

High Efficiency and High Precision  
Tangential Shoulder Milling Cutter

SEC-Sumi Dual Mill **TSX** Series

Rev. 3

**Excellent Surface  
Finish and Superior  
Toughness!**



**4** Corner  
Ground Insert



**New** Repeater type!!

# SEC-Sumi Dual Mill TSX Series

## Features

### Superior Surface Finish

Incredible accuracy and superior finish are achieved with use of ground inserts

### Excellent Cutting Edge Strength and Sharpness

Excellent cutting edge strength and sharpness are possible due to tangentially mounted inserts and optimized cutting edge shape.

### Wide Range of Product Offering

2 types of insert size, 3 types of chipbreaker, and a wide range of grades available for use in a variety of machining applications.



## Series

Face mill

● Number in circle indicates the number of teeth

Type	Cat. No.	Series	Diameter Range (mm)											Shape			
			ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø160		ø200	ø250	ø315
Shell	<b>TSX 08000RS</b>	Standard Pitch					4	5	6	7							
	<b>TSX 08000R</b> <small>Inch</small>	Standard Pitch								7							
	<b>TSXF 08000RS</b>	Extra-Fine Pitch					6	8	10	11							
	<b>TSXF 08000R</b> <small>Inch</small>	Extra-Fine Pitch								11							
	<b>TSX 13000RS</b>	Standard Pitch					3	4	5	5	6	7	8	12	14	16	
	<b>TSX 13000R</b> <small>Inch</small>	Standard Pitch								5	6	7	8	12	14	16	
	<b>TSXM 13000RS</b>	Fine Pitch					4	5	6	7	8	10	12	16	20	24	
	<b>TSXM 13000R</b> <small>Inch</small>	Fine Pitch								7	8	10	12	16	20	24	
	<b>TSXF 13000RS</b>	Extra-Fine Pitch					5	6	7	8	10	14	16				
	<b>TSXF 13000R</b> <small>Inch</small>	Extra-Fine Pitch								8	10	14	16				
Shank	<b>TSX 08000E</b>	Standard Pitch	2	2*	3*	3*	4	5	6	7							
	<b>TSXF 08000E</b>	Extra-Fine Pitch		3	4	5	6	8	10	11							
	<b>TSX 13000E</b>	Standard Pitch			2	2	3	4	5	5							
	<b>TSXM 13000E</b>	Fine Pitch				3	4	5	6	7							
	<b>TSXF 13000E</b>	Extra-Fine Pitch					5	6	7	8							

\* Different shank diameters in stock

Repeater

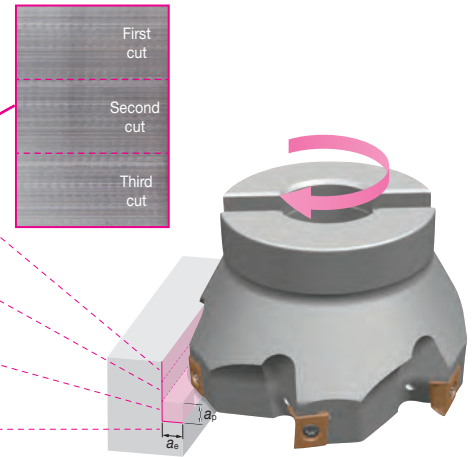
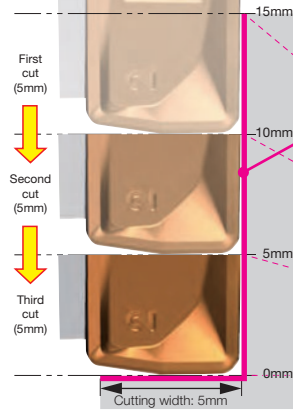
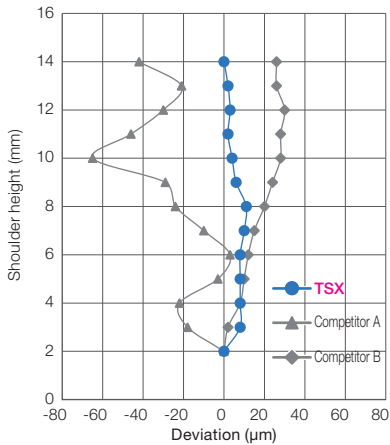
● Number in circle indicates the number of effective teeth

Type	Cat. No.	Diameter Range (mm)									Shape					
		ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100		ø125				
Shell	<b>TSXR 08000RS</b>				2	3	3	4	5							
	<b>TSXR 13000RS</b>					2	3		3	4	4	5	5	6	7	
Shank	<b>TSXR 08000E</b>		1	2	2	3										
	<b>TSXR 13000E</b>					2	3									



### Shoulder Squareness

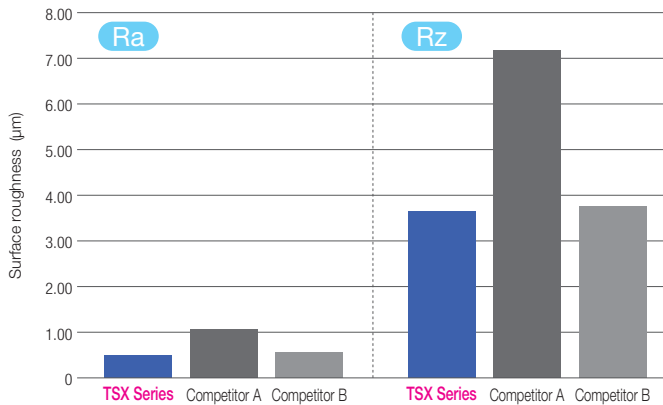
Achieved excellent squareness with high precision insert and optimized edge shape



Machine: Vertical M/C BT50, Part Material: S50C  
 Tool: TSX 13100R, Insert: L Nex 130608PNER-G (ACP200)  
 Cutting conditions:  $v_c=200\text{m/min}$ ,  $f_z=0.2\text{mm/t}$ ,  $a_p=5\text{mm}$  x 3 passes,  $a_e=5\text{mm}$  Dry

### Surface Finish

Optimized edge shape creates superior surface finish

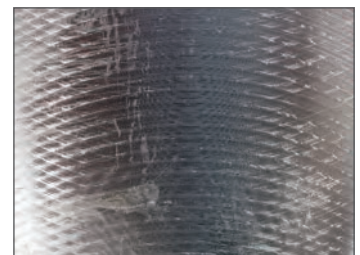


### Surface Finish Comparison

TSX Series  
Smooth Finish



Competitor  
Rough Finish



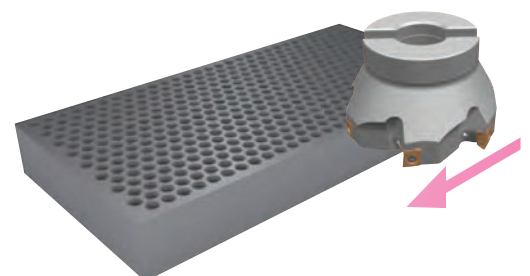
Machine: Vertical M/C BT50, Part Material: S50C  
 Tool: TSX 13100R, Insert: L Nex 130608PNER-G (ACP200)  
 Cutting conditions:  $v_c=200\text{m/min}$ ,  $f_z=0.2\text{mm/t}$ ,  $a_p=3\text{mm}$ ,  $a_e=60\text{mm}$  Dry

### Cutting Edge Strength

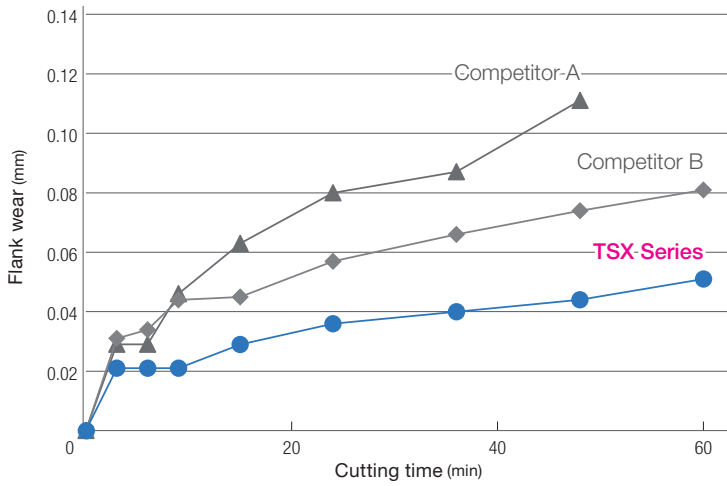
TSX Series has extremely strong cutting edge, allowing for high efficiency machining

Cutting length	1 pass = 300 mm		
	4 passes	8 passes	12 passes
TSX Series	Continuous Machining		
Competitor A	Breakage		
Competitor B	Breakage		

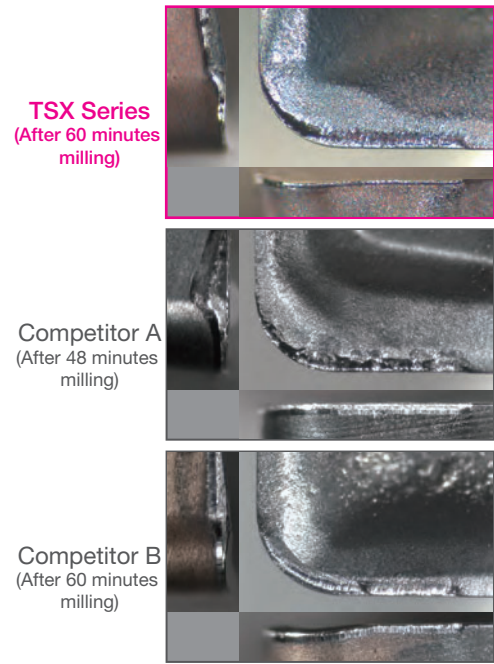
Machine: Vertical M/C BT50, Part Material: S50C  
 Tool: TSX 13100R, Insert: L Nex 130608PNER-G (ACP200)  
 Cutting conditions:  $v_c=150\text{m/min}$ ,  $f_z=0.6\text{mm/t}$  (acceleration evaluation)  
 $a_p=3\text{mm}$ ,  $a_e=40\text{mm}$  Dry



**Tool Life** Longer tool life and stability due to superior wear resistance

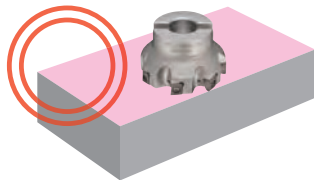


Machine: Vertical M/C BT50, Part Material: S50C  
 Tool: TSX 08025E, Insert: L Nex 080408PNER-G (ACP200)  
 Cutting conditions:  $v_c=200\text{m/min}$ ,  $f_z=0.10\text{mm/t}$ ,  $a_p=2\text{mm}$ ,  $a_e=5\text{mm}$

