

# TURNING

## How to select parting and grooving tools

### Structure of parting and grooving tools selection table

- Categorized as external machining, internal machining and profile machining
- Concluded and separately listed according to product series (Little squirrel series and Supplementary series).

#### Dimensions

Application of external machining, internal machining and profile machining

#### External parting, grooving and turning tools

R-type shown

Type		Stock		Basic dimensions(mm)						Applicable inserts	Screw	Wrench
		R	L	H×B	L	S	W	Ø max				
QEED	1616R/L10	▲	▲	16×16	125	15	2.5	10	ZQED0250□	GB70-85-M5×20	WH40L	
	1616R/L17	▲	▲	16×16	125	15	2.5	17	ZQED0250□			
	2020R/L10	▲	▲	20×20	125	19	2.5	10	ZQED0250□			
	2020R/L17	▲	▲	20×20	125	19	2.5	17	ZQED0250□			
	2525R/L10	▲	▲	25×25	150	24	2.5	10	ZQED0250□			
QEFD	2525R/L17	▲	▲	25×25	150	24	2.5	17	ZQED0250□	GB70-85-M6×20	WH40L	
	1616R/L10	▲	▲	16×16	125	14.8	3	10	ZQFD030□			
	1616R/L17	▲	▲	16×16	125	14.8	3	17	ZQFD030□			
	2020R/L10	▲	▲	20×20	125	18.8	3	10	ZQFD030□			
	2020R/L17	▲	▲	20×20	125	18.8	3	17	ZQFD030□			
QEGD	2525R/L10	▲	▲	25×25	150	23.8	3	10	ZQFD030□	GB70-85-M6×20	WH50L	
	2525R/L17	▲	▲	25×25	150	23.8	3	17	ZQFD030□			
	2020R/L13	▲	▲	20×20	140	18.5	4	13	ZQGD040□			
	2020R/L22	▲	▲	20×20	140	18.5	4	22	ZQGD040□			
	2525R/L13	▲	▲	25×25	150	23.5	4	13	ZQGD040□			
QEHD	2525R/L22	▲	▲	25×25	150	23.5	4	22	ZQGD040□	GB70-85-M6×20	WH50L	
	3232R/L13	▲	▲	32×32	170	30.5	4	13	ZQGD040□			
	3232R/L22	▲	▲	32×32	170	30.5	4	22	ZQGD040□			
	2525R/L13	▲	▲	25×25	150	23	5	13	ZQHD050□			
	2525R/L22	▲	▲	25×25	150	23	5	22	ZQHD050□			
QEHS	2525N30	▲	▲	25×25	150	12.5	5	30	ZQHS050□	GB70-85-M6×20	WH50L	
QEHD	3232R/L13	▲	▲	32×32	170	30	5	13	ZQHD050□			
	3232R/L22	▲	▲	32×32	170	30	5	22	ZQHD050□			
QEHS	3232N30	▲	▲	32×32	170	16	5	30	ZQHS050□			
QEKD	2525R/L13	▲	▲	25×25	150	22.6	6	13	ZQKD060□			
	2525R/L22	▲	▲	25×25	150	22.6	6	22	ZQKD060□	GB70-85-M6×20	WH50L	
QEKs	2525N30	▲	▲	25×25	150	12.5	6	30	ZQKS060□			
QEKD	3232R/L13	▲	▲	32×32	170	29.6	6	13	ZQKD060□			
	3232R/L22	▲	▲	32×32	170	29.6	6	22	ZQKD060□			
QEKs	3232N30	▲	▲	32×32	170	16	6	30	ZQKS060□			

▲ Stock available


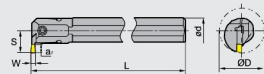

△ Make-to-order

▲ Stock available △ Make-to-order

#### Specification of products

Including type, basic dimensions, applicable inserts and accessories

### Internal grooving and turning tools

Type	Stock		Basic dimensions(mm)							Applicable inserts	Screw	Wrench
	R	L	ød	L	S	W	øDmax	ØDmin				
C20Q-QEDR/L05-27	▲	▲	20	180	15.2	2.5	5	27	ZTED025□□ ZRED025□□	GB70-85-M4 × 12 GB70-85-M5 × 16 GB70-85-M5 × 20	WH30L WH40L	
C25R-QEDR/L07-33	▲	▲	25	200	20.3	2.5	7	33				
C32S-QEDR/L09-42	▲	▲	32	250	25.3	2.5	9	42				
C20Q-QFDR/L05-27	▲	▲	20	180	15.2	3	5	27	ZTFD030□□ ZRFD030□□	GB70-85-M4 × 12 GB70-85-M5 × 16 GB70-85-M5 × 20	WH30L WH40L	
C25R-QFDR/L07-33	▲	▲	25	200	20.3	3	7	33				
C32S-QFDR/L09-42	▲	▲	32	250	25.3	3	9	42				
C25R-QGDR/L08-35	▲	▲	25	200	21.5	4	8	35	ZTGD040□□ ZRGD040□□	GB70-85-M5 × 16 GB70-85-M6 × 20 GB70-85-M6 × 20	WH40L WH50L	
C32S-QGDR/L11-44	▲	▲	32	250	27.5	4	11	44				
C40T-QGDR/L13-54	▲	▲	40	300	33.5	4	13	54				
C25R-QHDR/L08-35	▲	▲	25	200	21.5	5	8	35	ZTHD050□□ ZRH050□□	GB70-85-M5 × 16 GB70-85-M6 × 20 GB70-85-M6 × 20	WH40L WH50L	
C32S-QHDR/L11-44	▲	▲	32	250	27.5	5	11	44				
C40T-QHDR/L13-54	▲	▲	40	300	33.5	5	13	54				
C25R-QKDR/L08-35	▲	▲	25	200	21.5	6	8	35	ZTKD060□□ ZRKD060□□	GB70-85-M5 × 16 GB70-85-M6 × 20 GB70-85-M6 × 20	WH40L WH50L	
C32S-QKDR/L11-44	▲	▲	32	250	27.5	6	11	44				
C40T-QKDR/L13-54	▲	▲	40	300	33.5	6	13	54				

▲ Stock available △ Make-to-order

### Profile turning tools for Al

R-type shown

Type	Stock		Basic dimensions(mm)					Applicable inserts	Screw	Wrench
	R	L	ØD (Maximum machining diameter)	ød	S	L <sub>1</sub>	L <sub>2</sub>			
C40X-QLDR/L65-15A	▲	▲	160	40	21	320	65	ZRLD08-LH	GB70-85-M6×20	WH50L
C40X-QLDR/L80-15A	▲	▲	160	40	21	320	80	ZRLD08-LH		
C40X-QKDR/L60-15A	▲	▲	160	40	20	320	60	ZRKD06-LH		
C40X-QKDR/L75-15A	▲	▲	160	40	20	320	75	ZRKD06-LH		
▲ Stock available    △ Make-to-order										

▲ Stock available △ Make-to-order

Indicating the minimum machining diameter













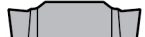

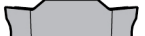
The minimum machining diameter is very important for internal machining.




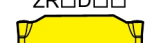
# TURNING




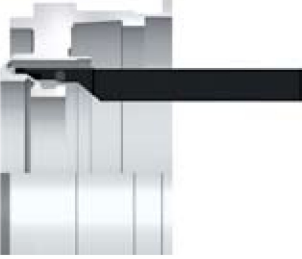
## Parting and grooving tools

<b>Parting and grooving tools overview</b>	<b>A230-A232</b>
<b>Parting and grooving inserts</b>	<b>A233-A241</b>
Introduction of Little Squirrel series inserts chipbreaker	A233-A234
Parting, grooving and profiling inserts code key	A235
Inserts of Little Squirrel series	A236-A240
Inserts of ZQMX series	A241
<b>Parting and grooving tools</b>	<b>A242-A259</b>
Little squirrel series	
Little squirrel series parting and grooving tools code key	A242-A243
External parting, grooving and turning tools	A244
Precise grooving and turning tools	A245
External recess and profiling tools	A245
External grooving tools for materials hard to be machined	A246
External parting blade and holder for external parting	A247
Surface grooving and turning tools	A248-A255
Internal grooving and turning tools	A256
Profile turning tools for Al	A257
Supplementary series	
Supplementary series parting and grooving tools code key	A258
QZQ external grooving series	A259
Application information on parting and grooving	A260-A261

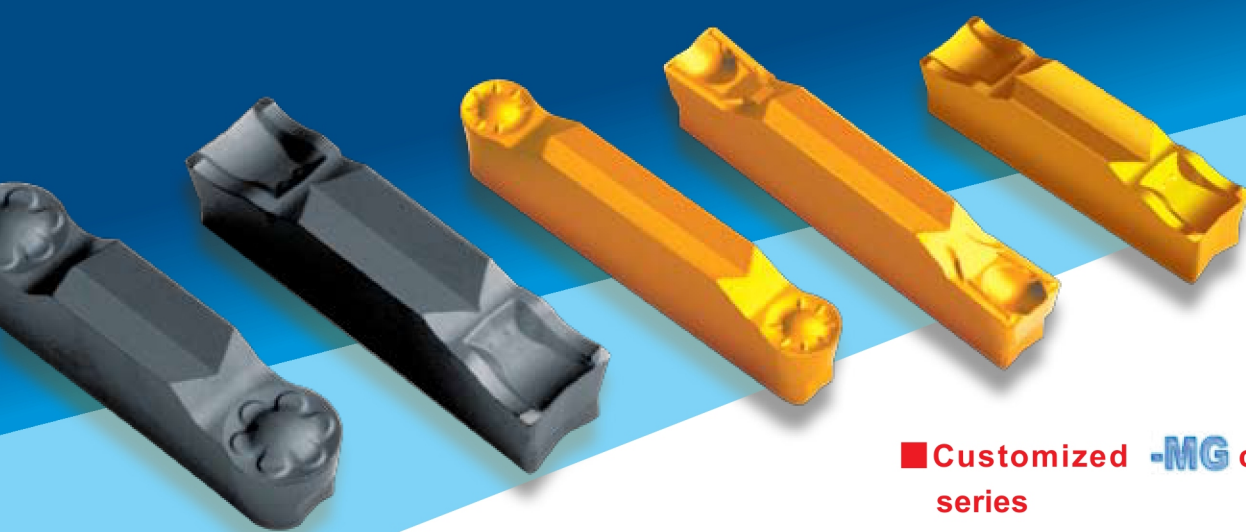


Machining application	Machining type	Applicable tools	Corresponding inserts	Tool features and parameters
External machining	Parting	<p>Little squirrel series QZ□□+QE□□</p>  <p>A247</p>	<p>Parting inserts ZP□S□□</p> 	<ul style="list-style-type: none"> <li>Assemble structure of parting blade and holder; good rigidity; adjustable parting range</li> <li>The maximum parting diameter is 120mm.</li> </ul>
		<p>Little squirrel series QE□□R/L</p>  <p>A244</p>	<p>ZP□D□□</p>  <p>ZP□S□□</p> 	<ul style="list-style-type: none"> <li>Inserts have three-dimensional chipbreaker with small cutting force and good performance on chip-breaking.</li> <li>The maximum parting diameter is 60mm.</li> </ul>
		<p>Supplementary series QZQ□□R/L</p>  <p>A259</p>	<p>ZQMX□□</p> 	<ul style="list-style-type: none"> <li>Cutting edge strength is suitable for bad machining conditions.</li> <li>The maximum parting diameter is 70mm.</li> </ul>
	Grooving and turning	<p>Little squirrel series QE□□R/L</p>  <p>A244</p>	<p>Double cutting edges for parting ZT□D□□</p>  <p>Profile turning ZR□D□□</p>  <p>Single cutting edge for deep grooving ZT□S□□</p> 	<ul style="list-style-type: none"> <li>A single tool with multiple applications such as grooving, parting and profile turning, reducing tools categories needed.</li> <li>Installed with grooving inserts, the tool realizes grooving and transverse cutting. It is multifunctional.</li> <li>The maximum slot depth machinable is 30mm.</li> </ul>
	Precise grooving	<p>Little squirrel series QECD</p>  <p>A245</p>	<p>Precise grooving ZT□D□□-EG</p>  <p>Edge width 1.2~2.4mm</p>	<ul style="list-style-type: none"> <li>Grinded insert used for precise grooving</li> <li>Edge width can be anything between 1.0-6.5mm, customized according to users' needs.</li> </ul>
		<p>Little squirrel series QE□□R/L</p>  <p>A244</p>	<p>Precise grooving ZT□D□□-EG</p>  <p>Edge width 12.4~6.5mm</p>	<ul style="list-style-type: none"> <li>ZT□D□□-EG inserts: When edge width is between 1.2-2.4mm, the maximum cutting depth is 2.5mm. When edge width is above 2.4-6.5mm, the maximum cutting depth is 22mm.</li> </ul>

