



**Vol.28**  
**PRODUCTS GUIDE**

**FUJIGEN KOGYO CO.,LTD.**



# 「Idea Force」 × 「Implementation Force」

We are refining "the idea force" and "the implementation force" and as "FIJIGEN of Chamfering" aim to be the only one company who can have your trust from everyone.



New  
Comer

Centering・Chamfering series

# MOMIMEN PICO

The following processing  
can be done by PICO only !

Centering Processing



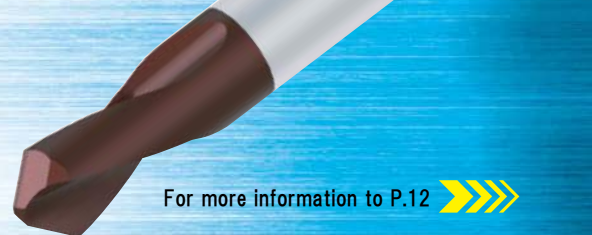
Dish Chamfering Processing



Chamfering Processing



(※can't use for Bench Drilling Machine)



For more information to P.12 >>>

- 1 Succeeded the improvement of sharpness at the Pointing processing and eliminated the secondary Burrs !
- 2 Can also be used to C-Chamfering, Dish Chamfering Processing that runs in the transverse!

New  
Comer

Centering・Chamfering series

# DODECAECO

Cost Reduction !

Centering Processing



Dish Chamfering Processing



Chamfering Processing



(※can't use for Bench Drilling Machine)



For more information to P.15 >>>

- 1 Reduced Processing Cost by by Tip with 3-corners
- 2 Improved machinability and cutting chip disposability
- 3 Achieved a long life by original tip (Ultrafine Particle Carbide+New coating)

New  
Comer

# MENTRUDEE

Can be used with both Bench Drilling Machines and  
Electric Drill !

Dish Chamfering Processing



Dish Chamfering Processing



- 1 Best for small diameter hole chamfering( $\phi 2.5 \sim \phi 11\text{mm}$ )
- 2 Used durable high-speed steel in the body
- 3 Achieved a long life by original tip(Ultrafine Particle Carbide+new coating)
- 4 Positive type Tip with 3-corners



For more information to P.28 >>>



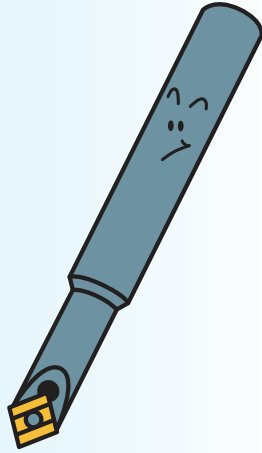
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### Centering and Chamfering Series

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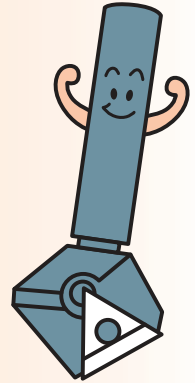


## Chamfering Series

### Chamfering Series

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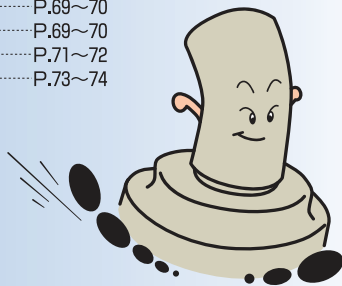


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### Face/Shoulder Milling Series

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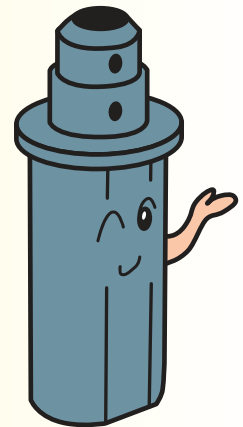


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### Sleeve Series

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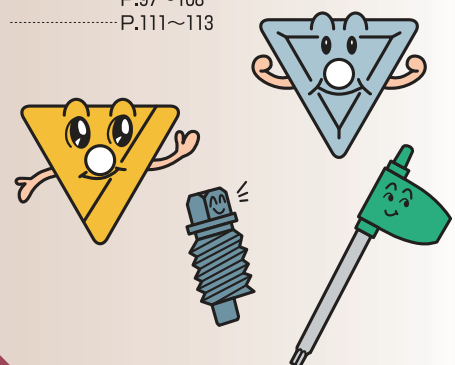


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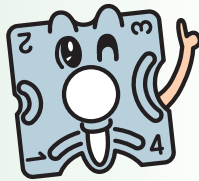




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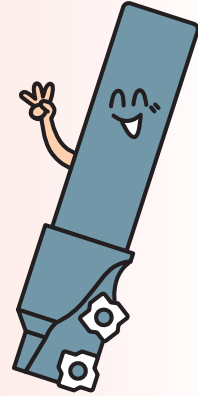


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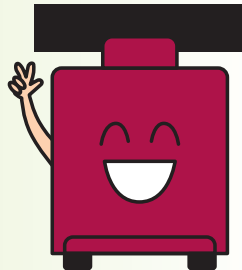


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### Portable Chamfering Machine

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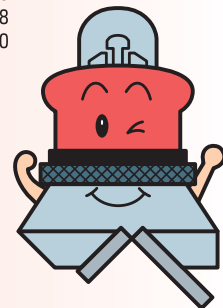


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### Handy Series

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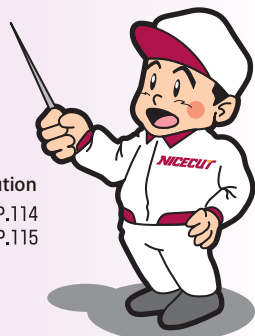


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### Trouble Shooting

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Centering & Chamfering Series

Chamfering Series

Round corner Chamfering Series

Countersink and Chamfering of Cap Screw

Face/Shoulder Milling Series

Sleeve Series

Portable Chamfering Machine Series

Handy Series

Discontinued Products

Inserts / Spare Parts List

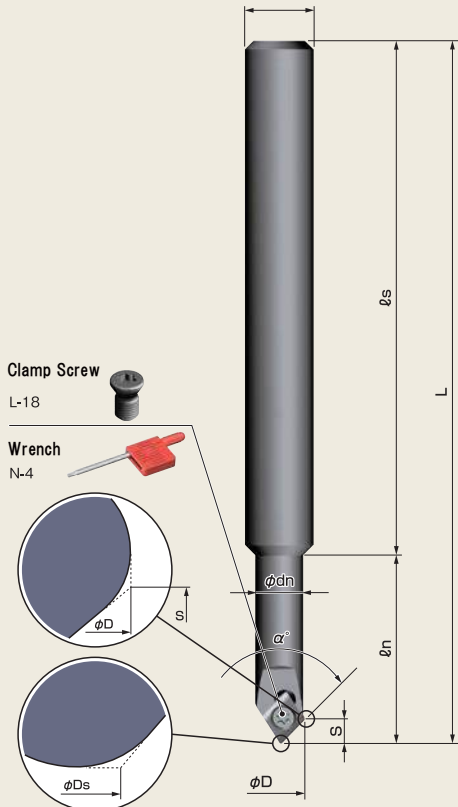
Cutting tips

Trouble shooting

INDEX

# Smallest Indexable Tools !

- Developed screw-on type smallest Insert (under-neck diameter  $\phi 6\text{mm}$ )  
This will be smallest insert in the existing market.
- Small diameter long neck prevents tool interference when processing in the deep area
- You can use this tool for engraving process

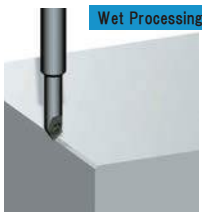


## Processing Example

### [ Perimetry C2 Chamfering ]

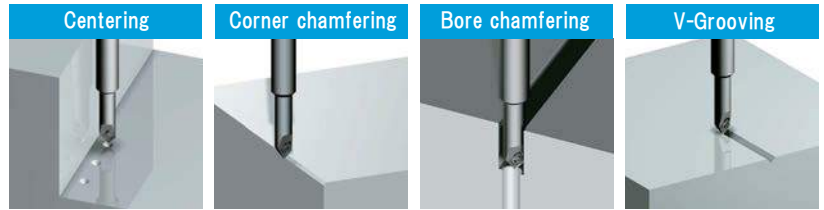
- Body : SCN0845E
- Insert : ENGX040102 AC15N

- Material : SUS304
- Rotation Speed : 5,000r.p.m.
- Feed (Z-axis) : 350mm/min
- Cutting Depth : C2
- Cutting Oil : Yes



### Result

Good!  
No secondary burrs and No chattering after processing



※ This tool cannot be used with drilling machines

## Dish Chamfering Processing (Min. Blade Diameter ~ Max. Blade Diameter)

90°  
 $\phi 0.6\text{mm} \sim \phi 6\text{mm}$

120°  
 $\phi 0.6\text{mm} \sim \phi 7.4\text{mm}$

## Body

Model. No.	Blades	Dimensions (mm)								$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	$\phi d_n$	L	$\ell_s$	$\ell_n$	S	
SCN0845E	1	6	0.58	8	5.6	82	60	22	2.8	90°
SCN0830E	1	7.4	0.52	8	7	82	60	22	2.0	120°

※ Insert is not given as standard accessory. Please purchase it separately  
※ Clamp screw wrench we have standard equipment.

**Z-value compensate standard**  
※ Please note that this value may be getting some errors

$\alpha^\circ = 90^\circ \rightarrow +0.3$   
 $\alpha^\circ = 120^\circ \rightarrow +0.15$

[Example]  
Correct Z-value (-2.5) to -2.2 in case of  $\phi 5\text{mm}$  spot drilling process

## Cutting Conditions

Centering				
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.02~0.03	4,000~	ENGX040102 AC15N	Yes
Alloy Steel	0.02~0.03	4,000~	ENGX040102 AC15N	Yes
Stainless Steel	0.01~0.02	4,000~	ENGX040102 AC15N	Yes
Aluminum, Resin, Brass	0.05~0.08	4,000~	ENGX040102F ZC16N	Yes
Castings	0.04~0.06	4,000~	ENGX040102 AC15N	None

Chamfering				
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.07~0.1	4,000~	ENGX040102 AC15N	Yes
Alloy Steel	0.07~0.1	4,000~	ENGX040102 AC15N	Yes
Stainless Steel	0.05~0.1	4,000~	ENGX040102 AC15N	Yes
Aluminum, Resin, Brass	0.1~0.15	4,000~	ENGX040102F ZC16N	Yes
Castings	0.07~0.12	4,000~	ENGX040102 AC15N	None

V-groove processing				
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.05~0.07	4,000~	ENGX040102 AC15N	Yes
Alloy Steel	0.05~0.07	4,000~	ENGX040102 AC15N	Yes
Stainless Steel	0.03~0.05	4,000~	ENGX040102 AC15N	Yes
Aluminum, Resin, Brass	0.05~0.08	4,000~	ENGX040102F ZC16N	Yes
Castings	0.04~0.06	4,000~	ENGX040102 AC15N	None

● In case of bore chamfering process by Z-axis only, please take same cutting condition of centering process

● According to the shape of work, large or small chamfering amount and position of blade, the cutting condition will have to be adjusted.

In case of processing with large amount chamfer, please take reducing cutting condition

● In case of chamfering process of Stainless Steel, please take the down cutting

## Insert

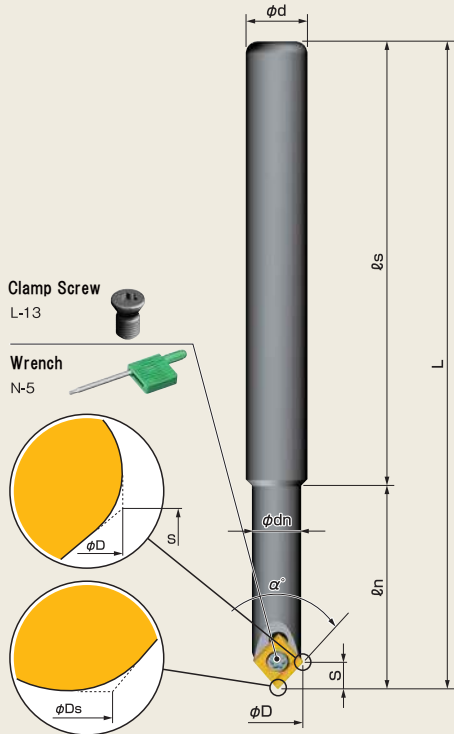
Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	<b>NEW</b> ENGX040102F ZC16N	Fine particles Carbide	Sharp edge	None	2	12
	ENGX040102 AC15N	Fine particles Carbide	Honing edge	AlCrN	2	12



Blade edge by V-grooving and centering processing could not be a perfect vertex angle

# This Tool !

- Center-drilling and chamfer process can be done by this Tool. You can reduce numbers of ATC tooling by using this tool and make high productivity!
- Original insert shape desined by us solved risk of Chattering and breakage



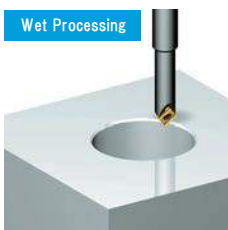
- Carbide made shank increased rigidity and limit of spotting has been much improved with the standard long shank, Protruding limit is now high.
- This tool have (φ10) Shank and (φ9) Blade, and can be used at narrow area also

## Processing Example

### [φ100 Bore Chamfering]

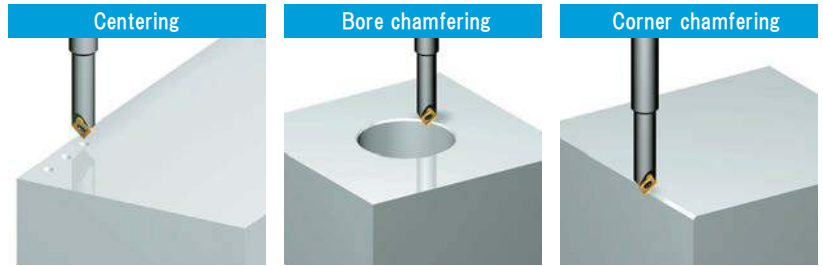
- Body : SCM1045C
- Insert : C22GUX NK5050

- Material ..... SUS304
- Rotation Speed ..... 5,000r.p.m.
- Feed (Z-axis) ..... 500mm/min
- Cutting Depth ..... C1
- Cutting Oil ..... Yes



### Result

Good!  
800pcs process has successfully done without size change, secondary burrs and alternant sound during processing



※ This tool cannot be used with drilling machines

## Dish Chamfering Processing (Min. Blade Diameter ~ Max. Blade Diameter)

90°

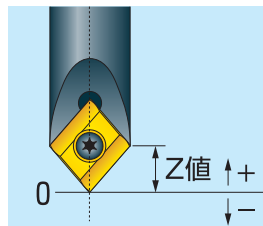
φ0.6mm ~ φ9mm

## Body

Model. No.	Blades	Dimensions (mm)								α°	Carbide Shank
		φD	φDs	φd	φdn	L	ls	ln	S		
SCM1045C	1	9	0.5	10	8	105	72	33	4.4	90°	
SCM1045CL	1	9	0.5	10	8	165	132	33	4.4	90°	
SCM1045CL-CB	1	9	0.5	10	8	165	145	20	4.4	90°	●

※ Insert is not equipped as standard accessory. Please purchase it separtately.

※ Clamp screw wrench we have standard equipment.



## Z-value compensate standard

※ Please note that this value may be getting little errors

α° = 90° → +0.2

[Example]

Correct Z-value(-4.0)to -3.8in case of φ8mm spot drilling process

## Cutting Conditions

Centering				
Material	Feed Per Blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.05~0.08	2,000~3,500	C22GUX NK2020	Yes
Alloy Steel	0.05~0.08	2,000~3,500	C22GUX NK3030	Yes
Stainless Steel	0.05~0.08	2,000~3,500	C22GUX AC16N	Yes
Aluminum,Resin,Brass	0.05~0.1	3,000~	C22GUX NK1010	Yes
Castings	0.05~0.08	2,000~3,500	C22GUX NK3030	Yes

Chamfering				
Material	Feed Per Blade (fz)	Rotation Speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.1~0.15	2,000~	C22GUX NK2020	Yes
Alloy Steel	0.1~0.15	2,000~	C22GUX NK3030	Yes
Stainless Steel	0.1~0.15	2,000~	C22GUX AC16N	Yes
Aluminum,Resin,Brass	0.1~0.15	3,000~	C22GUX NK1010	Yes
Castings	0.1~0.15	2,000~	C22GUX NK3030	Yes

- In case of bore chamfering process by Z-axis only, please take same cutting condition of centering process
- According to the shape of work, large or small chamfering, amount and position of blade, the cutting condition will have to be adjusted.  
In case of process with large amount chamfer, please take reducing cutting condition
- In case of chamfering process of stainless steel, please take the down cutting

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>(Except nose R)</p>	C22GUX NK1010	Carbide K10	Sharp edge	None	2	12
	C22GUX NK2020	Carbide M20	Honing edge	None	2	12
	C22GUX NK3030	Carbide M20	Honing edge	TiN	2	12
	C22GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	C22GUX NK6060	Carbide M20	Honing edge	TiAlN	2	12
	C22GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	C22GUX AC16N	Fine particles Carbide	Sharp edge	AlCrN	2	12
	C22GUX AC16N	Fine particles Carbide	Honing edge	AlCrN	2	12



Blade edge by V-grooving and centering processing could not be a perfect vertex angle



# This Tool !

- Center-drilling and chamfer process can be done by this Tool. You can reduce numbers of ATC tooling by using this tool and make high productivity!
- Original insert shape desined by us solved risk of Chattering and breakage



※ This tool cannot be used with drilling machines

## Dish Chamfering Processing (Min. Blade Diameter ~ Max. Blade Diameter)

90°  
φ2mm ~ φ13.5mm

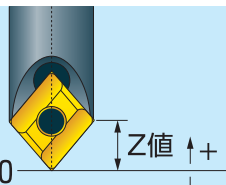
118°  
φ2mm ~ φ16.15mm

## Body

Model. No.	Blades	Dimensions (mm)								α°
		φD	φDs	φd	φdn	L	ℓs	ℓn	S	
SC1045C	1	13.5	1.0	10	13	110	82	28	6.3	90°
SC1245C	1	13.5	1.0	12	13	110	82	28	6.3	90°
SC1645C	1	13.5	1.0	16	13	110	82	28	6.3	90°
SC1645CL	1	13.5	1.0	16	13	200	172	28	6.3	90°
SC1630C	1	16.15	0.39	16	16.5	110	82	28	4.6	118°
SC1630CL	1	16.15	0.39	16	16.5	200	172	28	4.6	118°

※ Insert is not equipped as standard accessory. Please purchase it separately.

※ Lock Pin is supplied as standard accessory



## Z-value compensate standard

※ Please note that this value may be getting little errors

α° = 90° → +0.45

α° = 118° → +0.2

[Example]

Correct Z-value(-6.0)to -5.55in case of φ12mm spot drilling process

## Cutting Conditions

Centering				
Material	Feed Per Blade (fz)	Rotation Speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.05~0.1	1,500~3,000	C32GUX NK2020	Yes
Alloy Steel	0.05~0.1	1,500~3,000	C32GUX NK3030	Yes
Stainless Steel	0.05~0.1	1,500~3,000	C32GUX AC15D	Yes
Aluminum, Resin, Brass	0.05~0.2	3,000~	C32GUX NK1010	Yes
Castings	0.05~0.1	1,500~3,000	C32GUX NK3030	Yes

Chamfering				
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.1~0.2	2,000~	C32GUX NK2001	None
Alloy Steel	0.1~0.2	2,000~	C32GUX NK2001	None
Stainless Steel	0.1~0.2	2,000~	C32GUX AC15D	Yes
Aluminum, Resin, Brass	0.1~0.2	3,000~	C32GUX NK1010	Yes
Castings	0.1~0.2	2,000~	C32GUX NK2001	None

● In case of bore chamfering process by Z-axis only, please take same cutting condition of centering process

● According to the shape of work, large or small chamfering, amount and position of blade, the cutting condition will have to be adjusted.