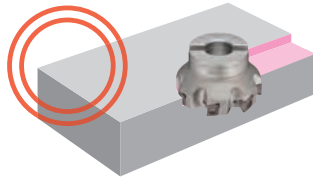


**Applications**

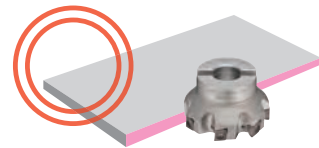
Face Milling



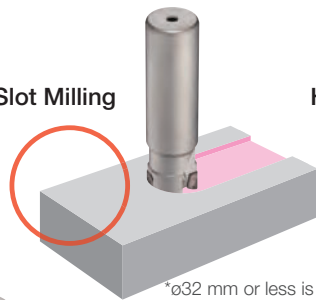
Shoulder Milling



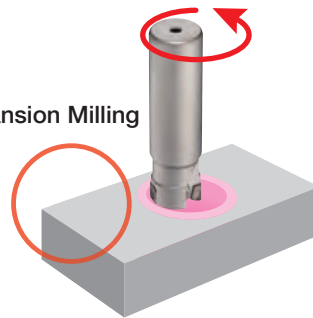
Side Face Milling



Slot Milling

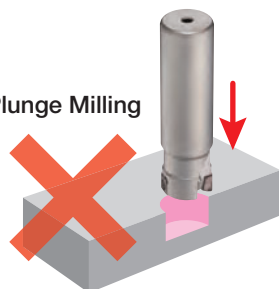


Hole Expansion Milling

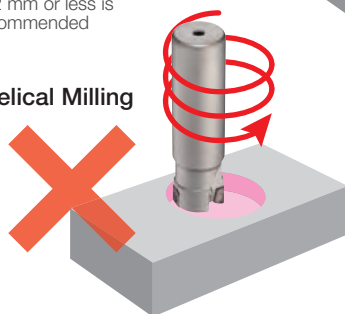


\*ø32 mm or less is recommended

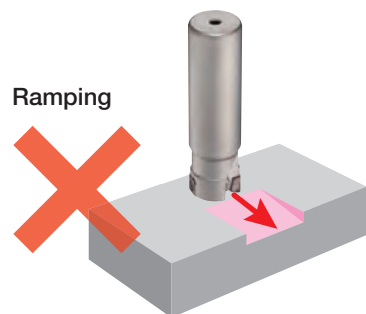
Plunge Milling



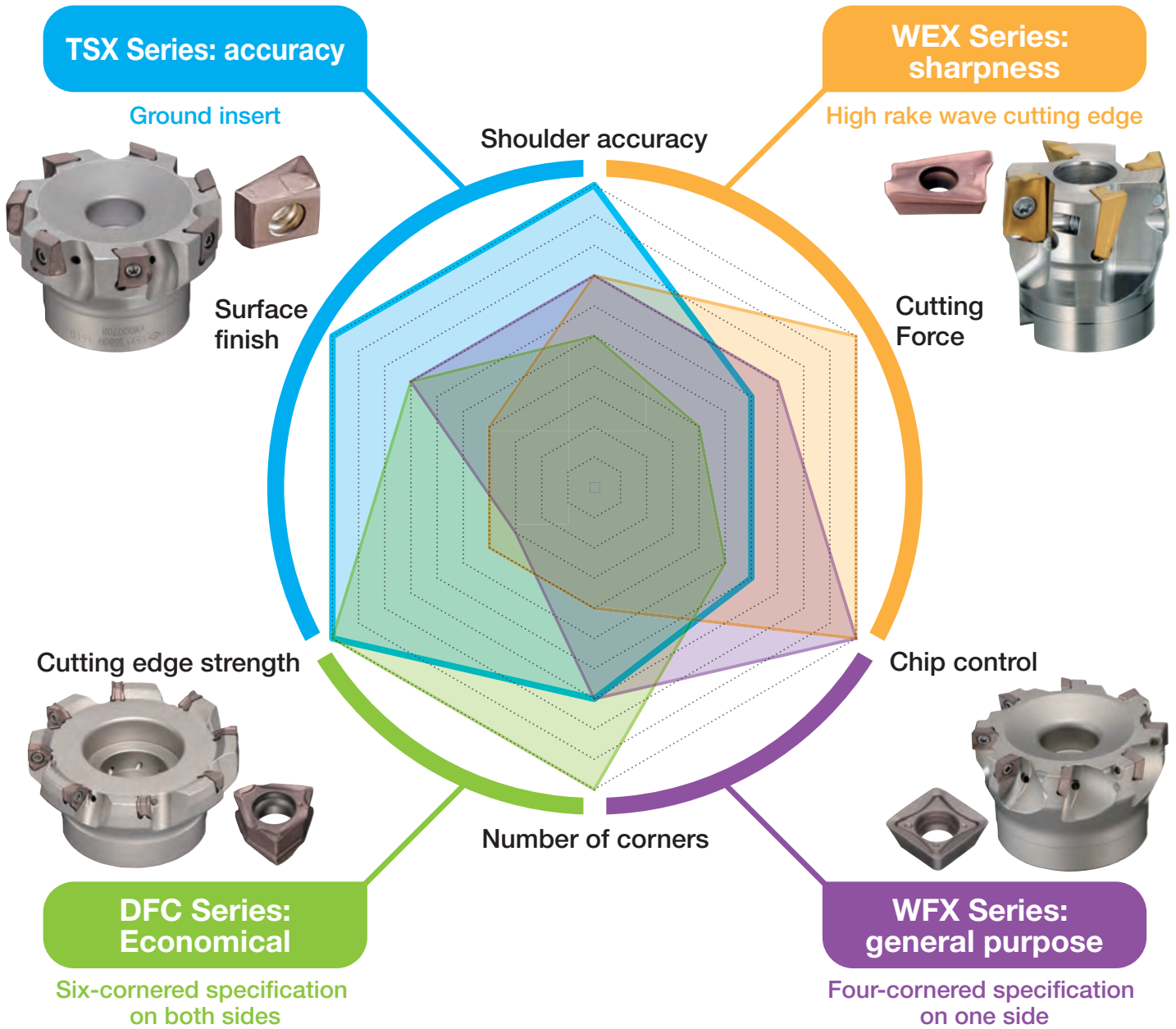
Helical Milling



Ramping



### Shoulder Milling Tool Selection Guide



★★★: Top recommendation

	Surface finish	Shoulder accuracy	Cutting Force	Chip control	Number of corners	Cutting edge strength
<b>TSX Series</b>	★★★	★★★	★★	★☆	★★	★★★
<b>DFC Series</b>	★★	★	★	★☆	★★★★	★★★
<b>WEX Series</b>	★	★★	★★★★	★★★★	★	★★
<b>WFX Series</b>	★★	★★	★★	★★★★	★★	★

\*See DFC Series (IGETALLOY News No. 513), WEX Series (IGETALLOY News No. 452) and WFX Series (IGETALLOY News No. 491) for more information on individual products.

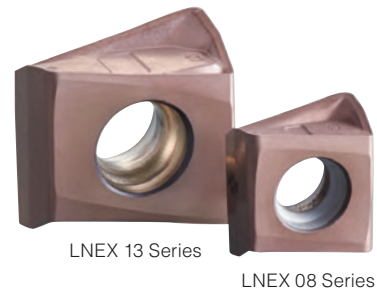
## Insert Grades Selection Guide

ACP100/ACP200/ACP300 grades for steel machining, ACM200/ACM300 grades for stainless steel machining, and ACK200/ACK300 grades for cast iron machining to cover a wide range of materials.

Material	Finishing to Light Cut	Medium Cut	Rough to Heavy Cut
<b>P</b> Steel	(New) ACP100	(New) ACP200	(New) ACP300
	ACM200	ACM300	
	(New) ACK200	(New) ACK300	
<b>M</b> Stainless Steel		ACM200	ACM300
		ACM200	ACM300
<b>K</b> Cast Iron		ACM200	ACM300
		ACM200	ACM300
<b>S</b> Exotic Alloy		ACM200	ACM300
		ACM200	ACM300

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

## Insert Size Comparison

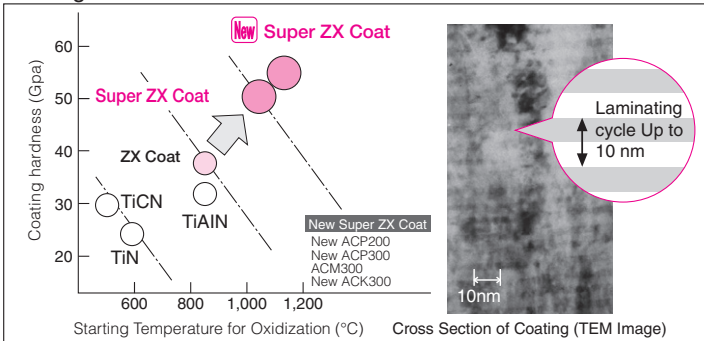


## Coating Features

### ▲ New Super ZX Coat/Super ZX Coat (PVD: Physical Vapor Deposition)

Utilizes the "New Super ZX Coat" featuring thousands of ultra-thin layers on the nanometer scale (a nanometer is one billionth of a meter), made possible with our proprietary thin layer coating technology and advanced nanotechnology.

#### Coating features

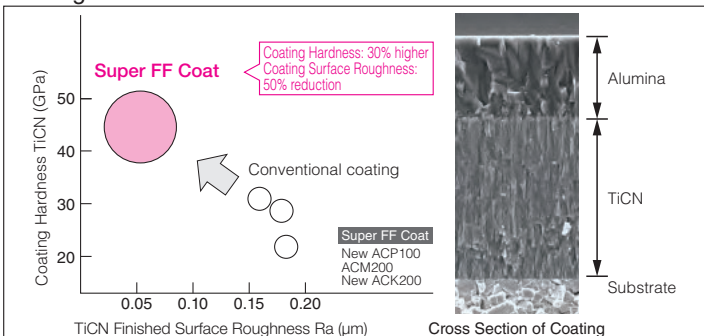


- ▶ Compared to conventional grades, the coating hardness has been increased by 40% and the oxidization starting temperature has been increased by 200°C.
- ▶ High speed, high efficiency machining of more than 1.5 times conventional grades is achieved with the hardened coating layer.
- ▶ 2x or better tool life than conventional grades.

### ▽ Super FF Coat (CVD: Chemical Vapor Deposition)




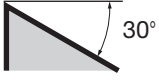
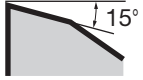
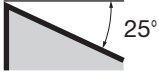


Both high reliability and superior wear resistance have been achieved with the ultra-fine coating particles and coating stress control technology found in our proprietary CVD process used in the Super FF Coat.

#### Coating features

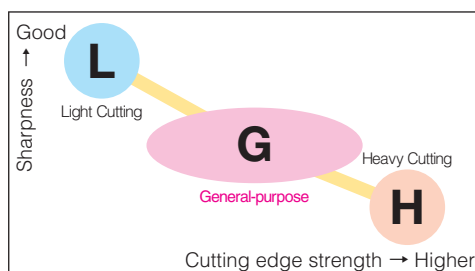


- ▶ Achieves excellent chipping resistance due to the smoothness of the coating and our coating stress control technology.
- ▶ High speed, high efficiency machining of more than 1.5 times conventional grades is achieved with the hardened coating layer.
- ▶ 2x or better tool life than conventional grades.

### Chipbreaker Lineup

Work Materials	<span style="background-color: #007bff; color: white; padding: 2px;">P</span> <span style="background-color: #ffc107; color: white; padding: 2px;">M</span> <span style="background-color: #dc3545; color: white; padding: 2px;">K</span> <span style="background-color: #dc3545; color: white; padding: 2px;">S</span>		
	L type	G type	H type
Chipbreaker			
Features	Low Cutting Force	General Purpose	Strong Edge
LNEX 08 Series Cutting Edge Figure			Not available
LNEX 13 Series Cutting Edge Figure			
Applications	Light cut, low rigidity machining Low-burr design	General to interrupted machining	Heavy cut, heavy interrupted machining Hard materials

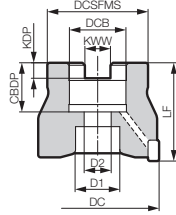
### Chipbreaker Selection Guide



### Series

Cat. No.	Corner Radius (mm)						
	R0.4	R0.8	R1.2	R1.6	R2.0	R2.4	R3.2
LNEX 0804○○PNER-L	●	●	●	●			
LNEX 0804○○PNER-G	●	●	●	●			
LNEX 1306○○PNER-L	●	●	●	●	●	●	●
LNEX 1306○○PNER-G	●	●	●	●	●	●	●
LNEX 1306○○PNER-H	●	●	●	●	●	●	●

Rake Angle	Radial	-20°
	Axial	-6°



## Body (Standard Pitch)

Dimensions (mm)

	Cat. No.	Stock	Diameter	Flange Diameter	Height	Hole Size	Grooving Width	Grooving Depth	Mounting Depth	Bolt Size	Bolt Size		No. of Teeth	Weight (kg)
			DC	DCSFMS	LF	DCB	KWW	KDP	CBDP	D1	D2			
Metric	<b>TSX 08040RS</b>	●	40	33	40	16.0	8.4	5.6	18	14	9		4	0.21
	<b>TSX 08050RS</b>	●	50	41	40	22.0	10.4	6.3	20	18	11		5	0.30
	<b>TSX 08063RS</b>	●	63	50	40	22.0	10.4	6.3	20	18	11		6	0.53
	<b>TSX 08080RS</b>	●	80	55	50	27.0	12.4	7.0	22	20	14		7	0.99
Inch	<b>TSX 08080R</b>	●	80	55	50	25.4	9.5	6.0	25	20	14		7	1.00



Check the arbor attachment size (DCB) when selecting the cutter. Inserts are not included.

\*Please use JIS B1176 hexagonal bolt (M12×30 to 35mm) for securing a ø80mm cutter to the arbor.

## Body (Extra-Fine Pitch)

Dimensions (mm)

	Cat. No.	Stock	Diameter	Flange Diameter	Height	Hole Size	Grooving Width	Grooving Depth	Mounting Depth	Bolt Size	Bolt Size		No. of Teeth	Weight (kg)
			DC	DCSFMS	LF	DCB	KWW	KDP	CBDP	D1	D2			
Metric	<b>TSXF 08040RS</b>	●	40	33	40	16.0	8.4	5.6	18	14	9		6	0.21
	<b>TSXF 08050RS</b>	●	50	41	40	22.0	10.4	6.3	20	18	11		8	0.31
	<b>TSXF 08063RS</b>	●	63	50	40	22.0	10.4	6.3	20	18	11		10	0.54
	<b>TSXF 08080RS</b>	●	80	55	50	27.0	12.4	7.0	22	20	14		11	0.97
Inch	<b>TSXF 08080R</b>	●	80	55	50	25.4	9.5	6.0	25	20	14		11	0.98



Check the arbor attachment size (DCB) when selecting the cutter. Inserts are not included.