Machining application	Machining type	Applicable tools	Corresponding inserts	Tool features and parameters
Internal machining	Grooving and turning	 <p>Little squirrel series C□□-Q□□R/L□</p>  <p>A256</p>	<p>Grooving, Turning ZT□D□□</p>  <p>Profile turning ZR□D□□</p> 	<ul style="list-style-type: none"> <li>By installing inserts for grooving and profiling, one tool can be versatile, reducing the tool categories needed.</li> <li>The maximum slot depth machinable is 13mm.</li> <li>The minimum machining diameter is 27mm.</li> </ul>
		<p>Little squirrel series QF□□□□H</p>  <p>A248-A253</p>	<p>Grooving, Turning ZT□D□□</p>  <p>Profile turning ZR□D□□</p> 	<ul style="list-style-type: none"> <li>By installing inserts for grooving and profiling, one tool can be versatile, reducing the tool categories needed.</li> <li>Grooving diameter is 48-400mm.</li> <li>Grooving depth is 10-30mm.</li> </ul>
End surface machining	Grooving and turning	<p>Little squirrel series QF□□□□L</p>  <p>A254-A255</p>	<p>Grooving, Turning ZT□D□□</p>  <p>Profile turning ZR□D□□</p> 	<ul style="list-style-type: none"> <li>90°holder, top clamping</li> <li>By installing inserts for grooving and profiling, one tool can be versatile, reducing the tool categories needed.</li> <li>Grooving diameter is 48~400mm.</li> <li>Grooving depth is 10~30mm.</li> </ul>
		<p>Little squirrel series QX□□□□□□</p>  <p>A245</p>	<p>Grooving, Turning ZT□D□□</p>  <p>Profile turning ZR□D□□</p> 	<ul style="list-style-type: none"> <li>The unique tool for recess machining.</li> <li>Complete range of specifications, able to achieve various recess machining.</li> </ul>
AI profiling	External machining	<p>Little squirrel series QE□□R/L</p>  <p>A244</p>	<p>Little squirrel series ZR□□-LH</p> 	<ul style="list-style-type: none"> <li>The unique tool for profiling of AI material.</li> <li>Cutting edge is designed to combine sharpness and strength, suitable for continuous and intermittent turning.</li> <li>Used for external, surface and inner wall machining of AI wheel hub.</li> </ul>
	Inner wall and surface machining	<p>Little squirrel series C40X□□</p>  <p>A257</p>		

Machining application	Machining type	Applicable tools	Corresponding inserts	Tool features and parameters
Tools for aviation and aerospace industries	External machining	<p>Little squirrel series QE□S□□N</p>  <p>A246</p>	<p>Little squirrel series ZIGQ□□</p>  <p>Little squirrel series ZIMF□□</p> 	<ul style="list-style-type: none"> <li>• V-type locating, top clamping, precise locating, safe clamping.</li> <li>• Normal square-ended inserts and precise square-ended inserts are suitable for adhesive materials hard to machine such as Ni-base high-temperature alloy, Ti alloy and stainless steel, etc.</li> </ul>
	Non-standard Tools	 <p>Non-standard tools to match workpiece</p>	Select and manufacture as required	<ul style="list-style-type: none"> <li>• Instantly provide solutions for machining various parts to satisfy your requirements.</li> </ul>



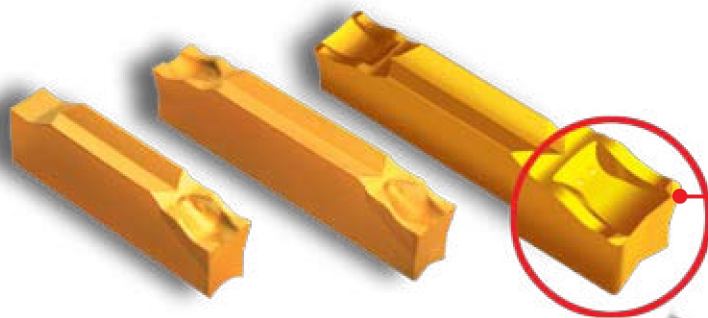
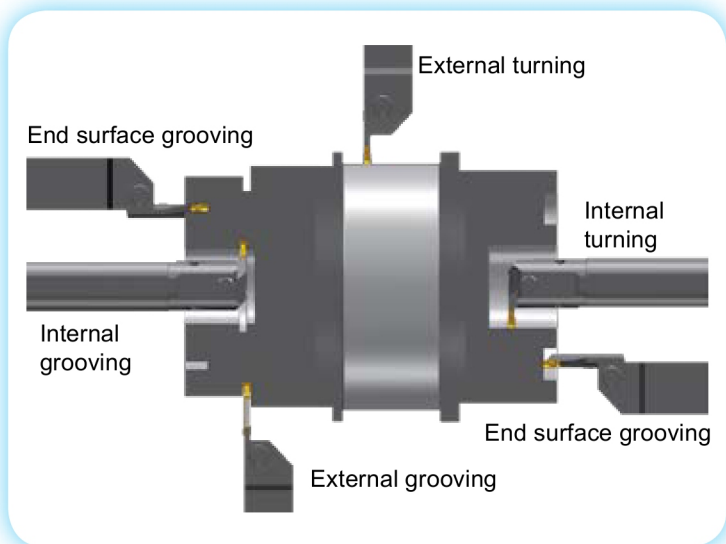


## Little squirrel series

# -MG Chipbreaker

### ■ Human-centered design realizes various application of one single insert, reducing the tool categories needed.

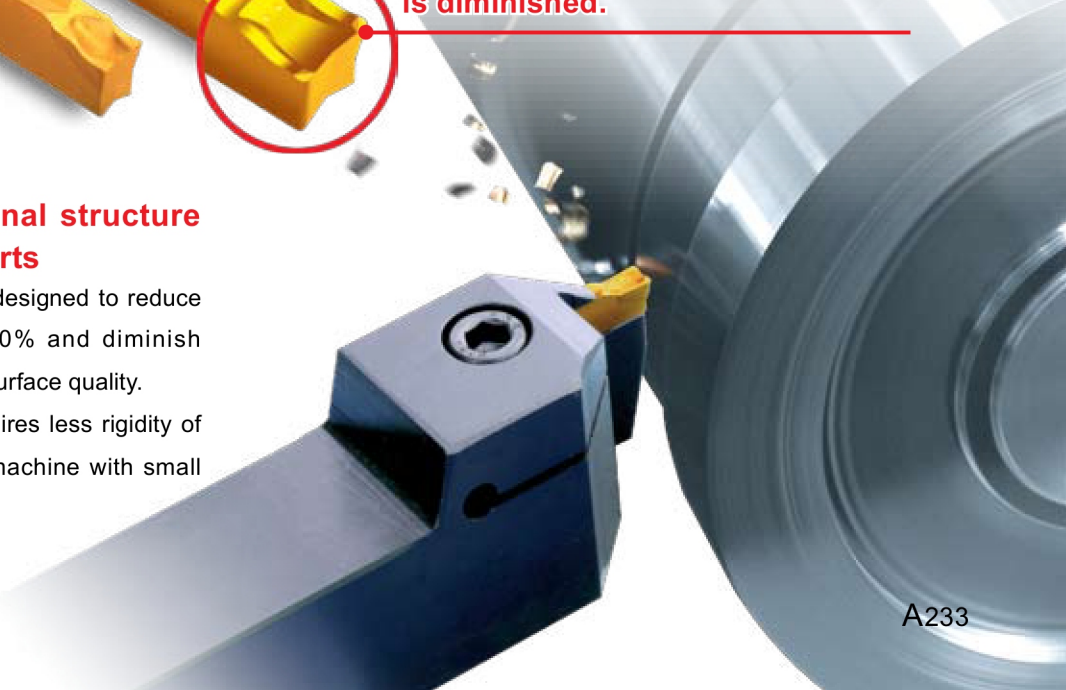
Inserts of the same edge with can work with corresponding tool holders to satisfy the requirements of external, internal and surface grooving and turning by using minimum categories of inserts and tool holders, effectively reducing cost of tool storage and management.



**The cutting resistant force is reduced by 20%, and the vibration is diminished.**

### ■ Unique and professional structure design of parting inserts

- A special flank structure is designed to reduce cutting resistant force by 20% and diminish vibration, which improves the surface quality.
- A special edge design requires less rigidity of machine. It can be used on machine with small power.





## Little squirrel series

# -EG

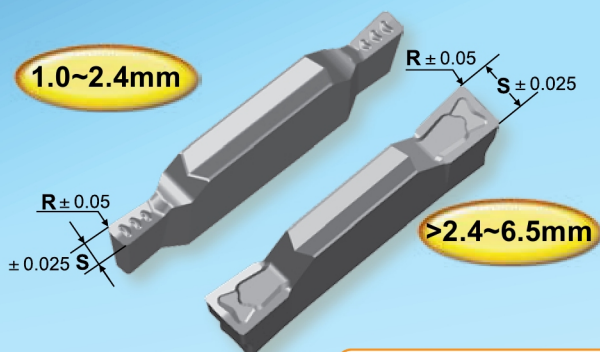
### Precise grooving and profile turning inserts

Special chipbreaker design, suitable for precise grooving of low-carbon steel, stainless steel, adhesive materials and non-ferrous metal.

## -EG

### Precise grooving inserts

The edge width can be anything between **1.0-6.5mm** according to your requirements.



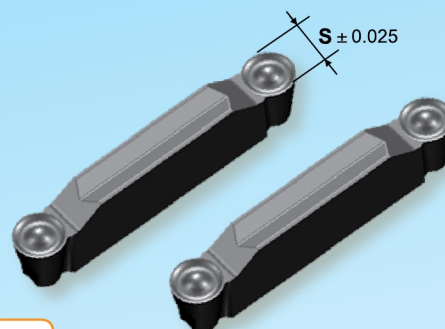
The tolerance of the edge width S of precise grooving and profiling inserts can reach  $\pm 0.025$ . Inserts can also be mounted on the corresponding specifications of original tool series.

The width of the Little Squirrel series precise grooving inserts can be anything between 1.0mm to 6.5mm, which means products with any edge width or nose radius can be provided according to customers' requirements. The inserts are mainly used for precise grooving, such as sealing slot and locating slot, etc.

## -EG

### Precise profile turning inserts

The Little Squirrel series precise profiling and turning inserts are mainly used for Precise grooving and profiling.

