

# Experience the Power of SumiTurn **B-Groove**

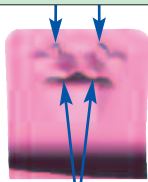
**New**



**Excellent chip control when grooving !**

■ Unique Chipbreaker

Reliable chip control  
even at low feed rates



Bumpy geometry manages  
shape and length of chip



**SUMITOMO**

CARBIDE - CBN - DIAMOND

# SumiTurn B-Groove Insert TGA-BF Type

Indexable insert grooving system with triangular inserts  
and integral chipbreaker for external and internal grooving



## Characteristics

- Outstanding chip control when grooving
- Excellent chip control when finishing wide grooves using axial feed
- Grooving inserts from 1,5mm - 4,5mm wide
- New grade **AC530U** with Super ZX ultra hard coating for Steels, Stainless Steels, and Non Ferrous metals increases productivity and extends tool life

## Performance

### Comparison of chip control

Insert: **TGAR4200BF**, Work material: 34CrMo4  
Cutting data:  $vc = 120$  m/min, Wet

f (mm/rev)	0,05	0,07	0,1
<b>B-Groove</b>			
Conventional insert with ground chip-breaker			

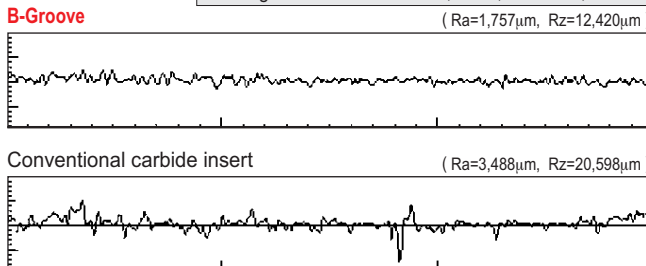
### Chip control whilst traversing

Insert: **TGAR4200BF**, Work material: 34CrMo4  
Cutting data:  $vc = 120$  m/min, Wet

f (mm/rev)	0,03	0,05	0,07	0,1
<b>B-Groove</b>				

### Comparison of surface roughness along sidewall

Insert: **TGAR4200BF**, Work material: 34CrMo4  
Cutting data:  $vc = 120$  m/min,  $f = 0,07$  mm/rev, Wet



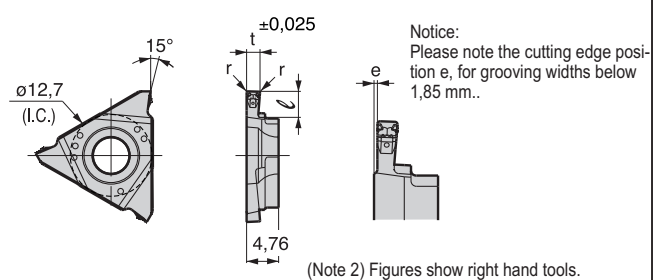
## Recommended Cutting Conditions

### Grooving

Wet condition is recommended.

Work material	General steel	Stainless steel	
Cutting speed (m/min)	50 ~ 180	50 ~ 160	
Groove width (mm)	1,5-2,3	2,5-3,3	
Feed rate (mm/rev)	0,03-0,12	0,04-0,12	
Depth of cut (mm)	Ext.	~3,5	~5,0
	Int.	~3,5	~2,5

## Inserts



Cat. No.	Coated		Dimensions (mm)				Applicable holder & insert group
	AC530U		t	l	r	e	
<b>TGA R/L 4145BF</b>	●	●	1,45	2,5 (2,0)	0,2	0,275	①
<b>TGA R/L 4150BF</b>	●	●	1,50	3,9		0,250	
<b>TGA R/L 4165BF</b>	○	○	1,65		External (3,5) Internal (2,5)	0,175	②
<b>TGA R/L 4175BF</b>	○	○	1,75	0,125			
<b>TGA R/L 4185BF</b>	○	○	1,85	0,3	0	③	
<b>TGA R/L 4200BF</b>	●	●	2,00				
<b>TGA R/L 4220BF</b>	○	○	2,20	5,4	0,4		
<b>TGA R/L 4230BF</b>	○	○	2,30				
<b>TGA R/L 4250BF</b>	●	●	2,50	External (5,0) Internal (2,5)	0,4		
<b>TGA R/L 4265BF</b>	○	○	2,65				
<b>TGA R/L 4270BF</b>	○	○	2,70	0,4			
<b>TGA R/L 4280BF</b>	○	○	2,80				
<b>TGA R/L 4300BF</b>	●	●	3,00	0,4			
<b>TGA R/L 4320BF</b>	○	○	3,20				
<b>TGA R/L 4330BF</b>	○	○	3,30	0,4			
<b>TGA R/L 4350BF</b>	●	●	3,50				
<b>TGA R/L 4370BF</b>	○	○	3,70	0,4			
<b>TGA R/L 4390BF</b>	○	○	3,90				
<b>TGA R/L 4400BF</b>	●	●	4,00	0,4			
<b>TGA R/L 4410BF</b>	○	○	4,10				
<b>TGA R/L 4420BF</b>	○	○	4,20	0,4			
<b>TGA R/L 4430BF</b>	○	○	4,30				
<b>TGA R/L 4440BF</b>	○	○	4,40	0,4			
<b>TGA R/L 4450BF</b>	●	●	4,50				

● = Euro stock  
○ = Delivery on request

### Axial Feed

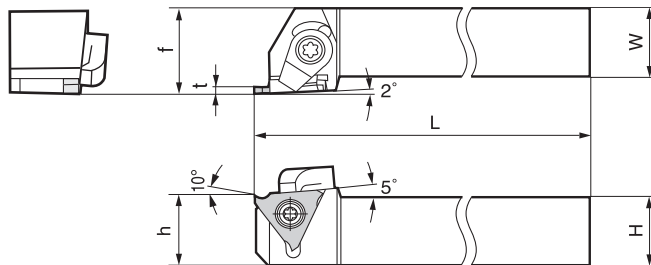
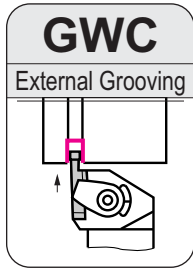
Feed direction for Axial Feed

Wet condition is recommended.