\*Please use JIS B1176 hexagonal bolt (M12×30 to 35mm) for securing a ø80mm cutter to the arbor.

## Identification Details

# TSX F 08 050 R S

Cutter Series    Extra-Fine Pitch    Insert Size    Cutting Diameter    Direction    Metric Bore

## Parts

Screw	Wrench	Anti-seizure Cream
BFTX0308IP	TRDR08IP	SUMI-P

Recommended Tightening Torque (N·m)



### Inserts

P Steel 
 M Stainless Steel 
 K Cast Iron 
 S Exotic Alloy

Grades		Coating							Dimensions (mm)
Applications	High Speed/Light Cut	<span style="border: 1px solid black; padding: 2px;">P</span>			<span style="border: 1px solid black; padding: 2px;">K</span>		<span style="border: 1px solid black; padding: 2px;">M</span>	<span style="border: 1px solid black; padding: 2px;">S</span>	
	General Purpose Cut	<span style="border: 1px solid black; padding: 2px;">P</span>	<span style="border: 1px solid black; padding: 2px;">M</span>		<span style="border: 1px solid black; padding: 2px;">K</span>		<span style="border: 1px solid black; padding: 2px;">M</span>	<span style="border: 1px solid black; padding: 2px;">S</span>	
	Roughing Cut		<span style="border: 1px solid black; padding: 2px;">P</span>	<span style="border: 1px solid black; padding: 2px;">M</span>		<span style="border: 1px solid black; padding: 2px;">K</span>		<span style="border: 1px solid black; padding: 2px;">M</span>	
Cat. No.		<span style="border: 1px solid black; padding: 2px;">New</span> ACP100	<span style="border: 1px solid black; padding: 2px;">New</span> ACP200	<span style="border: 1px solid black; padding: 2px;">New</span> ACP300	<span style="border: 1px solid black; padding: 2px;">New</span> ACK200	<span style="border: 1px solid black; padding: 2px;">New</span> ACK300	ACM200	ACM300	Corner Radius
									RE
<b>LNEX 080404PNER-L</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 080408PNER-L</b>		●	●	●	●	●	●	●	0.8
<b>LNEX 080412PNER-L</b>		●	●	●	●	●	●	●	1.2
<b>LNEX 080416PNER-L</b>		●	●	●	●	●	●	●	1.6
<b>LNEX 080404PNER-G</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 080408PNER-G</b>		●	●	●	●	●	●	●	0.8
<b>LNEX 080412PNER-G</b>		●	●	●	●	●	●	●	1.2
<b>LNEX 080416PNER-G</b>		●	●	●	●	●	●	●	1.6

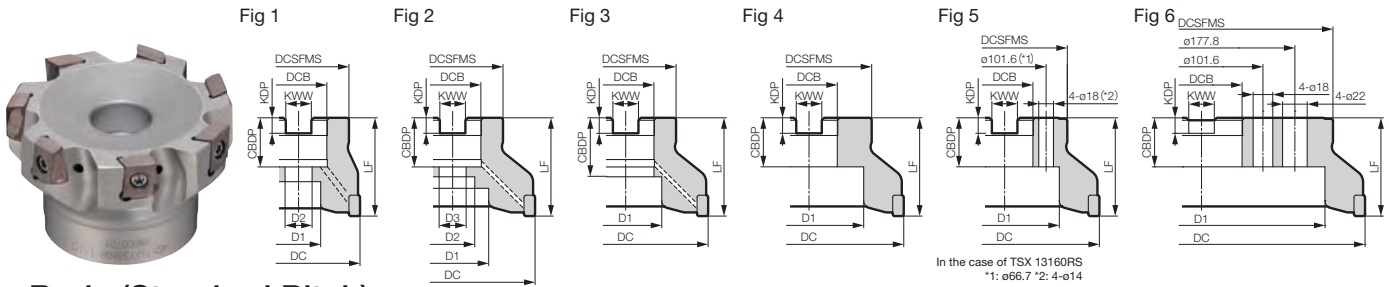
### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	150 - <b>225</b> - 300	0.08 - <b>0.20</b> - 0.30	ACP100
		>280HB	75 - <b>150</b> - 230	0.08 - <b>0.20</b> - 0.30	ACP200
	Alloy Steel	180 to 280HB	100 - <b>175</b> - 250	0.08 - <b>0.15</b> - 0.25	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.08 - <b>0.15</b> - 0.25	ACM200
		>280HB	75 - <b>125</b> - 170	0.08 - <b>0.15</b> - 0.25	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	150 - <b>175</b> - 250	0.08 - <b>0.20</b> - 0.30	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.05 - <b>0.10</b> - 0.15	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.

Rake Angle	Radial	-23° to -15°
	Axial	-6°

**12mm** **90°**



**Body (Standard Pitch)**

Dimensions (mm)

Cat. No.	Stock	Diameter		Height	Hole Size	Grooving Width	Grooving Depth	Mounting Depth	Bolt Size	Bolt Size	Bolt Size	No. of Teeth	Weight (kg)	Fig
		DC	DCSFMS											
<b>TSX 13040RS</b>	●	40	33	40	16.0	8.4	5.6	18.0	14	9	—	3	0.20	1
<b>TSX 13050RS</b>	●	50	41	40	22.0	10.4	6.3	20.0	18	11	—	4	0.30	1
<b>TSX 13063RS</b>	●	63	50	40	22.0	10.4	6.3	20.0	18	11	—	5	0.50	1
<b>TSX 13080RS</b>	●	80	55	50	27.0	12.4	7.0	22.0	20	14	—	5	0.92	1
<b>TSX 13100RS</b>	●	100	70	50	32.0	14.4	8.0	32.0	46	—	—	6	1.35	3
<b>TSX 13125RS</b>	●	125	80	63	40.0	16.4	9.0	29.0	52	29	—	7	2.55	1
<b>TSX 13160RS</b>	●	160	130	63	40.0	16.4	9.0	29.0	90	—	—	8	4.97	5*
<b>TSX 13200RS</b>	●	200	160	63	60.0	25.7	14.0	35.0	135	—	—	12	6.20	5
<b>TSX 13250RS</b>	●	250	180	63	60.0	25.7	14.0	35.0	160	—	—	14	9.35	5
<b>TSX 13315RS</b>	●	315	240	63	60.0	25.7	14.0	35.0	230	—	—	16	16.42	6
<b>TSX 13080R</b>	●	80	55	50	25.4	9.5	6.0	25.0	20	14	—	5	0.93	1
<b>TSX 13100R</b>	●	100	70	63	31.75	12.7	8.0	32.0	46	27	18	6	1.88	2
<b>TSX 13125R</b>	●	125	80	63	38.1	15.9	10.0	35.5	55	30	—	7	2.61	1
<b>TSX 13160R</b>	●	160	100	63	50.8	19.1	11.0	38.0	72	—	—	8	4.18	4
<b>TSX 13200R</b>	●	200	160	63	47.625	25.4	14.0	35.0	135	—	—	12	6.36	5
<b>TSX 13250R</b>	●	250	180	63	47.625	25.4	14.0	35.0	160	—	—	14	9.60	5
<b>TSX 13315R</b>	●	315	240	63	47.625	25.4	14.0	35.0	230	—	—	16	16.68	6



Check the arbor attachment size (DCB) when selecting the cutter. Inserts are not included.

\*Please use JIS B1176 hexagonal bolt (ø80: M12×30 to 35mm, ø100: M16×40 to 45mm) for securing a ø80/ø100mm cutter to the arbor.

**Identification Details**

**TSX 13 100 R S**

Cutter Series    Insert Size    Cutting Diameter    Direction    Metric Bore

**Parts**

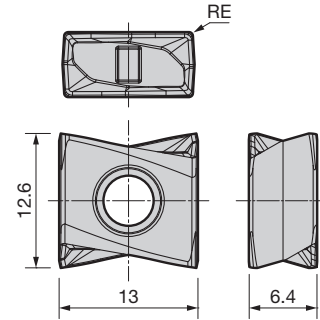
Applicable Cutters	Screw	Un-detachable wrench	Detachable wrench		Seat	Anti-seizure Cream
			Handle grip	Bit		
TSX 13040RS TSX 13050RS TSX 13063RS TSX 13080RS TSX 13100RS TSX 13125RS TSX 13160RS TSX 13200RS TSX 13250RS TSX 13315RS	 BFTX03510IP 3.0		HPS1015	TRB15IP		SUMI-P
TRDR15IP			—	TSXS13R		
TSX 13080R TSX 13100R TSX 13125R TSX 13160R TSX 13200R TSX 13250R TSX 13315R	 BFTX03510IP 3.0		HPS1015	TRB15IP		SUMI-P
TRDR15IP			—	TSXS13R		

Recommended Tightening Torque (N-m)

### Inserts

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

Grades		Coating						Dimensions (mm)	
Applications	High Speed/Light Cut								
	General Purpose Cut								
	Roughing Cut								
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	Corner Radius
									RE
<b>LNEX 130604PNER-L</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 130608PNER-L</b>			●	●	●	●	●	●	0.8
<b>LNEX 130612PNER-L</b>			●			●	●	●	1.2
<b>LNEX 130616PNER-L</b>			●			●	●	●	1.6
<b>LNEX 130620PNER-L</b>			●			●	●	●	2.0
<b>LNEX 130624PNER-L</b>			●			●	●	●	2.4
<b>LNEX 130632PNER-L</b>			●			●	●	●	3.2
<b>LNEX 130604PNER-G</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 130608PNER-G</b>		●	●	●	●	●	●	●	0.8
<b>LNEX 130612PNER-G</b>		●	●	●	●	●	●	●	1.2
<b>LNEX 130616PNER-G</b>		●	●	●	●	●	●	●	1.6
<b>LNEX 130620PNER-G</b>		●	●	●	●	●	●	●	2.0
<b>LNEX 130624PNER-G</b>		●	●	●	●	●	●	●	2.4
<b>LNEX 130632PNER-G</b>		●	●	●	●	●	●	●	3.2
<b>LNEX 130604PNER-H</b>			●	●	●	●			0.4
<b>LNEX 130608PNER-H</b>			●	●	●	●			0.8
<b>LNEX 130612PNER-H</b>			●	●	●	●			1.2
<b>LNEX 130616PNER-H</b>			●	●	●	●			1.6
<b>LNEX 130620PNER-H</b>			●	●	●	●			2.0
<b>LNEX 130624PNER-H</b>			●	●	●	●			2.4
<b>LNEX 130632PNER-H</b>			●	●	●	●			3.2



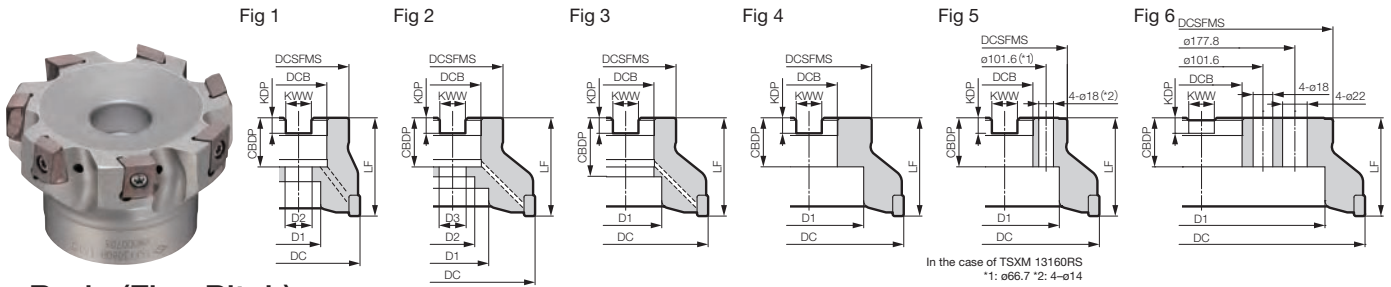
### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - <b>Optimum</b> - Max.	Feed Rate $f_z$ (mm/t) Min. - <b>Optimum</b> - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	150 - <b>225</b> - 300	0.10 - <b>0.30</b> - 0.40	ACP100
		>280HB	75 - <b>150</b> - 230	0.10 - <b>0.30</b> - 0.40	ACP200
	Alloy Steel	180 to 280HB	100 - <b>175</b> - 250	0.10 - <b>0.25</b> - 0.35	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.10 - <b>0.20</b> - 0.30	ACM200
		>280HB	75 - <b>125</b> - 170	0.10 - <b>0.20</b> - 0.30	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	150 - <b>175</b> - 250	0.10 - <b>0.30</b> - 0.40	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.10 - <b>0.15</b> - 0.20	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.