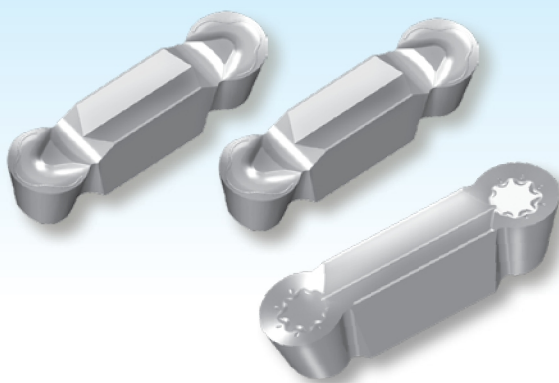


# -LC/-LH

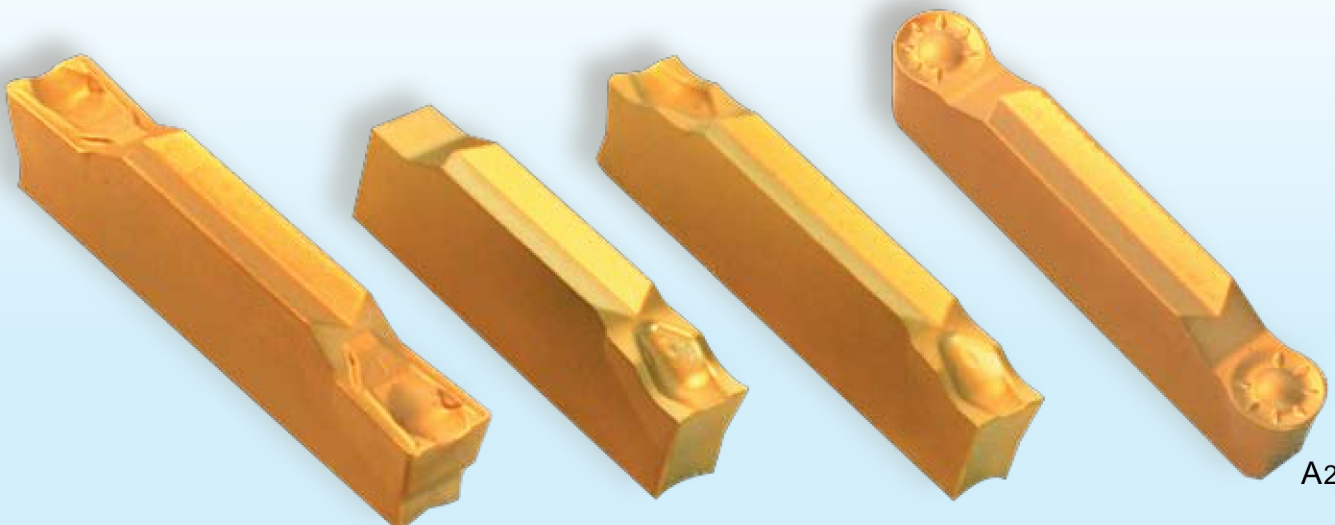
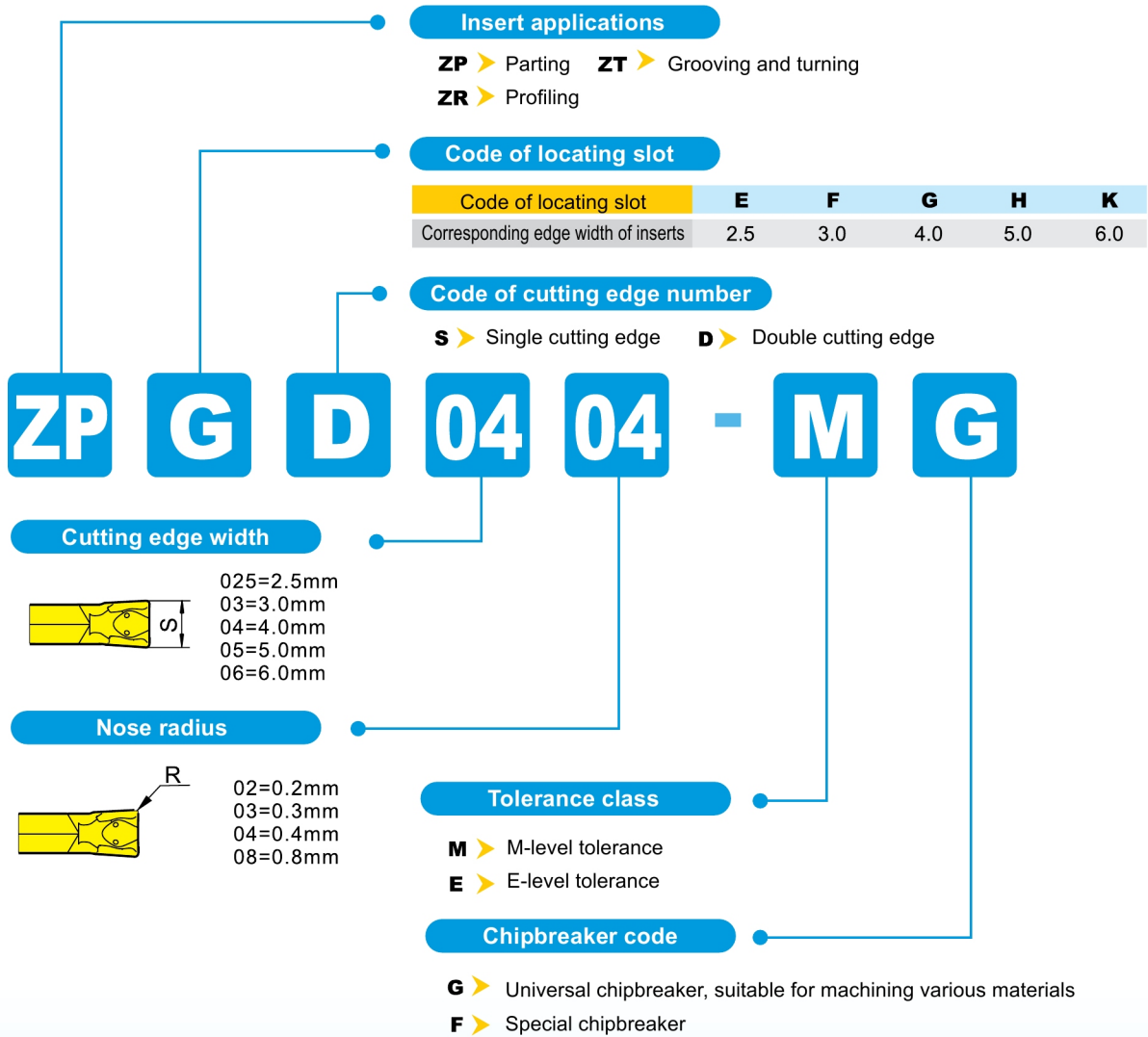
### Profile turning inserts for Al

The special chipbreaker for aluminum profiling is designed to combine sharpness and strength of the cutting edge, effectively reducing the friction between chips and the rake face. The inserts are suitable for continuous and intermittent profiling of Al alloy.

Suitable for various machining of Al wheel boss periphery, surface and inner wall, etc.



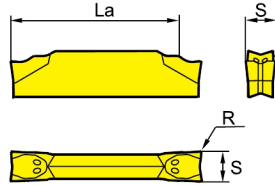
## Little squirrel series parting, grooving and profiling inserts code key



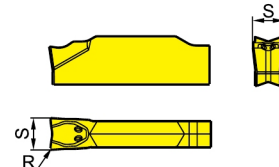
### Parting inserts



Double edges



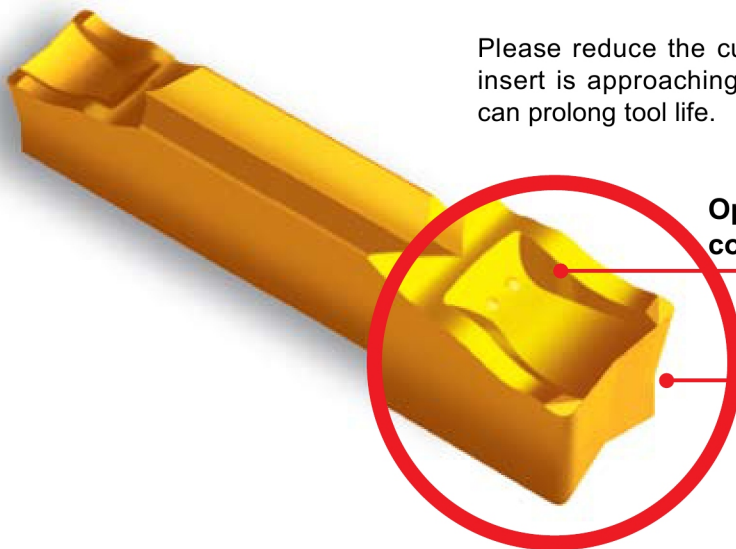
Single edge



Type		Basic dimensions(mm)			Grade						
					P			M		K	N
		S <sup>+0.1</sup> <sub>0</sub>	R <sub>±0.1</sub>	Cutting depth La <sub>max</sub>	YBG202	YBG302	YBC151	YBG202	YBG302	YBG302	YD101
Double edges	ZPED02502-MG	2.5	0.2	17	●	★		●	★	★	
	ZPFD0302-MG	3.0	0.2	17		○			○	○	
	ZPGD0402-MG	4.0	0.2	22		○			○	○	
	ZPHD0503-MG	5.0	0.3	22		○			○	○	
	ZPKD0604-MG	6.0	0.4	22		○			○	○	
Single edge	ZPES02502-MG	2.5	0.2		○	★		○	★	★	
	ZPFS0302-MG	3.0	0.2			○			○	○	
	ZPGS0402-MG	4.0	0.2			○			○	○	
	ZPHS0503-MG	5.0	0.3			○			○	○	
	ZPKS0604-MG	6.0	0.4			○			○	○	

The single-edge insert is only mounted on parting blade.

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order



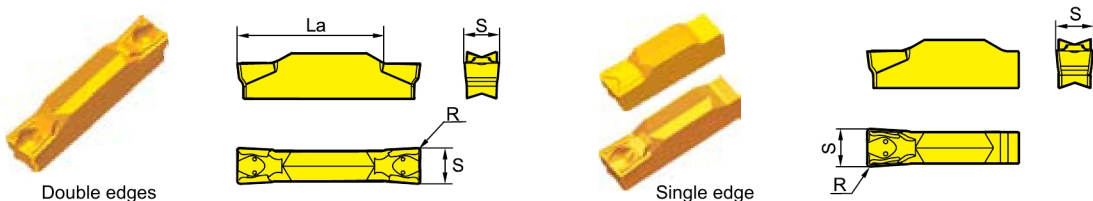
Please reduce the cutting speed by 30% when the insert is approaching the centre of workpiece. This can prolong tool life.

Optimal chipbreaker structure can well control chip flow and curling.

Cutting resistant force is reduced by 20% and vibration is diminished.


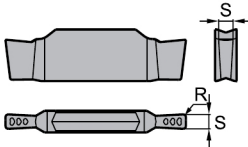

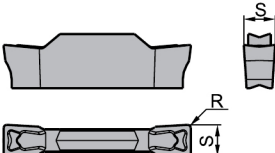


### Grooving and turning inserts

											
Double edges											
Single edge											
Type		Basic dimensions(mm)			Grade						
					P			M		K	N
		S <sup>+0.1</sup> <sub>0</sub>	R±0.10	Cutting depth La <sub>max</sub>	YBG202	YBG302	YBC151	YBG202	YBG302	YBG302	YD101
Double edges	ZTED02503-MG	2.5	0.3	17	●	★	○	●	★	★	
	ZTFD0303-MG	3.0	0.3	17	●	★	○	●	★	★	
	ZTGD0404-MG	4.0	0.4	22	●	★	●	●	★	★	
	ZTHD0504-MG	5.0	0.4	22	●	★		●	★	★	
	ZTKD0608-MG	6.0	0.8	22	●	★		●	★	★	
Single edge	ZTHS0504-MG	5.0	0.4		○	○		○	○	○	
	ZTKS0608-MG	6.0	0.8		○	○		○	○	○	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

### Precise grooving and turning inserts

							
1.0~2.4mm series				>2.4~6.5mm series			

Type		Basic dimensions(mm)			Grade						
					P			M		K	N
		S±0.025	R <sup>(2)</sup> ±0.05	Cutting depth La <sub>max</sub>	YBG202	YBG302	YBC151	YBG202	YBG302	YBG302	YD101
Double edges	ZTCD□□□□□ <sup>(1)</sup> -EG	1.0~1.6	See note. (2)	2.6	○	○	○	○	○	○	
		1.6~2.4		3.4							
	ZTED□□□□□-EG	2.4~3.0		17	○	○		○	○	○	
	ZTFD□□□□□-EG	3.0~3.8		17	○	○	○	○	○	○	
	ZTGD□□□□□-EG	3.8~4.8		22	○	○		○	○	○	
	ZTHD□□□□□-EG	4.8~5.8		22	○	○		○	○	○	
ZTKD□□□□□-EG	5.8~6.5	22	○	○		○	○	○			

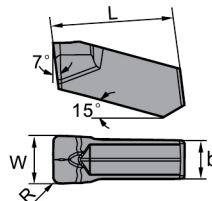
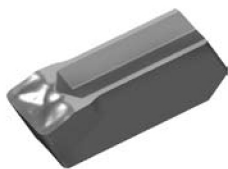
★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Note: (1) □ The code here in the description is determined by edge width and nose radius requested by customers. For example, when the customer requires an edge width of 3.5mm and a nose radius of 0.3mm, the description of the insert would be ZTFD03503-EG.

(2) The nose radius range is  $0.2 \leq R \leq 0.5$  on request.



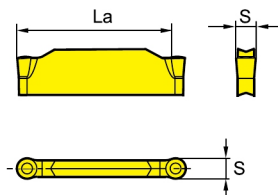
### Single-edge grooving and turning inserts for machining (from semi-finishing to roughing) materials hard to be machined



Type	Basic dimensions(mm)				Grade			
					S			M
	$W \pm 0.05$	$R \pm 0.1$	b	L	YD101	YBG102	YBG202	YBG202
ZIMF304N-NM	3	0.4	2.4	15.3		★		
ZIMF406N-NM	4	0.6	3.2	15.3		★		
ZIMF506N-NM	5	0.6	4	15.3		★		
ZIMF608N-NM	6	0.8	4	15.3	○	★		

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order


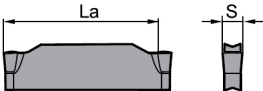
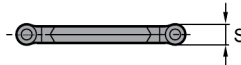
### Profile turning inserts



Type		Basic dimensions(mm)		Grade						
				P			M		K	N
		S <sup>+0.1</sup> <sub>0</sub>	Cutting depth L <sub>amax</sub>	YBG202	YBG302	YBC151	YBG202	YBG302	YBG302	YD101
Double edges	ZRED025-MG	2.5	17.5	●	★		●	★	★	
	ZRFD03-MG	3.0	17	●	★		●	★	★	
	ZRGD04-MG	4.0	21	●	★		●	★	★	
	ZRHD05-MG	5.0	20	○	★		○	★	★	
	ZRKD06-MG	6.0	19	●	★		●	★	★	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

### Precise profiling inserts


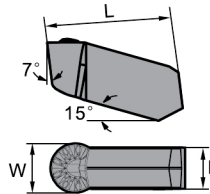




Type		Basic dimensions(mm)		Grade						
				P			M		K	N
		S ± 0.025	Cutting depth La <sub>max</sub>	YBG202	YBG302	YBC151	YBG202	YBG302	YBG302	YD101
Double edges	ZRFD03- EG	3.0	17		○			○	○	
	ZRGD04- EG	4.0	21		○			○	○	
	ZRHD05-EG	5.0	20		○			○	○	
	ZRKD06-EG	6.0	19		○			○	○	

★Recommended grade (always stock available)
●Available grade (always stock available)
○Make-to-order

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

### Single-edge inserts for machining materials hard to be machined

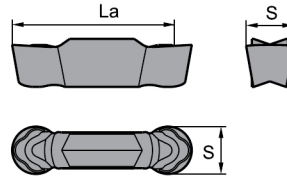



Type	Basic dimensions(mm)			Grade			
				S			M
	W±0.025	b	L	YD101	YBG102	YBG202	YBG202
ZIGQ3N-NM	3	2.4	15.3		★		
ZIGQ4N-NM	4	3.2	15.3		★		
ZIGQ5N-NM	5	4	15.3		★		
ZIGQ6N-NM	6	5	15.3		★		

★Recommended grade (always stock available)
●Available grade (always stock available)
○Make-to-order