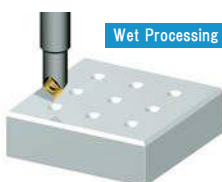
In case of process with large amount chamfer, please take reducing cutting condition

● In case of chamfering process of stainless steel, please take the down cutting

## Processing Example

[Φ8 of Centering Processing, Circumference C3 Chamfering]

- Body : SC1645C
- Insert : C32GUX NK3030
- Material : S45C
- Rotation Speed : 3,500r.p.m
- Feed (Z-axis) : 100mm/min
- Feed (X-axis) : 300mm
- Cutting Oil : Yes



Result

Good! No secondary burrs and no chattering process

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>(Except nose R)</p>	C32GUX NK2001	Cermet	Honing edge	None	2	12
	C32GUX NK1010	Carbide K10	Sharp edge	None	2	12
	C32GUX NK2020	Carbide M20	Honing edge	None	2	12
	C32GUX NK3030	Carbide M20	Honing edge	TiN	2	12
	C32GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	C32GUX NK6060	Carbide M20	Honing edge	TiAlN	2	12
	C32GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	C32GUX AC15D	Fine particles Carbide	Honing edge	AlCrN	2	12
	C32GUX AC25D	Fine particles Carbide	Sharp edge	AlCrN	2	12
	C32GUX HSS	HSS	Sharp edge	None	2	12
	C32GUX HSS TiN	HSS	Sharp edge	TiN	2	12

Blade edge by centering processing could not be a perfect vertex angle

When mounting insert, please do not take reverse tightening.

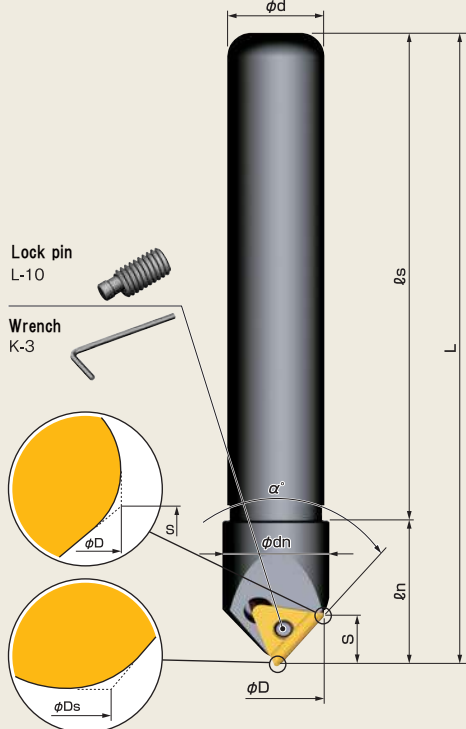
Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred

When replacing insert, please confirm whether you have been taking reserve tightening or not.

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# This Tool !

- Center-drilling and chamfer process can be done by this Tool. You can reduce numbers of ATC tooling by using this tool and make high productivity!
- Original insert shape designed by us solved risk of Chattering and breakage



Achieved large Capacity Cutting of Center-Drilling(22.5mm) and C-Face Chamfering(C8mm).

## Processing Example

[Φ20 of Centering Processing]

- Body : SC2045T
- Insert : T32GUX NK3030
- Material.....S50C
- Rotation Speed...2,500r.p.m
- Feed (Z-axis).....80mm/min
- Cutting Oil.....Yes



Wet Processing

Result

Good! No secondary burrs and no chattering process

Centering



Dish chamfering



Corner chamfering



※ This tool cannot be used with drilling machines

Dish Chamfering Processing (Min. Blade Diameter~Max. Blade Diameter)

90°

φ3mm~φ22.5mm

120°

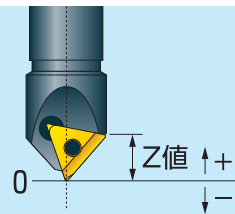
φ3mm~φ26.6mm

## Body

Model. No.	Blades	Dimensions (mm)								$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	$\phi d_n$	L	$\ell_s$	$\ell_n$	S	
SC2045T	1	22.5	1.99	20	22	130	100	30	10.5	90°
SC2045TL	1	22.5	1.99	20	22	200	170	30	10.5	90°
SC2545TL	1	22.5	1.99	25	22	200	150	50	10.5	90°
SC2530T	1	26.6	1.90	25	25	130	95	35	7.5	120°
SC3230TL	1	26.6	1.90	32	25	200	150	50	7.5	120°

※ Inset is not Included. Please Order Separately.

※ Lock pin Wrench we have Standard Equipment.



Z-value compensate standard

※ Please note that this value may be getting little errors

$\alpha^\circ = 90^\circ \rightarrow +0.8$

$\alpha^\circ = 120^\circ \rightarrow +0.6$

[Example]

Correct Z-value(-10.0)to -9.2in case of Φ20mm spot drilling process

## Cutting Conditions

Centering				
Material	Feed Per Blade (fz)	Rotation Speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.03~0.08	1,500~2,500	T32GUX NK2020	Yes
Alloy Steel	0.03~0.08	1,500~2,500	T32GUX NK3030	Yes
Stainless Steel	0.03~0.08	1,500~2,500	T32GUX NK6060	Yes
Aluminum, Resin, Brass	0.03~0.1	3,000~	T32GUX NK1010	Yes
Castings	0.03~0.08	1,500~2,500	T32GUX NK3030	Yes

Chamfering				
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.1~0.2	1,500~	T32GUX NK2001	None
Alloy Steel	0.1~0.2	1,500~	T32GUX NK2001	None
Stainless Steel	0.1~0.2	1,500~	T32GUX NK6060	Yes
Aluminum, Resin, Brass	0.1~0.2	2,000~	T32GUX NK1010	Yes
Castings	0.1~0.2	1,500~	T32GUX NK2001	None

- In case of bore chamfering process by Z-axis only, please take same cutting condition of centering process
- According to the shape of work, large or small chamfering, amount and position of blade, the cutting condition will have to be adjusted.
- In case of process with large amount chamfer, please take reducing cutting condition
- In case of chamfering process of stainless steel, please take the down cutting

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	T32GUX NK2001	Cermet	Honing edge	None	2	12
	T32GUX NK1010	Carbide K10	Sharp edge	None	2	12
	T32GUX NK2020	Carbide M20	Honing edge	None	2	12
	T32GUX NK3030	Carbide M20	Honing edge	TiN	2	12
	T32GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	T32GUX NK6060	Carbide M20	Honing edge	TiAlN	2	12
	T32GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	T32GUX AC16N	Fine particles Carbide	Sharp edge	AlCrN	2	12
	T32GUX AC16N	Fine particles Carbide	Honing edge	AlCrN	2	12
	T32GUX HSS	HSS	Sharp edge	None	2	12
	T32GUX HSS TiN	HSS	Sharp edge	TiN	2	12



Blade edge by centering processing could not be a perfect vertex angle

When mounting insert, please do not take reverse tightening.

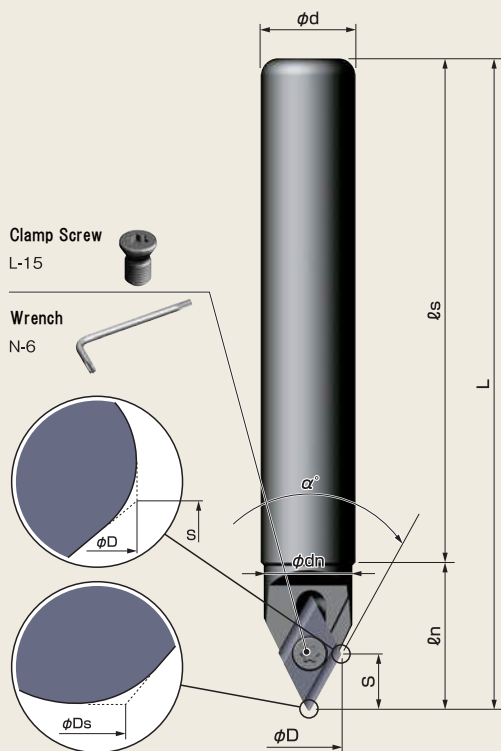
Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred

When replacing insert, please confirm whether you have been taking reserve tightening or not.

...P.114

## This Tool !

- Throw-away type tool ensured no alignment work
- Center-drilling and chamfer process can be done by tool. You can reduce numbers of ATC tooling, and ensured high speed cutting and high productivity.
- Slim body (shank:  $\phi 16\text{mm}$  and  $\phi 12\text{mm}$  blade) is suitable for work at narrow area

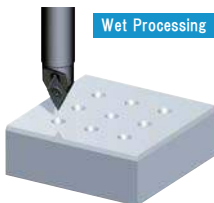


## Processing Example

[Φ12 of Centering, Perimetry chamfering]

- Body : SC1660DS
- Insert : DCET11X304 AC15N

- Material.....S45C
- Rotation Speed...3,500r.p.m
- Feed (Z-axis) ....100mm/min
- Cutting Depth....300mm/min
- Cutting Oil.....Yes



## Result

Good!

No secondary burrs and no chattering process

## Centering



## Corner chamfering (60 )



✖ This tool cannot be used with drilling machines

### Dish Chamfering Processing (Min. Blade Diameter ~ Max. Blade Diameter)

60°

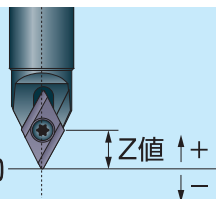
$\phi 1.2\text{mm} \sim \phi 11.88\text{mm}$

## Body

Model. No.	Blades	Dimensions (mm)								$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	$\phi d_n$	L	$\ell_s$	$\ell_n$	S	
SC1660DS	1	11.88	0.97	16	15	110	85	25	9.4	60°
SC1660DSL	1	11.88	0.97	16	15	200	175	25	9.4	60°

※ Inset is not equipped as standard accessory. Please purchase it separately

※ Clamp screw wrench we have standard equipment.



### Z-value compensate standard

※ Please note that this value may be getting little errors

 $\alpha^\circ = 60^\circ \rightarrow +0.82$ 

[Example]... Correct Z-value (-8.66) to -7.84 in case of  $\phi 10\text{mm}$  centering process

## Cutting Conditions

Centering				
Material	Feed Per Blade (fz)	Rotation Speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.03~0.05	3,000~3,500	DCET11X304 AC15N	Yes
Alloy Steel	0.03~0.05	3,000~3,500	DCET11X304 AC15N	Yes
Stainless Steel	0.03~0.05	3,000~3,500	DCET11X304 AC15N	Yes
Aluminum,Resin,Brass	0.03~0.08	3,000~	DCET11X304 ZA10N	Yes
Castings	0.03~0.05	3,000~3,500	DCET11X304 AC15N	Yes

Chamfering				
Material	Feed Per Blade (fz)	Rotation Speed (r.p.m.)	Recommended Insert	Coolant
General Steel	0.1~0.15	2,000~	DCET11X304 AC15N	Yes
Alloy Steel	0.1~0.15	2,000~	DCET11X304 AC15N	Yes
Stainless Steel	0.1~0.15	2,000~	DCET11X304 AC15N	Yes
Aluminum,Resin,Brass	0.1~0.2	3,000~	DCET11X304 ZA10N	Yes
Castings	0.1~0.15	2,000~	DCET11X304 AC15N	Yes

- In case of bore chamfering process by Z-axis only, please take same cutting condition of centering process
- According to the shape of work, large or small chamfering amount and position of blade, the cutting condition will have to be adjusted.
- In case of process with large chanfer ,please take reducing cutting condition
- In case of chamfering process of stainless steel, please take the down cutting

**Insert**

Figure	Model.No.	Material	Blade Shape	Coating	Usable Corner	Quantity per box
<p>           (Except nose R)         </p>	DCET11X304 ZA10N	Carbide K10	Sharp edge	None	2	12
	DCET11X304 AC15N	Fine Particles Carbide	Sharp edge	AlCrN	2	12
	DCET11X304E AC16N	Fine Particles Carbide	Honing edge	AlCrN	2	12



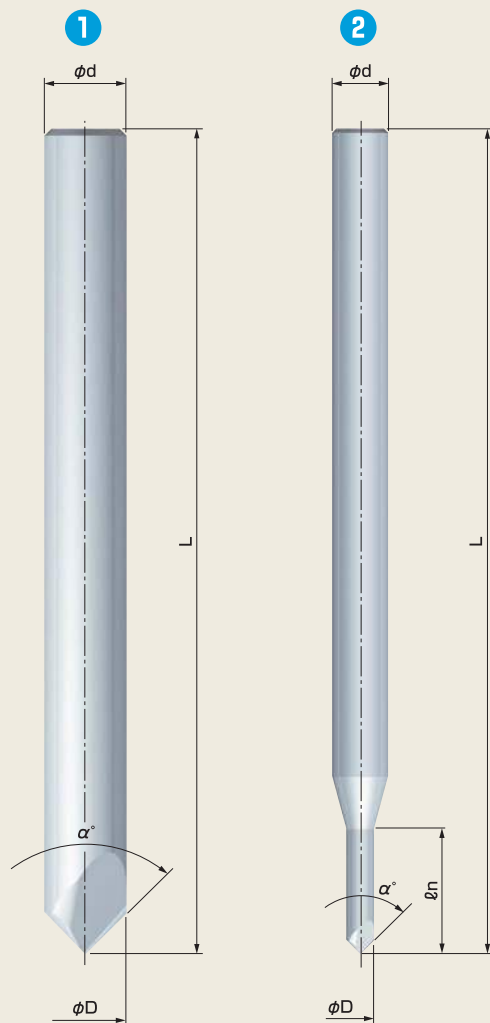
Blade edge by V-grooving and centering processing could not be a perfect vertex angle



# Micro Processing !

- Sharp edge design provides very fine Engraving
- Runout Accuracy is less than 0.005mm !
- $\phi 0.01\text{mm}$  thread chamfering is possible

(※ not for coating material)



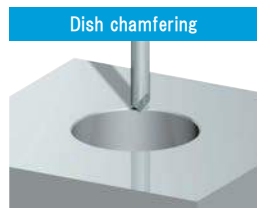
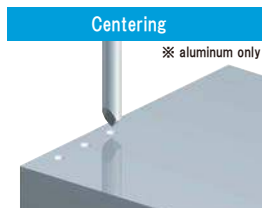
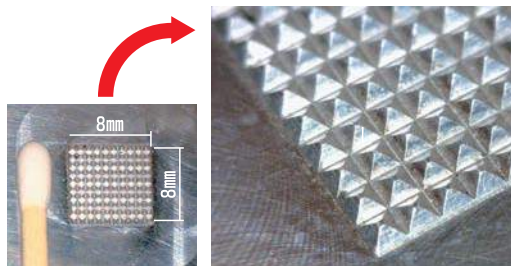
■ Material : Fine Particles Carbide

## Processing Example

[0.8mm height of the pyramid 100 processing]

■ Body : PKP0645

- Material..... A5052
- Rotation Speed..... 10,000r.p.m.
- Table feed..... 150/min
- Cutting Depth ..... Rough 0.185mm finish 0.03mm



※ This tool cannot be used with Drilling Machines

Model. No.	Capacity	$\alpha^\circ$
	Bore chamfering	
PKP0145	$\phi 0.01\text{mm} \sim \phi 1\text{mm}$	90°
PKP0245	$\phi 0.01\text{mm} \sim \phi 2\text{mm}$	90°
PKP0345	$\phi 0.01\text{mm} \sim \phi 3\text{mm}$	90°
PKP0445	$\phi 0.01\text{mm} \sim \phi 4\text{mm}$	90°
PKP0545	$\phi 0.01\text{mm} \sim \phi 5\text{mm}$	90°
PKP0645	$\phi 0.01\text{mm} \sim \phi 6\text{mm}$	90°
PKP0145C	$\phi 0.01\text{mm} \sim \phi 1\text{mm}$	90°
PKP0245C	$\phi 0.01\text{mm} \sim \phi 2\text{mm}$	90°
PKP0345C	$\phi 0.01\text{mm} \sim \phi 3\text{mm}$	90°
PKP0445C	$\phi 0.01\text{mm} \sim \phi 4\text{mm}$	90°
PKP0545C	$\phi 0.01\text{mm} \sim \phi 5\text{mm}$	90°
PKP0645C	$\phi 0.01\text{mm} \sim \phi 6\text{mm}$	90°
PKP0145DLC	$\phi 0.01\text{mm} \sim \phi 1\text{mm}$	90°
PKP0245DLC	$\phi 0.01\text{mm} \sim \phi 2\text{mm}$	90°
PKP0345DLC	$\phi 0.01\text{mm} \sim \phi 3\text{mm}$	90°
PKP0445DLC	$\phi 0.01\text{mm} \sim \phi 4\text{mm}$	90°
PKP0545DLC	$\phi 0.01\text{mm} \sim \phi 5\text{mm}$	90°
PKP0645DLC	$\phi 0.01\text{mm} \sim \phi 6\text{mm}$	90°

## Body

Model. No.	Figure	Blades	Dimensions (mm)				$\alpha^\circ$	Coating
			$\phi D$	$\phi d$	L	$\ell n$		
PKP0145	②	1	1	4	55	9	90°	None
PKP0245	②	1	2	4	55	9	90°	None
PKP0345	①	1	3	3	55	—	90°	None
PKP0445	①	1	4	4	55	—	90°	None
PKP0545	①	1	5	5	60	—	90°	None
PKP0645	①	1	6	6	60	—	90°	None
PKP0145C	②	1	1	4	55	9	90°	AlCrN
PKP0245C	②	1	2	4	55	9	90°	AlCrN
PKP0345C	①	1	3	3	55	—	90°	AlCrN
PKP0445C	①	1	4	4	55	—	90°	AlCrN
PKP0545C	①	1	5	5	60	—	90°	AlCrN
PKP0645C	①	1	6	6	60	—	90°	AlCrN
PKP0145DLC	②	1	1	4	55	9	90°	DLC
PKP0245DLC	②	1	2	4	55	9	90°	DLC
PKP0345DLC	①	1	3	3	55	—	90°	DLC
PKP0445DLC	①	1	4	4	55	—	90°	DLC
PKP0545DLC	①	1	5	5	60	—	90°	DLC
PKP0645DLC	①	1	6	6	60	—	90°	DLC

## Cutting Conditions

Centering			
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Coolant
General Steel	x	x	x
Alloy Steel	x	x	x
Stainless Steel	x	x	x
Aluminum, Resin, Brass	0.05~0.08	10,000	YES
Cast Steel	x	x	x

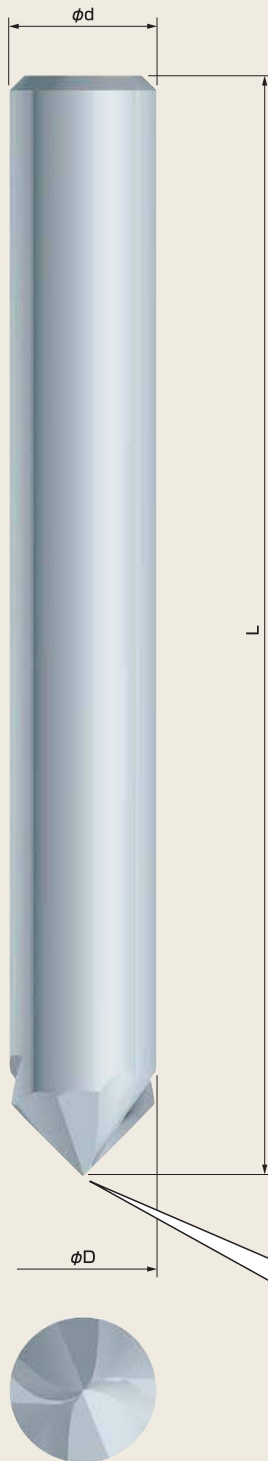
V-groove processing			
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Coolant
General Steel	0.05~0.07	8,000	YES
Alloy Steel	0.05~0.07	8,000	YES
Stainless Steel	0.03~0.05	8,000	YES
Aluminum, Resin, Brass	0.05~0.08	10,000	YES
Cast Steel	0.04~0.06	8,000	YES

Chamfering			
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Coolant
General Steel	0.07~0.1	8,000	YES
Alloy Steel	0.07~0.1	8,000	YES
Stainless Steel	0.05~0.07	8,000	YES
Aluminum, Resin, Brass	0.1~0.15	10,000	YES
Cast Steel	0.07~0.12	8,000	YES

- For finish application, the cutting condition will have to be reduced
- Not possible for processing more than C1 chamfer processing
- According to the shape of work, large or small chamfering amount and position of blade, the cutting condition will have to be adjusted
- In case of chamfering process of stainless steel, reduce the cutting conditions

## Exclusive for Aluminum processing !

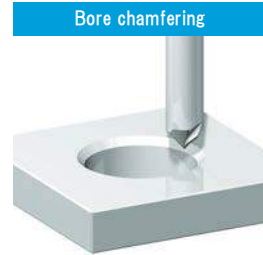
- Original shaped edge provide sharp cutting without deburring
- Running cost has magnificently reduced with High Strength and No resistance
- Runout Accuracy is less than 0.005mm !