# SEC-Sumi Dual Mill TSXM 13000R(S) Type

Rake Angle	Radial	-23° to -15°	12mm	90°	
	Axial	-6°			



## Body (Fine Pitch)

Dimensions (mm)

Cat. No.	Stock	Diameter		Height	Hole Size	Grooving Width	Grooving Depth	Mounting Depth	Bolt Size	Bolt Size	Bolt Size	No. of Teeth	Weight (kg)	Fig
		DC	DCSFMS											
Metric	●	40	33	40	16.0	8.4	5.6	18.0	14	9	—	4	0.19	1
	●	50	41	40	22.0	10.4	6.3	20.0	18	11	—	5	0.28	1
	●	63	50	40	22.0	10.4	6.3	20.0	18	11	—	6	0.50	1
	●	80	55	50	27.0	12.4	7.0	22.0	20	14	—	7	0.92	1
	●	100	70	50	32.0	14.4	8.0	32.0	46	—	—	8	1.36	3
	●	125	80	63	40.0	16.4	9.0	29.0	52	29	—	10	2.57	1
	●	160	130	63	40.0	16.4	9.0	29.0	90	—	—	12	5.02	5*
	●	200	160	63	60.0	25.7	14.0	35.0	135	—	—	16	6.32	5
	●	250	180	63	60.0	25.7	14.0	35.0	160	—	—	20	9.42	5
	●	315	240	63	60.0	25.7	14.0	35.0	230	—	—	24	16.37	6
Inch	●	80	55	50	25.4	9.5	6.0	25.0	20	14	—	7	0.93	1
	●	100	70	63	31.75	12.7	8.0	32.0	46	27	18	8	1.90	2
	●	125	80	63	38.1	15.9	10.0	35.5	55	30	—	10	2.62	1
	●	160	100	63	50.8	19.1	11.0	38.0	72	—	—	12	4.22	4
	●	200	160	63	47.625	25.4	14.0	35.0	135	—	—	16	6.48	5
	●	250	180	63	47.625	25.4	14.0	35.0	160	—	—	20	9.68	5
	●	315	240	63	47.625	25.4	14.0	35.0	230	—	—	24	16.63	6



Check the arbor attachment size (DCB) when selecting the cutter. Inserts are not included.

\*Please use JIS B1176 hexagonal bolt (ø80: M12×30 to 35mm, ø100: M16×40 to 45mm) for securing a ø80/ø100mm cutter to the arbor.

## Identification Details

# TSX M 13 100 R S

Cutter Series Fine Pitch Insert Size Cutting Diameter Direction Metric Bore

## Parts

Applicable Cutters	Screw	Un-detachable wrench	Detachable wrench		Seat	Anti-seizure Cream
			Handle grip	Bit		
TSXM 13040RS TSXM 13050RS TSXM 13063RS TSXM 13080RS TSXM 13100RS TSXM 13125RS TSXM 13160RS TSXM 13200RS TSXM 13250RS TSXM 13315RS						
TSXM 13080R TSXM 13100R TSXM 13125R TSXM 13160R TSXM 13200R TSXM 13250R TSXM 13315R						

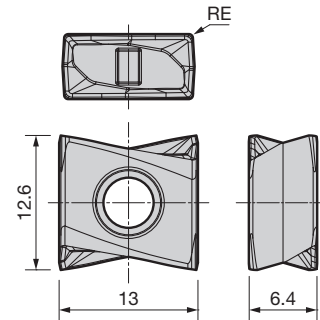
Recommended Tightening Torque (N-m)



### Inserts

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

Grades		Coating						Dimensions (mm)	
Applications	High Speed/Light Cut	<b>P</b>			<b>K</b>		<b>M</b>		
	General Purpose Cut	<b>P</b>	<b>M</b>		<b>K</b>		<b>M</b>	<b>S</b>	
	Roughing Cut		<b>P</b>	<b>M</b>		<b>K</b>		<b>M</b>	<b>S</b>
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	Corner Radius
									RE
<b>L</b>	<b>NEX 130604PNER-L</b>	●	●	●	●	●	●	●	0.4
<b>L</b>	<b>NEX 130608PNER-L</b>		●	●	●	●	●	●	0.8
<b>L</b>	<b>NEX 130612PNER-L</b>		●			●	●	●	1.2
<b>L</b>	<b>NEX 130616PNER-L</b>		●			●	●	●	1.6
<b>L</b>	<b>NEX 130620PNER-L</b>		●			●	●	●	2.0
<b>L</b>	<b>NEX 130624PNER-L</b>		●			●	●	●	2.4
<b>L</b>	<b>NEX 130632PNER-L</b>		●			●	●	●	3.2
<b>G</b>	<b>NEX 130604PNER-G</b>	●	●	●	●	●	●	●	0.4
<b>G</b>	<b>NEX 130608PNER-G</b>	●	●	●	●	●	●	●	0.8
<b>G</b>	<b>NEX 130612PNER-G</b>	●	●	●	●	●	●	●	1.2
<b>G</b>	<b>NEX 130616PNER-G</b>	●	●	●	●	●	●	●	1.6
<b>G</b>	<b>NEX 130620PNER-G</b>	●	●	●	●	●	●	●	2.0
<b>G</b>	<b>NEX 130624PNER-G</b>	●	●	●	●	●	●	●	2.4
<b>G</b>	<b>NEX 130632PNER-G</b>	●	●	●	●	●	●	●	3.2
<b>H</b>	<b>NEX 130604PNER-H</b>		●	●	●	●			0.4
<b>H</b>	<b>NEX 130608PNER-H</b>		●	●	●	●			0.8
<b>H</b>	<b>NEX 130612PNER-H</b>		●	●	●	●			1.2
<b>H</b>	<b>NEX 130616PNER-H</b>		●	●	●	●			1.6
<b>H</b>	<b>NEX 130620PNER-H</b>		●	●	●	●			2.0
<b>H</b>	<b>NEX 130624PNER-H</b>		●	●	●	●			2.4
<b>H</b>	<b>NEX 130632PNER-H</b>		●	●	●	●			3.2



### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	150 - <b>225</b> - 300	0.10 - <b>0.30</b> - 0.40	ACP100
		>280HB	75 - <b>150</b> - 230	0.10 - <b>0.30</b> - 0.40	ACP200
	Alloy Steel	180 to 280HB	100 - <b>175</b> - 250	0.10 - <b>0.25</b> - 0.35	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.10 - <b>0.20</b> - 0.30	ACM200
		>280HB	75 - <b>125</b> - 170	0.10 - <b>0.20</b> - 0.30	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	150 - <b>175</b> - 250	0.10 - <b>0.30</b> - 0.40	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.10 - <b>0.15</b> - 0.20	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.



Fig 1

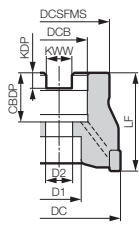


Fig 2

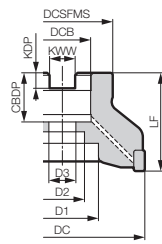


Fig 3

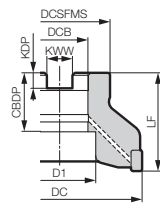


Fig 4

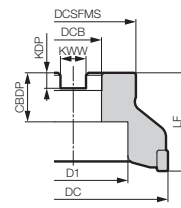
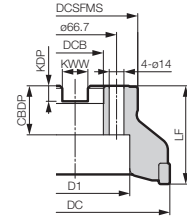


Fig 5



**Body (Extra-Fine Pitch)**

Dimensions (mm)

Cat. No.	Stock	Diameter		Height	Hole Size	Grooving Width	Grooving Depth	Mounting Depth	Bolt Size	Bolt Size	Bolt Size	No. of Teeth	Weight (kg)	Fig
		DC	DCSFMS	LF	DCB	KWW	KDP	CBDP	D1	D2	D3			
Metric														
<b>TSXF 13040RS</b>	●	40	33	40	16.0	8.4	5.6	18.0	14	9	—	5	0.18	1
<b>TSXF 13050RS</b>	●	50	41	40	22.0	10.4	6.3	20.0	18	11	—	6	0.29	1
<b>TSXF 13063RS</b>	●	63	50	40	22.0	10.4	6.3	20.0	18	11	—	7	0.50	1
<b>TSXF 13080RS</b>	●	80	55	50	27.0	12.4	7.0	22.0	20	14	—	8	0.92	1
<b>TSXF 13100RS</b>	●	100	70	50	32.0	14.4	8.0	32.0	46	—	—	10	1.34	3
<b>TSXF 13125RS</b>	●	125	80	63	40.0	16.4	9.0	29.0	52	29	—	14	2.58	1
<b>TSXF 13160RS</b>	●	160	130	63	40.0	16.4	9.0	29.0	90	—	—	16	5.08	5
Inch														
<b>TSXF 13080R</b>	●	80	55	50	25.4	9.5	6.0	25.0	20	14	—	8	0.93	1
<b>TSXF 13100R</b>	●	100	70	63	31.75	12.7	8.0	32.0	46	27	18	10	1.88	2
<b>TSXF 13125R</b>	●	125	80	63	38.1	15.9	10.0	35.5	55	30	—	14	2.60	1
<b>TSXF 13160R</b>	●	160	100	63	50.8	19.1	11.0	38.0	72	—	—	16	4.28	4



Check the arbor attachment size (DCB) when selecting the cutter. Inserts are not included.

\*Please use JIS B1176 hexagonal bolt (ø80: M12×30 to 35mm, ø100: M16×40 to 45mm) for securing a ø80/ø100mm cutter to the arbor.

**Identification Details**

**TSX F 13 100 R S**

Cutter Series    Extra-Fine Pitch    Insert Size    Cutting Diameter    Direction    Metric Bore

**Parts**

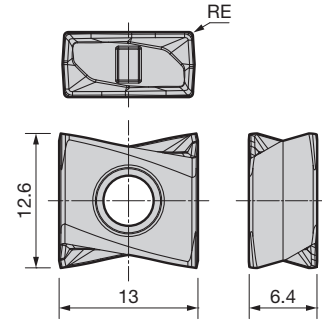
Applicable Cutters	Screw	Un-detachable wrench	Detachable wrench		Anti-seizure Cream
			Handle grip	Bit	
TSXF 13040RS TSXF 13050RS TSXF 13063RS TSXF 13080RS TSXF 13100RS TSXF 13125RS TSXF 13160RS	 BFTX03510IP 3.0	 —	 HPS1015	 TRB15IP	 SUMI-P
TSXF 13080R TSXF 13100R TSXF 13125R TSXF 13160R	 BFTX03510IP 3.0	 —	 HPS1015	 TRB15IP	 SUMI-P

Recommended Tightening Torque (N·m)

### Inserts

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

Grades		Coating						Dimensions (mm)	
Applications	High Speed/Light Cut								
	General Purpose Cut								
	Roughing Cut								
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	Corner Radius
LNEX 130604PNER-L			●	●	●	●	●	●	RE
LNEX 130608PNER-L			●	●	●	●	●	●	0.4
LNEX 130612PNER-L			●				●	●	0.8
LNEX 130616PNER-L			●				●	●	1.2
LNEX 130620PNER-L			●				●	●	1.6
LNEX 130624PNER-L			●				●	●	2.0
LNEX 130632PNER-L			●				●	●	2.4
LNEX 130604PNER-G		●	●	●	●	●	●	●	3.2
LNEX 130608PNER-G		●	●	●	●	●	●	●	0.4
LNEX 130612PNER-G		●	●	●	●	●	●	●	0.8
LNEX 130616PNER-G		●	●	●	●	●	●	●	1.2
LNEX 130620PNER-G		●	●	●	●	●	●	●	1.6
LNEX 130624PNER-G		●	●	●	●	●	●	●	2.0
LNEX 130632PNER-G		●	●	●	●	●	●	●	2.4
LNEX 130604PNER-H			●	●	●	●			3.2
LNEX 130608PNER-H			●	●	●	●			0.4
LNEX 130612PNER-H			●	●	●	●			0.8
LNEX 130616PNER-H			●	●	●	●			1.2
LNEX 130620PNER-H			●	●	●	●			1.6
LNEX 130624PNER-H			●	●	●	●			2.0
LNEX 130632PNER-H			●	●	●	●			2.4
LNEX 130632PNER-H			●	●	●	●			3.2



### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	150 - <b>225</b> - 300	0.10 - <b>0.30</b> - 0.40	ACP100
		>280HB	75 - <b>150</b> - 230	0.10 - <b>0.30</b> - 0.40	ACP200
	Alloy Steel	180 to 280HB	100 - <b>175</b> - 250	0.10 - <b>0.25</b> - 0.35	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.10 - <b>0.20</b> - 0.30	ACM200
		>280HB	75 - <b>125</b> - 170	0.10 - <b>0.20</b> - 0.30	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	150 - <b>175</b> - 250	0.10 - <b>0.30</b> - 0.40	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.10 - <b>0.15</b> - 0.20	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.