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

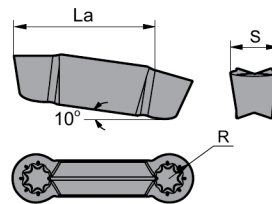
## ■ Profiling inserts for Al



Type	Basic dimensions(mm)		Grade
	$S \pm 0.02$	Cutting depth $L_{\text{amax}}$	
ZRKD06- LH	6.0	19	★
ZRLD08-LH	8.0	22	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

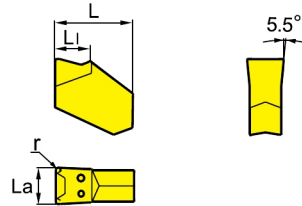
## ■ Profiling inserts for Al



Type	Basic dimensions(mm)			Grade
	$S \pm 0.02$	R	Cutting depth $L_{\text{amax}}$	
ZILD08-LC	8.0	4.0	22	●

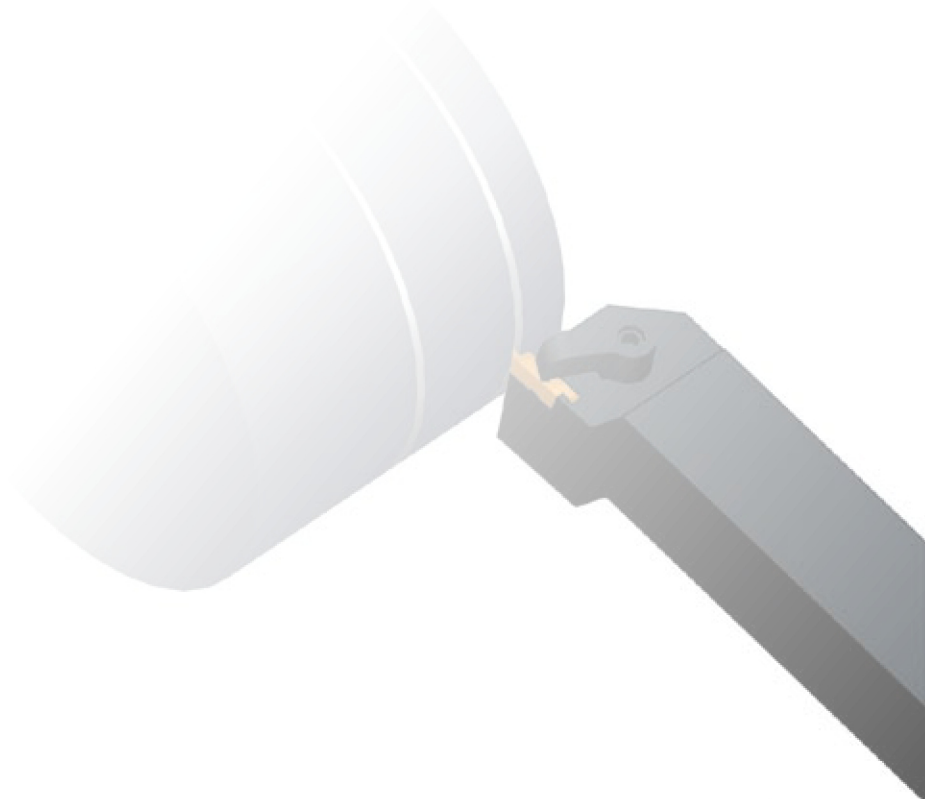
★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

## ■ ZQMX series



Type	Basic dimensions(mm)				Grade						
					P			M			K
	L1	La	r	L	YBC251	YC10	YC40	YBC251	YC10	YC40	YD201
ZQMX3N11-1E	4.4	3.125	0.3	11	●	●	●	●	●	●	●
ZQMX4N11-1E	4.95	4.125	0.3	11	●		●	●		●	●
ZQMX5N11-1E	5	5.125	0.3	11	●		●	●		●	●
ZQMX6N11-1E	5.28	6.4	0.3	11	●		●	●		●	○
ZQMX7N11-1E	4.53	7.05	0.3	14			○				

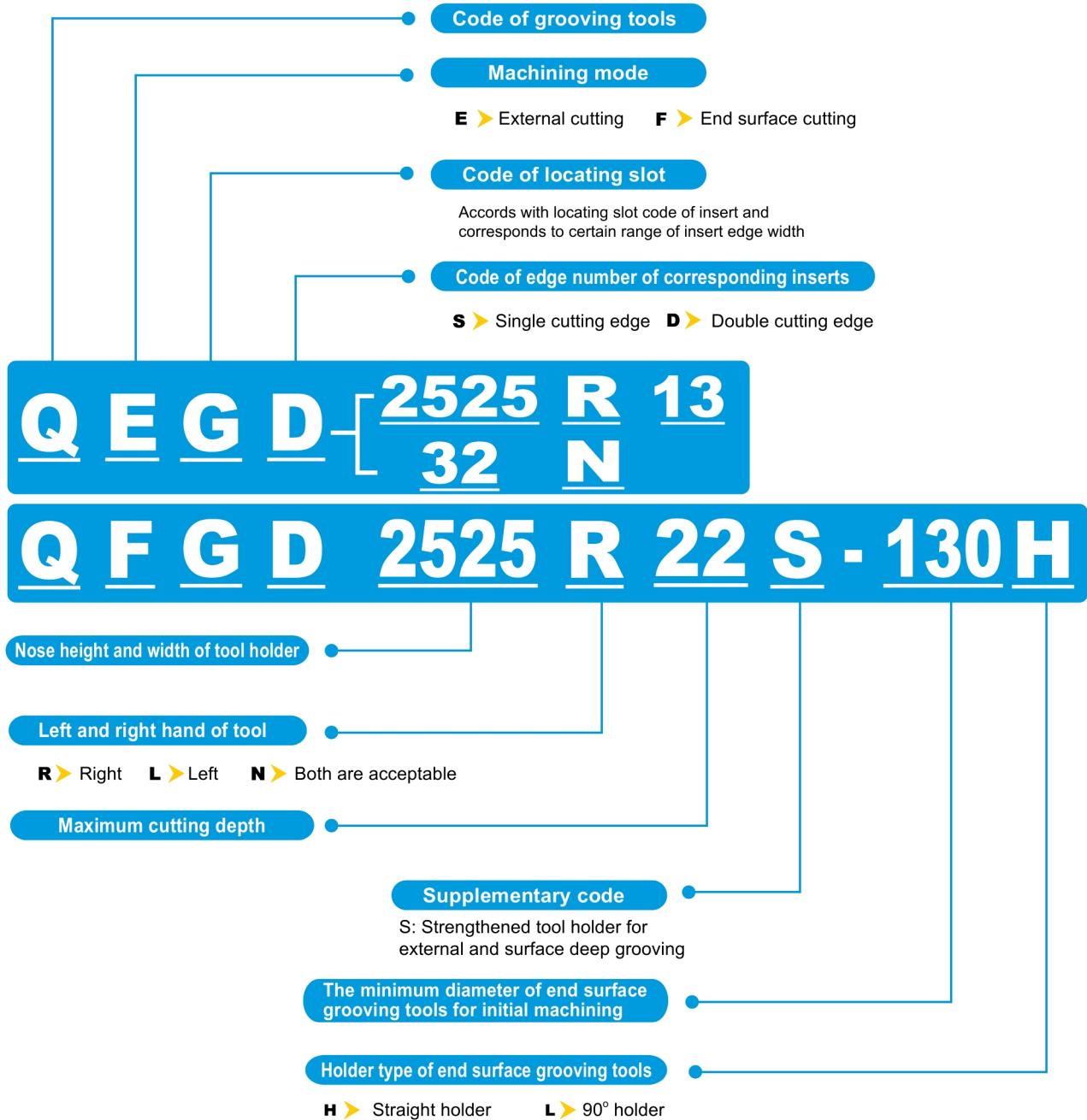
★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order