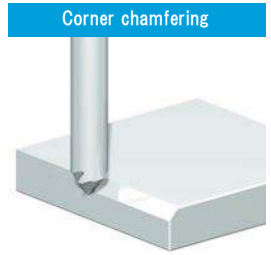
■ Material : Fine Particles Carbide



Centering



Bore chamfering



Corner chamfering

※ This tool cannot be used with Drilling Machines

Model. No.	Capacity
	Bore chamfering
AZ4-90-L60	$\phi 0.2\text{mm} \sim \phi 4\text{mm}$
AZ6-90-L75	$\phi 0.4\text{mm} \sim \phi 6\text{mm}$
AZ10-90-L75	$\phi 0.6\text{mm} \sim \phi 10\text{mm}$
AZ10-90-L120	$\phi 0.6\text{mm} \sim \phi 10\text{mm}$

### Body

Model. No.	Blades	Dimensions (mm)			
		$\phi D$	$\phi D1$	$\phi d$	L
AZ4-90-L60	2	4	$\phi 0.2$	4	60
AZ6-90-L75	2	6	$\phi 0.4$	6	75
AZ10-90-L75	2	10	$\phi 0.6$	10	75
AZ10-90-L120	2	10	$\phi 0.6$	10	120

⚠ Can not regrinding !

### Cutting Conditions

Material	Processing type	Rotation speed (r.p.m.)	Table feed	Coolant
Aluminum, Resin, Brass	C chamfering	7,000~10,000	1,000~2,000	YES
	Sculpture, engraving	7,000~10,000	1,000~2,000	YES
	Centering Bore chamfering	6,000	80	YES

● take lower feed rate less than 800 in case of more than C1 process

### Processing Example

[Sculpturing, Engraving]

■ Body : AZ10-90-L75

● Material : A5000  
A7000

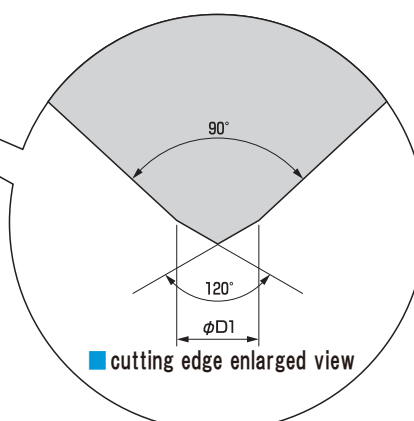
- Rotation Speed : 8,000 r.p.m.
- Feed Per Blade (fz) : 0.15mm/tooth
- Table feed : 2400mm/min
- Cutting Depth : 0.15mm
- Coolant : YES

#### Result

Good cutting, no deburring after processing



Wet processing

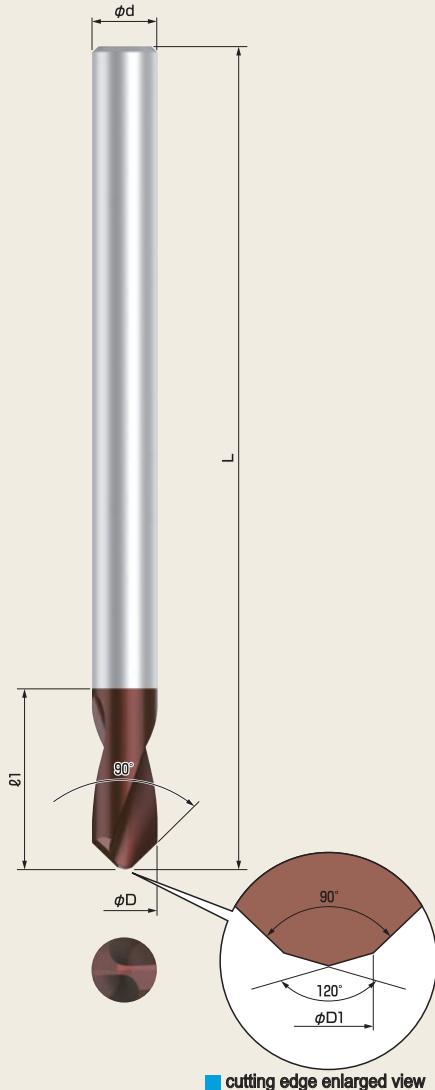


■ cutting edge enlarged view



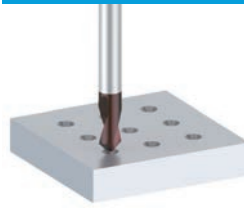
**By PICO only !**

- Succeeded the improvement of sharpness at the Pointing processing and eliminated the secondary Burrs !
- Can also be used to C-Chamfering, Dish Chamfering Processing that runs in the transverse!

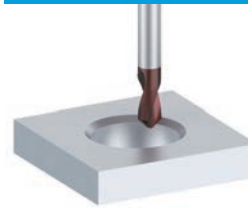


Material: Fine Particles Carbide

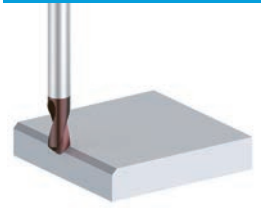
## Centering Processing



## Dish Chamfering Processing



## Chamfering Processing



※ Ncan't use for Bench Drilling Machines

Model. No.	Capacity
	Dish Chamfering Processing
SCP0345F/SCP0345FL	$\phi 0.75\text{mm} \sim \phi 3.0\text{mm}$ (For steel-based)
SCP0445F/SCP0445FL	$\phi 1.0\text{mm} \sim \phi 4.0\text{mm}$ (For steel-based)
SCP0545F/SCP0545FL	$\phi 1.25\text{mm} \sim \phi 5.0\text{mm}$ (For steel-based)
SCP0645F/SCP0645FL	$\phi 1.5\text{mm} \sim \phi 6.0\text{mm}$ (For steel-based)
SCP0345S/SCP0345SL	$\phi 0.75\text{mm} \sim \phi 3.0\text{mm}$ (For stainless steel-based)
SCP0445S/SCP0445SL	$\phi 1.0\text{mm} \sim \phi 4.0\text{mm}$ (For stainless steel-based)
SCP0545S/SCP0545SL	$\phi 1.25\text{mm} \sim \phi 5.0\text{mm}$ (For stainless steel-based)
SCP0645S/SCP0645SL	$\phi 1.5\text{mm} \sim \phi 6.0\text{mm}$ (For stainless steel-based)

## Body

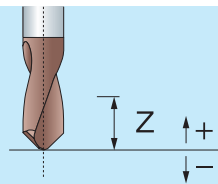
Model. No.	Blades	Dimensions (mm)					Coating
		$\phi D$	$\phi D1$	$\phi d$	L	$\phi 1$	
NEW SCP0345F	2	3	$\phi 0.75$	3	50	8	TiAlN
NEW SCP0445F	2	4	$\phi 1.0$	4	50	10	TiAlN
NEW SCP0545F	2	5	$\phi 1.25$	5	50	13	TiAlN
NEW SCP0645F	2	6	$\phi 1.5$	6	50	15	TiAlN
NEW SCP0345FL	2	3	$\phi 0.75$	3	100	8	TiAlN
NEW SCP0445FL	2	4	$\phi 1.0$	4	100	10	TiAlN
NEW SCP0545FL	2	5	$\phi 1.25$	5	100	13	TiAlN
NEW SCP0645FL	2	6	$\phi 1.5$	6	100	15	TiAlN
NEW SCP0345S	2	3	$\phi 0.75$	3	50	8	TiAlN
NEW SCP0445S	2	4	$\phi 1.0$	4	50	10	TiAlN
NEW SCP0545S	2	5	$\phi 1.25$	5	50	13	TiAlN
NEW SCP0645S	2	6	$\phi 1.5$	6	50	15	TiAlN
NEW SCP0345SL	2	3	$\phi 0.75$	3	100	8	TiAlN
NEW SCP0445SL	2	4	$\phi 1.0$	4	100	10	TiAlN
NEW SCP0545SL	2	5	$\phi 1.25$	5	100	13	TiAlN
NEW SCP0645SL	2	6	$\phi 1.5$	6	100	15	TiAlN



Blade edge by centering processing could not be a perfect vertex angle



Can not regrinding !



Estimated Z value correction during Cutting processing  
※ (this value there is a case where slight error is out)

SCP0345 → +0.16 SCP0545 → +0.26  
SCP0445 → +0.21 SCP0645 → +0.32

[Example] .....In case of centering of 2  $\phi$  in SCP0345,  
Z value is the place of -l to -0.84—Z value

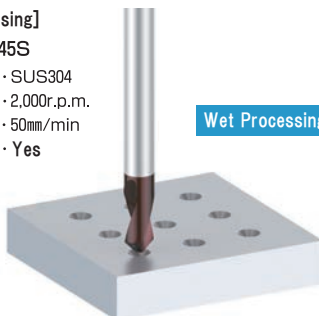
## Processing Example

[ $\Phi 2$  Centering Processing]

Holder : SCP0445S

- Material ..... SUS304
- Rotation ..... 2,000r.p.m.
- Z-Table Feed ..... 50mm/min
- Use Cutting Oil ..... Yes

Wet Processing



Result

Good!  
No secondary burrs and no chattering process

## Cutting Conditions

Centering				
Material	Feed Per Blade (fz)	Rotation Speed (r.p.m.)		Coolant
		SCP0345F/SCP0345FL	SCP0445S/SCP0445SL	
General Steel	0.05~0.1	4,000	×	Yes
Alloy Steel	0.05~0.1	3,000	×	Yes
Stainless Steel	0.02~0.03	×	2,000	Yes
Aluminum, Resin, Brass	×	×	×	Yes
Castings	0.05~0.1	4,000	×	×

Chamfering				
Material	Feed Per Blade (fz)	Rotation Speed (r.p.m.)		Coolant
		SCP0345F/SCP0345FL	SCP0445S/SCP0445SL	
General Steel	0.08~0.12	5,000~	×	Yes
Alloy Steel	0.08~0.12	4,000~	×	Yes
Stainless Steel	0.05~0.1	×	3,000~	Yes
Aluminum, Resin, Brass	×	×	×	Yes
Castings	0.08~0.12	5,000~	×	×

- Lower as much as possible the conditions in the case of finishing
- Work shape, Clamp condition, Amount of large and small, please adjust the conditions by cutting edge position  
In case the amount is large, please lower cutting condition and process.
- In case Of Chamfering processing of Stainless Steel(SUS304etc) please process with Down-Cut.



# Cost Reduction !

- Original insert have 3 usable corners and decrease the production cost widely
- Due to the improvement of blade shape and new coating, it is machinable more than any other insert, and chip(cuttings) release has been drastically improving
- Micro-grained Carbide with new coating made longer life of insert



Centering

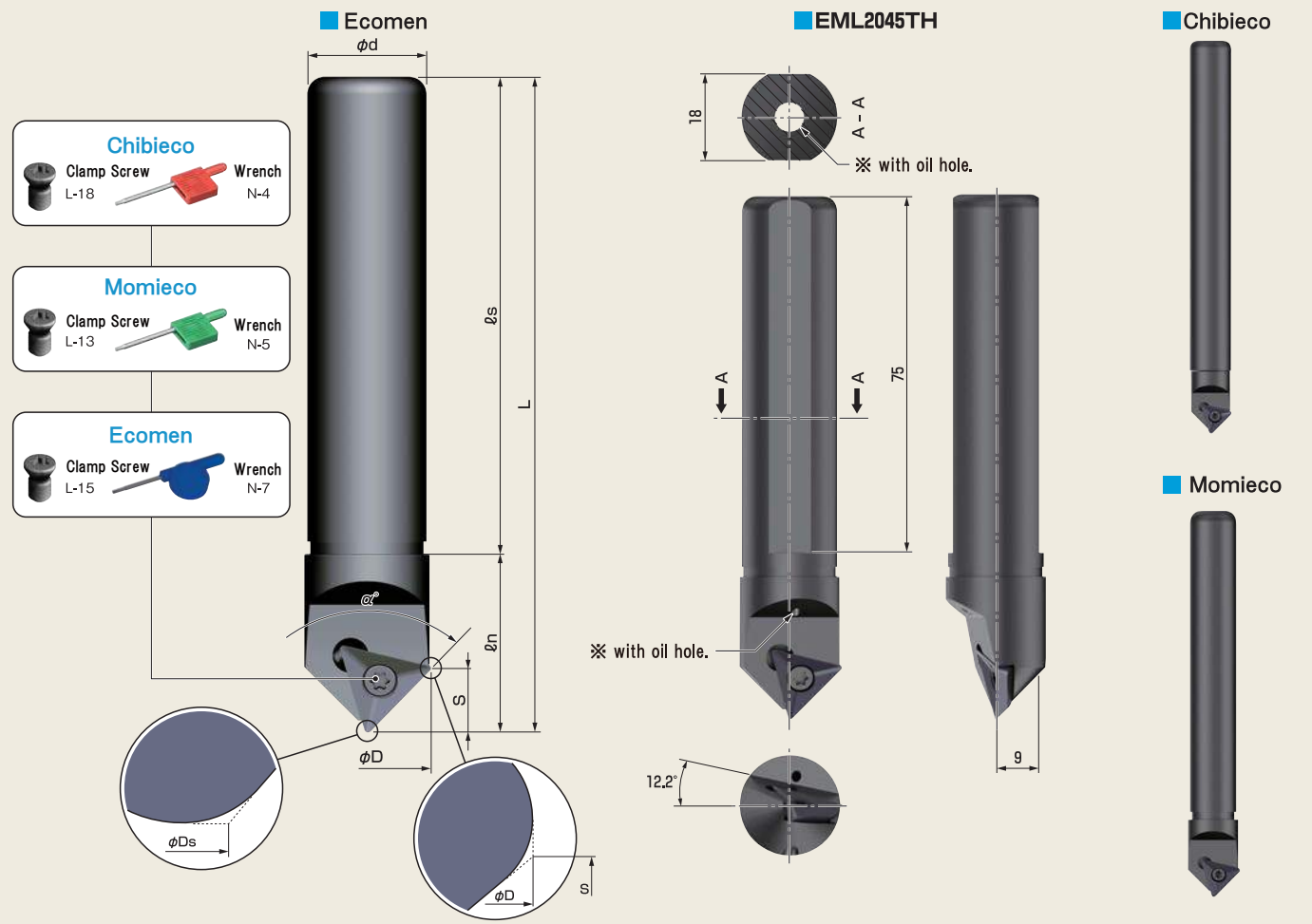


Bore chamfering



Corner chamfering

※ This tool cannot be used with drilling machines



## Body

Product name	Model. No.	blades	Dimensions (mm)							$\alpha^\circ$	Inserts
			$\phi D$	$\phi D_s$	$\phi d$	L	$l_s$	$l_n$	S		
Chibieco	EMS1045T	1	10.3	0.88	10	95	80	15	4.7	90°	TXMT080206
	EMS1045TL	1	10.3	0.88	10	155	140	15	4.7	90°	TXMT080206
	EMS1030T	1	12.3	0.71	10	95	80	15	3.3	120°	TXMT080206
	EMS1030TL	1	12.3	0.71	10	155	140	15	3.3	120°	TXMT080206
Momieco	EMM1245T	1	14.2	0.88	12	100	80	20	6.7	90°	TXMT110306
	EMM1245TL	1	14.2	0.88	12	160	140	20	6.7	90°	TXMT110306
	EMM1645T	1	14.2	0.88	16	100	80	20	6.7	90°	TXMT110306
	EMM1645TL	1	14.2	0.88	16	160	140	20	6.7	90°	TXMT110306
	EMM1230T	1	17.1	0.71	12	100	80	20	4.7	120°	TXMT110306
	EMM1230TL	1	17.1	0.71	12	160	140	20	4.7	120°	TXMT110306
Ecomen	EML2045T	1	22	0.88	20	110	80	30	10.5	90°	TXMT16T306
	EML2045TL	1	22	0.88	20	170	140	30	10.5	90°	TXMT16T306
	EML2545TL	1	22	0.88	25	170	140	30	10.5	90°	TXMT16T306
	EML2045TH	1	22	0.88	20	110	80	30	10.5	90°	TXMT16T306
	EML2030T	1	26.6	0.71	20	110	80	30	7.5	120°	TXMT16T306
	EML2030TL	1	26.6	0.71	20	170	140	30	7.5	120°	TXMT16T306

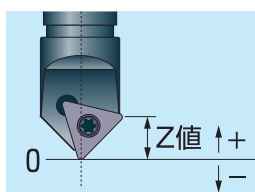
※ Insert is not equipped as standard accessory. Please purchase it separately ※ Clamp screw is equipped as standard accessory



Blade edge by V-grooving and centering processing could not be a perfect vertex angle

Product Name	Model, No.	Capacity	$\alpha^\circ$
		Bore chamfering	
Chibieco	EMS1045T	$\phi 1.2\text{mm} \sim \phi 9.7\text{mm}$	90°
	EMS1045TL	$\phi 1.2\text{mm} \sim \phi 9.7\text{mm}$	90°
	EMS1030T	$\phi 1.0\text{mm} \sim \phi 11.7\text{mm}$	120°
	EMS1030TL	$\phi 1.0\text{mm} \sim \phi 11.7\text{mm}$	120°
Momieco	EMM1245T	$\phi 1.2\text{mm} \sim \phi 13.6\text{mm}$	90°
	EMM1245TL	$\phi 1.2\text{mm} \sim \phi 13.6\text{mm}$	90°
	EMM1645T	$\phi 1.2\text{mm} \sim \phi 13.6\text{mm}$	90°
	EMM1645TL	$\phi 1.2\text{mm} \sim \phi 13.6\text{mm}$	90°
	EMM1230T	$\phi 1.0\text{mm} \sim \phi 16.5\text{mm}$	120°
	EMM1230TL	$\phi 1.0\text{mm} \sim \phi 16.5\text{mm}$	120°
Ecomen	EML2045T	$\phi 1.2\text{mm} \sim \phi 21.6\text{mm}$	90°
	EML2045TL	$\phi 1.2\text{mm} \sim \phi 21.6\text{mm}$	90°
	EML2545TL	$\phi 1.2\text{mm} \sim \phi 21.6\text{mm}$	90°
	※ EML2045TH	$\phi 1.2\text{mm} \sim \phi 21.6\text{mm}$	90°
	EML2030T	$\phi 1.0\text{mm} \sim \phi 26.0\text{mm}$	120°
	EML2030TL	$\phi 1.0\text{mm} \sim \phi 26.0\text{mm}$	120°

※ with oil hole.



### Z-value compensate standard

※ Please note that this value may be getting little errors

$\alpha^\circ=90^\circ \rightarrow +0.44$  (Common to all models)

$\alpha^\circ=120^\circ \rightarrow +0.20$  (Common to all models)

[Example] ... Correct Z-value (-2.5) to -2.06 in case of 8mm centering process

### Processing Example

#### [Φ5mm Center-drilling]

- Body : EML2045T
- Insert : TXMT16T306 AC15N

- Material..... SUS304
- Rotation Speed... 2,000r.p.m
- Feed (Z-axis) .... 40mm/min
- Cutting Oil..... Yes

#### Result

No cutting vibration or secondary burr after centering



## Cutting Conditions

Centering					
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant	Air blow
General Steel	0.02~0.08	2,000~	TXMT□□□□□ AC15N	Yes	—
Alloy Steel	0.02~0.08	2,000~	TXMT□□□□□ AC15N	Yes	—
Stainless Steel	0.01~0.05	2,000~	TXMT□□□□□ AC15N	Yes	—
Aluminum, Resin, Brass	0.02~0.08	5,000~	TXMT□□□□□ ZA10N	Yes	—
Castings	0.02~0.08	2,000~	TXMT□□□□□ AC15N	—	Yes

Chamfering					
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant	Air blow
General Steel	0.03~0.15	3,000~	TXMT□□□□□ AC15N	None (※)	—
Alloy Steel	0.03~0.15	3,000~	TXMT□□□□□ AC15N	None (※)	—
Stainless Steel	0.03~0.15	3,000~	TXMT□□□□□ AC15N	Yes	—
Aluminum, Resin, Brass	0.03~0.15	5,000~	TXMT□□□□□ ZA10N	Yes	—
Castings	0.03~0.15	3,000~	TXMT□□□□□ AC15N	—	Yes

※ Please used as needed.