Rake Angle	Radial	-36° to -20°
	Axial	-6°

**8mm** **90°**

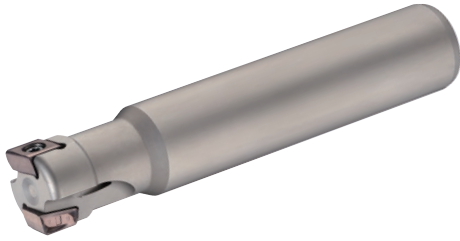


Fig 1

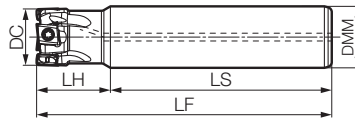
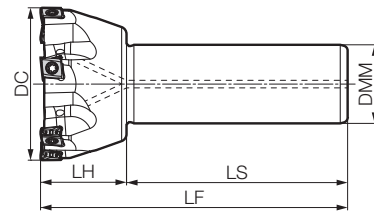


Fig 2



**Body (Standard Pitch)**

Dimensions (mm)

Cat. No.	Stock	Diameter		Head Length	Shank Length	Total Length	No. of Teeth	Weight (kg)	Fig
		DC	DMM	LH	LS	LF			
<b>TSX 08016E</b>	●	16	16	25	75	100	2	0.13	1
<b>TSX 08020E</b>	●	20	20	30	80	110	2	0.22	1
<b>TSX 08020E-16</b>	●	20	16	30	80	110	2	0.15	2
<b>TSX 08025E</b>	●	25	25	30	90	120	3	0.40	1
<b>TSX 08025E-20</b>	●	25	20	30	90	120	3	0.26	2
<b>TSX 08032E</b>	●	32	32	30	90	120	3	0.67	1
<b>TSX 08032E-25</b>	●	32	25	30	90	120	3	0.43	2
<b>TSX 08040E</b>	●	40	32	30	90	120	4	0.72	2
<b>TSX 08050E</b>	●	50	32	30	90	120	5	0.85	2
<b>TSX 08063E</b>	●	63	32	35	90	125	6	1.09	2
<b>TSX 08080E</b>	●	80	32	35	90	125	7	1.44	2

Inserts are not included.

**Body (Extra-Fine Pitch)**

Dimensions (mm)

Cat. No.	Stock	Diameter		Head Length	Shank Length	Total Length	No. of Teeth	Weight (kg)	Fig
		DC	DMM	LH	LS	LF			
<b>TSXF 08020E</b>	●	20	20	30	80	110	3	0.22	1
<b>TSXF 08025E</b>	●	25	25	30	90	120	4	0.40	1
<b>TSXF 08032E</b>	●	32	32	30	90	120	5	0.67	1
<b>TSXF 08040E</b>	●	40	32	30	90	120	6	0.73	2
<b>TSXF 08050E</b>	●	50	32	30	90	120	8	0.85	2
<b>TSXF 08063E</b>	●	63	32	35	90	125	10	1.10	2
<b>TSXF 08080E</b>	●	80	32	35	90	125	11	1.42	2

Inserts are not included.

**Identification Details**

**TSX F 08 032 E (-25)**

Cutter Series    Extra-Fine Pitch    Insert Size    Cutting Diameter    Shank Type    Shank Diameter

**Parts**

Applicable Cutters	Screw	Wrench	Anti-seizure Cream
	TSX 08016E, TSX 08020E, TSXF 08020E TSX 08025E-80E, TSXF 08025E-80E	 BFTX0306IP BFTX0308IP <b>2.0</b>	 TRDR08IP

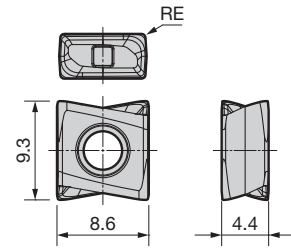
Recommended Tightening Torque (N-m)



### Inserts

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

Grades		Coating							Dimensions (mm)
Applications	High Speed/Light Cut								
	General Purpose Cut								
	Roughing Cut								
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	Corner Radius
									RE
	<b>LNEX 080404PNER-L</b>	●	●	●	●	●	●	●	0.4
	<b>LNEX 080408PNER-L</b>	●	●	●	●	●	●	●	0.8
	<b>LNEX 080412PNER-L</b>	●	●	●	●	●	●	●	1.2
	<b>LNEX 080416PNER-L</b>	●	●	●	●	●	●	●	1.6
	<b>LNEX 080404PNER-G</b>	●	●	●	●	●	●	●	0.4
	<b>LNEX 080408PNER-G</b>	●	●	●	●	●	●	●	0.8
	<b>LNEX 080412PNER-G</b>	●	●	●	●	●	●	●	1.2
	<b>LNEX 080416PNER-G</b>	●	●	●	●	●	●	●	1.6



### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	150 - <b>225</b> - 300	0.08 - <b>0.20</b> - 0.30	ACP100
		>280HB	75 - <b>150</b> - 230	0.08 - <b>0.20</b> - 0.30	ACP200
	Alloy Steel	180 to 280HB	100 - <b>175</b> - 250	0.08 - <b>0.15</b> - 0.25	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.08 - <b>0.15</b> - 0.25	ACM200
		>280HB	75 - <b>125</b> - 170	0.08 - <b>0.15</b> - 0.25	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	150 - <b>175</b> - 250	0.08 - <b>0.20</b> - 0.30	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.05 - <b>0.10</b> - 0.15	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.

Rake Angle	Radial	-31° to -15°
	Axial	-6°

**12mm** **90°**



Fig 1

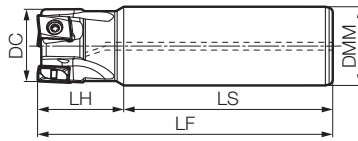
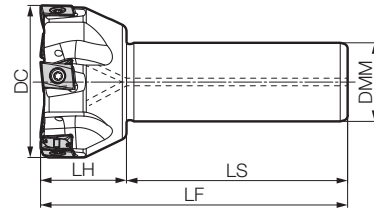


Fig 2



**Body (Standard Pitch)**

Dimensions (mm)

Cat. No.	Stock	Diameter		Head Length	Shank Length	Total Length	No. of Teeth	Weight (kg)	Fig
		DC	DMM	LH	LS	LF			
<b>TSX 13025E</b>	●	25	25	35	85	120	2	0.38	1
<b>TSX 13032E</b>	●	32	32	35	85	120	2	0.66	1
<b>TSX 13040E</b>	●	40	32	30	90	120	3	0.71	2
<b>TSX 13050E</b>	●	50	32	30	90	120	4	0.81	2
<b>TSX 13063E</b>	●	63	32	35	90	125	5	1.08	2
<b>TSX 13080E</b>	●	80	32	35	90	125	5	1.40	2

Inserts are not included.

**Body (Fine Pitch)**

Dimensions (mm)

Cat. No.	Stock	Diameter		Head Length	Shank Length	Total Length	No. of Teeth	Weight (kg)	Fig
		DC	DMM	LH	LS	LF			
<b>TSXM 13032E</b>	●	32	32	35	85	120	3	0.65	1
<b>TSXM 13040E</b>	●	40	32	30	90	120	4	0.71	2
<b>TSXM 13050E</b>	●	50	32	30	90	120	5	0.80	2
<b>TSXM 13063E</b>	●	63	32	35	90	125	6	1.07	2
<b>TSXM 13080E</b>	●	80	32	35	90	125	7	1.41	2

Inserts are not included.

**Body (Extra-Fine Pitch)**

Dimensions (mm)

Cat. No.	Stock	Diameter		Head Length	Shank Length	Total Length	No. of Teeth	Weight (kg)	Fig
		DC	DMM	LH	LS	LF			
<b>TSXF 13040E</b>	●	40	32	30	90	120	5	0.70	2
<b>TSXF 13050E</b>	●	50	32	30	90	120	6	0.80	2
<b>TSXF 13063E</b>	●	63	32	30	90	125	7	1.07	2
<b>TSXF 13080E</b>	●	80	32	35	90	125	8	1.42	2

Inserts are not included.

**Identification Details**

**TSX M 13 050 E**

Cutter Series M:Fine Pitch F:Extra-Fine Pitch    Insert Size    Cutting Diameter    Shank Type

**Parts**

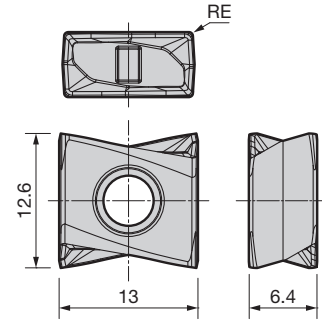
Screw	Wrench	Anti-seizure Cream
BFTX03510IP <b>3.0</b>	TRDR15IP	SUMI-P

Recommended Tightening Torque (N·m)

### Inserts

P Steel M Stainless Steel K Cast Iron S Exotic Alloy

Grades		Coating						Dimensions (mm)	
Applications	High Speed/Light Cut	P			K		M		Corner Radius RE
	General Purpose Cut	P	M		K		M		
	Roughing Cut		M	P		K		M	
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	
LNEX 130604PNER-L		●	●	●	●	●	●	0.4	
LNEX 130608PNER-L			●	●	●	●	●	0.8	
LNEX 130612PNER-L			●			●	●	1.2	
LNEX 130616PNER-L			●			●	●	1.6	
LNEX 130620PNER-L			●			●	●	2.0	
LNEX 130624PNER-L			●			●	●	2.4	
LNEX 130632PNER-L			●			●	●	3.2	
LNEX 130604PNER-G		●	●	●	●	●	●	0.4	
LNEX 130608PNER-G		●	●	●	●	●	●	0.8	
LNEX 130612PNER-G		●	●	●	●	●	●	1.2	
LNEX 130616PNER-G		●	●	●	●	●	●	1.6	
LNEX 130620PNER-G		●	●	●	●	●	●	2.0	
LNEX 130624PNER-G		●	●	●	●	●	●	2.4	
LNEX 130632PNER-G		●	●	●	●	●	●	3.2	
LNEX 130604PNER-H			●	●	●	●		0.4	
LNEX 130608PNER-H			●	●	●	●		0.8	
LNEX 130612PNER-H			●	●	●	●		1.2	
LNEX 130616PNER-H			●	●	●	●		1.6	
LNEX 130620PNER-H			●	●	●	●		2.0	
LNEX 130624PNER-H			●	●	●	●		2.4	
LNEX 130632PNER-H			●	●	●	●		3.2	

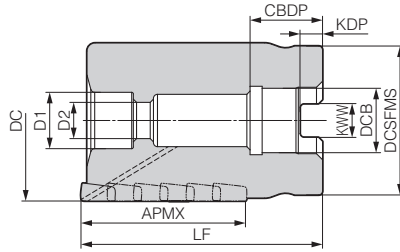


### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Grades
P	Carbon Steel	180 to 280HB	150 - <b>225</b> - 300	0.10 - <b>0.30</b> - 0.40	ACP100
		>280HB	75 - <b>150</b> - 230	0.10 - <b>0.30</b> - 0.40	ACP200
	Alloy Steel	180 to 280HB	100 - <b>175</b> - 250	0.10 - <b>0.25</b> - 0.35	ACP300
M	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.10 - <b>0.20</b> - 0.30	ACM200
		>280HB	75 - <b>125</b> - 170	0.10 - <b>0.20</b> - 0.30	ACM300
K	Cast Iron/ Ductile Cast Iron	250HB	150 - <b>175</b> - 250	0.10 - <b>0.30</b> - 0.40	ACK200 ACK300
S	Exotic Alloy	—	30 - <b>60</b> - 90	0.10 - <b>0.15</b> - 0.20	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.

Rake Angle	Radial	-20° to -15°
	Axial	-6° to -3°



## Body

Dimensions (mm)

Cat. No.	Stock	Diameter	Max. Depth of Cut	Flange Diameter	Height	Hole Size	Grooving Width	Grooving Depth	Mounting Depth	Bolt Size	Bolt Size	Total Teeth	Steps	Effective Teeth	Weight (kg)
		DC	APMX	DCSFMS	LF	DCB	KWW	KDP	CBDP	D1	D2				
TSXR 08032RS3416Z02	●	32	34	33	55	16.0	8.4	5.6	18.0	14	9	10	5	2	0.17
TSXR 08040RS4016Z03	●	40	40	37	60	16.0	8.4	5.6	18.0	14	9	18	6	3	0.32
TSXR 08050RS5422Z03	●	50	54	47	75	22.0	10.4	6.3	20.0	18	11	24	8	3	0.70
TSXR 08050RS5422Z04	●	50	54	47	75	22.0	10.4	6.3	20.0	18	11	32	8	4	0.68
TSXR 08063RS6027Z05	●	63	60	60	80	27.0	12.4	7.0	22.0	20	14	45	9	5	1.25

Inserts are not included.