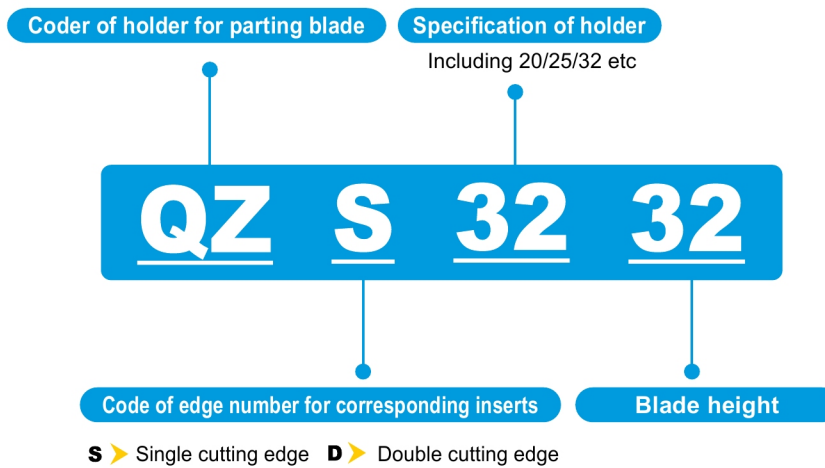


### Little squirrel series parting and grooving tools code key

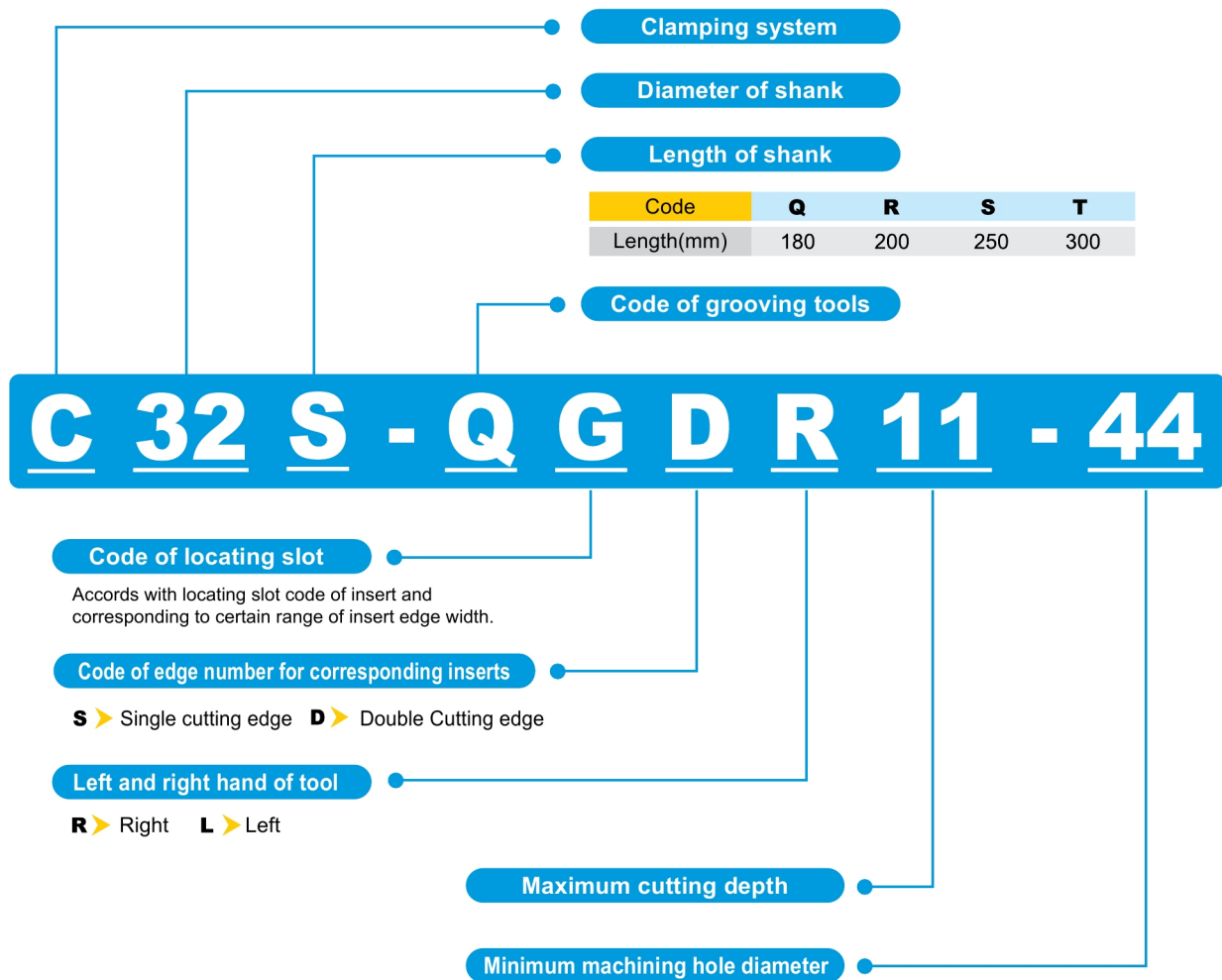
#### ● External and surface turning



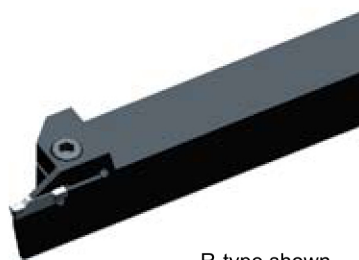
## ● Holder for parting blade



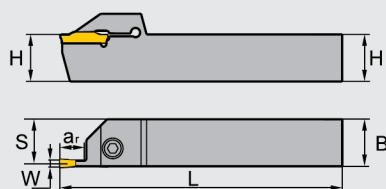
## ● Internal machining



### External parting, grooving and turning tools




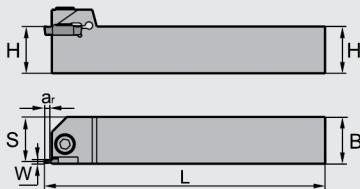

R-type shown



Type		Stock		Basic dimensions(mm)					Applicable inserts	Screw	Wrench
		R	L	H×B	L	S	W	ar <sub>max</sub>			
<b>QEED</b>	1616R/L10	▲	▲	16×16	125	15	2.5	10	Z□ED025□□	GB70-85-M5×20	WH40L
	1616R/L17	▲	▲	16×16	125	15	2.5	17	Z□ED025□□		
	2020R/L10	▲	▲	20×20	125	19	2.5	10	Z□ED025□□	GB70-85-M6×20	WH50L
	2020R/L17	▲	▲	20×20	125	19	2.5	17	Z□ED025□□		
	2525R/L10	▲	▲	25×25	150	24	2.5	10	Z□ED025□□		
	2525R/L17	▲	▲	25×25	150	24	2.5	17	Z□ED025□□		
<b>QEFD</b>	1616R/L10	▲	▲	16×16	125	14.8	3	10	Z□FD03□□	GB70-85-M5×20	WH40L
	1616R/L17	▲	▲	16×16	125	14.8	3	17	Z□FD03□□		
	2020R/L10	▲	▲	20×20	125	18.8	3	10	Z□FD03□□	GB70-85-M6×20	WH50L
	2020R/L17	▲	▲	20×20	125	18.8	3	17	Z□FD03□□		
	2525R/L10	▲	▲	25×25	150	23.8	3	10	Z□FD03□□		
	2525R/L17	▲	▲	25×25	150	23.8	3	17	Z□FD03□□		
<b>QEGD</b>	2020R/L13	▲	▲	20×20	140	18.5	4	13	Z□GD04□□	GB70-85-M6×20	WH50L
	2020R/L22	▲	▲	20×20	140	18.5	4	22	Z□GD04□□		
	2525R/L13	▲	▲	25×25	150	23.5	4	13	Z□GD04□□		
	2525R/L22	▲	▲	25×25	150	23.5	4	22	Z□GD04□□		
	3232R/L13	▲	▲	32×32	170	30.5	4	13	Z□GD04□□		
	3232R/L22	▲	▲	32×32	170	30.5	4	22	Z□GD04□□		
<b>QEHD</b>	2525R/L13	▲	▲	25×25	150	23	5	13	Z□HD05□□	GB70-85-M6×20	WH50L
	2525R/L22	▲	▲	25×25	150	23	5	22	Z□HD05□□		
<b>QEHS</b>	2525N30	▲	▲	25×25	150	12.5	5	30	Z□HS05□□		
<b>QEHD</b>	3232R/L13	▲	▲	32×32	170	30	5	13	Z□HD05□□		
	3232R/L22	▲	▲	32×32	170	30	5	22	Z□HD05□□		
<b>QEHS</b>	3232N30	▲	▲	32×32	170	16	5	30	Z□HS05□□		
<b>QEKD</b>	2525R/L13	▲	▲	25×25	150	22.6	6	13	Z□KD06□□	GB70-85-M6×20	WH50L
	2525R/L22	▲	▲	25×25	150	22.6	6	22	Z□KD06□□		
<b>QEKS</b>	2525N30	▲	▲	25×25	150	12.5	6	30	Z□KS06□□		
<b>QEKD</b>	3232R/L13	▲	▲	32×32	170	29.6	6	13	Z□KD06□□		
	3232R/L22	▲	▲	32×32	170	29.6	6	22	Z□KD06□□		
<b>QEKS</b>	3232N30	▲	▲	32×32	170	16	6	30	Z□KS06□□		

▲Stock available    △Make-to-order

## Precise grooving and turning tools

R-type shown

Type		Stock		Basic dimensions(mm)					Applicable inserts	Screw	Wrench
		R	L	H×B	L	S	W	a <sub>r</sub> max			
QECD	1616R/L025	△	△	16×16	125	14.75		2.5	ZTCD□□□□□-EG	GB70-85-M5×20	WH40L
	2020R/L025	▲	△	20×20	125	18.75				GB70-85-M6×20	WH50L
	2525R/L025	▲	△	25×25	150	23.75					

▲Stock available      △Make-to-order

▲Stock available    △Make-to-order

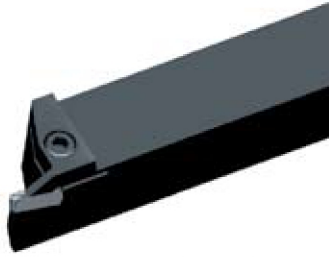
## External recess and profiling turning tools

											
R-type shown											
Type		Stock		Basic dimensions(mm)					Applicable inserts	Screw	Wrench
		R	L	H×B	L	S	W	a <sub>r</sub> max			
QXFD	2020R/L03-45	△	△	20×20	125	23	3.0	3.0	ZR(T)FD03-EG ZR(T)FD03-MG	GB70-85-M6×20	WH50L
	2525R/L03-45	△	△	25×25	150	28					
	3232R/L03-45	△	△	32×32	170	35					
QXGD	2020R/L03-45	△	△	20×20	125	23	4.0	3.0	ZR(T)GD04-EG ZR(T)GD04-MG		
	2525R/L03-45	△	△	25×25	150	28					
	3232R/L03-45	△	△	32×32	170	35					
QXHD	2020R/L04-45	△	△	20×20	125	24	5.0	4.0	ZR(T)HD05-EG ZR(T)HD05-MG		
	2525R/L04-45	△	△	25×25	150	29					
	3232R/L04-45	△	△	32×32	170	36					
QXKD	2020R/L04-45	△	△	20×20	125	24	6.0	4.0	ZR(T)KD06-EG ZR(T)KD06-MG		
	2525R/L04-45	△	△	25×25	150	29					
	3232R/L04-45	△	△	32×32	170	36					

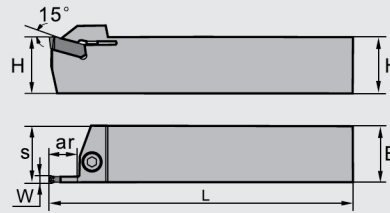
▲Stock available    △Make-to-order



### External grooving tools for materials hard to be machined



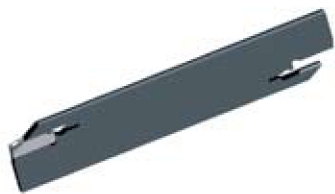
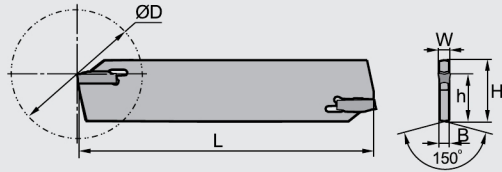
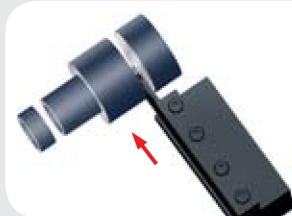


R-type shown



Type		Stock		Basic dimensions(mm)					Applicable inserts	Screw	Wrench
		R	L	H×B	L	S	W	a <sub>r</sub> max			
QEFS	2525R/L12-3N	△	△	25×25	150	25.3	3	12	ZIGQ3N-NM ZIMF304N-NM	GB70-85-M6×20	WH50L
	3232R/L22-3N	△	△	32×32	170	32.3	3	22			
QEGS	2525R/L12-4N	△	△	25×25	150	25.3	4	12	ZIGQ4N-NM ZIMF406N-NM		
	3232R/L22-4N	△	△	32×32	170	32.3	4	22			
QEHS	2525R/L12-5N	△	△	25×25	150	25.4	5	12	ZIGQ5N-NM ZIMF506N-NM		
	3232R/L22-5N	△	△	32×32	170	32.4	5	22			
QEKs	2525R/L12-6N	△	△	25×25	150	25.4	6	12	ZIGQ6N-NM ZIMF608N-NM		
	3232R/L22-6N	△	△	32×32	170	32.4	6	22			

▲Stock available    △Make-to-order


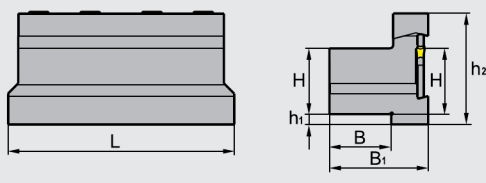
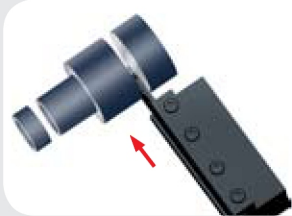



## Blade for external parting

									
Type	Stock	Basic dimensions(mm)						Applicable inserts	Wrench
		L	H	h	B	W	ØDmax (Maximum parting diameter)		
QEES26N	▲	110	26	19	2	2.5	60	ZPES02502-MG	W50RL
QEFS26N	▲	110	26	19	2.4	3	60	ZPFS0302-MG	
QEGS26N	▲	110	26	19	3.2	4	70	ZPGS0402-MG	
QEHS26N	▲	110	26	19	4	5	70	ZPHS0503-MG	
QEKS26N	▲	110	26	19	5	6	70	ZPKS0604-MG	
QEES32N	▲	150	32	24.6	2	2.5	100	ZPES02502-MG	
QEFS32N	▲	150	32	24.6	2.4	3	100	ZPFS0302-MG	
QEGS32N	▲	150	32	24.6	3.2	4	120	ZPGS0402-MG	
QEHS32N	▲	150	32	24.6	4	5	120	ZPHS0503-MG	
QEKS32N	▲	150	32	24.6	5	6	120	ZPKS0604-MG	

▲Stock available

△Make-to-order

## Holder for blade used for external parting

										
Type	Stock	Basic dimensions(mm)						Clamp	Screw	Wrench
		L	H	h <sub>1</sub>	h <sub>2</sub>	B	B <sub>1</sub>			
QZS2026	▲	86	20	10	46.6	19	38	QZC26	GB70-85-M6×20	WH50L
QZS2526	▲	86	25	5	46.6	23	42	QZC26		
QZS3226	▲	86	30	3	51.6	30	48	QZC26		
QZS2032	▲	110	20	13	50	19	38	QZC32		
QZS2532	▲	110	25	8	50	23	42	QZC32		
QZS3232	▲	110	32	5	54	30	48	QZC32		

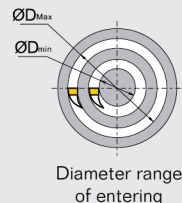
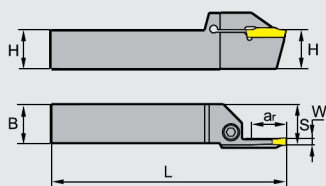
▲Stock available

△Make-to-order

### End surface grooving and turning tools






L-type shown



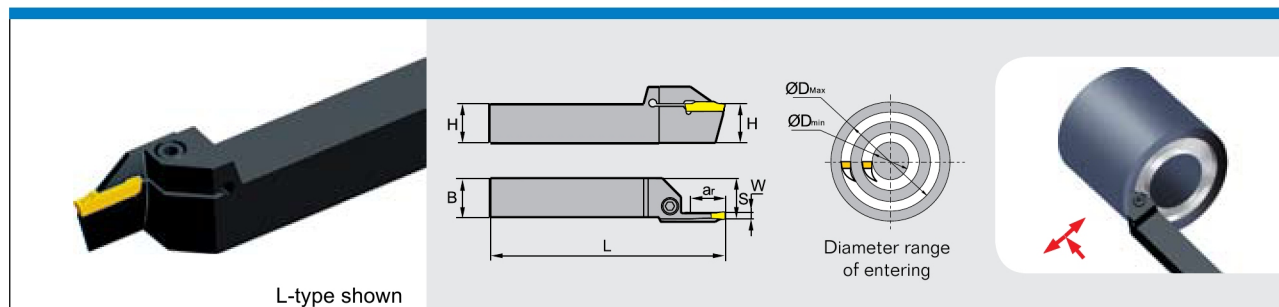
Diameter range of entering



Type		Stock		Basic dimensions(mm)						Applicable inserts	Screw	Wrench		
		R	L	H×B	L	S	W	ar <sub>max</sub>	ØD (min-max)					
QFFD	2020R/L7-48H	▲	▲	20×20	150	21	3	7	48-66	ZTFD0303-MG	GB70-85-M6×20	WH50L		
	2020R/L10-48H	▲	▲	20×20	150	21	3	10	48-66					
	2525R/L10-48H	▲	▲	25×25	150	26	3	10	48-66					
	2525R/L17-48H	▲	▲	25×25	150	26	3	17	48-66					
	2020R/L7-60H	△	△	20×20	150	21	3	7	60-80					
	2020R/L10-60H	△	△	20×20	150	21	3	10	60-80					
	2525R/L10-60H	▲	▲	25×25	150	26	3	10	60-80					
	2525R/L17-60H	▲	▲	25×25	150	26	3	17	60-80					
	2020R/L7-74H	△	△	20×20	150	21	3	7	74-110					
	2020R/L10-74H	△	▲	20×20	150	21	3	10	74-110					
	2525R/L10-74H	▲	▲	25×25	150	26	3	10	74-110					
	2525R/L17-74H	▲	▲	25×25	150	26	3	17	74-110					
	2020R/L7-100H	△	△	20×20	150	21	3	7	100-150					
	2020R/L10-100H	△	△	20×20	150	21	3	10	100-150					
	2525R/L10-100H	▲	▲	25×25	150	26	3	10	100-150					
	2525R/L17-100H	▲	▲	25×25	150	26	3	17	100-150					
QFGD	2020R/L10-52H	△	△	20×20	150	21	4	10	52-72	ZTGD0404-MG			GB70-85-M6×20	WH50L
	2525R/L13-52H	▲	▲	25×25	150	26	4	13	52-72					
	2020R/L15-52H	△	△	20×20	150	21	4	15	52-72					
	2525R/L22-52H	▲	▲	25×25	150	26	4	22	52-72					
	2020R/L10-64H	△	▲	20×20	150	21	4	10	64-100					
	2525R/L13-64H	▲	▲	25×25	150	26	4	13	64-100					
	2020R/L15-64H	△	△	20×20	150	21	4	15	64-100					
	2525R/L22-64H	▲	▲	25×25	150	26	4	22	64-100					
	2020R/L10-90H	△	△	20×20	150	21	4	10	90-140					
	2525R/L13-90H	▲	▲	25×25	150	26	4	13	90-140					
	2020R/L15-90H	△	△	20×20	150	21	4	15	90-140					
	2525R/L22-90H	▲	▲	25×25	150	26	4	22	90-140					
	2020R/L10-130H	△	△	20×20	150	21	4	10	130-230					
	2525R/L13-130H	▲	▲	25×25	150	26	4	13	130-230					
	2020R/L15-130H	△	△	20×20	150	21	4	15	130-230					
	2525R/L22-130H	▲	▲	25×25	150	26	4	22	130-230					