● According to the shape of work, large or small chamfering, amount and position of blade, the cutting condition will have to be adjusted.

● In case of process with large amount chamfer, please take reducing cutting condition

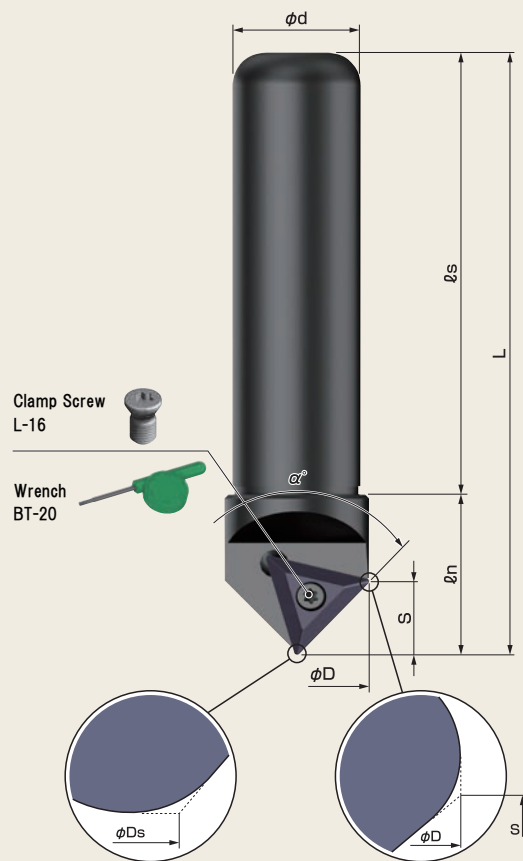
● In case of chamfering process of stainless steel, please take the down cutting

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● Chibieco</b> 	TXMT080206 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT080206 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12
<b>● Momieco</b> 	TXMT110306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT110306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12
<b>● Ecomen</b> 	TXMT16T306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT16T306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12

## Reduced Processing Cost!

- Reduced Processing Cost by Tip with 3-corners
- Improved machinability and cutting chip disposability
- Achieved a long life by original tip(Ultrafine Particle Carbide+New coating)

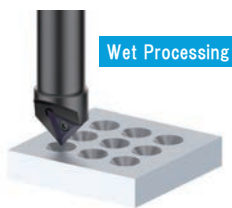


### Processing Example

【 $\phi 30\text{mm}$  Centering Processing】

- Body : EMD3245T
- Insert : TXMT270506 AC16N

- Material..... SKD11
- Rotation Speed... 1,500r.p.m
- Feed (Z-axis).....45mm/min
- Cutting Oil..... Yes



#### Result

No secondary burrs and no chattering process  
Good Finish

### Centering Processing



### Dish Chamfering Processing



### Chamfering Processing



※ can't use for Bench Drilling Machines

Dish Chamfering Processing (Min. Blade Diameter ~ Max. Blade Diameter)

90°  
 $\phi 1.5\text{mm} \sim \phi 36.8\text{mm}$

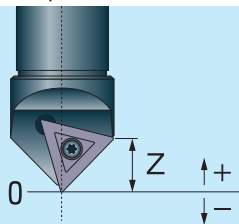
120°  
 $\phi 1.1\text{mm} \sim \phi 44.4\text{mm}$

### Body

Model. No.	blades	Dimensions (mm)							$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$	S	
NEW EMD2545T	1	37.1	1.2	25	150	110	40	18	90°
EMD3245T	1	37.1	1.2	32	150	110	40	18	90°
NEW EMD3230T	1	45.0	0.9	32	150	110	40	12.6	120°

※ Inset is not equipped as standard accessory. Please purchase it separately.

※ Clamp screw wrench we have standard equipment.



Estimated Z value correction during Cutting processing  
(this value the is a case where all ght errors out)

$\alpha^\circ = 90^\circ \rightarrow +0.5$     $\alpha^\circ = 120^\circ \rightarrow +0.25$

[Example]... In case of centering of 5  $\phi$  in EMD3245T,  
Z value is the place of -2.5 to -2 Z value

### Cutting Conditions

Centering					
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant	Air blow
General Steel	0.02~0.08	1,000~2,000	TXMT270506 AC16N	Yes	—
Alloy Steel	0.02~0.08	1,000~2,000	TXMT270506 AC16N	Yes	—
Stainless Steel	0.01~0.05	1,000~2,000	TXMT270506 AC16N	Yes	—
Aluminum, Resin, Brass	0.02~0.08	1,500~3,800	TXMT270506 ZA10N	Yes	—
Castings	0.02~0.08	1,000~2,000	TXMT270506 AC16N	—	Yes

Chamfering					
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant	Air blow
General Steel	0.03~0.15	1,000~2,000	TXMT270506 AC16N	None (※)	—
Alloy Steel	0.03~0.15	1,000~2,000	TXMT270506 AC16N	None (※)	—
Stainless Steel	0.03~0.15	1,000~2,000	TXMT270506 AC16N	Yes	—
Aluminum, Resin, Brass	0.03~0.15	1,500~3,000	TXMT270506 ZA10N	Yes	—
Castings	0.03~0.15	1,000~2,000	TXMT270506 AC16N	—	Yes

※ Please used as needed.

● Lower as much as possible the conditions in the case of finishing

● Work shape, Clamp condition, Amount of large and small, please adjust the conditions by cutting edge position  
In case the amount is large, please lower cutting condition and process.

● In case Of Chamfering processing of Stainless Steel(SUS304etc) please process with Down-Cut.

⚠ Z value is -4.5mm becomes the upper limit when performing the processing

### Insert

Figure	ModelNo.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	TXMT270506 ZA10N	Carbide K10	Sharp edge	None	3	3
	TXMT270506 AC16N	Fine particles Carbide	Honing edge	AlCrN	3	3



Blade edge by centering processing could not be a perfect vertex angle



# .....MEMO.....



## Cost Reduction !

- Original insert have 3 usable corners and decrease the production cost widely
- Due to the improvement of blade shape and new coating, it is machinable more than any other insert, and chip(cuttings) release has been drastically improving
- Micro-grained Carbide with new coating made longer life of insert

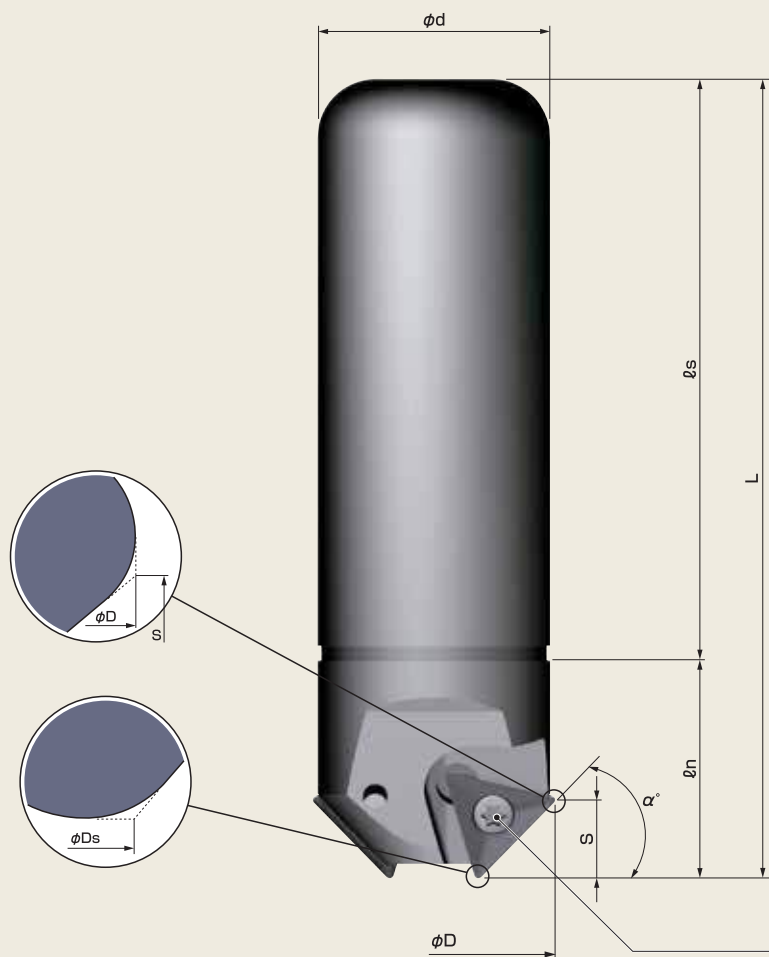
Corner chamfering



Bore chamfering



※ This tool cannot be used with drilling machines



Clamp Screw



L-18

Wrench



N-4

Clamp Screw



L-13

Wrench



N-5

Clamp Screw



L-15

Wrench



N-7

### Body

Product name	Model. No.	blades	Dimensions (mm)							$\alpha^\circ$	Inserts
			$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$	S		
Chibieco2	NKS3018T	2	18.6	7	16	95	80	15	3.3	30°	TXMT080206
	NKS4516T	2	16.5	7	16	95	80	15	4.7	45°	TXMT080206
	NKS6017T	2	17.7	11	16	95	80	15	5.8	60°	TXMT080206
Momieco2	NKM3025T	2	25.3	9	20	100	80	20	4.7	30°	TXMT110306
	NKM4522T	2	22.3	9	20	100	80	20	6.7	45°	TXMT110306
	NKM6023T	2	23.4	14	20	100	80	20	8.2	60°	TXMT110306
Ecomen2	NKL3036T	2	36.9	11	32	110	80	30	7.5	30°	TXMT16T306
	NKL4534T	2	34.1	13	32	110	80	30	10.5	45°	TXMT16T306
	NKL6034T	2	34.9	20	32	110	80	30	12.9	60°	TXMT16T306

※ Insert is not equipped as standard accessory. Please purchase it separately

※ Clamp screw is equipped as standard accessory

Product Name	Model. No.	Capacity	$\alpha^\circ$
		Bore chamfering	
Chibieco2	NKS3018T	$\phi 7.3\text{mm} \sim \phi 18.0\text{mm}$	30°
	NKS4516T	$\phi 7.3\text{mm} \sim \phi 15.9\text{mm}$	45°
	NKS6017T	$\phi 11.3\text{mm} \sim \phi 17.1\text{mm}$	60°
Momieco2	NKM3025T	$\phi 9.3\text{mm} \sim \phi 24.7\text{mm}$	30°
	NKM4522T	$\phi 9.3\text{mm} \sim \phi 21.7\text{mm}$	45°
	NKM6023T	$\phi 14.3\text{mm} \sim \phi 22.8\text{mm}$	60°
Ecomen2	NKL3036T	$\phi 11.3\text{mm} \sim \phi 36.3\text{mm}$	30°
	NKL4534T	$\phi 13.4\text{mm} \sim \phi 33.8\text{mm}$	45°
	NKL6034T	$\phi 20.4\text{mm} \sim \phi 34.8\text{mm}$	60°

### Processing Example

#### [ $\phi 15$ C5 Bore Chamfering]

- Body : NKL4534T
- Insert : TXMT16T306 AC15N

- Material : .....SUS304
- Rotation Speed : .....4,500r.p.m.
- Feed (Z-axis) : .....150/min
- Cutting Depth : .....C5
- Cutting Oil : .....Yes

#### Result

Good!  
No secondary burrs and  
No chattering after processing



### Cutting Conditions

Chamfering					
Material	Feed per blade (fz)	Rotation speed (r.p.m.)	Recommended Insert	Coolant	Air blow
General Steel	0.03~0.15	3,000~	TXMT□□□□□ AC15N	None (※)	—
Alloy Steel	0.03~0.15	3,000~	TXMT□□□□□ AC15N	None (※)	—
Stainless Steel	0.03~0.15	3,000~	TXMT□□□□□ AC15N	Yes	—
Aluminum, Resin, Brass	0.03~0.15	5,000~	TXMT□□□□□ ZA10N	Yes	—
Castings	0.03~0.15	3,000~	TXMT□□□□□ AC15N	—	Yes

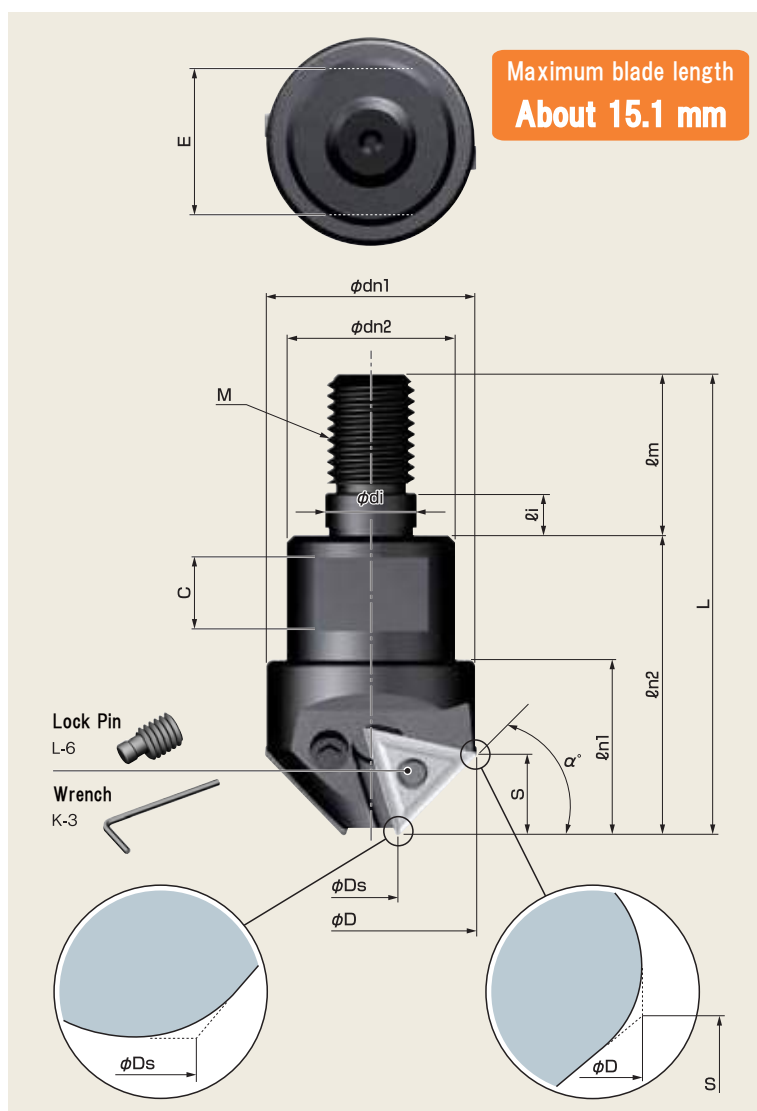
※ Please used as needed.

- According to the shape of work, large or small chamfering, amount and position of blade, the cutting condition will have to be adjusted.
- In case of process with large amount chamfer, please take reducing cutting condition
- In case of chamfering process of stainless steel, please take the down cutting

### Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable Corner	Quantity per box
<b>Chibieco2</b> 	TXMT080206 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT080206 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12
<b>Momieco2</b> 	TXMT110306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT110306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12
<b>Ecomen2</b> 	TXMT16T306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT16T306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12

Applications use	Capacity												
	NK1536T-MD	NK2035T-MD	NK2535T-MD	NK3030T-MD	NK3532T-MD	NK4031T-MD	NK4530T-MD	NK5031T-MD	NK5532T-MD	NK6030T-MD	NK6533T-MD	NK7032T-MD	NK7533T-MD
$\alpha^\circ$	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°
Bore chamfering	$\phi 8 \sim 36\text{mm}$	$\phi 8 \sim 36\text{mm}$	$\phi 8 \sim 35\text{mm}$	$\phi 8 \sim 33\text{mm}$	$\phi 8 \sim 32\text{mm}$	$\phi 8 \sim 31\text{mm}$	$\phi 8 \sim 29\text{mm}$	$\phi 12 \sim 31\text{mm}$	$\phi 15 \sim 32\text{mm}$	$\phi 15 \sim 30\text{mm}$	$\phi 20 \sim 33\text{mm}$	$\phi 22 \sim 32\text{mm}$	$\phi 25 \sim 33\text{mm}$



## Modular Type!

- Angle 15° ~ 75° (by 5° increments) Modular type cutter can be chosen according your application
- Insert available are rich and will meet with various applications you may need

Specific  
agency  
Items



Corner Chamfering



Bore Chamfering



Corner Chamfering



※ Please use Arbors to size and application, at local market

## Body

Model. No.	Blades	Dimensions (mm)														$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi dn1$	$\phi dn2$	$\phi di$	M	L	$\ell n1$	$\ell n2$	$\ell m$	$\ell i$	S	C	E	
NK1536T-MD	2	37.9	8	37.8	23	12.5	M12	63	24	41	22	5.5	4.0	10	17	15°
NK2035T-MD	2	37.1	8	36.8	23	12.5	M12	63	24	41	22	5.5	5.3	10	17	20°
NK2535T-MD	2	36.0	8	35.6	23	12.5	M12	63	24	41	22	5.5	6.5	10	17	25°
NK3030T-MD	2	34.8	8	34.1	23	12.5	M12	63	24	41	22	5.5	7.7	10	17	30°
NK3532T-MD	2	33.3	8	32.5	23	12.5	M12	63	24	41	22	5.5	8.9	10	17	35°
NK4031T-MD	2	31.7	8	30.6	23	12.5	M12	63	24	41	22	5.5	9.9	10	17	40°
NK4530T-MD	2	29.9	8	28.5	23	12.5	M12	63	24	41	22	5.5	10.9	10	17	45°
NK5031T-MD	2	31.9	12	30.6	23	12.5	M12	63	24	41	22	5.5	11.8	10	17	50°
NK5532T-MD	2	32.7	15	31.4	23	12.5	M12	63	24	41	22	5.5	12.7	10	17	55°
NK6030T-MD	2	30.5	15	28.9	23	12.5	M12	63	24	41	22	5.5	13.4	10	17	60°
NK6533T-MD	2	33.1	20	31.7	23	12.5	M12	63	24	41	22	5.5	14.0	10	17	65°
NK7032T-MD	2	32.6	22	31.2	23	12.5	M12	63	24	41	22	5.5	14.5	10	17	70°
NK7533T-MD	2	33.0	25	31.6	23	12.5	M12	63	24	41	22	5.5	15.0	10	17	75°

※ Inset is not equipped as standard accessory. Please purchase it separately.

※ Lock Pin is supplied as standard accessory



When mounting insert, please do not take reverse tightening.

Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred

When replacing insert, please confirm whether you have been taking reserve tightening or not.