## Identification Details

# TSXR 08 050 R S 54 22 Z03

Cutter Series    Insert Size    Cutting Diameter    Direction    Metric Bore    Max. Depth of Cut    Hole Size    Effective Teeth

## Parts

Applicable Cutters	Screw	Wrench	Bolt	Anti-seizure Cream
TSXR 08032RS3416Z02 TSXR 08040RS4016Z03 TSXR 08050RS5422Z03 TSXR 08050RS5422Z04 TSXR 08063RS6027Z05	 BFTX0308IP 2.0	 TRDR08IP	 BX0845 BX0850 BX1060 BX1265	 SUMI-P

Recommended Tightening Torque (N·m)



Rake Angle	Radial	-20° to -15°
	Axial	-6° to -3°

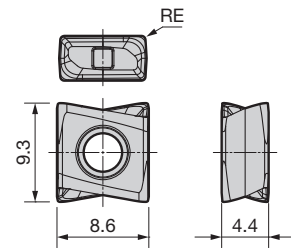
34-60mm 90°

<b>P</b> Steel	<b>M</b> Stainless Steel	<b>K</b> Cast Iron	<b>N</b> Titanium	<b>N</b> Aluminum	<b>S</b> Exotic Alloy	<b>H</b> High Speed Steel
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### Inserts

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

Grades		Coating							Dimensions (mm)
Applications	High Speed/Light Cut	<b>P</b>			<b>K</b>		<b>M</b>		
	General Purpose Cut	<b>P</b>	<b>M</b>		<b>K</b>		<b>M</b>	<b>S</b>	
	Roughing Cut		<b>P</b>	<b>M</b>		<b>K</b>		<b>M</b>	
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	Corner Radius
									RE
<b>LNEX 080404PNER-L</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 080408PNER-L</b>			●	●	●	●	●	●	0.8
<b>LNEX 080412PNER-L</b>			●			●	●	●	1.2
<b>LNEX 080416PNER-L</b>			●			●	●	●	1.6
<b>LNEX 080404PNER-G</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 080408PNER-G</b>		●	●	●	●	●	●	●	0.8
<b>LNEX 080412PNER-G</b>		●	●	●	●	●	●	●	1.2
<b>LNEX 080416PNER-G</b>		●	●	●	●	●	●	●	1.6



· Use the inserts RE ≤ 0.8mm except for the tip blade.

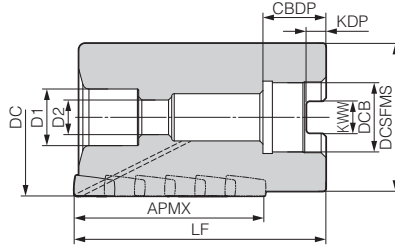
### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	110 - 200 - 280	0.10 - 0.20 - 0.30	ACP100
		>280HB	70 - 135 - 200	0.10 - 0.20 - 0.30	ACP200
	Alloy Steel	180 to 280HB	90 - 155 - 220	0.10 - 0.15 - 0.25	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - 135 - 180	0.10 - 0.15 - 0.25	ACM200
		>280HB	70 - 115 - 160	0.10 - 0.15 - 0.25	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	125 - 175 - 225	0.10 - 0.20 - 0.30	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - 60 - 90	0.05 - 0.10 - 0.15	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
· The above is a guide for use with BT50.

Rake Angle	Radial	-23° to -15°
	Axial	-6° to -3°

41-60mm 90°



## Body

Dimensions (mm)

Cat. No.	Stock	Diameter	Max Depth of Cut	Flange Diameter	Height	Hole Size	Grooving Width	Grooving Depth	Mounting Depth	Bolt Size	Bolt Size	Total Teeth	Steps	Effective Teeth	Weight (kg)
		DC	APMX	DCSFMS	LF	DCB	KWW	KDP	CBDP	D1	D2				
TSXR 13040RS4116Z02	●	40	41	37	60	16.0	8.4	5.6	18.0	14	9	8	4	2	0.31
TSXR 13050RS6022Z03	●	50	60	47	80	22.0	10.4	6.3	20.0	18	11	18	6	3	0.66
TSXR 13063RS5027Z03	●	63	50	60	75	27.0	12.4	7.0	22.0	20	14	15	5	3	1.12
TSXR 13063RS6027Z04	●	63	60	60	80	27.0	12.4	7.0	22.0	20	14	24	6	4	1.15
TSXR 13080RS6032Z04	●	80	60	77	80	32.0	14.4	8.0	26.0	25	18	24	6	4	2.06
TSXR 13080RS6032Z05	●	80	60	77	80	32.0	14.4	8.0	26.0	25	18	30	6	5	2.04
TSXR 13100RS6040Z05	●	100	60	88	85	40.0	16.4	9.0	29.0	32	21	30	6	5	3.45
TSXR 13100RS6040Z06	●	100	60	88	85	40.0	16.4	9.0	29.0	32	21	36	6	6	3.44
TSXR 13125RS6040Z07	●	125	60	100	85	40.0	16.4	9.0	29.0	32	21	42	6	7	5.63

Inserts are not included.

## Identification Details

# TSXR 13 050 R S 60 22 Z03

Cutter Series    Insert Size    Cutting Diameter    Direction    Metric Bore    Max. Depth of Cut    Hole Size    Effective Teeth

## Parts

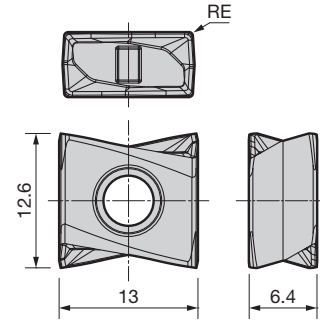
Applicable Cutters	Screw	Un-detachable wrench	Detachable wrench		Bolt	Anti-seizure Cream
			Handle grip	Bit		
TSXR 13040RS4116Z02 TSXR 13050RS6022Z03 TSXR 13063RS5027Z03 TSXR 13063RS6027Z04 TSXR 13080RS6032Z04 TSXR 13080RS6032Z05 TSXR 13100RS6040Z05 TSXR 13100RS6040Z06 TSXR 13125RS6040Z07	BFTX03510IP 3.0	— TRDR15IP	HPS1015 —	TRB15IP —	BX0850 BX1060 BX1260 BX1265 BX1660 BX2065	SUMI-P

Recommended Tightening Torque (N-m)

### Inserts

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

Grades		Coating						Dimensions (mm)
Applications	High Speed/Light Cut	<b>P</b>			<b>K</b>		<b>M</b> <b>S</b>	
	General Purpose Cut	<b>P</b>	<b>M</b>		<b>K</b>		<b>M</b> <b>S</b>	
	Roughing Cut		<b>P</b>	<b>P</b>		<b>K</b>		<b>M</b> <b>S</b>
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300
	Corner Radius							RE
<b>L</b>	LNEX 130604PNER-L	●	●	●	●	●	●	0.4
<b>L</b>	LNEX 130608PNER-L	●	●	●	●	●	●	0.8
<b>L</b>	LNEX 130612PNER-L	●	●	●	●	●	●	1.2
<b>L</b>	LNEX 130616PNER-L	●	●	●	●	●	●	1.6
<b>L</b>	LNEX 130620PNER-L	●	●	●	●	●	●	2.0
<b>L</b>	LNEX 130624PNER-L	●	●	●	●	●	●	2.4
<b>L</b>	LNEX 130632PNER-L	●	●	●	●	●	●	3.2
<b>G</b>	LNEX 130604PNER-G	●	●	●	●	●	●	0.4
<b>G</b>	LNEX 130608PNER-G	●	●	●	●	●	●	0.8
<b>G</b>	LNEX 130612PNER-G	●	●	●	●	●	●	1.2
<b>G</b>	LNEX 130616PNER-G	●	●	●	●	●	●	1.6
<b>G</b>	LNEX 130620PNER-G	●	●	●	●	●	●	2.0
<b>G</b>	LNEX 130624PNER-G	●	●	●	●	●	●	2.4
<b>G</b>	LNEX 130632PNER-G	●	●	●	●	●	●	3.2
<b>H</b>	LNEX 130604PNER-H	●	●	●	●	●	●	0.4
<b>H</b>	LNEX 130608PNER-H	●	●	●	●	●	●	0.8
<b>H</b>	LNEX 130612PNER-H	●	●	●	●	●	●	1.2
<b>H</b>	LNEX 130616PNER-H	●	●	●	●	●	●	1.6
<b>H</b>	LNEX 130620PNER-H	●	●	●	●	●	●	2.0
<b>H</b>	LNEX 130624PNER-H	●	●	●	●	●	●	2.4
<b>H</b>	LNEX 130632PNER-H	●	●	●	●	●	●	3.2



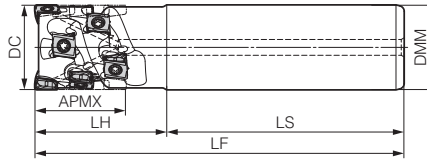
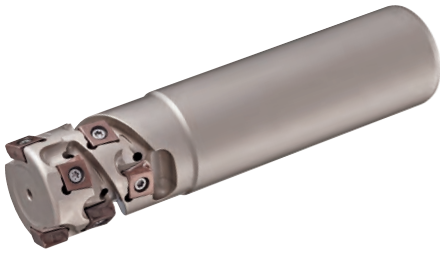
· Use the inserts RE ≤ 0.8mm except for the tip blade.

### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - <b>Optimum</b> - Max.	Feed Rate $f_z$ (mm/t) Min. - <b>Optimum</b> - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	110 - <b>200</b> - 280	0.10 - <b>0.20</b> - 0.30	ACP100
		>280HB	70 - <b>135</b> - 200	0.10 - <b>0.20</b> - 0.30	ACP200
	Alloy Steel	180 to 280HB	90 - <b>155</b> - 220	0.10 - <b>0.15</b> - 0.25	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.10 - <b>0.15</b> - 0.25	ACM200
		>280HB	70 - <b>115</b> - 160	0.10 - <b>0.15</b> - 0.25	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	125 - <b>175</b> - 225	0.10 - <b>0.20</b> - 0.30	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.05 - <b>0.10</b> - 0.15	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.

Rake Angle	Radial	-33° to -18°
	Axial	-6° to -3°



## Body

Dimensions (mm)

	Cat. No.	Stock	Diameter		Max. Depth of Cut		Shank Diameter		Head Length		Shank Length		Total Length		Total Teeth	Steps	Effective Teeth	Weight (kg)
			DC	APMX	DMM	LH	LS	LF										
Metric	<b>TSXR 08020E2120Z01</b>	●	20	21	20	30	80	110	3	3	1	0.22						
	<b>TSXR 08025E2725Z02</b>	●	25	27	25	35	90	125	8	4	2	0.39						
	<b>TSXR 08032E3432Z02</b>	●	32	34	32	50	90	140	10	5	2	0.74						
	<b>TSXR 08040E4032Z03</b>	●	40	40	32	60	90	150	18	6	3	0.92						

Inserts are not included.

## Identification Details

**TSXR 08 025 E 27 25 Z02**

Cutter Series    Insert Size    Cutting Diameter    Shank Type    Max. Depth of Cut    Shank Diameter    Effective Teeth

## Parts

Screw	Wrench	Anti-seizure Cream
BFTX0308IP <b>2.0</b>	TRDR08IP	SUMI-P

Recommended Tightening Torque (N·m)



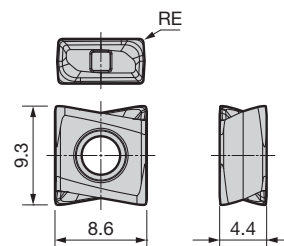
Rake Angle	Radial	-33° to -18°
	Axial	-6° to -3°



### Inserts

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

Grades		Coating							Dimensions (mm)
Applications	High Speed/Light Cut								
	General Purpose Cut								
	Roughing Cut								
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	Corner Radius
									RE
<b>LNEX 080404PNER-L</b>			●	●	●	●	●	●	0.4
<b>LNEX 080408PNER-L</b>			●	●	●	●	●	●	0.8
<b>LNEX 080412PNER-L</b>			●			●	●	●	1.2
<b>LNEX 080416PNER-L</b>			●			●	●	●	1.6
<b>LNEX 080404PNER-G</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 080408PNER-G</b>		●	●	●	●	●	●	●	0.8
<b>LNEX 080412PNER-G</b>		●	●	●	●	●	●	●	1.2
<b>LNEX 080416PNER-G</b>		●	●	●	●	●	●	●	1.6

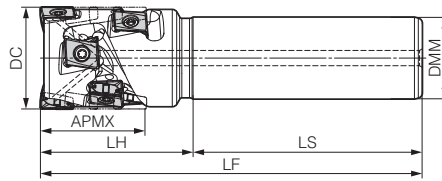


· Use the inserts RE ≤ 0.8mm except for the tip blade.

### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - Optimum - Max.	Feed Rate $f_z$ (mm/t) Min. - Optimum - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	110 - <b>200</b> - 280	0.10 - <b>0.20</b> - 0.30	ACP100
		>280HB	70 - <b>135</b> - 200	0.10 - <b>0.20</b> - 0.30	ACP200
	Alloy Steel	180 to 280HB	90 - <b>155</b> - 220	0.10 - <b>0.15</b> - 0.25	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.10 - <b>0.15</b> - 0.25	ACM200
		>280HB	70 - <b>115</b> - 160	0.10 - <b>0.15</b> - 0.25	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	125 - <b>175</b> - 225	0.10 - <b>0.20</b> - 0.30	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.05 - <b>0.10</b> - 0.15	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
· The above is a guide for use with BT50.



## Body

Dimensions (mm)

Metric	Cat. No.	Stock	Diameter		Max. Depth of Cut		Shank Diameter		Head Length		Shank Length		Total Length		Total Teeth	Steps	Effective Teeth	Weight (kg)
			DC	APMX	DMM	LH	LS	LF										
	<b>TSXR 13040E4132Z02</b>	●	40	41	32	60	90	150	8	4	2	0.91						
	<b>TSXR 13050E6042Z03</b>	●	50	60	42	80	90	170	18	6	3	1.74						

Inserts are not included.

## Identification Details

**TSXR 13 050 E 60 42 Z03**

Cutter Series	Insert Size	Cutting Diameter	Shank Type	Max. Depth of Cut	Shank Diameter	Effective Teeth
TSXR 13	050	E	60	42	Z03	

## Parts

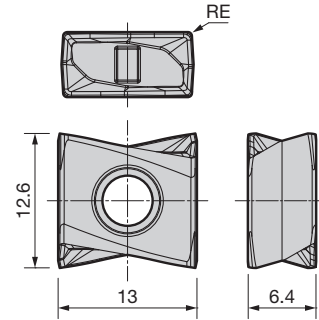
Screw	Wrench	Anti-seizure Cream
BFTX03510IP	TRDR15IP	SUMI-P

Recommended Tightening Torque (N·m)

### Inserts

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

Grades		Coating						Dimensions (mm)	
Applications	High Speed/Light Cut	<b>P</b>			<b>K</b>		<b>M</b> <b>S</b>		
	General Purpose Cut	<b>P</b>	<b>M</b>		<b>K</b>		<b>M</b> <b>S</b>		
	Roughing Cut		<b>P</b>	<b>M</b>	<b>K</b>		<b>M</b> <b>S</b>		
Cat. No.		<b>ACP100</b>	<b>ACP200</b>	<b>ACP300</b>	<b>ACK200</b>	<b>ACK300</b>	<b>ACM200</b>	<b>ACM300</b>	Corner Radius RE
			●	●	●	●	●	●	
<b>LNEX 130604PNER-L</b>			●	●	●	●	●	●	0.4
<b>LNEX 130608PNER-L</b>			●	●	●	●	●	●	0.8
<b>LNEX 130612PNER-L</b>			●			●	●	●	1.2
<b>LNEX 130616PNER-L</b>			●			●	●	●	1.6
<b>LNEX 130620PNER-L</b>			●			●	●	●	2.0
<b>LNEX 130624PNER-L</b>			●			●	●	●	2.4
<b>LNEX 130632PNER-L</b>			●			●	●	●	3.2
<b>LNEX 130604PNER-G</b>		●	●	●	●	●	●	●	0.4
<b>LNEX 130608PNER-G</b>		●	●	●	●	●	●	●	0.8
<b>LNEX 130612PNER-G</b>		●	●	●	●	●	●	●	1.2
<b>LNEX 130616PNER-G</b>		●	●	●	●	●	●	●	1.6
<b>LNEX 130620PNER-G</b>		●	●	●	●	●	●	●	2.0
<b>LNEX 130624PNER-G</b>		●	●	●	●	●	●	●	2.4
<b>LNEX 130632PNER-G</b>		●	●	●	●	●	●	●	3.2
<b>LNEX 130604PNER-H</b>			●	●	●	●			0.4
<b>LNEX 130608PNER-H</b>			●	●	●	●			0.8
<b>LNEX 130612PNER-H</b>			●	●	●	●			1.2
<b>LNEX 130616PNER-H</b>			●	●	●	●			1.6
<b>LNEX 130620PNER-H</b>			●	●	●	●			2.0
<b>LNEX 130624PNER-H</b>			●	●	●	●			2.4
<b>LNEX 130632PNER-H</b>			●	●	●	●			3.2



· Use the inserts RE ≤ 0.8mm except for the tip blade.

### Recommended Cutting Conditions

ISO	Material	Hardness	Cutting Speed $v_c$ (m/min) Min. - <b>Optimum</b> - Max.	Feed Rate $f_z$ (mm/t) Min. - <b>Optimum</b> - Max.	Grades
<b>P</b>	Carbon Steel	180 to 280HB	110 - <b>200</b> - 280	0.10 - <b>0.20</b> - 0.30	ACP100
		>280HB	70 - <b>135</b> - 200	0.10 - <b>0.20</b> - 0.30	ACP200
	Alloy Steel	180 to 280HB	90 - <b>155</b> - 220	0.10 - <b>0.15</b> - 0.25	ACP300
<b>M</b>	Stainless Steel	220 to 280HB	90 - <b>135</b> - 180	0.10 - <b>0.15</b> - 0.25	ACM200
		>280HB	70 - <b>115</b> - 160	0.10 - <b>0.15</b> - 0.25	ACM300
<b>K</b>	Cast Iron/ Ductile Cast Iron	250HB	125 - <b>175</b> - 225	0.10 - <b>0.20</b> - 0.30	ACK200 ACK300
<b>S</b>	Exotic Alloy	—	30 - <b>60</b> - 90	0.05 - <b>0.10</b> - 0.15	ACM200 ACM300

· Adjust the above-mentioned recommended cutting conditions, as required by the mechanical and workpiece rigidity.  
 · The above is a guide for use with BT50.

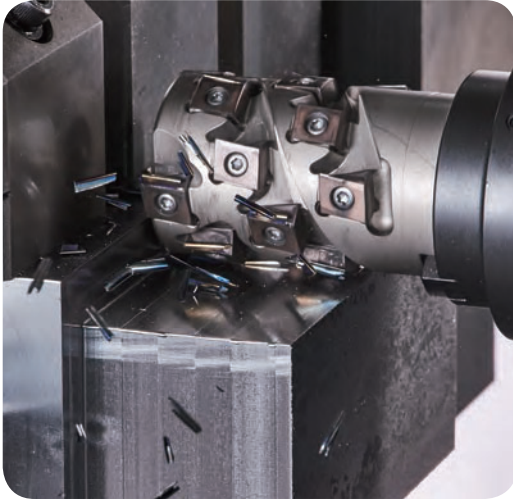
## SEC-Sumi Dual Mill TSX Series Repeater Design Contact Sheet (1)

Select a specialized shape and fill out the dimensions in the boxes.

Once you have filled this form out please contact your nearest Sumitomo Sales Office or authorized distributor.

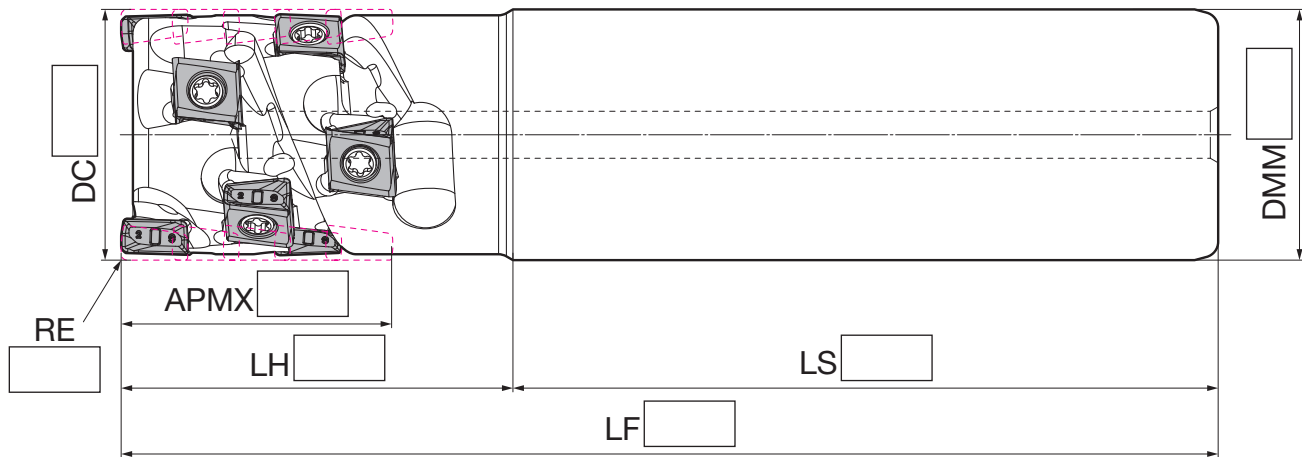
Please include necessary additional information (different shapes, dimensions, etc.)

Company name/contact information



Standard Specifications							
Applicable Inserts	Diameter (mm)	Maximum Depth of Cut (mm)	Total number of Teeth	Number of Steps	Max. Effective No. of Teeth	Specifications	
	DC	APMX				Shell Type	Shank Type
LNEX08 (See P. 9)	20	21	3	3	1		○
	25	27	8	4	2		○
	32	34	10	5	2	○	○
	40	40	18	6	3	○	○
	50	54	32	8	4	○	
	63	60	45	9	5	○	
LNEX13 (See P. 11)	40	41	8	4	2	○	○
	50	60	18	6	3	○	○
	63	60	24	6	4	○	
	80	60	30	6	5	○	
	100	60	36	6	6	○	
	125	60	42	6	7	○	

**Shank type** Based on the standard specifications above, fill in the required special dimensions



### Included Parts

Screw	Wrench	Anti-seizure Cream

- Tip blade corner radius (RE) can be selected.  
All other blades  $RE \leq 0.8\text{mm}$ .
- Required effective no. of teeth:
- Coolant holes: Yes  No

## SEC-Sumi Dual Mill TSX Series Repeater Design Contact Sheet (2)

Select a specialized shape and fill out the dimensions in the boxes.

Once you have filled this form out please contact your nearest Sumitomo Sales Office or authorized distributor.

Please include necessary additional information (different shapes, dimensions, etc.)

Company name/contact information

**Shell type** Please refer to the standard specifications on P. 28 when filling out.

Technical drawing of a shell type mill. Dimensions to be filled out include: DC (overall diameter), RE (tip blade corner radius), APMX (width of the main body), LF (total length), CDBP (width of the cutting edge), KDP (width of the cutting edge), DCSFMS (width of the cutting edge), KWW (width of the cutting edge), and DCB (width of the cutting edge).

**Arbor type** Please refer to the standard specifications on P. 28 when filling out.

Technical drawing of an arbor type mill. Dimensions to be filled out include: DC (overall diameter), RE (tip blade corner radius), APMX (width of the main body), LH (total length), and Interface (width of the interface).

### Included Parts

Screw	Wrench	Bolt	Anti-seizure Cream
		<small>*Shell type only</small>	

· Tip blade corner radius (RE) can be selected.

All other blades  $RE \leq 0.8\text{mm}$ .

· Required effective no. of teeth:

· Coolant holes: Yes  No

## SEC-Sumi Dual Mill TSX Series Side Cutter Design Contact Sheet

Select a specialized shape and fill out the dimensions in the boxes.

Once you have filled this form out please contact your nearest Sumitomo Sales Office or authorized distributor.

Please include necessary additional information (different shapes, dimensions, etc.)

Company name/contact information

### Insert Series (Left-Handed)

Cat. No.	Corner Radius (mm)						
	R0.4	R0.8	R1.2	R1.6	R2.0	R2.4	R3.2
LNEX 0804○PNEL-L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	—	—	—
LNEX 0804○PNEL-G	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	—	—	—
LNEX 1306○PNEL-L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LNEX 1306○PNEL-G	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

mark indicates left-handed available as made-to-order product. — mark indicates not available.

#### [Specialized Insert Support]

LNEX 08 corner radius (RE) = 0.4 to 1.6mm




LNEX 13 corner radius (RE) = 0.4 to 3.2mm, support for left and right handed operation.