▲Stock available    △Make-to-order

## End surface grooving and turning tools



Type		Stock		Basic dimensions(mm)						Applicable inserts	Screw	Wrench
		R	L	H×B	L	S	W	ar max	ØD (min-max)			
<b>QFHD</b>	2525R/L13-58H	▲	▲	25×25	150	26	5	13	58-96	ZTHD0504-MG	GB70-85-M6×20	WH50L
	2525R/L22-58H	▲	▲	25×25	150	26	5	22	58-96			
	2525R/L13-86H	△	▲	25×25	150	26	5	13	86-140			
	2525R/L22-86H	▲	▲	25×25	150	26	5	22	86-140			
	2525R/L13-130H	▲	▲	25×25	150	26	5	13	130-200			
	2525R/L22-130H	▲	▲	25×25	150	26	5	22	130-200			
	2525R/L13-185H	▲	▲	25×25	150	26	5	13	185-400			
	2525R/L22-185H	▲	▲	25×25	150	26	5	22	185-400			
<b>QFHS</b>	2525R/L30-185H	△	△	25×25	150	26	5	30	185-400	ZTHS0504-MG		
<b>QFKD</b>	2525R/L13-60H	▲	▲	25×25	150	26	6	13	60-100	ZTKD0608-MG	GB70-85-M6×20	WH50L
	2525R/L22-60H	▲	▲	25×25	150	26	6	22	60-100			
	2525R/L13-88H	△	▲	25×25	150	26	6	13	88-180			
	2525R/L22-88H	▲	▲	25×25	150	26	6	22	88-180			
	2525R/L13-160H	▲	▲	25×25	150	26	6	13	160-400			
	2525R/L22-160H	▲	▲	25×25	150	26	6	22	160-400			
<b>QFKS</b>	2525R/L30-160H	△	△	25×25	150	26	6	30	160-400	ZTKS0608-MG		

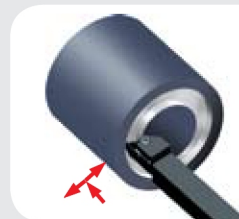
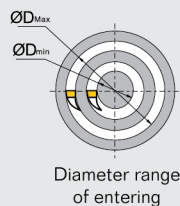
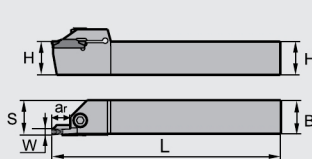
▲Stock available    △Make-to-order






### End surface grooving and turning tools



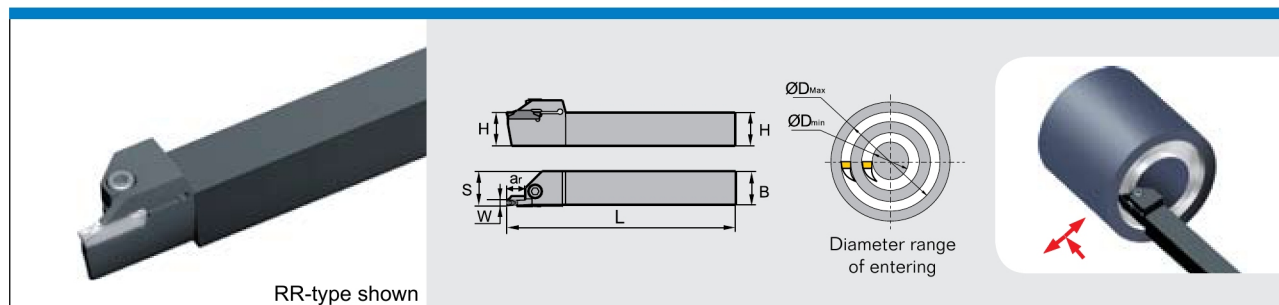
RR-type shown






Type		Stock	Basic dimensions(mm)						Applicable inserts	Screw	Wrench
			H×B	L	S	W	a <sub>r</sub> max	ØD (min-max)			
QFFD	2020RR7-48H	△	20×20	150	21	3	7	48-66	ZTFD0303-MG	GB70-85-M6×20	WH50L
	2020RR10-48H	△	20×20	150	21	3	10	48-66			
	2525RR10-48H	△	25×25	150	26	3	10	48-66			
	2525RR17-48H	△	25×25	150	26	3	17	48-66			
	2020RR7-60H	△	20×20	150	21	3	7	60-80			
	2020RR10-60H	△	20×20	150	21	3	10	60-80			
	2525RR10-60H	△	25×25	150	26	3	10	60-80			
	2525RR17-60H	△	25×25	150	26	3	17	60-80			
	2020RR7-74H	△	20×20	150	21	3	7	74-110			
	2020RR10-74H	△	20×20	150	21	3	10	74-110			
	2525RR10-74H	△	25×25	150	26	3	10	74-110			
	2525RR17-74H	△	25×25	150	26	3	17	74-110			
	2020RR7-100H	△	20×20	150	21	3	7	100-150			
	2020RR10-100H	△	20×20	150	21	3	10	100-150			
	2525RR10-100H	△	25×25	150	26	3	10	100-150			
	2525RR17-100H	△	25×25	150	26	3	17	100-150			
QFGD	2020RR10-52H	△	20×20	150	21	4	10	52-72	ZTGD0404-MG		
	2020RR15-52H	△	20×20	150	26	4	15	52-72			
	2525RR13-52H	△	25×25	150	21	4	13	52-72			
	2525RR22-52H	△	25×25	150	26	4	22	52-72			
	2020RR10-64H	△	20×20	150	21	4	10	64-100			
	2020RR15-64H	△	20×20	150	26	4	15	64-100			
	2525RR13-64H	△	25×25	150	21	4	13	64-100			
	2525RR22-64H	△	25×25	150	26	4	22	64-100			
	2020RR10-90H	△	20×20	150	21	4	10	90-140			
	2020RR15-90H	△	20×20	150	26	4	15	90-140			
	2525RR13-90H	△	25×25	150	21	4	13	90-140			
	2525RR22-90H	△	25×25	150	26	4	22	90-140			
	2020RR10-130H	△	20×20	150	21	4	10	130-230			
	2020RR15-130H	△	20×20	150	26	4	15	130-230			
	2525RR13-130H	△	25×25	150	21	4	13	130-230			
	2525RR22-130H	△	25×25	150	26	4	22	130-230			

▲Stock available    △Make-to-order

## End surface grooving and turning tools



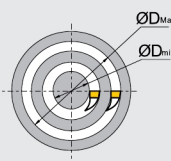
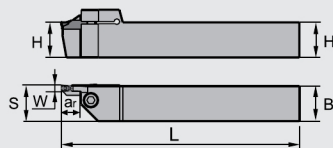
Type		Stock	Basic dimensions(mm)						Applicable inserts	Screw	Wrench
			H×B	L	S	W	a <sub>r</sub> max	ØD (min-max)			
QFHD	2525RR13-58H	△	25×25	150	26	5	13	58-96	ZTHD0504-MG	GB70-85-M6×20	WH50L
	2525RR22-58H	△	25×25	150	26	5	22	58-96			
	2525RR13-86H	△	25×25	150	26	5	13	86-140			
	2525RR22-86H	△	25×25	150	26	5	22	86-140			
	2525RR13-130H	△	25×25	150	26	5	13	130-200			
	2525RR22-130H	△	25×25	150	26	5	22	130-200			
	2525RR13-185H	△	25×25	150	26	5	13	185-400			
	2525RR22-185H	△	25×25	150	26	5	22	185-400			
QFHS	2525RR30-185H	△	25×25	150	26	5	30	185-400	ZTHS0504-MG		
QFKD	2525RR13-60H	△	25×25	150	26	6	13	60-100	ZTKD0608-MG	GB70-85-M6×20	WH50L
	2525RR22-60H	△	25×25	150	26	6	22	60-100			
	2525RR13-88H	△	25×25	150	26	6	13	88-180			
	2525RR22-88H	△	25×25	150	26	6	22	88-180			
	2525RR13-160H	△	25×25	150	26	6	13	160-400			
	2525RR22-160H	△	25×25	150	26	6	22	160-400			
QFKS	2525RR30-160H	△	25×25	150	26	6	30	160-400	ZTKS0608-MG		

▲Stock available    △Make-to-order

### End surface grooving and turning tools





LL-type shown



Diameter range of entering

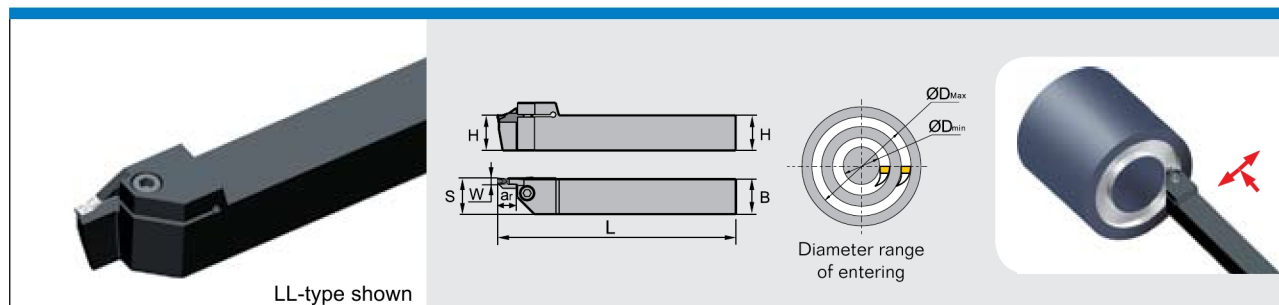





Type		Stock	Basic dimensions(mm)						Applicable inserts	Screw	Wrench
			H×B	L	S	W	a <sub>r</sub> max	ØD (min-max)			
QFFD	2020LL7-48H	△	20×20	150	21	3	7	48-66	ZTFD0303-MG	GB70-85-M6×20	WH50L
	2020LL10-48H	△	20×20	150	21	3	10	48-66			
	2525LL10-48H	△	25×25	150	26	3	10	48-66			
	2525LL17-48H	△	25×25	150	26	3	17	48-66			
	2020LL7-60H	△	20×20	150	21	3	7	60-80			
	2020LL10-60H	△	20×20	150	21	3	10	60-80			
	2525LL10-60H	△	25×25	150	26	3	10	60-80			
	2525LL17-60H	△	25×25	150	26	3	17	60-80			
	2020LL7-74H	△	20×20	150	21	3	7	74-110			
	2020LL10-74H	△	20×20	150	21	3	10	74-110			
	2525LL10-74H	△	25×25	150	26	3	10	74-110			
	2525LL17-74H	△	25×25	150	26	3	17	74-110			
	2020LL7-100H	△	20×20	150	21	3	7	100-150			
	2020LL10-100H	△	20×20	150	21	3	10	100-150			
	2525LL10-100H	△	25×25	150	26	3	10	100-150			
	2525LL17-100H	△	25×25	150	26	3	17	100-150			
QFGD	2020LL10-52H	△	20×20	150	21	4	10	52-72	ZTGD0404-MG		
	2020LL15-52H	△	20×20	150	26	4	15	52-72			
	2525LL13-52H	△	25×25	150	21	4	13	52-72			
	2525LL22-52H	△	25×25	150	26	4	22	52-72			
	2020LL10-64H	△	20×20	150	21	4	10	64-100			
	2020LL15-64H	△	20×20	150	26	4	15	64-100			
	2525LL13-64H	△	25×25	150	21	4	13	64-100			
	2525LL22-64H	△	25×25	150	26	4	22	64-100			
	2020LL10-90H	△	20×20	150	21	4	10	90-140			
	2020LL15-90H	△	20×20	150	26	4	15	90-140			
	2525LL13-90H	△	25×25	150	21	4	13	90-140			
	2525LL22-90H	△	25×25	150	26	4	22	90-140			
	2020LL10-130H	△	20×20	150	21	4	10	130-230			
	2020LL15-130H	△	20×20	150	26	4	15	130-230			
	2525LL13-130H	△	25×25	150	21	4	13	130-230			
	2525LL22-130H	△	25×25	150	26	4	22	130-230			