...P.114

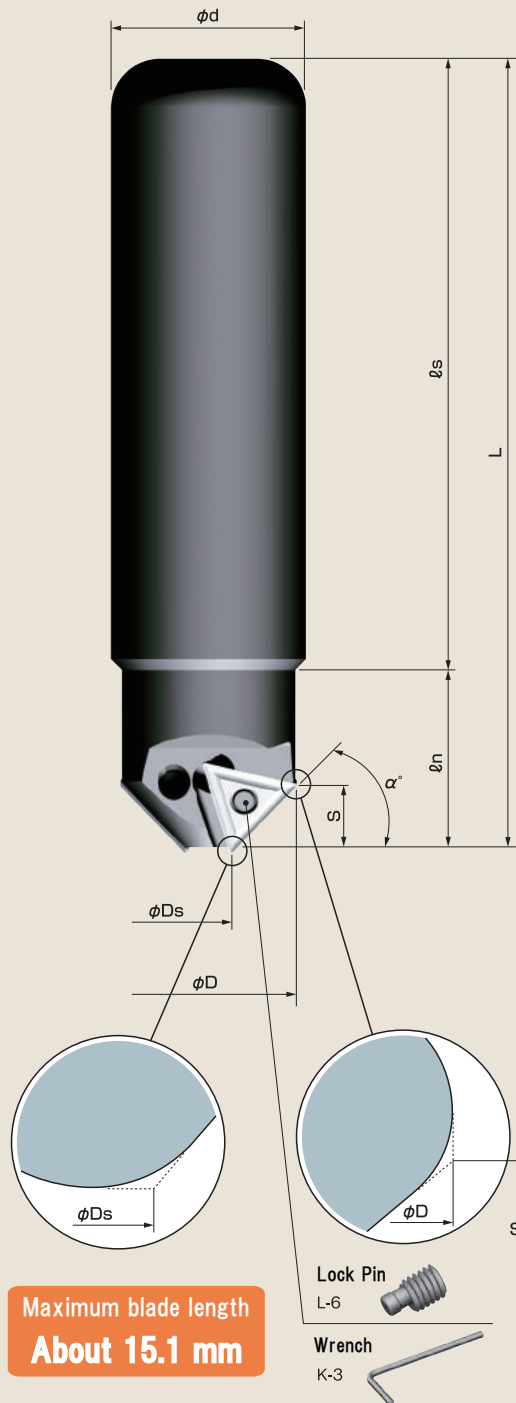







Applications use													
	NK1536T	NK2035T	NK2535T	NK3030T	NK3532T	NK4031T	NK4530T	NK5031T	NK5532T	NK6030T	NK6533T	NK7032T	NK7533T
$\alpha^\circ$	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°
Bore chamfering	$\phi 8 \sim 36\text{mm}$	$\phi 8 \sim 36\text{mm}$	$\phi 8 \sim 35\text{mm}$	$\phi 8 \sim 33\text{mm}$	$\phi 8 \sim 32\text{mm}$	$\phi 8 \sim 31\text{mm}$	$\phi 8 \sim 29\text{mm}$	$\phi 12 \sim 31\text{mm}$	$\phi 15 \sim 32\text{mm}$	$\phi 15 \sim 30\text{mm}$	$\phi 20 \sim 33\text{mm}$	$\phi 22 \sim 32\text{mm}$	$\phi 25 \sim 33\text{mm}$

## Wide variety!

- Angle 15 ° ~ 75 ° (by 5° increments) can be chosen according your application
- Insert available are rich and will meet with various applications you may need



## ■ Body

Model. No.	Blades	Dimensions (mm)							α°
		φD	Minimum cutting diameter φDs	φd	L	ℓs	ℓn	S	
NK1536T-20	2	37.9	8	20	130	100	30	4.0	15°
NK1536T-25	2	37.9	8	25	130	100	30	4.0	15°
NK1536T	2	37.9	8	32	130	100	30	4.0	15°
NK1536TL	2	37.9	8	32	170	140	30	4.0	15°
NK2035T-20	2	37.1	8	20	130	100	30	5.3	20°
NK2035T-25	2	37.1	8	25	130	100	30	5.3	20°
NK2035T	2	37.1	8	32	130	100	30	5.3	20°
NK2035TL	2	37.1	8	32	170	140	30	5.3	20°
NK2535T-20	2	36.0	8	20	130	100	30	6.5	25°
NK2535T-25	2	36.0	8	25	130	100	30	6.5	25°
NK2535T	2	36.0	8	32	130	100	30	6.5	25°
NK2535TL	2	36.0	8	32	170	140	30	6.5	25°
NK3030T-20	2	34.8	8	20	130	100	30	7.7	30°
NK3030T-25	2	34.8	8	25	130	100	30	7.7	30°
NK3030T	2	34.8	8	32	130	100	30	7.7	30°
NK3030TL	2	34.8	8	32	170	140	30	7.7	30°
NK3532T-20	2	33.3	8	20	130	100	30	8.9	35°
NK3532T-25	2	33.3	8	25	130	100	30	8.9	35°
NK3532T	2	33.3	8	32	130	100	30	8.9	35°
NK3532TL	2	33.3	8	32	170	140	30	8.9	35°
NK4031T-20	2	31.7	8	20	130	100	30	9.9	40°
NK4031T-25	2	31.7	8	25	130	100	30	9.9	40°
NK4031T	2	31.7	8	32	130	100	30	9.9	40°
NK4031TL	2	31.7	8	32	170	140	30	9.9	40°
NK4530T-20	2	29.9	8	20	130	100	30	10.9	45°
NK4530T-25	2	29.9	8	25	130	100	30	10.9	45°
NK4530T	2	29.9	8	32	130	100	30	10.9	45°
NK4530TL	2	29.9	8	32	170	140	30	10.9	45°
 NK3-4536T	3	36.9	15	32	130	100	30	10.9	45°
 NK4-4543T	4	43.9	22	32	130	100	30	10.9	45°
 NK5-4559T	5	59.9	38	32	130	100	30	10.9	45°
NK5031T-20	2	31.9	12	20	130	100	30	11.8	50°
NK5031T-25	2	31.9	12	25	130	100	30	11.8	50°
NK5031T	2	31.9	12	32	130	100	30	11.8	50°
NK5031TL	2	31.9	12	32	170	140	30	11.8	50°
NK5532T-20	2	32.7	15	20	130	100	30	12.7	55°
NK5532T-25	2	32.7	15	25	130	100	30	12.7	55°
NK5532T	2	32.7	15	32	130	100	30	12.7	55°
NK5532TL	2	32.7	15	32	170	140	30	12.7	55°
NK6030T-20	2	30.5	15	20	130	100	30	13.4	60°
NK6030T-25	2	30.5	15	25	130	100	30	13.4	60°
NK6030T	2	30.5	15	32	130	100	30	13.4	60°
NK6030TL	2	30.5	15	32	170	140	30	13.4	60°
NK6533T-20	2	33.1	20	20	130	100	30	14.0	65°
NK6533T-25	2	33.1	20	25	130	100	30	14.0	65°
NK6533T	2	33.1	20	32	130	100	30	14.0	65°
NK6533TL	2	33.1	20	32	170	140	30	14.0	65°
NK7032T-20	2	32.6	22	20	130	100	30	14.5	70°
NK7032T-25	2	32.6	22	25	130	100	30	14.5	70°
NK7032T	2	32.6	22	32	130	100	30	14.5	70°
NK7032TL	2	32.6	22	32	170	140	30	14.5	70°
NK7533T-20	2	33.0	25	20	130	100	30	15.0	75°
NK7533T-25	2	33.0	25	25	130	100	30	15.0	75°
NK7533T	2	33.0	25	32	130	100	30	15.0	75°
NK7533TL	2	33.0	25	32	170	140	30	15.0	75°

※ Inset is not Included. Please Order Separately.  
※ Lock pin Wrench we have Standard Equipment.



When mounting insert, please do not take reverse tightening.  
Due to the eccentricity looking mechanism ,poor accuracy or breakage of insert may be occurred  
When replacing insert, please confirm twwhether you have been taking reserve tightening or not.

Applications use	Capacity		
	NK3-4536T	NK4-4543T	NK5-4559T
Blades	3	4	5
$\alpha^\circ$	45°	45°	45°
Bore chamfering	$\phi 15.5 \sim 36\text{mm}$	$\phi 22.5 \sim 43\text{mm}$	$\phi 38.5 \sim 59\text{mm}$

Line-up of 3 blades, 4-blade and 5-blades at 45°



The Insert breaker is thin and is suitable for hard material process if compared with TT32GUR

Since the thermal resistance is large when processing the hardening heat treatment materials, chamfering amount will have to be up to C3



TT32GUR

The Insert's breaker ensures no secondary burrs and no chattering



## Processing Example

### [C5 chamfering]

- Body : NK4530T
- Insert : TT32GUR AC15N

- Material.....SUS304
- Rotation Speed...2,000r.p.m
- Table feed.....200/min
- Cuting Depth....C5
- Cutting Oil.....None

### Result

Good!  
No secondary burrs and  
No chattering after processing



Dry cutting

## Cutting Conditions

T32MOR						
Material	Material Model	NK2001	NK1010	NK2020	NK3030	AC16N
	Feed Per Blade (fz)	Cutting speed (m / min)				
General Steel	0.08~0.2	200~250		150~200	150~200	100~200
Alloy Steel	0.08~0.2	200~250		150~200	150~200	100~200
Stainless Steel	0.08~0.2			100~150	100~150	100~200
Aluminum, Resin, Brass						
Castings	0.08~0.2	200~250 ※FCD	100~150			

TT32GURF		
Material	Material Model	TC16N
	Feed per blade (fz)	Cutting speed (m / min)
heat resistant alloy (Inconel)	0.02~0.05	150~200
titanium alloy	0.02~0.05	150~200

TNEA160304		
Material	Material Model	TC16N
	Feed per blade (fz)	Cutting speed (m / min)
Hardened alloy steel SKD/HSS (HRC50~65)	0.08~0.2	150~200

TT32GUR										
Material	Material Model	NK2001	NK1010	NK2020	NK3030	NK5050	NK8080	AC15N	HSS	HSS TiN
	Feed PerBlade (fz)	Cutting speed (m / min)								
General Steel	0.08~0.2	200~250		150~200	150~200			150~200	13~23	15~25
Alloy Steel	0.08~0.2	200~250		150~200	150~200			150~200	10~20	13~22
Stainless Steel	0.08~0.2			120~180	150~200	120~180	150~200 ※SUS316	150~200	10~15	11~17
Aluminum,Resin,Brass	0.08~0.3		250~800			250~800	300~1,000		31~40	31~47
Castings	0.08~0.3	200~250 ※FCD								

● According to the shape of work, large or small chamfering, amount and position of blade, the cutting condition will have to be adjusted.

In case of process with large amount chamfer, please take reducing cutting condition

● You have been to the workpiece by recommended Inset.

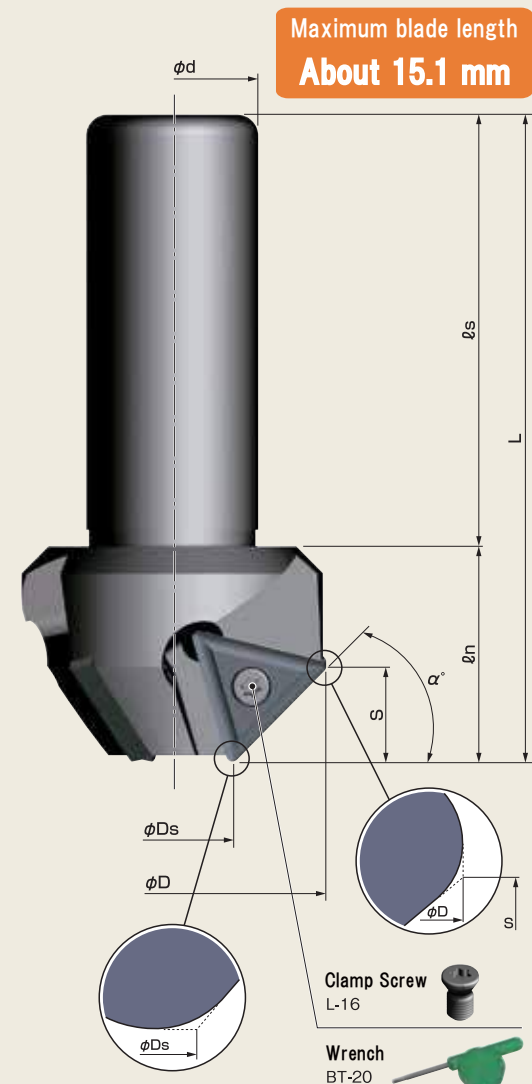
● In case of chamfering process of stainless steel, please take the down cutting

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	T32MOR NK2001	Cermet	Honing edge	None	6	12
	T32MOR NK1010	Carbide K10	Sharp edge	None	6	12
	T32MOR NK2020	Carbide M20	Honing edge	None	6	12
	T32MOR NK3030	Carbide M20	Honing edge	TiN	6	12
	T32MOR AC16N	Fine particles Carbide	Honing edge	AlCrN	6	12
	TT32GUR NK2001	Cermet	Honing edge	None	2	12
	TT32GUR NK1010	Carbide K10	Sharp edge	None	2	12
	TT32GUR NK2020	Carbide M20	Honing edge	None	2	12
	TT32GUR NK3030	Carbide M20	Honing edge	TiN	2	12
	TT32GUR NK5050	Carbide K10	Sharp edge	TiN	2	12
	TT32GUR NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	TT32GUR AC15N	Fine particles Carbide	Honing edge	AlCrN	2	12
	TT32GURF TC16N	Fine particles Carbide	Sharp edge	TiSiN	2	12
	TT32GUR HSS	HSS	Sharp edge	None	2	12
	TT32GUR HSS TiN	HSS	Sharp edge	TiN	2	12
	TNEA160304 TC16N	Fine particles Carbide	Honing edge	TiSiN	6	12

## C15 Chamfering !

### Economical and Heavy Cutting



## Corner Chamfering



## Processing Example

[C15 Chamfering]

- Material.....SUS304
- Rotation Speed...800r.p.m
- Table feed.....100mm/min
- Cutting Depth....C15
- Cutting Oil.....None

## Result

Good!

By one pass process,C15 Chamfer has been successfully made without chattering



■ **Body**

Model. No.	Blades	Dimensions (mm)							$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$	S	
BNK4546T-1	1	46.5	12	32	120	80	40	17.2	45°
BNK3062T	3	62.2	20	32	120	80	40	11.8	30°
BNK4558T	3	58.2	23.8	32	120	80	40	17.2	45°
BNK6058T	3	58.2	33.8	32	120	80	40	21.1	60°

※ Insert is not equipped as standard accessory

※ Clamp screw and wrench are supplied as standard accessory

## ■ Cutting Conditions

		TNEX270412	TNEQ270412	TNMX270412
Material Model		ZA10T	ZA10N	AC15N
Material	Feed per blade (fz)	Rotation speed (r.p.m.)		
General Steel	0.04~0.12			800~1500
Alloy Steel	0.04~0.12			800~1500
Stainless Steel	0.04~0.12			600~1200
Aluminum,Resin,Brass	0.06~0.18	2,500~4,000		
Cast Steel	0.04~0.12		800~1,500	

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- Yellow marked condition is recommended for the material listed
- In case of chamfering process of Stainless steel, kindly take down cutting

**Insert**

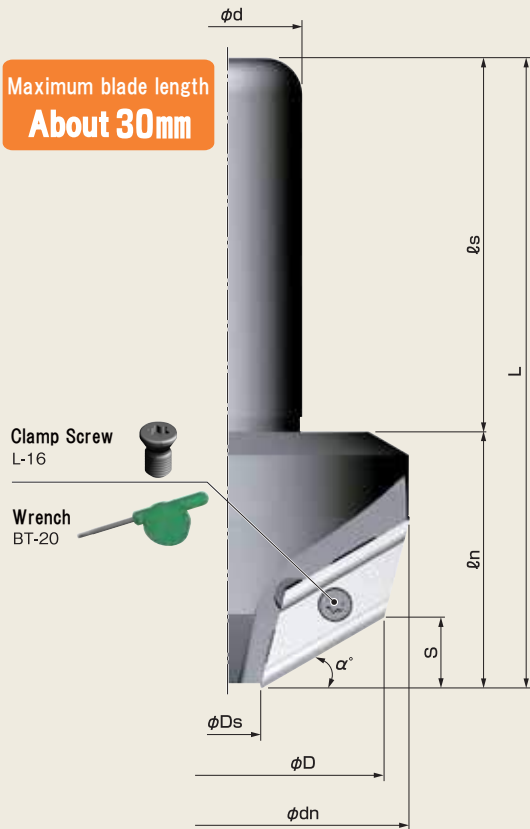
Figure	Model.No.	Material	Blade Shape	Coating	Usable Corner	Quantity per box
<p>〈TNEX270412〉</p>	TNEX270412 ZA10T	Carbide K10	Sharp edge	None	2	3
<p>〈TNEQ270412〉</p>	TNEQ270412 ZA10N	Carbide K10	Honing edge	None	6	3
<p>〈TNMX270412〉</p>	TNMX270412 AC15N	Fine particles Carbide	Honing edge	AlCrN	6	3



**Max, 30mm Blade Length!**

- 30mm blade length and originally designed breaker ensured maximum 30mm Chamfering process without chattering
- Line-up 5°~85° Angle process are ensured

Maximum blade length  
**About 30mm**

**Corner Chamfering****Body**

Model. No.	Blades	Dimensions (mm)								α°
		φD	φDs	φd	φdn	L	ℓs	ℓn	S	
NK4554X-1	1	54.9	12.0	32		135	80	55	21.4	45
NK0574X	3	74.8	15.0	32	102.8	135	80	55	2.6	5
NK1074X	3	74.5	15.0	32	99.5	135	80	55	5.2	10
NK1571X	3	73.3	15.0	32	95.2	135	80	55	7.8	15
NK2070X	3	71.8	15.0	32	90.3	135	80	55	10.3	20
NK2568X	3	69.8	15.0	32	84.9	135	80	55	12.8	25
NK3080X	3	67.4	15.0	32	79.0	135	80	55	15.1	30
NK3563X	3	64.6	15.0	32	72.8	135	80	55	17.4	35
NK4060X	3	61.4	15.0	32	66.3	135	80	55	19.5	40
NK4557X	3	57.9	15.0	32		135	80	55	21.4	45
NK5056X	3	57.0	18.0	32		135	80	55	23.2	50
NK5556X	3	56.8	22.0	32		135	80	55	24.8	55
NK6054X	3	54.3	24.0	32		135	80	55	26.3	60
NK6553X	3	53.6	28.0	32		145	80	65	27.5	65
NK7052X	3	52.8	32.0	32		145	80	65	28.5	70
NK7550X	3	50.7	35.0	32		145	80	65	29.3	75
NK8048X	3	48.5	38.0	32		145	80	65	29.9	80
NK8547X	3	47.3	42.0	32		145	80	65	30.3	85

※ Inset is not equipped as standard accessory

※ Clamp screw and wrench are supplied as standard accessory

**Processing Example****[C20 Chamfering]**

- Body : NK4557X
- Insert : X63GUR AC15N
- Material : SUS304
- Rotation Speed : 800r.p.m
- Table feed : 150mm/min
- Cutting Depth : C20
- Cutting Oil : None



Dry cutting

Result

Good!  
By one pass process, C20 Chamfer  
has been successfully made without chattering

**Cutting Conditions**

X63GUR				
Material	material Model	NK1010	NK2020	AC15N
	Feed per blade (fz)	Rotation speed. (r.p.m)		
General Steel	0.05~0.15		1,000~2,000	1,000~2,000
Alloy Steel	0.05~0.15		1,000~2,000	1,000~2,000
Stainless Steel	0.05~0.15		700~1,500	700~1,500
Aluminum, Resin, Brass	0.08~0.2	3,000~5,000		
Cast Steel	0.05~0.15	1,000~2,000		

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- Yellow marked condition is recommended for the material listed
- In case of chamfering process of Stainless steel, kindly take down cutting

**Insert**

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	X63GUR NK1010	Carbide K10	Sharp edge	None	2	3
	X63GUR NK2020	Carbide M20	Honing edge	None	2	3
	X63GUR AC15N	Fine particles Carbide	Honing edge	AlCrN	2	3

# For Drilling Machine

For Customers Purchased

Clamp Screw  
M-1

Wrench  
MA-1

New type



Old type.

To customers who only purchase tools and parts

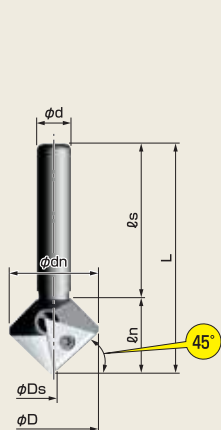
Lock pin  
L-6Wrench  
K-3

※ 1 piece TM32GUR HSS Insert is supplied as standard accessory  
 ※ Clamp Screw, lock pin and wrench are supplied as standard accessory

Please check it

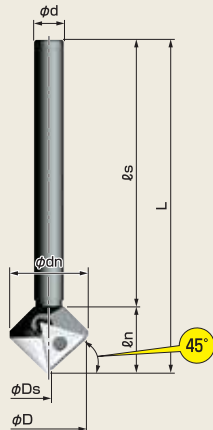
4 BM4538T, 5 BM4552T, 6 BM4566T  
 There are new type and old type.