Work material	General steel	Stainless steel
Cutting speed (m/min)	50 ~ 180	50 ~ 160
Feed rate (mm/rev)	0,03-0,10	0,05-0,10
Depth of cut (mm)	~0,3	~0,5

# SumiTurn B-Groove Holders GWC/GWCS Type

## External Grooving



Figures show right hand tools.

### ■ Holders

Right handed tool holders are used with **right** handed inserts.

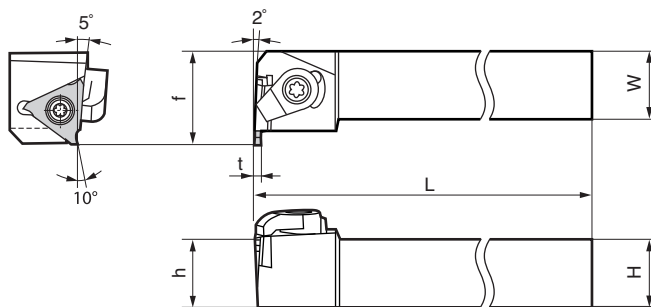
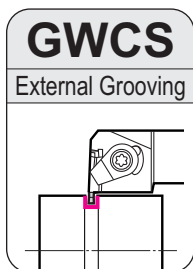
Cat. No.	Stock		Dimensions (mm)					Grooving width	Maximum Grooving Depth (mm)	Applicable Insert Group No.
	R	L	H	W	L	f	h	t (mm)		
GWC R/L 2020-15			20	20	125	25	20	1,25~1,45	2,0	①
GWC R/L 2020-25	●	●	20	20	125	25	20	1,50~2,30	3,5	②
GWC R/L 2020-35	●	●	20	20	125	25	20	2,50~4,80	5,0	③
GWC R/L 2525-15			25	25	150	30	25	1,25~1,45	2,0	①
GWC R/L 2525-25	●	●	25	25	150	30	25	1,50~2,30	3,5	②
GWC R/L 2525-35	●	●	25	25	150	30	25	2,50~4,80	5,0	③

\*) Please select applicable inserts for the holders by using matching group numbers.

### ■ Spare Parts

Screw	Wrench	Clamp	Screw	Wrench
BFTX 0509N	TRX 20	CCM 8U-R/L	WB 8-22T/TL	LT 27

● = Euro stock



Figures show right hand tools.

### ■ Holders

Right handed tool holders are used with **left** handed inserts.

Cat. No.	Stock		Dimensions (mm)					Grooving width	Maximum Grooving Depth (mm)	Applicable Insert Group No.
	R	L	H	W	L	f	h	t (mm)		
GWCS R/L 2020-15			20	20	125	27	20	1,25~1,45	2,0	①
GWCS R/L 2020-25	○	○	20	20	125	27	20	1,50~2,30	3,5	②
GWCS R/L 2020-35	○	○	20	20	125	27	20	2,50~4,80	5,0	③
GWCS R/L 2525-15			25	25	150	32	25	1,25~1,45	2,0	①
GWCS R/L 2525-25	○	○	25	25	150	32	25	1,50~2,30	3,5	②
GWCS R/L 2525-35	○	○	25	25	150	32	25	2,50~4,80	5,0	③

\*) Please select applicable inserts for the holders by using matching group numbers.

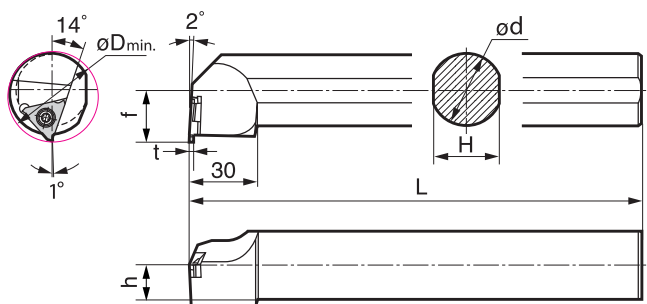
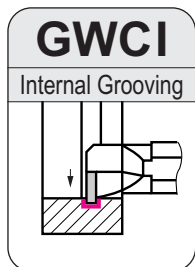
### ■ Spare Parts

Screw	Wrench	Clamp	Screw	Wrench
BFTX 0509N	TRX 20	CCM 8U-R/L	WB 8-22T/TL	LT 27

○ = Delivery on request

# SumiTurn B-Groove Boring Bars GWCI Type

## Internal Grooving



Figures show right hand tools.

### ■ Holders

Right handed tool holders are applicable with **left** handed inserts.

Cat. No.	Stock		Dimensions (mm)						Grooving width t (mm)	Maximum Grooving Depth (mm)	Applicable Insert Group No.
	R	L	$\varnothing D_{min}$	$\varnothing d$	L	H	h	f			
<b>GWCI R/L 325</b>			35	25	200	23	11,5	17,5	0,33~2,80	0,8~2,0	
<b>GWCI R/L 432</b>	○	○	40	32	250	30	15,0	17,5	1,25~4,80	2,0~2,5	1 2 3

\*1) Please select applicable inserts for the holders by using matching group numbers.

### ■ Spare Parts

Screw	Wrench
BFTX 0509N	TRX 20

○ = Delivery on request



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