▲Stock available

△Make-to-order

## ■ End surface grooving and turning tools

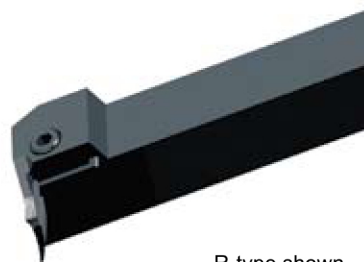


Type		Stock	Basic dimensions(mm)						Applicable inserts	Screw	Wrench
			H×B	L	S	W	a <sub>r</sub> max	ØD (min-max)			
QFHD	2525LL13-58H	△	25×25	150	26	5	13	58-96	ZTHD0504-MG	GB70-85-M6×20	WH50L
	2525LL22-58H	△	25×25	150	26	5	22	58-96			
	2525LL13-86H	△	25×25	150	26	5	13	86-140			
	2525LL22-86H	△	25×25	150	26	5	22	86-140			
	2525LL13-130H	△	25×25	150	26	5	13	130-200			
	2525LL22-130H	△	25×25	150	26	5	22	130-200			
	2525LL13-185H	△	25×25	150	26	5	13	185-400			
	2525LL22-185H	△	25×25	150	26	5	22	185-400			
QFHS	2525LL30-185H	△	25×25	150	26	5	30	185-400	ZTHS0504-MG		
QFKD	2525LL13-60H	△	25×25	150	26	6	13	60-100	ZTKD0608-MG	GB70-85-M6×20	WH50L
	2525LL22-60H	△	25×25	150	26	6	22	60-100			
	2525LL13-88H	△	25×25	150	26	6	13	88-180			
	2525LL22-88H	△	25×25	150	26	6	22	88-180			
	2525LL13-160H	△	25×25	150	26	6	13	160-400			
	2525LL22-160H	△	25×25	150	26	6	22	160-400			
QFKS	2525LL30-160H	△	25×25	150	26	6	30	160-400	ZTKS0608-MG		

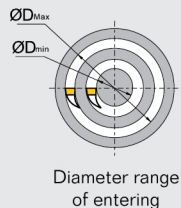
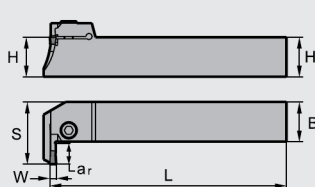
▲Stock available    △Make-to-order






### Left hand style tools for surface grooving and turning



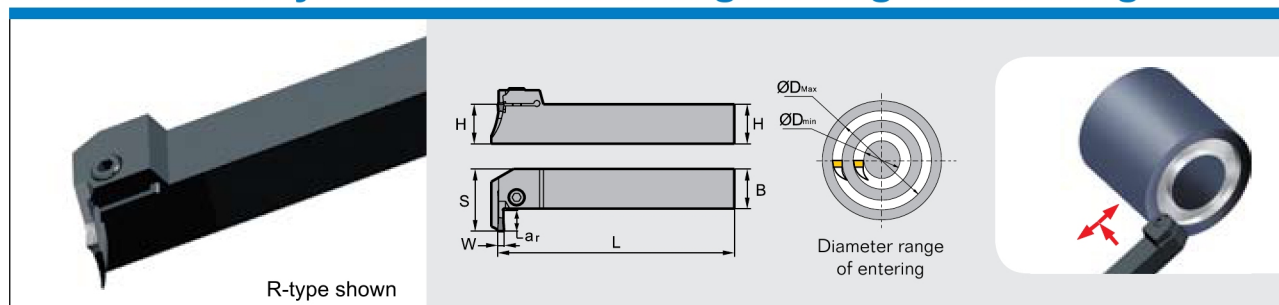
R-type shown






Type		Stock		Basic dimensions(mm)						Applicable inserts	Screw	Wrench		
		R	L	H×B	L	S	W	a <sub>r</sub> max	ØD (min-max)					
QFFD	2020R/L7-48L	△	△	20×20	150	28.5	3	7	48-66	ZTFD0303-MG	GB70-85-M6×20	WH50L		
	2020R/L10-48L	△	△	20×20	150	31.5	3	10	48-66					
	2525R/L10-48L	▲	▲	25×25	150	36.5	3	10	48-66					
	2525R/L17-48L	△	△	25×25	150	43.5	3	17	48-66					
	2020R/L7-60L	△	△	20×20	150	28.5	3	7	60-80					
	2020R/L10-60L	△	△	20×20	150	31.5	3	10	60-80					
	2525R/L10-60L	▲	▲	25×25	150	36.5	3	10	60-80					
	2525R/L17-60L	△	△	25×25	150	43.5	3	17	60-80					
	2020R/L7-74L	△	△	20×20	150	28.5	3	7	74-110					
	2020R/L10-74L	△	△	20×20	150	31.5	3	10	74-110					
	2525R/L10-74L	▲	▲	25×25	150	36.5	3	10	74-110					
	2525R/L17-74L	△	△	25×25	150	43.5	3	17	74-110					
	2020R/L7-100L	△	△	20×20	150	28.5	3	7	100-150					
	2020R/L10-100L	△	△	20×20	150	31.5	3	10	100-150					
	2525R/L10-100L	▲	▲	25×25	150	36.5	3	10	100-150					
	2525R/L17-100L	△	△	25×25	150	43.5	3	17	100-150					
QFGD	2020R/L10-52L	△	△	20×20	150	31.5	4	10	52-72	ZTGD0404-MG				
	2525R/L13-52L	▲	△	25×25	150	39.5	4	13	52-72					
	2020R/L15-52L	△	△	20×20	150	36.5	4	15	52-72					
	2525R/L22-52L	△	△	25×25	150	48.5	4	22	52-72					
	2020R/L10-64L	△	△	20×20	150	31.5	4	10	64-100					
	2525R/L13-64L	△	△	25×25	150	39.5	4	13	64-100					
	2020R/L15-64L	△	△	20×20	150	36.5	4	15	64-100					
	2525R/L22-64L	△	△	25×25	150	48.5	4	22	64-100					
	2020R/L10-90L	△	△	20×20	150	31.5	4	10	90-140					
	2525R/L13-90L	△	△	25×25	150	39.5	4	13	90-140					
	2020R/L15-90L	△	△	20×20	150	36.5	4	15	90-140					
	2525R/L22-90L	▲	△	25×25	150	48.5	4	22	90-140					
	2020R/L10-130L	△	△	20×20	150	31.5	4	10	130-230					
	2525R/L13-130L	△	△	25×25	150	39.5	4	13	130-230					
	2020R/L15-130L	△	△	20×20	150	36.5	4	15	130-230					
	2525R/L22-130L	▲	▲	25×25	150	48.5	4	22	130-230					

▲Stock available    △Make-to-order

## Left hand style tools for surface grooving and turning



Type		Stock		Basic dimensions(mm)						Applicable inserts	Screw	Wrench
		R	L	H×B	L	S	W	a <sub>r</sub> max	ØD (min-max)			
QFHD	2525R/L13-58L	△	△	25×25	150	39.5	5	13	58-96	ZTHD0504-MG	GB70-85-M6×20	WH50L
	2525R/L22-58L	△	△	25×25	150	48.5	5	22	58-96			
	2525R/L13-86L	△	△	25×25	150	39.5	5	13	86-140			
	2525R/L22-86L	△	△	25×25	150	48.5	5	22	86-140			
	2525R/L13-130L	△	△	25×25	150	39.5	5	13	130-200			
	2525R/L22-130L	△	△	25×25	150	48.5	5	22	130-200			
	2525R/L13-185L	△	△	25×25	150	39.5	5	13	185-400			
	2525R/L22-185L	▲	△	25×25	150	48.5	5	22	185-400			
QFHS	2525R/L30-185L	△	△	25×25	150	56.5	5	30	185-400	ZTHS0504-MG		
QFKD	2525R/L13-60L	▲	▲	25×25	150	39.5	6	13	60-100	ZTKD0608-MG	GB70-85-M6×20	WH50L
	2525R/L22-60L	▲	▲	25×25	150	48.5	6	22	60-100			
	2525R/L13-88L	△	▲	25×25	150	39.5	6	13	88-180			
	2525R/L22-88L	▲	▲	25×25	150	48.5	6	22	88-180			

▲Stock available    △Make-to-order

A

General turning

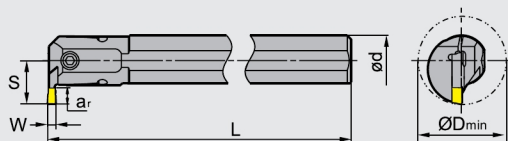
Parting and grooving



Little squirrel series parting and grooving tools

### Internal grooving and turning tools



R-type shown

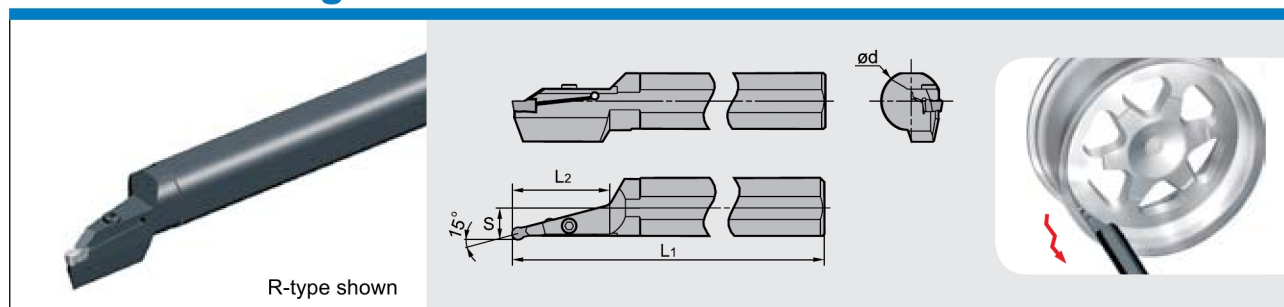





Type	Stock		Basic dimensions(mm)						Applicable inserts	Screw	Wrench
	R	L	ød	L	S	W	ar <sub>max</sub>	ØD <sub>min</sub>			
C20Q-QEDR/L05-27	▲	▲	20	180	15.2	2.5	5	27	ZTED025□□ ZRED025□□	GB70-85-M4×12	WH30L
C25R-QEDR/L07-33	▲	▲	25	200	20.3	2.5	7	33		GB70-85-M5×16	WH40L
C32S-QEDR/L09-42	▲	▲	32	250	25.3	2.5	9	42		GB70-85-M5×20	
C20Q-QFDR/L05-27	▲	▲	20	180	15.2	3	5	27	ZTFD03□□ ZRFD03□□	GB70-85-M4×12	WH30L
C25R-QFDR/L07-33	▲	▲	25	200	20.3	3	7	33		GB70-85-M5×16	WH40L
C32S-QFDR/L09-42	▲	▲	32	250	25.3	3	9	42		GB70-85-M5×20	
C25R-QGDR/L08-35	▲	▲	25	200	21.5	4	8	35	ZTGD04□□ ZRGD04□□	GB70-85-M5×16	WH40L
C32S-QGDR/L11-44	▲	▲	32	250	27.5	4	11	44		GB70-85-M6×20	WH50L
C40T-QGDR/L13-54	▲	▲	40	300	33.5	4	13	54		GB70-85-M6×20	
C25R-QHDR/L08-35	▲	▲	25	200	21.5	5	8	35	ZTHD05□□ ZRHD05□□	GB70-85-M5×16	WH40L
C32S-QHDR/L11-44	▲	▲	32	250	27.5	5	11	44		GB70-85-M6×20	WH50L
C40T-QHDR/L13-54	▲	▲	40	300	33.5	5	13	54		GB70-85-M6×20	
C25R-QKDR/L08-35	▲	▲	25	200	21.5	6	8	35	ZTKD06□□ ZRKD06□□	GB70-85-M5×16	WH40L
C32S-QKDR/L11-44	▲	▲	32	250	27.5	6	11	44		GB70-85-M6×20	WH50L
C40T-QKDR/L13-54	▲	▲	40	300	33.5	6	13	54		GB70-85-M6×20	

▲ Stock available

△ Make-to-order

## Profile turning tools for Al



Type	Stock		Basic dimensions(mm)					Applicable inserts	Screw	Wrench
	R	L	ØD (Minimum machining diameter)	ød	S	L1	L2			
C40X-QLDR/L65-15A	▲	▲	160	40	21	320	65	ZRLD08-LH	GB70-85-M6×20	WH50L
C40X-QLDR/L80-15A	▲	△	160	40	21	320	80	ZRLD08-LH		
C40X-QKDR/L60-15A	△	△	160	40	20	320	60	ZRKD06-LH		
C40X-QKDR/L75-15A	△	△	160	40	20	320	75	ZRKD06-LH		