- Fantastic machining with HSS insert and breaker originally designed by us  
 Line-up 30°, 45° and 60° fantastic angle processing are ensured



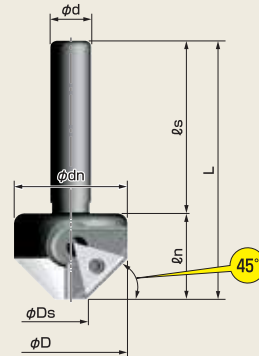
1 BM4524T

TM32GUR :  $\phi 5\text{mm} \sim \phi 24\text{mm}$   
 TM32GSR :  $\phi 5\text{mm} \sim \phi 21\text{mm}$



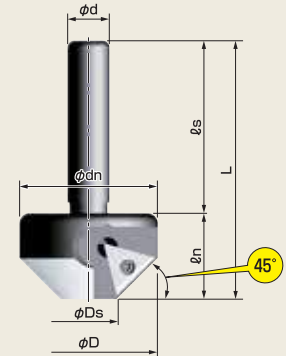
2 BM4524TL

TM32GUR :  $\phi 5\text{mm} \sim \phi 24\text{mm}$   
 TM32GSR :  $\phi 5\text{mm} \sim \phi 21\text{mm}$



3 BM4531T

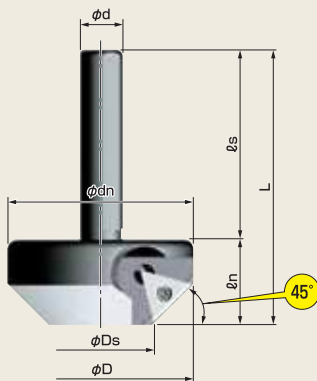
TM32GUR :  $\phi 12\text{mm} \sim \phi 31\text{mm}$   
 TM32GSR :  $\phi 12\text{mm} \sim \phi 28\text{mm}$



4 BM4538T

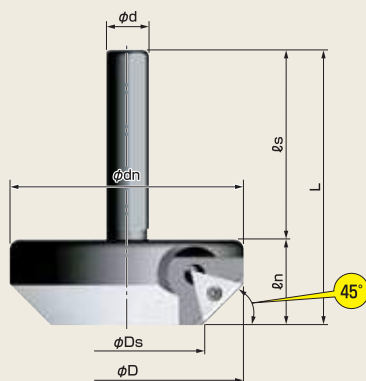
TM32GUR :  $\phi 19\text{mm} \sim \phi 38\text{mm}$   
 TM32GSR :  $\phi 19\text{mm} \sim \phi 36\text{mm}$

※Please purchase a commercially available product separately.



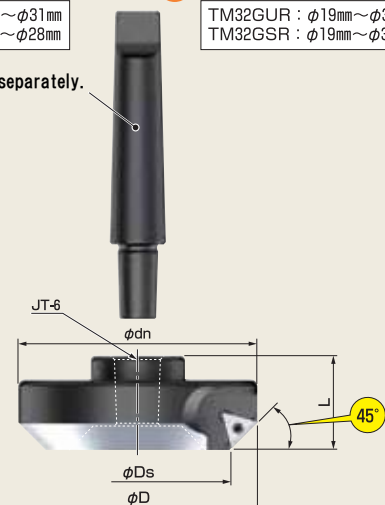
5 BM4552T

TM32GUR :  $\phi 33\text{mm} \sim \phi 52\text{mm}$   
 TM32GSR :  $\phi 33\text{mm} \sim \phi 50\text{mm}$



6 BM4566T

TM32GUR :  $\phi 47\text{mm} \sim \phi 66\text{mm}$   
 TM32GSR :  $\phi 47\text{mm} \sim \phi 64\text{mm}$



7 BM4580T-JT6

TM32GUR :  $\phi 61\text{mm} \sim \phi 80\text{mm}$   
 TM32GSR :  $\phi 61\text{mm} \sim \phi 77\text{mm}$

BM4594T-JT6

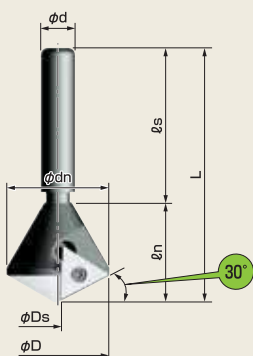
TM32GUR :  $\phi 75\text{mm} \sim \phi 94\text{mm}$   
 TM32GSR :  $\phi 75\text{mm} \sim \phi 91\text{mm}$

BM45100T-JT6

TM32GUR :  $\phi 81\text{mm} \sim \phi 100\text{mm}$   
 TM32GSR :  $\phi 81\text{mm} \sim \phi 97\text{mm}$

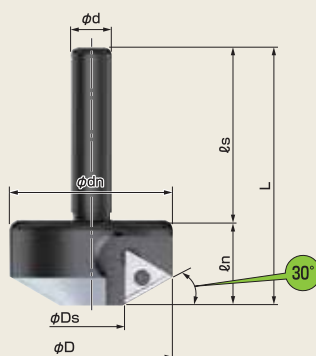
BM45108T-JT6

TM32GUR :  $\phi 89\text{mm} \sim \phi 108\text{mm}$   
 TM32GSR :  $\phi 89\text{mm} \sim \phi 105\text{mm}$



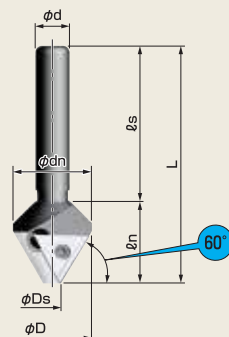
8 BM3029T

TM32GUR :  $\phi 6\text{mm} \sim \phi 29\text{mm}$   
 TM32GSR :  $\phi 6\text{mm} \sim \phi 26\text{mm}$



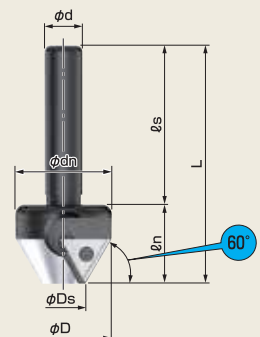
9 BM3047T

TM32GUR :  $\phi 21\text{mm} \sim \phi 46\text{mm}$   
 TM32GSR :  $\phi 21\text{mm} \sim \phi 43\text{mm}$



10 BM6021T

TM32GUR :  $\phi 7\text{mm} \sim \phi 21\text{mm}$   
 TM32GSR :  $\phi 7\text{mm} \sim \phi 19\text{mm}$



11 BM6030T

TM32GUR :  $\phi 15\text{mm} \sim \phi 29\text{mm}$   
 TM32GSR :  $\phi 15\text{mm} \sim \phi 27\text{mm}$

## Body

Model. No.	Figure	Blades	Dimensions (mm)							
			$\phi D$	$\phi D_s$	$\phi d$	$\phi d_n$	L	$\ell_s$	$\ell_n$	$\alpha^\circ$
BM4524T	①	1	25.20	4.49	10	26	67	45	22	45°
BM4524TL	②	1	25.20	4.49	10	26	110	88	22	45°
BM4531T	③	1	33.06	11.57	12	33	75	50	25	45°
BM4538T	④	1	39.83	18.17	12	40	75	50	25	45°
BM4552T	⑤	1	53.91	32.17	13	54	80	55	25	45°
BM4566T	⑥	1	67.94	46.17	13	68	80	55	25	45°
BM4580T-JT6	⑦	1	81.96	60.17	10	82	40	45	29	45°
NEW BM4594T-JT6	⑦	1	95.96	74.17		96	40			45°
BM45100T-JT6	⑦	1	101.96	80.16		101	40			45°
NEW BM45108T-JT6	⑦	1	109.96	88.17		110	40			45°
BM3029T	⑧	1	30.2	5.52	10	30	74	45	29	30°
BM3047T	⑨	1	47.39	21	12	47.5	75	50	25	30°
BM6021T	⑩	1	21.77	6.60	10	23	69	45	24	60°
BM6030T	⑪	1	30.38	15	12	30.4	75	50	25	60°

※ 1 piece TM32GUR HSS Insert is supplied as standard accessory

※ Clamp Screw, lock pin and wrench are supplied as standard accessory

## Cutting Conditions

Model. No.	TM32GUR HSS	TM32GUR HSS TiAlN	TM32GSR HSS	TM32GSR HSS TiAlN	TM32GSR AC16N
	Rotation Speed (r.p.m.)				
BM4524T	160~320	200~400	160~320	200~400	200~400
BM4524TL	160~320	200~400	160~320	200~400	200~400
BM4531T	130~280	150~350	130~280	150~350	150~350
BM4538T	130~280	150~350	130~280	150~350	150~350
BM4552T	80~120	100~150	80~120	100~150	100~150
BM4566T	40~80	50~100	40~80	50~100	50~100
BM4580T-JT6	20~50	20~50	20~50	20~50	20~50
BM4594T-JT6	20~50	20~50	20~50	20~50	20~50
BM45100T-JT6	20~50	20~50	20~50	20~50	20~50
BM45108T-JT6	20~50	20~50	20~50	20~50	20~50
BM3029T	160~320	200~400	160~320	200~400	200~400
BM3047T	130~280	150~350	130~280	150~350	150~350
BM6021T	160~320	200~400	160~320	200~400	200~400
BM6030T	130~280	150~350	130~280	150~350	150~350

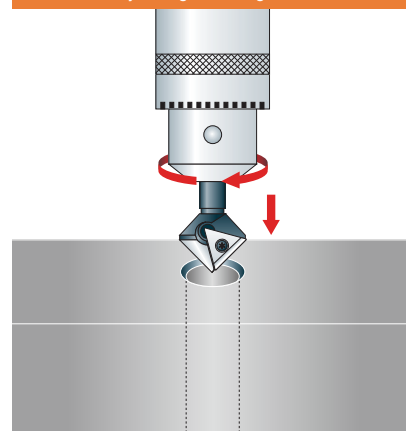
● Depending on the Machine's rigidity, above conditions may not be Suitable.

In case of soft material like Aluminum, Copper etc, reduce rotation speed accordingly

In case the chattering is occurred, rotation speed will have to be reduced and use cutting oil

● Please use our original Insert for our tool

● According to the shape, clamp condition and volume of chamfering amount the above cutting condition have to be adjusted. For large amount chamfering, the rate will have to be reduced

Chamfering and Deburring  
by Drilling and Milling Machines

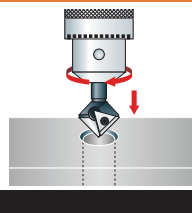
Model. No.	Capacity	
	Bore chamfering	
	TM32GUR	TM32GSR
BM4524T	$\phi 5\text{mm} \sim \phi 24\text{mm}$	$\phi 5\text{mm} \sim \phi 21\text{mm}$
BM4524TL	$\phi 5\text{mm} \sim \phi 24\text{mm}$	$\phi 5\text{mm} \sim \phi 21\text{mm}$
BM4531T	$\phi 12\text{mm} \sim \phi 31\text{mm}$	$\phi 12\text{mm} \sim \phi 28\text{mm}$
BM4538T	$\phi 19\text{mm} \sim \phi 38\text{mm}$	$\phi 19\text{mm} \sim \phi 36\text{mm}$
BM4552T	$\phi 33\text{mm} \sim \phi 52\text{mm}$	$\phi 33\text{mm} \sim \phi 50\text{mm}$
BM4566T	$\phi 47\text{mm} \sim \phi 66\text{mm}$	$\phi 47\text{mm} \sim \phi 64\text{mm}$
BM4580T-JT6	$\phi 61\text{mm} \sim \phi 80\text{mm}$	$\phi 61\text{mm} \sim \phi 77\text{mm}$
BM4594T-JT6	$\phi 75\text{mm} \sim \phi 94\text{mm}$	$\phi 75\text{mm} \sim \phi 91\text{mm}$
BM45100T-JT6	$\phi 81\text{mm} \sim \phi 100\text{mm}$	$\phi 81\text{mm} \sim \phi 97\text{mm}$
BM45108T-JT6	$\phi 89\text{mm} \sim \phi 108\text{mm}$	$\phi 89\text{mm} \sim \phi 105\text{mm}$
BM3029T	$\phi 6\text{mm} \sim \phi 29\text{mm}$	$\phi 6\text{mm} \sim \phi 26\text{mm}$
BM3047T	$\phi 21\text{mm} \sim \phi 46\text{mm}$	$\phi 21\text{mm} \sim \phi 43\text{mm}$
BM6021T	$\phi 7\text{mm} \sim \phi 21\text{mm}$	$\phi 7\text{mm} \sim \phi 19\text{mm}$
BM6030T	$\phi 15\text{mm} \sim \phi 29\text{mm}$	$\phi 15\text{mm} \sim \phi 27\text{mm}$

## Processing Example

[  $\phi 12\text{mm}$  Bore mouth chamfering ]

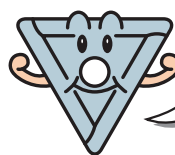
■ Body : BM4524T  
■ Insert : TM32GUR HSS

- Material : SUS304
- Rotation Speed : 320r.p.m.
- Use machine : Bench type Drilling Machine



Result

Good ! No deburring even after more than 1000 time processing



TM32GSR

Blade length is 2-3mm longer than TM32GSR and can be widely processed

TM32GUR



TM32GUR have 2-usable corners (front and rear) but TM32GSR have 6-usable corners. Saving production cost !

## Insert

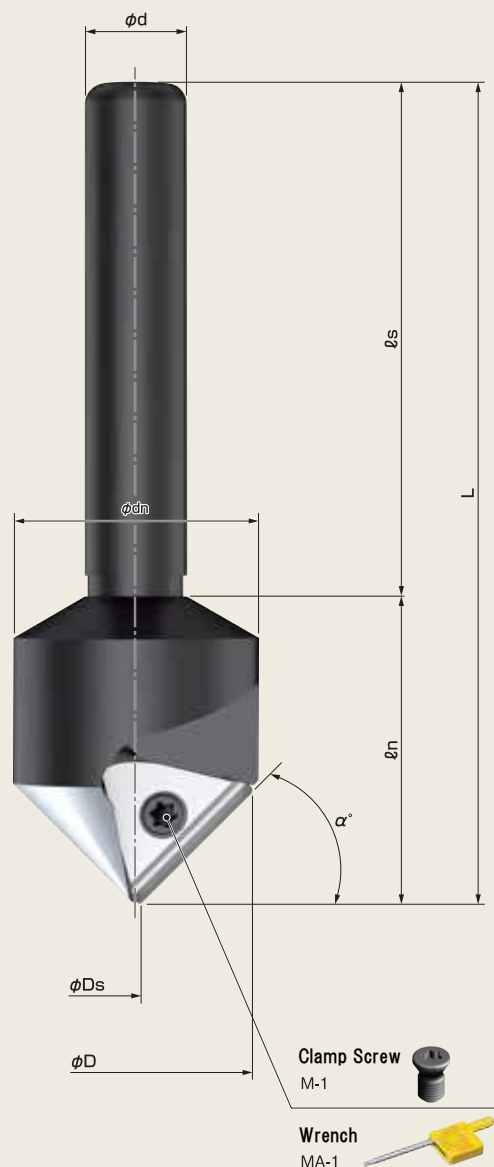
Figure	Model.No.	Material	Blade Shape	Coating	Usable Corner	Quantity per box
	TM32GUR HSS	HSS	Sharp edge	None	2	3
	TM32GUR HSS TiAlN	HSS	Sharp edge	TiAlN	2	3
	TM32GSR HSS	HSS	Sharp edge	None	6	3
	TM32GSR HSS TiAlN	HSS	Sharp edge	TiAlN	6	3
	NEW TM32GSR AC16N	Fine particles Carbide	Honing edge	AlCrN	6	3



Please do not take reverse tightening when mounting insert. Poor accuracy or breakage of insert could be occurred  
Please make sure that reverse tightening is made or not

## For Drilling Machine

- Ideal for small hole chamfering
- High Heiss steel durable to a main body material



### Bore chamfering



### Capacity Bore chamfering

φ1mm~φ22mm

### Body

Model. No.	Blades	Dimensions (mm)							α°
		φD	φDs	φd	φdn	L	ℓs	ℓn	
TBM4522T	1	22.9	1	10	24	80	50	30	45°

※ 1 piece TNEGXR160304XR HSS Insert is supplied as standard accessory  
 ※ Clamp Screw, lock pin and wrench are supplied as standard accessory

### Cutting Conditions

	TNEG160304XR HSS TNXT160304FR	TNEG160304ER HSS TNXT160304ER HSS TNXT160304ER HSS AICrN
Material	Rotation Speed (r.p.m.)	
General Steel	160~320	200~500
Alloy Steel		
Aluminum, Resin, Brass		
Castings		

- Depending on the Machine's rigidity, above conditions may not be Suitable.  
 In case of soft material like Aluminum, Copper etc, reduce rotation speed accordingly  
 In case the chattering is occurred, rotation speed will have to be reduced and use cutting oil  
 Please use our original Insert for our tool
- According to the shape, clamp condition and volume of chamfering amount the above cutting condition have to be adjusted. For large amount chamfering, the rate will have to be reduced

### Processing Example

[ φ2mm Bore mouth chamfering ]

- Body : TBM4522T
- Insert : TNEG160304ER HSS
- Material..... S50C
- Rotation Speed... 320r.p.m.
- Use machine..... Bench type Drilling Machine

**Result**  
 Good finish



Dry cutting

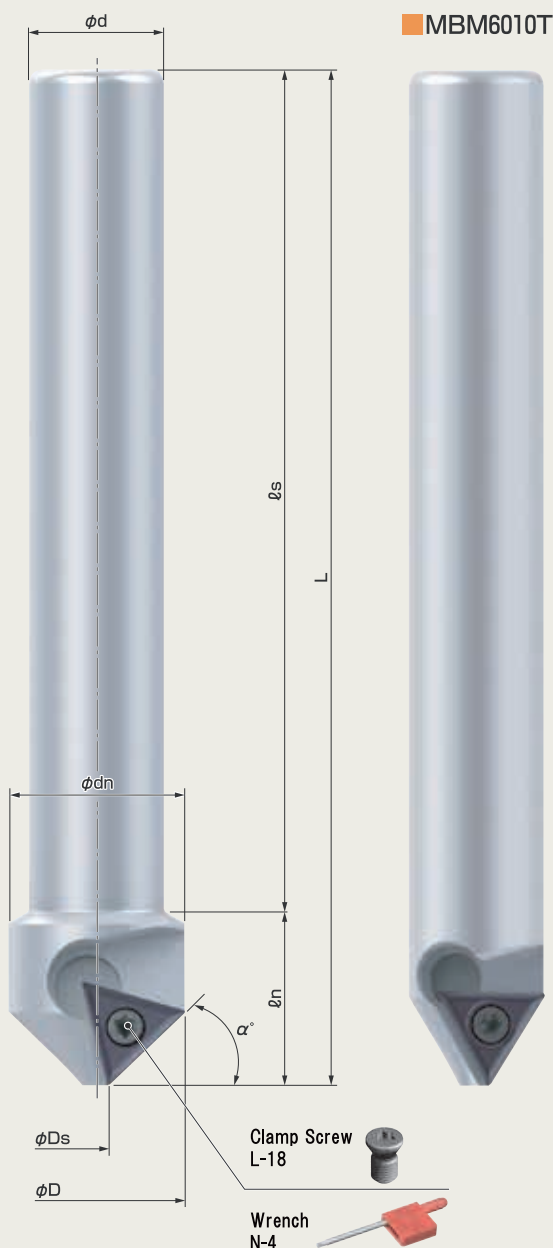
### Insert

Figure	Model.No.					
(TNEG160304) 	TNEG160304XR HSS	HSS	Sharp edge	None	2	3
	TNEG160304ER HSS	HSS	Honing edge	None	2	3
(TNXT160304ER-TNXT160304FR) 	<b>NEW</b> TNXT160304FR HSS	HSS	Sharp edge	None	3	3
	<b>NEW</b> TNXT160304ER HSS	HSS	Honing edge	None	3	3
	<b>NEW</b> TNXT160304ER HSS AICrN	HSS	Honing edge	AICrN	3	3



## OK for Drilling Machine, also Electric Drill !

- Optimal Tool for small hole chamfering!
- Using Durable High-Speed Steel body
- Achieved a super long life by using Ultrafine particle Carbide + New Coating Tips !
- Positive type with 3-coner Fine Carbide Tip can be used !