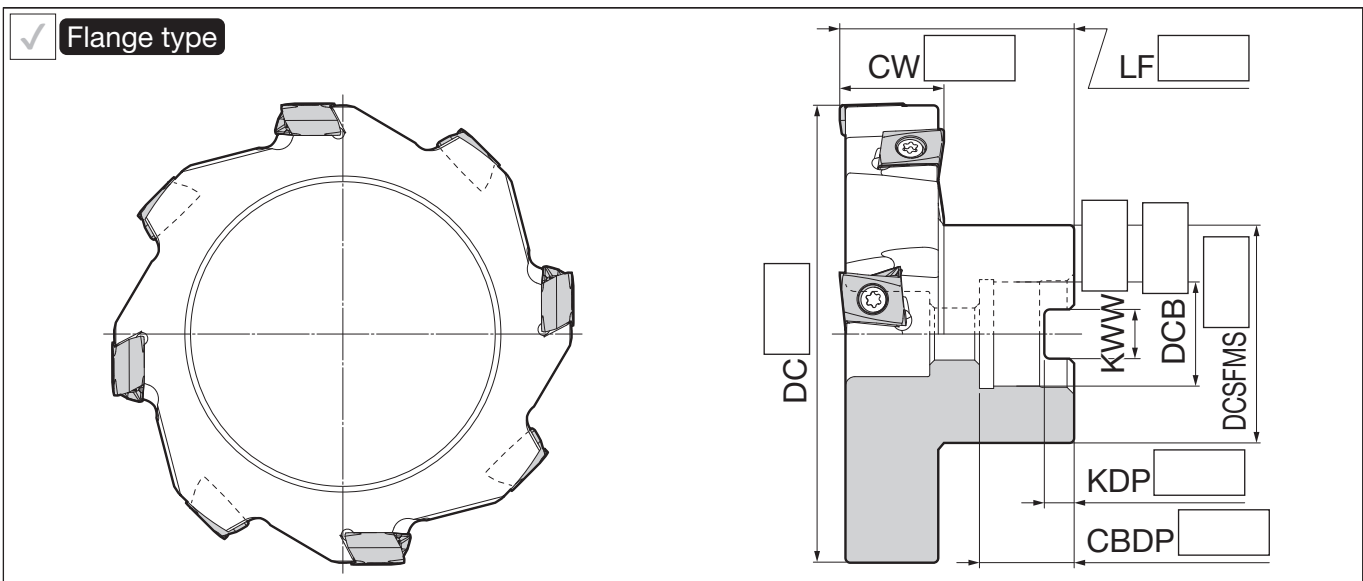
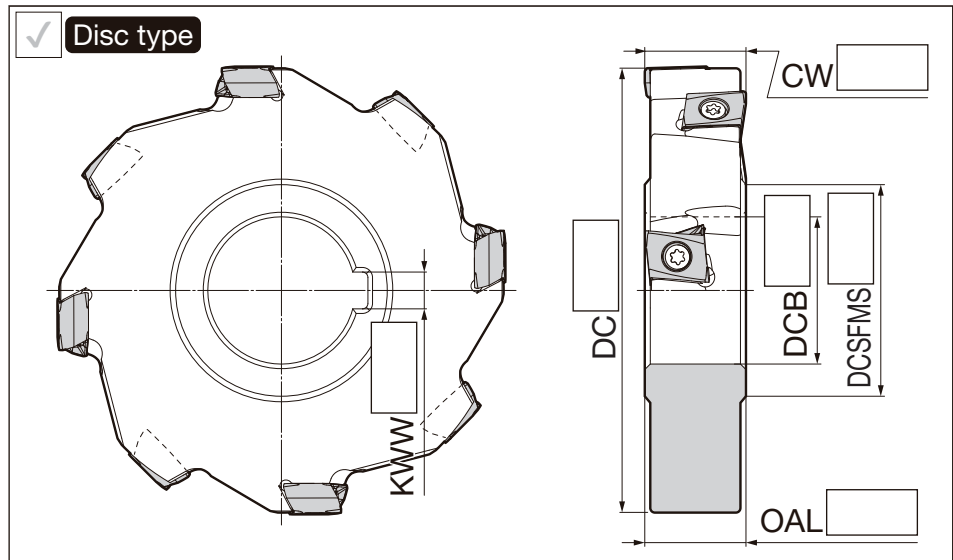
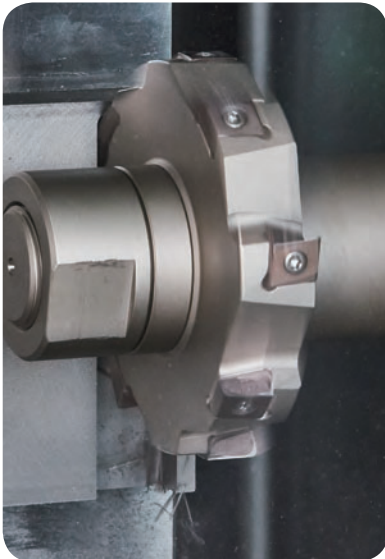
(After processing, the shape of the corner radius can differ from the corner RE size of the installed insert.)

CW size standard specifications	
14mm	LNEX 08 (see P. 9)
18 to 22mm	LNEX 13 (see P. 11)

\*CW sizes above those stated here use a multi-stage design.

#### Included Parts

Screw	Wrench	Anti-seizure Cream
		



· Required effective no. of teeth:



## SEC-Sumi Dual Mill TSX Series Specialized Design Contact Sheet

Select a specialized shape and fill out the dimensions in the boxes.

Once you have filled this form out please contact your nearest Sumitomo Sales Office or authorized distributor.

Please include necessary additional information (different shapes, dimensions, etc.)

Company name/contact information

### Insert Series (Left-Handed)

Cat. No.	Corner Radius (mm)						
	R0.4	R0.8	R1.2	R1.6	R2.0	R2.4	R3.2
LNEX 0804○OPNEL-L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	—	—	—
LNEX 0804○OPNEL-G	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	—	—	—
LNEX 1306○OPNEL-L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LNEX 1306○OPNEL-G	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

mark indicates left-handed available as made-to-order product. — mark indicates not available.

#### [Specialized Insert Support]

LNEX 08 corner radius (RE) = 0.4 to 1.6mm

LNEX 13 corner radius (RE) = 0.4 to 3.2mm, support for left and right handed operation.




(After processing, the shape of the corner radius can differ from the corner RE size of the installed insert.)

#### CW size standard specifications

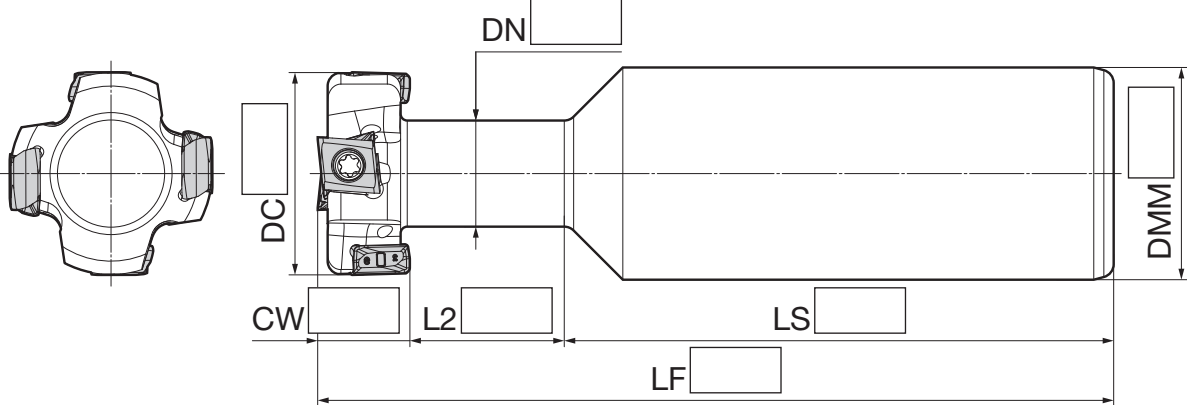
14mm	LNEX 08 (see P. 9)
18 to 22mm	LNEX 13 (see P. 11)

\*CW sizes above those stated here use a multi-stage design.

#### Included Parts

Screw	Wrench	Anti-seizure Cream
		

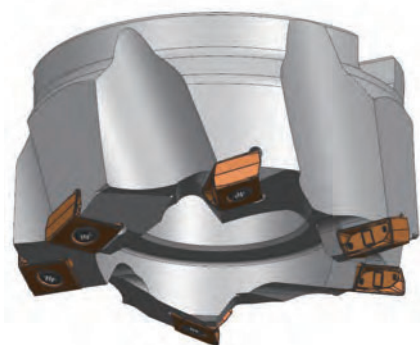
T-Slot type




· Required effective no. of teeth:


· Coolant holes: Yes  No


\* Angled cutters, high feed cutters, bore cutters, etc. are also available.





# Application Examples


SCM440 Mechanical Parts		Sumitomo	Conventional
 <p>(1) Side Face Milling (2) Face Milling (3) Face Milling</p>	Tool	TSXF 08020E	Vertical 4 corner
	Grade	ACP200	—
	Chipbreaker	G	—
	Tool diameter (mm)	20	20
	No. of teeth	3	3
	$V_c$ (m/min)	270	270
	$V_f$ (mm/min)	650	650
	$f_z$ (mm/t)	0.05	0.05
	$a_p$ (mm)	8.0	8.0
	$a_e$ (mm)	0.64	0.64
	Coolant	Wet	Wet
	Result	Faster finish compared to conventional products due to superior shoulder squareness.	

SUS304L Guide		Sumitomo	Conventional	
	M/C:BT50	Tool	TSXM 13125RS	—
	Grade	ACM200	—	
	Chipbreaker	L	—	
	Tool diameter (mm)	125	125	
	No. of teeth	10	8	
	$V_c$ (m/min)	70	70	
	$V_f$ (mm/min)	80	40	
	$f_z$ (mm/t)	0.045	0.028	
	$a_p$ (mm)	5.0	5.0	
	$a_e$ (mm)	95	95	
	Coolant	Wet	Wet	
	Result	Twice the machining efficiency, twice the tool life.		

FC250 Cylinder Block		Sumitomo	Conventional	
	M/C:BT40	Tool	TSX 13050RS	—
	Grade	ACK300	—	
	Chipbreaker	L	—	
	Tool diameter (mm)	50	50	
	No. of teeth	4	4	
	$V_c$ (m/min)	235	235	
	$V_f$ (mm/min)	600	600	
	$f_z$ (mm/t)	0.1	0.1	
	$a_p$ (mm)	0.8	0.8	
	$a_e$ (mm)	0.8	0.8	
	Coolant	Wet	Wet	
	Result	Superior dimensional accuracy and surface finish compared to conventional products.		

Cast Steel Shaft Housing		Sumitomo	Conventional	
	M/C:BT40	Tool	TSX 13100R	—
	Grade	ACP200	—	
	Chipbreaker	G	—	
	Tool diameter (mm)	100	100	
	No. of teeth	6	8	
	$V_c$ (m/min)	180	141	
	$V_f$ (mm/min)	962	1000	
	$f_z$ (mm/t)	0.28	0.28	
	$a_p$ (mm)	Rough: 3mm Finish: 1mm	Rough: 3mm Finish: 1mm	
	$a_e$ (mm)	—	—	
	Coolant	Wet	Wet	
	Result	Superior machined surfaces compared to conventional products.		

Ductile Iron Housing		Sumitomo	Conventional	
	M/C:BT40	Tool	TSXM 13050RS	One-sided 4 corner
	Grade	ACK300	—	
	Chipbreaker	G	—	
	Tool diameter (mm)	50	50	
	No. of teeth	5	5	
	$V_c$ (m/min)	240	240	
	$V_f$ (mm/min)	1150	1150	
	$f_z$ (mm/t)	0.13	0.13	
	$a_p$ (mm)	1.0	1.0	
	$a_e$ (mm)	30.0	30.0	
	Coolant	Dry	Dry	
	Result	Tool life extended by 131%.		

SCM430 Bearing Cover		Sumitomo	Competitor	
	M/C: BT50 horizontal	Tool	TSXM 13080RS	—
	Grade	ACP200	—	
	Chipbreaker	H	—	
	Tool diameter (mm)	80	80	
	No. of teeth	7	6	
	$V_c$ (m/min)	180	180	
	$V_f$ (mm/min)	950	950	
	$f_z$ (mm/t)	0.2	0.2	
	$a_p$ (mm)	3.8	3.8	
	$a_e$ (mm)	50.0	50.0	
	Coolant	Dry	Dry	
	Result	Tool life extended by 333%.		

## < SAFETY NOTES >



- 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.

- 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.

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