▲Stock available    △Make-to-order

A

General  
turning

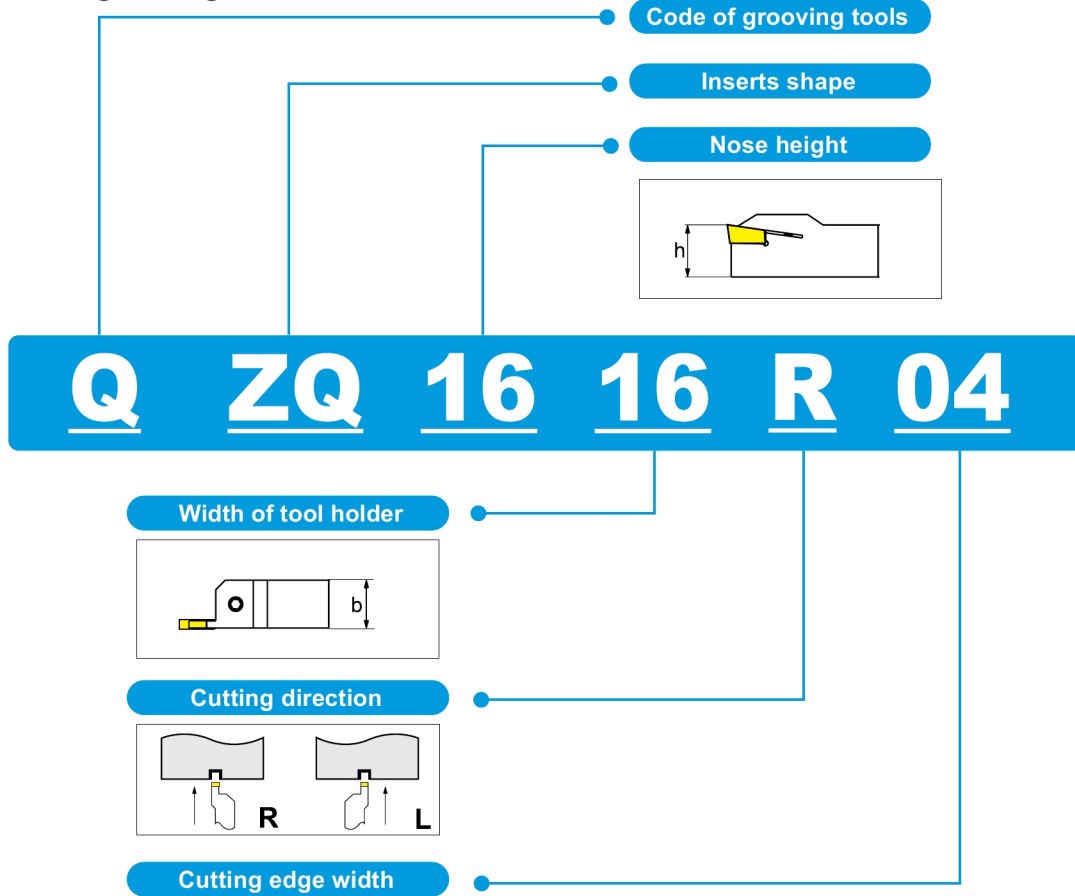
Parting and  
grooving

Little squirrel series parting  
and grooving tools

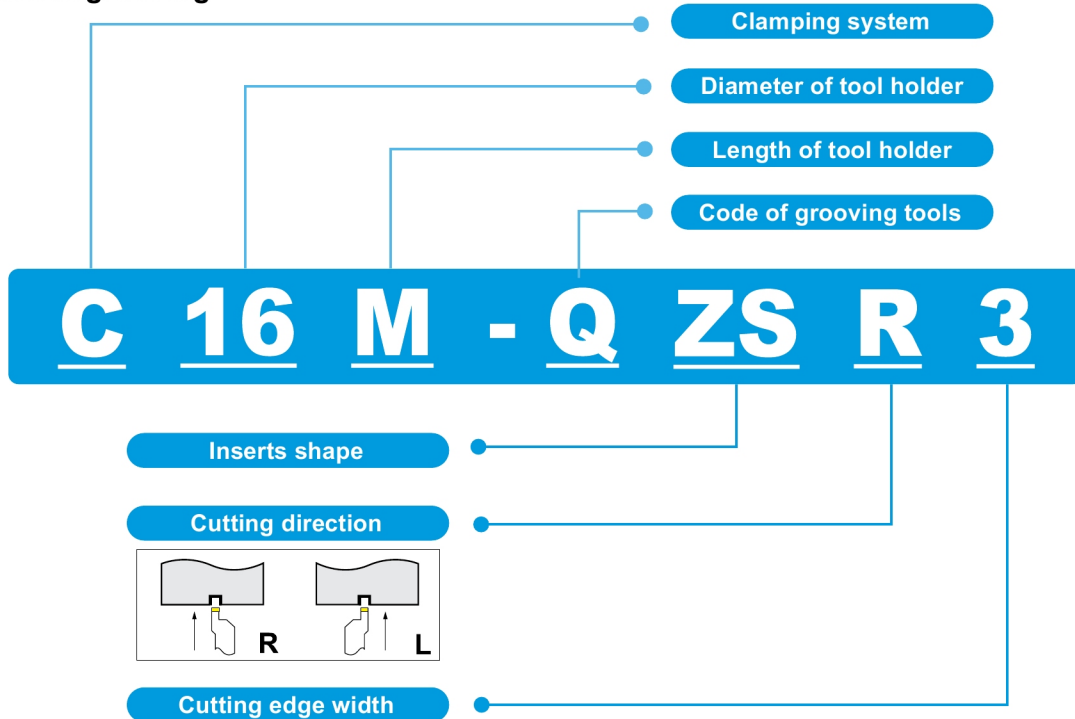


### Parting and grooving tools code key


#### ● External grooving

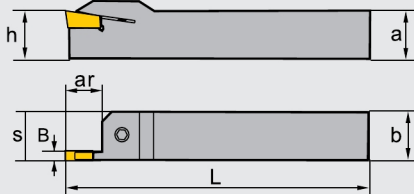


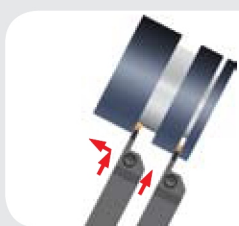
#### ● Internal grooving






## External parting and grooving tools: QZQ series







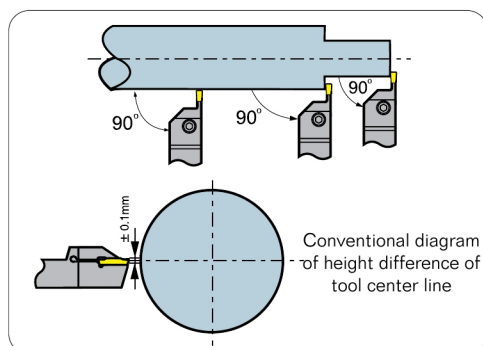
R-type shown

Type		Stock		Basic dimensions(mm)						Applicable inserts	Screw	Wrench
		R	L	a=h	b	L	S	B	ar <sub>max</sub>			
QZQ	1616R/L03	▲	▲	16	16	100	16.4	3	16	ZQMX3N11-IE	GB70-85-M5×16	WH40L
	1616R/L04	▲	▲	16	16	100	16.4	4	18	ZQMX4N11-IE		
	2020R/L03	▲	▲	20	20	125	20.4	3	20	ZQMX3N11-IE	GB70-85-M6×20	WH50L
	2020R/L04	▲	▲	20	20	125	20.4	4	20	ZQMX4N11-IE		
	2525R/L03	▲	▲	25	25	150	25.4	3	20	ZQMX3N11-IE		
	2525R/L04	▲	▲	25	25	150	25.4	4	20	ZQMX4N11-IE		
	2525R/L05	▲	▲	25	25	150	25.4	5	25	ZQMX5N11-IE		
	2525R/L06	▲	▲	25	25	150	25.7	6	32	ZQMX6N11-IE		
	3225R/L03	▲	▲	32	25	170	25.4	3	25	ZQMX3N11-IE		
	3225R/L04	▲	▲	32	25	170	25.4	4	25	ZQMX4N11-IE		
	3225R/L05	▲	▲	32	25	170	25.4	5	25	ZQMX5N11-IE		
	3225R/L06	▲	▲	32	25	170	25.7	6	35	ZQMX6N11-IE		

▲Stock available    △Make-to-order

### Center height control of parting and grooving tools

- No matter which parting or grooving tools you select, the ideal surface quality is only achieved by ensuring that insert is vertical from the center line of workpiece, which can also effectively reduce vibration during machining.
- The height tolerance between insert edge bottom and the center height of workpiece should be remained in  $\pm 0.1\text{mm}$ , especially for lever parting and grooving workpieces with small diameter. This can improve tool life, reduce cutting resistant force, and diminish burrs.



### Parting

- When the insert is approaching the center of workpiece, the cutting speed should be reduced by 30%, which is good for improving life and surface quality.
- As long as conditions allow, try to shorten the overhang of tools as much as possible to ensure good stability.

### External grooving, turning and profiling

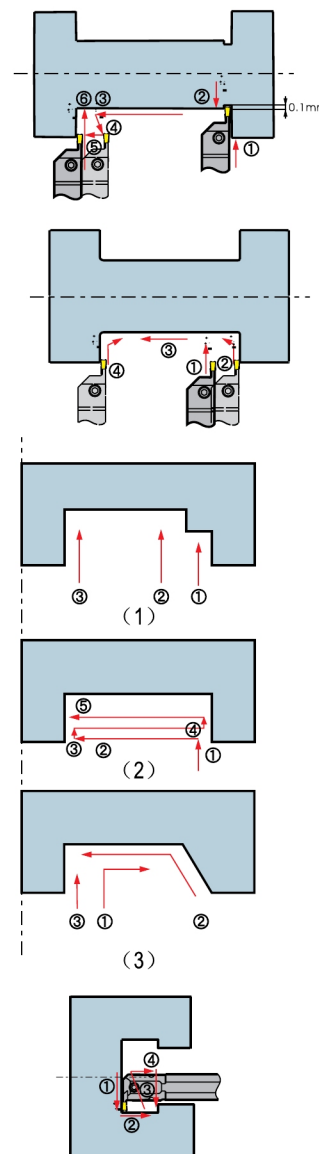
- In-feed sequence: When cutting depth  $> 0.5\text{mm}$ , radial in-feed (Max. cutting depth can be  $0.75 \times \text{insert edge width } S$ )  $\rightarrow$  radial out-feed about  $0.1\text{mm}$   $\rightarrow$  axial in-feed  $\rightarrow$  flank out-feed  $\rightarrow$  axial in-feed  $\rightarrow$  radial machining to required depth.
- When finishing, adopt the sequence shown in the diagram. It can reduce vibration caused by the friction between tools and chips.

### Surface grooving and turning

- Finishing (Multi-slot cutting)  
Cut inwards from Max. diameter. Inserts offset to inward flange when retracting, as is shown in diagram (1).
- Recess turning  
Axial turning depth should not exceed  $0.75 \times S$  (cutting edge width).  
If slot width is larger than slot depth, it is recommended to adopt recess turning, as is shown in diagram (2).  
If slot depth is larger than slot depth, it is recommended to adopt multi-slot cutting.
- Finish machining  
First finish bottom and external diameter fringe, then finish the internal diameter to required size, as is shown in diagram (3).

### Internal grooving and turning

- To facilitate chip flow, always feed along the direction of moving from the deepest in the hole to outside.



The cutting parameters recommended are suitable for wet machining.

Insert size	Recommended feed rate(mm/r)			
Insert width(mm)	Parting	Grooving	Turning	Profiling
2.5	0.05—0.15	0.05—0.15	0.05—0.15	0.05—0.15
3	0.05—0.15	0.05—0.15	0.07—0.15	0.1—0.2
4	0.05—0.2	0.05—0.2	0.07—0.25	0.1—0.2
5	0.07—0.2	0.07—0.22	0.1—0.25	0.15—0.3
6	0.1—0.3	0.07—0.25	0.1—0.3	0.15—0.3

Workpiece material	Hardness	YBG302	YBG202	YBC151	YBC251	YD101	YD201	YBG102	YC10	YC40
<b>P</b>	Carbon steel	125≤HB≤170	120-260	150-280	140-280	150-280			130-280	110-260
	Low alloy steel	180≤HB≤275	80-175	110-200	100-240	110-200			90-200	70-175
	High alloy steel	180≤HB≤325	80-160	110-190	100-220	110-190			90-190	70-160
	Cast steel	180≤HB≤250	75-140	100-170	80-160	100-170			80-170	60-140
<b>M</b>	Ferrite, Martensite	200≤HB≤300	70-170	100-200		100-200			80-200	60-170
	Austenite	180≤HB≤300	80-200	110-220		110-220			90-220	70-200
<b>K</b>	Malleable cast iron	130≤HB≤230	100-200	130-220			90-160			
	Grey cast iron	180≤HB≤220	90-170	120-200			80-140			
	Nodular cast iron	160≤HB≤250	80-150	110-180			60-140			
<b>N</b>	Al alloy	--				200-400				
<b>S</b>	High temperature alloy	≤400				20-50		30-60		

The cutting parameters recommended are suitable for wet machining.

Advice: internal machining and end machining, The cutting speed should be reduced by 30%-40%.