **S** Exotic Alloy

Application	Coated Carbide						Fig.
	P	M	M	K	M	S	
High Speed/Light cut	P			K		M	Fig.1
General Purpose	P	M	M	K	M	S	
Roughing	P	M	M	K	M	S	Fig.2
Cat. No.	ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	
SEMT 13T3AGSR L	●	●	●	●	●	●	1
SEMT 13T3AGSR G	●	●	●	●	●	●	1
SEMT 13T3AGSR H	●	●	●	●	●	●	1
SEMT 13T3AGSR FG	●	●	●	●	●	●	2

● Euro stock



### ■ Spare Parts

Applicable Cutters	Seat	Seat Screw	Insert Screw	Spanner (for Insert)	Torque (N·m)	Spanner (for Seat)
WGX(M/F)13000	WGCS13R	BW0507F	BFTX03512IP	TRDR15IP	3,0	LH035
WGX13032EW	-	-	BFTX03512IP	TRDR15IP	3,0	-

### ■ Recommended Cutting Conditions

ISO	Work Material	Hardness	Cutting Speed v <sub>c</sub> (m/min)	Feed Rate f <sub>z</sub> (mm/t)	Grade
<b>P</b>	General Steel	180~280HB	150- <b>200</b> -250	0,10- <b>0,20</b> -0,30	ACP200
	Soft Steel	≤180HB	180- <b>265</b> -350	0,10- <b>0,25</b> -0,40	ACP200
	Die Steel	200~220HB	100- <b>150</b> -200	0,15- <b>0,20</b> -0,25	ACP200
<b>M</b>	Stainless Steel	-	160- <b>205</b> -250	0,15- <b>0,23</b> -0,30	ACM300
<b>K</b>	Cast Iron	250HB	100- <b>175</b> -250	0,15- <b>0,23</b> -0,30	ACK200
<b>S</b>	Super Alloy	-	30- <b>50</b> - 80	0,10- <b>0,20</b> -0,30	AC300M

Minimum-Optimum-Maximum



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