### Dish Chamfering Processing



### Dish Chamfering Processing



Model. No.	Capacity	
	Dish Chamfering Processing (Min. Blade Diameter * Max. Blade Diameter)	
	TCXT080102F / TCXT080102E	
MBM3015T	φ2.5mm~φ13mm	
MBM4513T	φ2.5mm~φ11mm	
MBM4513TL	φ2.5mm~φ11mm	
MBM6010T	φ3mm~φ7mm	

### Body

型番 Model. No.	刃数	Dimensions (mm)							α°
		φD	φDs	φd	φdn	L	ls	ln	
NEW MBM3015T	1	15.33	2.40	10	15	75	62	13	30°
MBM4513T	1	13.08	2.41	10	13	75	62	13	45°
MBM4513TL	1	13.08	2.41	10	13	143	130	13	45°
NEW MBM6010T	1	10.26	2.69	10	—	75	—	—	60°

※ 1-pce of TCXT080102E AC16N insert is equipped as standard accessory

※ Clamp Screw・Wrench are standard accessory

### Cutting Conditions

Work Material	TCXT080102F ZC16N	TCXT080102E AC16N
	Spindle Speed(r.p.m.)	
General Steel etc.	150~800	
Alloy Steel, SKD/SCM etc.	150~800	
Stainless Steel, SUS etc.	150~800	
Aluminum, Resin, Brass	150~800	150~800
Cast/Steel, FC/FCD etc.	150~800	150~800

- There is that above condition is not the case due to the difference of various machine's rigidity. Hard-to-cut materials(A5052, Copper etc.) should be increasing the rotation than the above mentioned conditions.
- If the chattering or the like occurs in the cutting plane, please lower the rotation and use cutting oil
- Please use a dedicated Tips listed below.
- Please adjust the cutting condition due to the work shape, clamp condition, chamfering amount(small or large) and position of cutting edge etc.
- If processing diameter and the chamfering amount is large to process by lowering the cutting conditions,

### Processing Example

[φ3 C2 Chamfering of the hole in the mouth]

- Holder : MBM4513T
- Tips : TCXT080102E AC16N

- Material.....SUS304
- Rotation.....450r.p.m.
- Machine.....Bench Drilling Machines

#### Result

No Bari and No Burr  
Good Finish



### Insert

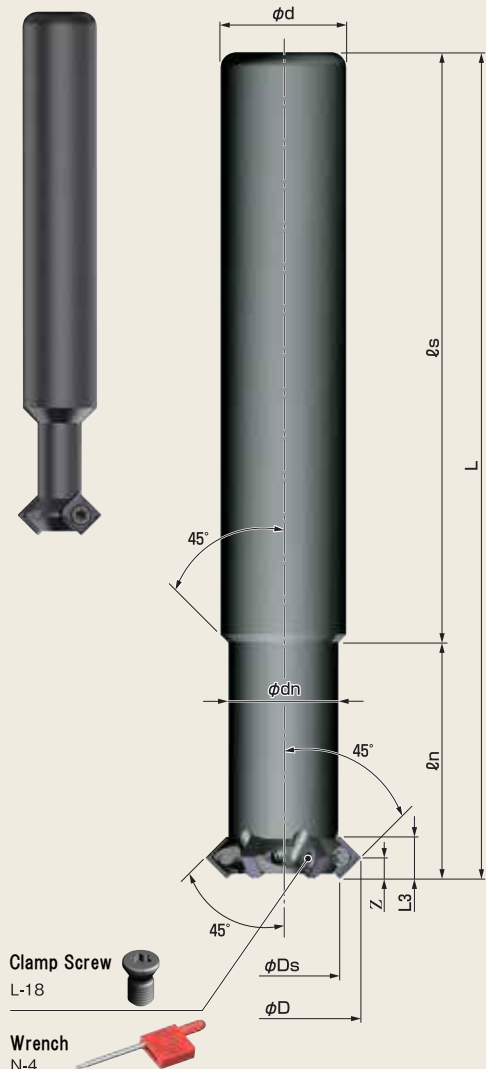
Drawing	Model Number	Material	Edge Shape	Coating	Usable Corner	Quantity per box
	NEW TCXT080102F ZC16N	Fine particles Carbide	Sharp edge	None	3	3
	NEW TCXT080102E AC16N	Fine particles Carbide	Honing edge	AlCrN	3	3

# Smallest Multi-Blade Tools!

Enable front/reverse chamfering and V-grooving

## TR10-12S

## TR16-20S



### Corner Chamfering



### Reverse chamfering



### Side V-grooving



Model. No.	Capacity
	Bore chamfering
TR10-12S	φ6mm~φ11.24mm
TR16-20S	φ14.5mm~φ19.8mm

※ Steel: C2 is maximum  
※ Stainless Steel: C1 is maximum

## Body

Model. No.	Blades	Dimensions (mm)								
		φD	φDs	φDn	φd	L	ℓs	ℓn	L3	Z
TR10-12S	2	11.24	6	6	10	70	55	15	5.45	2.72
TR16-20S	6	19.8	14.5	14	16	105	75	30	5.45	2.72

※ Inset is not supplied as standard accessory. Please order separately.  
※ Clamp screw wrench are supplied as standard accessory

## Cutting Conditions

		SPEW030102	SPMT030102	
material Model		ZA10N	ZA20N	AC16N
Material	Feed per blade (fz)	Cutting speed (m / min)		
General Steel	0.08~0.2		100~200	100~200
Alloy Steel	0.08~0.2		100~200	100~200
Stainless Steel	0.08~0.2		100~200	100~200
Aluminum, Resin, Brass	0.08~0.3	250~800		
Cast Steel	0.08~0.3		100~200	100~200

- According to the shape of work, clamp condition and large or small chamfering amount and position of blade, the cutting condition will have to be adjusted.
- In case of large amount chamfering process, please reduce the condition
- In case of chamfering process of Stainless steel, kindly take down cutting

## Processing Example

### [Corner Chamfering]

- Body : TR16-20S
- Insert : SPMT030102 AC16N

- Material : S50C
- Rotation Speed : 7,000r.p.m.
- Table feed : 4,000mm/min
- Cutting Depth : 1mm
- Cutting Oil : None

### Result

Good!  
Without secondary burrs and chattering



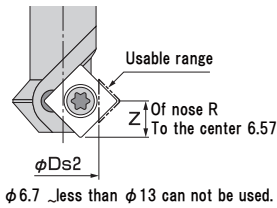
## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	SPEW030102 ZA10N	Carbide K10	Sharp edge	None	4	12
	SPMT030102 ZA20N	Carbide M20	Sharp edge	None	4	12
	NEW SPMT030102 AC16N	Fine particles Carbide	Sharp edge	AlCrN	4	12

# One pass chamfering!

- Enable front/reverse chamfering and V-grooving one pass

Cutting edge effective blade diameter  $\phi 13$  more

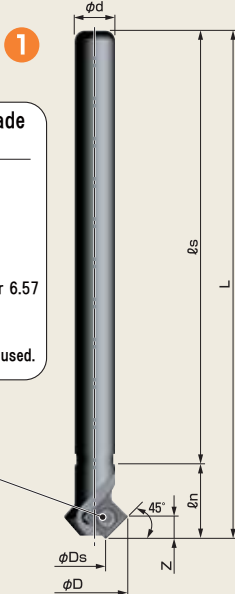


Clamp Screw

L-15

Wrench

N-6



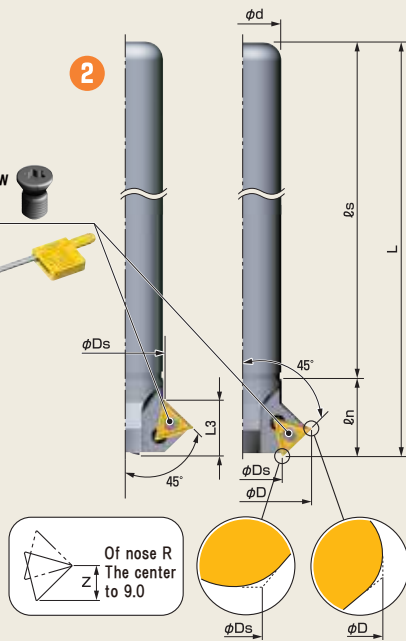
2

Clamp Screw

M-1

Wrench

MA-1



Corner Chamfering



Reverse chamfering



Side V-grooving



Model. No.	Capacity
	Bore chamfering
MRV12-19S	$\phi 13\text{mm} \sim \phi 19.5\text{mm}$
RV16-35T	$\phi 18\text{mm} \sim \phi 35.9\text{mm}$
RV25-46T	$\phi 28\text{mm} \sim \phi 45.6\text{mm}$

## Body

Model. No.	Fig.	Blades	Dimensions (mm)								Inserts	
			φD	φDs	φDs2	φd	L	ℓs	ℓn	L3		Z
MRV12-19S	①	1	19.5	6.7	13	12	150	128	22	—	6.57	SPMT090304
RV16-35T	②	Staggered 2 blade	35.9	18		16	200	175	25	18.3	9.0	T22MOR
RV25-46T	②	Staggered 4 blade	45.6	28		25	200	175	25	17.9	9.0	T22MOR

※ Inset is not supplied as standard accessory. Please order separately.

※ Clamp screw wrench are supplied as standard accessory.

## Cutting Conditions

Chamfering		
Material	Feed per blade (fz)	Cutting speed (m / min)
General Steel	0.05~0.2	100~150
Alloy Steel	0.05~0.2	100~150
Stainless Steel	0.05~0.2	80~120
Aluminum, Resin, Brass	0.08~0.25	150~400
Cast Steel	0.05~0.2	100~150

Side V Groove Processing		
Material	Feed per blade (fz)	Cutting speed (m / min)
General Steel	0.03~0.1	100~150
Alloy Steel	0.03~0.1	100~150
Stainless Steel	0.03~0.1	80~120
Aluminum, Resin, Brass	0.05~0.15	150~400
Cast Steel	0.03~0.1	100~150

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- In case of large amount chamfering process, please reduce the condition
- In case of chamfering process of Stainless steel, kindly take down cutting

## Processing Example

### [C2 chamfering]

- Body : RV25-46T
- Insert : T22MOR NK5050
- Material : ..... SUS304
- Rotation Speed : 800r.p.m
- Table feed : 160mm/min
- Cutting Depth : 2mm
- Cutting Oil : None

### Result

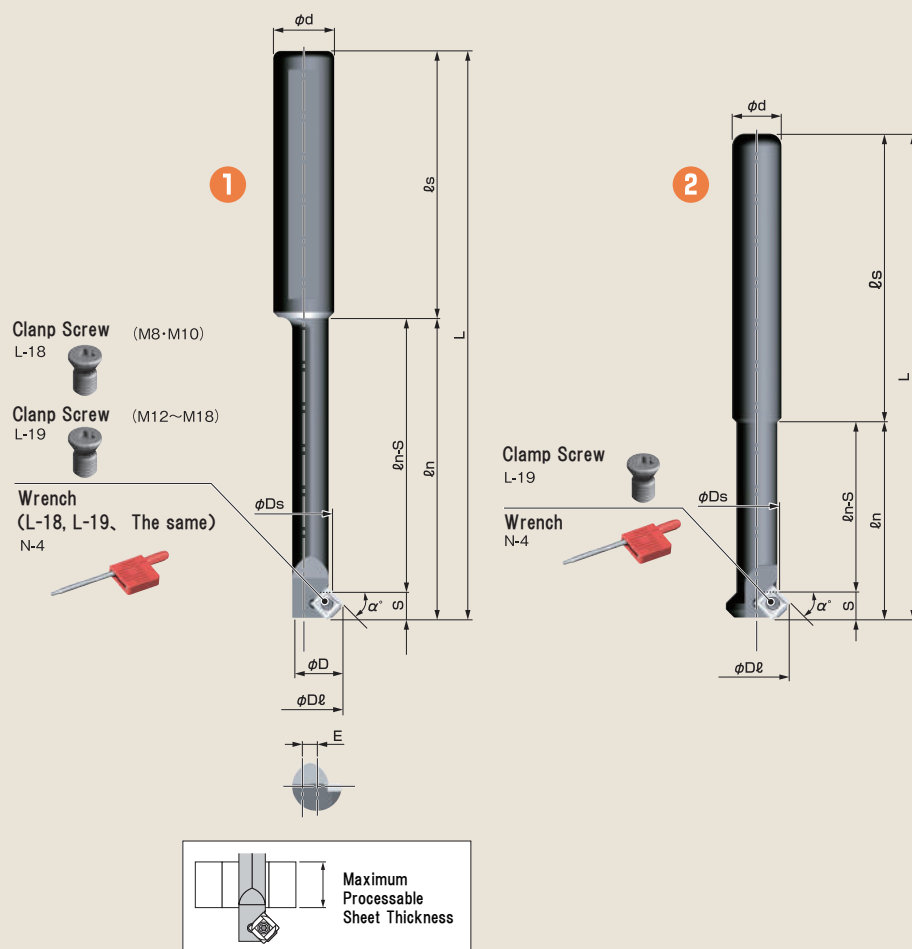
Good! Without secondary burrs and chattering



Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	T22MOR NK5050	Carbide M10	Sharp edge	TiN	3	12
	SPMT090304 NK6060	Carbide M20	Honing edge	TiAlN	4	12

# Exclusive use for back chamfering

● This is a special tool for back spot hole chamfering and edge chamfering process



30°		
Model. No.	Hole diameter	Capacity Rear edge chamfering
UMH12-6.8S-M8-30	φ6.8	φ6.8mm~φ9.7mm
UMH12-8.5S-M10-30	φ8.5	φ8.5mm~φ11.7mm
UMH12-10S-M12-30	φ10.0	φ10.0mm~φ14.8mm
UMH12-12S-M14-30	φ12.0	φ12.0mm~φ16.8mm
UMH12-14S-M16-30	φ14.0	φ14.0mm~φ18.8mm
UMH16-16S-M18-30	φ16.0	φ16.0mm~φ20.8mm
UM12-16S-30		φ16.0mm Over ~

45°		
Model. No.	Hole diameter	Capacity Rear edge chamfering
UMH12-6.8S-M8	φ6.8	φ6.8mm~φ9.7mm
UMH12-8.5S-M10	φ8.5	φ8.5mm~φ11.7mm
UMH12-10S-M12	φ10.0	φ10.0mm~φ14.8mm
UMH12-12S-M14	φ12.0	φ12.0mm~φ16.8mm
UMH12-14S-M16	φ14.0	φ14.0mm~φ18.8mm
UMH16-16S-M18	φ16.0	φ16.0mm~φ20.8mm
UM12-16S		φ16.0mm Over ~

60°		
Model. No.	Hole diameter	Capacity Rear edge chamfering
UMH12-6.8S-M8-60	φ6.8	φ6.8mm~φ9.7mm
UMH12-8.5S-M10-60	φ8.5	φ8.5mm~φ11.4mm
UMH12-10S-M12-60	φ10.0	φ10.0mm~φ13.5mm
UMH12-12S-M14-60	φ12.0	φ12.0mm~φ15.5mm
UMH12-14S-M16-60	φ14.0	φ14.0mm~φ17.5mm
UMH16-16S-M18-60	φ16.0	φ16.0mm~φ19.5mm
UM12-14.5S-60		φ14.5mm Over ~

## Body

Model. No.	Figure	Blades	Dimensions (mm)											Inserts	α°
			φD	φDℓ	φDs	φd	L	ℓs	ℓn	ℓn-S	S	T	E		
UMH12-6.8S-M8-30	①	1	6.2	9.7	6.8	12	107	70	37	32.1	4.9	28	1.76	SP-SPET040102	30°
UMH12-8.5S-M10-30	①	1	7.5	11.7	8.5	12	117	70	47	42.0	5.0	38	2.11	SPET040102	
UMH12-10S-M12-30	①	1	9.0	14.8	10.0	12	129	70	59	52.2	6.8	47	2.92	SPET06T104	
UMH12-12S-M14-30	①	1	10.0	16.8	12.0	12	134	70	64	57.2	6.8	52	3.42	SPET06T104	
UMH12-14S-M16-30	①	1	12.0	18.8	14.0	12	139	70	69	62.2	6.8	57	3.41	SPET06T104	
UMH16-16S-M18-30	①	1	14.0	20.8	16.0	16	149	70	79	72.2	6.8	67	3.41	SPET06T104	
UM12-16S-30	②	1		16.0	11.0	12	118	70	48	41.1	6.9			SPET06T104	45°
UMH12-6.8S-M8	①	1	6.2	9.7	6.8	12	107	70	37	32.2	4.8	28	1.76	SP-SPET040102	
UMH12-8.5S-M10	①	1	7.5	11.7	8.5	12	117	70	47	42.0	5.0	38	2.11	SPET040102	
UMH12-10S-M12	①	1	9.0	14.8	10.0	12	129	70	59	52.1	6.9	47	2.92	SPET06T104	
UMH12-12S-M14	①	1	10.0	16.8	12.0	12	134	70	64	57.1	6.9	52	3.42	SPET06T104	
UMH12-14S-M16	①	1	12.0	18.8	14.0	12	139	70	69	62.1	6.9	57	3.41	SPET06T104	
UMH16-16S-M18	①	1	14.0	20.8	16.0	16	149	70	79	72.1	6.9	67	3.41	SPET06T104	
UM12-16S	②	1		16.0	11.0	12	118	70	48	41.0	7.0			SPET06T104	60°
UMH12-6.8S-M8-60	①	1	6.2	9.7	6.8	12	107	70	37	32.0	5.0	28	1.76	SP-SPET040102	
UMH12-8.5S-M10-60	①	1	7.5	11.4	8.5	12	117	70	47	42.0	5.0	38	1.96	SPET040102	
UMH12-10S-M12-60	①	1	9.0	13.5	10.0	12	129	70	59	52.7	6.3	47	2.27	SPET06T104	
UMH12-12S-M14-60	①	1	10.0	15.5	12.0	12	134	70	64	57.7	6.3	52	2.77	SPET06T104	
UMH12-14S-M16-60	①	1	12.0	17.5	14.0	12	139	70	69	62.7	6.3	57	2.76	SPET06T104	
UMH16-16S-M18-60	①	1	14.0	19.5	16.0	16	149	70	79	72.7	6.3	69	2.76	SPET06T104	
UM12-14.5S-60	②	1		14.5	11.0	12	118	70	48	41.7	6.3			SPET06T104	

※ Inset is not supplied as standard accessory. Please order separately.

※ Clamp screw and wrench are supplied as standard accessory.



Rear Spot surface chamfer process in bore process



Rear surface Edge chamfering process



## Processing Example

## [Eccentric Rear Chamfering Cutter-Test]

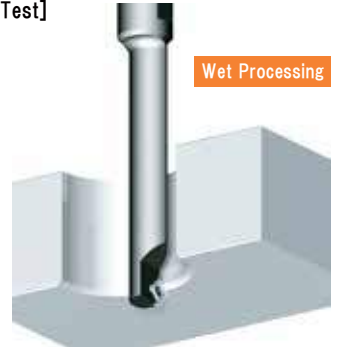
Body : UMH12-8 5S-M10  
Insert : SPET040102 AC16N

- Material : SKD11
- Rotation Speed : 800r.p.m.
- Cutting Speed : 21m/min
- Table Feed : 40mm/min
- Blade Feed : 0.05mm/tooth
- Hole diameter : 8.5mm
- Cutting Depth : 1mm

## Result

Good!  
Without secondary burrs and chattering

Wet Processing

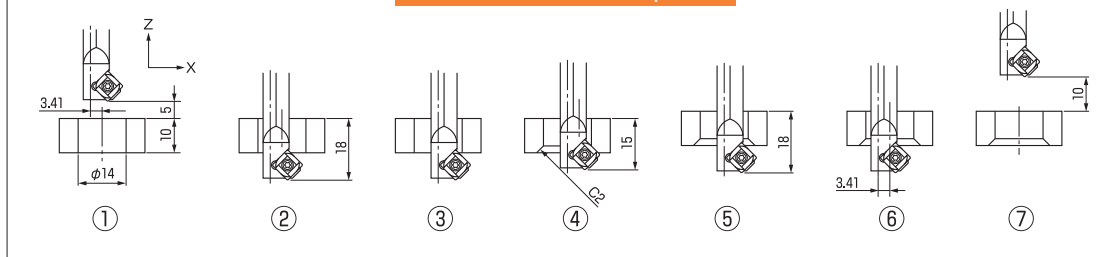


## Cutting Conditions

Body Figure		1 UMH□□-□□□-M□-30 UMH□□-□□□-M□ UMH□□-□□□-M□-60			2 UM12-16S UM12-16S-30 UM12-14.5S-60			
Material Model		NK1010	NK2020	AC16N	Material Model	NK1010	NK2020	AC16N
Material	Feed Per Blade (fz)	Cutting speed (m / min)			Feed Per Blade (fz)	Cutting Speed (m / min)		
General Steel	0.03~0.05		25~30	25~30	0.05~0.1		50~70	50~70
Alloy Steel	0.03~0.05		25~30	25~30	0.05~0.1		50~70	50~70
Stainless Steel	0.03~0.05		20~25	25~30	0.05~0.1		40~50	40~50
Aluminum, Resin,Brass	0.03~0.05	30~35			0.05~0.1	80~100		
Cast Steel	0.03~0.05	30~35			0.05~0.1	80~100		

- According to the shape of work, clamp condition, large or small chamfering amount and position of blade, the cutting condition will have to be reduced
- Coolant is recommended
- Yellow marked condition is recommended for the material listed

## How to use and Example



## Example program (UMH12-14S-M16)

- N10
- G90 G00 G54 X-3.41 Y0 M19
- G43 Z5.0 H3 T11.....①
- G1 Z-18.0 F2000.....②
- X0.....③
- M3 S600
- G1 Z-14.9 F30.....④
- Z-18.0 F200.....⑤
- M19
- X-3.41.....⑥
- G0 Z10.0.....⑦
- G80 Z10.0
- G30 Z10.0

Max. processing thickness: T  
Chamfer amount: C  
Z = -(T+S-C)

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
● M8 (SP-SPET040102)	SP-SPET040102 NK1010	Carbide K10	Sharp edge	None	1	12
	SP-SPET040102 NK2020	Carbide M20	Honing edge	None	1	12
	<b>NEW</b> SP-SPET040102 AC16N	Fine particles Carbide	Honing edge	AlCrN	1	12
● M10 (SPET040102)	SPET040102 NK1010	Carbide K10	Sharp edge	None	4	12
	SPET040102 NK2020	Carbide M20	Honing edge	None	4	12
	<b>NEW</b> SPET040102 AC16N	Fine particles Carbide	Honing edge	AlCrN	4	12
● M12~18/UM12-16S (SPET06T104)	SPET06T104 NK1010	Carbide K10	Sharp edge	None	4	12
	SPET06T104 NK2020	Carbide M20	Honing edge	None	4	12
	<b>NEW</b> SPET06T104 AC16N	Fine particles Carbide	Honing edge	AlCrN	4	12

## Variable Angle Processing!

- 0°~90° Angle adjustment can be easily and securely made



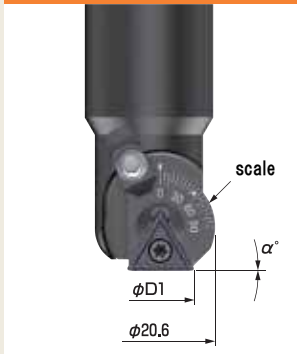
### Bore Chamfering



### Corner Chamfering



※in the case of an angle less than 45°  
※ $\alpha^\circ < 45^\circ \cdots \phi D1 > \phi D1$



Clamp piece  
CL-2SI

Wrench  
K-2

locator  
ML-T11I

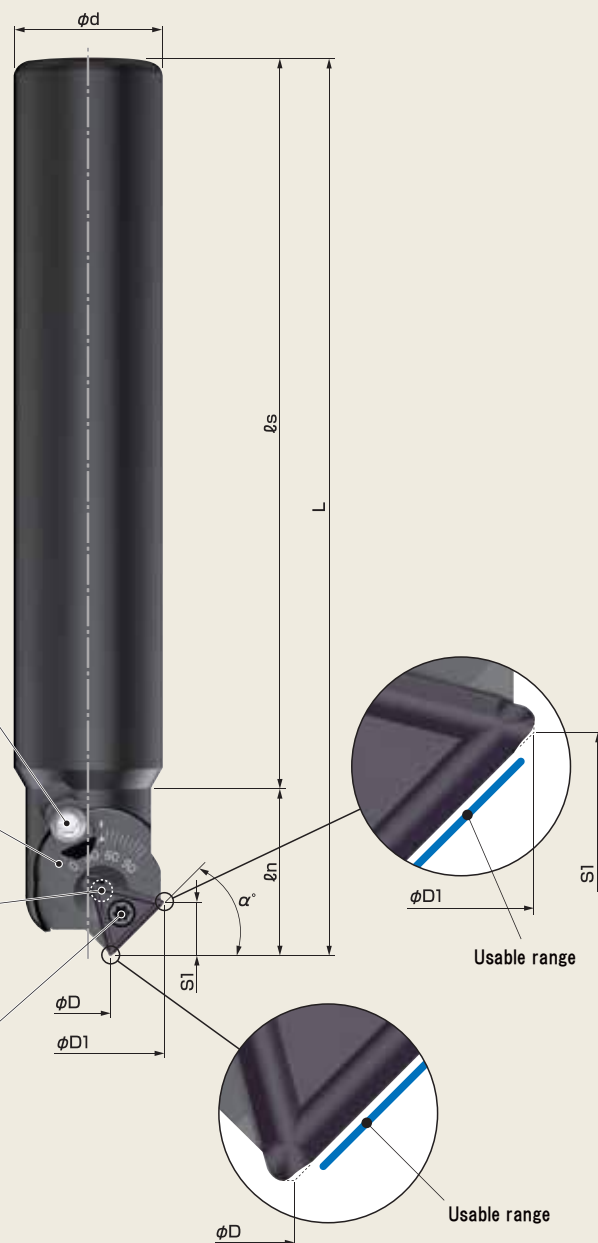
※5° scale

Screw  
BB3-4

Wrench  
K-2

Clamp Screw  
L-13

Wrench  
N-5



## Body

Model. No.	blades	Dimensions (mm)						
		$\phi D$	$\phi D1$	$\phi d$	S1	L ※1	ls	ln ※3
MAM20-19TI	1	※2	※2	20	※2	(120)	97.1	(22.6)

● Insert is not equipped as standard accessory. Please purchase it separately  
● Clamp screw, screw, wrench and locator are supplied as standard accessories

※1... Dimensions vary depending on the angle.

※2... Please refer to angle dimension table (P-34)

※3... It is the dimension when the scale is set to 45 degrees.

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	TPET110204 ZA10N	Carbide K10	Sharp edge	None	3	3
	TPET110204 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	3

## Cutting Conditions

TPET110204			
Material Model		ZA10N	AC15N
Material	Feed per blade (fz)	Cutting speed (m/min)	
General steel	0.05~0.15		100~150
Alloy steel	0.05~0.15		100~150
Stainless steel	0.05~0.15		80~120
Aluminum, resin, brass	0.08~0.2	150~400	
Cast steel	0.05~0.15		100~150

● Coolant will be recommended

## Processing Example

[C3 Chamfering]

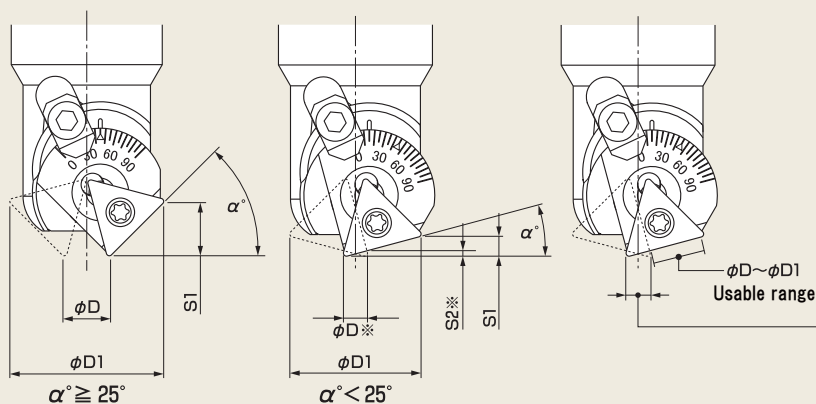
■ Body : MAM20-19TI

■ Insert : TPET110204 AC15N

- Material ..... SUS304
- Rotation Speed ..... 1,000r.p.m.
- Table feed ..... 100mm/min
- Depth of Cut ..... C3
- Cutting Oil ..... Yes

Result

Good!  
No secondary burrs and, No chattering after processing



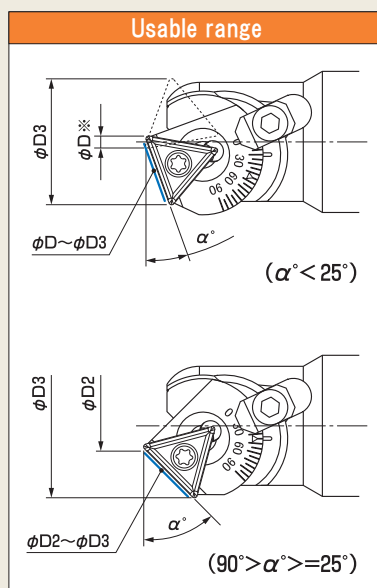
Angle Dimension Table 1

Angle	Dimensions (mm)					
	Usable range φD~φD3		φD1	S1	S2※	ℓn
α°	φD※	φD3				
5°	φ5.64	φ13.46	φ15.11	0.87	0.46	21.50
10°	φ4.41	φ14.55	φ16.12	1.73	0.70	21.84
15°	φ3.13	φ15.56	φ17.04	2.58	0.72	22.13
20°	φ1.79	φ16.48	φ17.87	3.41	0.48	22.35

Please note the blade back interference in the case of an angle less than 25°

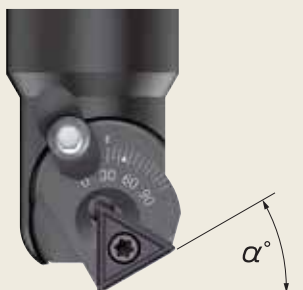
Angle Dimension Table 2

α°	Dimensions (mm)					
	φD	φD1	Usable range φD2~φD3		S1	ℓn
			φD2	φD3		
0°	φ6.81	φ14.01	φ6.81	φ12.29	—	21.10
25°	φ0.55	φ18.60	φ1.55	φ17.3	4.21	22.53
30°	φ1.98	φ19.21	φ2.96	φ18.01	4.98	22.64
35°	φ3.42	φ19.72	φ4.38	φ18.62	5.71	22.69
40°	φ4.87	φ20.11	φ5.8	φ19.11	6.39	22.67
45°	φ6.31	φ20.37	φ7.2	φ19.48	7.03	22.60
50°	φ7.73	φ20.52	φ8.57	φ19.74	7.62	22.47
55°	φ9.13	φ20.54	φ9.9	φ19.87	8.15	22.27
60°	φ10.49	φ20.44	φ11.18	φ19.87	8.62	22.02
65°	φ11.81	φ20.22	φ12.41	φ19.76	9.02	21.71
70°	φ13.06	φ19.88	φ13.57	φ19.52	9.36	21.35
75°	φ14.26	φ19.42	φ14.66	φ19.15	9.63	20.94
80°	φ15.38	φ18.85	φ15.66	φ18.67	9.83	20.47
85°	φ16.42	φ18.16	φ16.57	φ18.08	9.96	19.97
90°	—	φ17.38	—	φ17.38	10.01	19.42

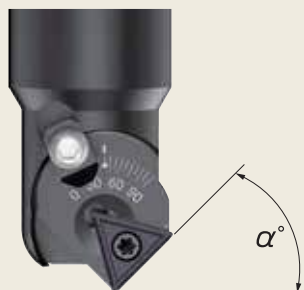


## Scale display

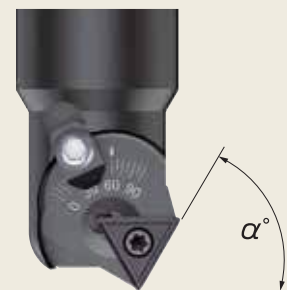
[30°]



[45°]

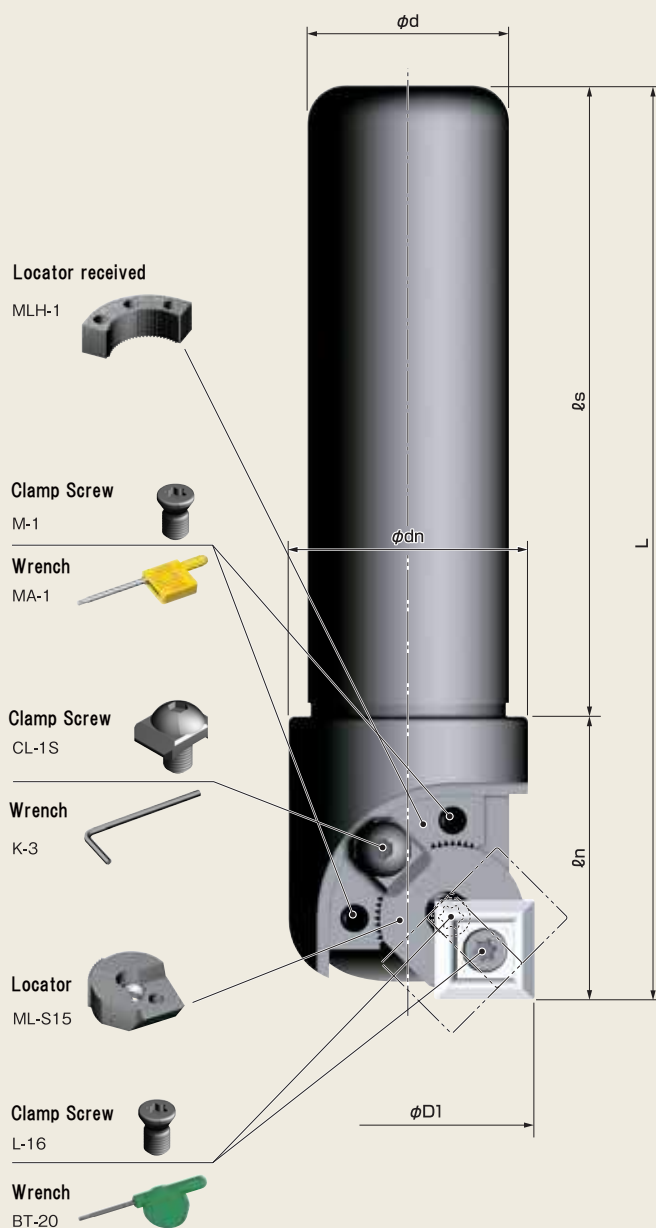


[60°]



## Variable Angle Processing!

- By the serration mechanism and our original double clamp system, holding parts is superior to prevent insert movement. 0°~90° Angle adjustment can be easily and securely made



Corner Chamfering



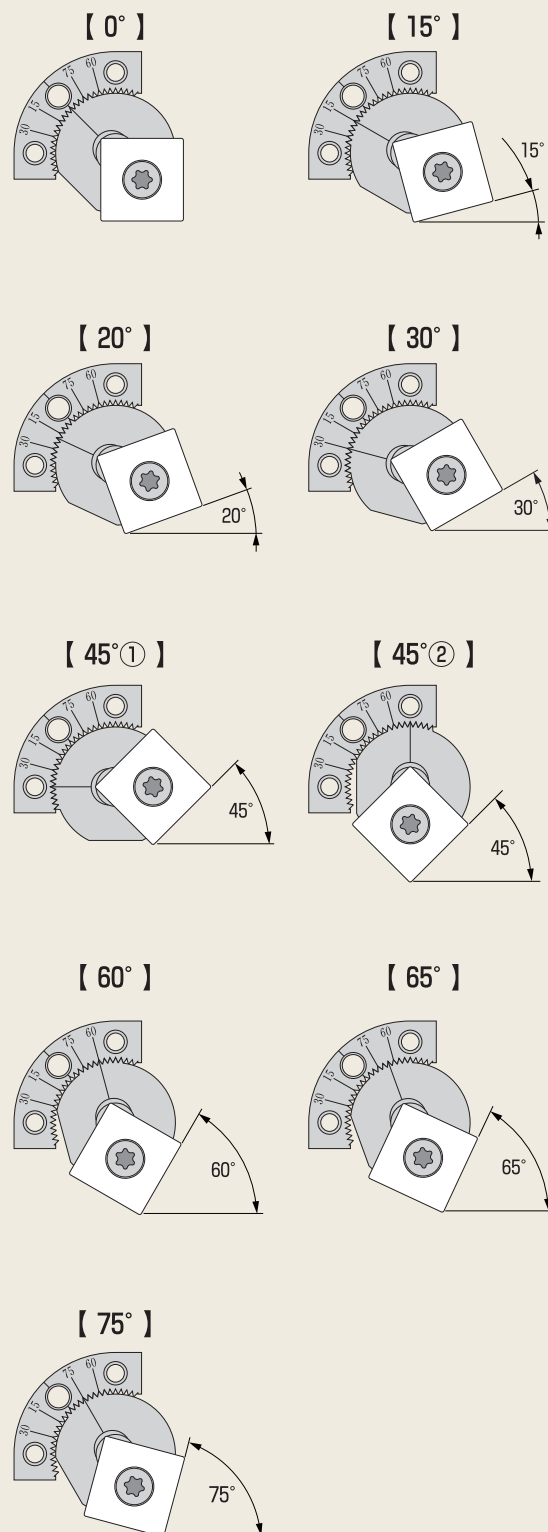
Back up processing



Side V-groove processing



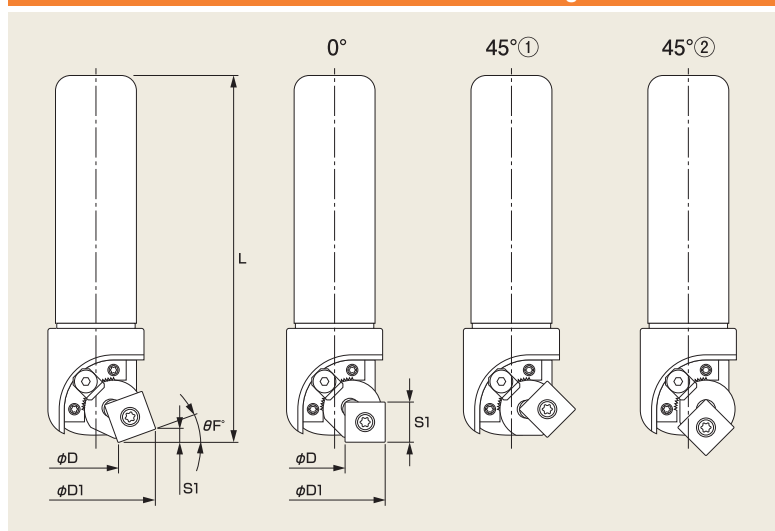
Display for division of angle



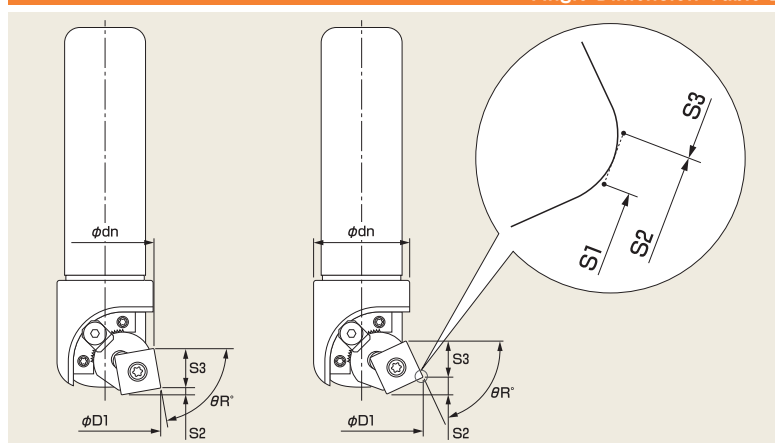
### Body

Model No.	blades	Dimensions (mm)					
		$\phi D1$	$\phi d$	$\phi dn$	L	$\ell s$	$\ell n$
MAM32-50S	1	※1	32	38	145	100	45
MAM32-50SL	1	※1	32	38	200	155	45

※ Insert is not equipped as standard accessory. Please purchase it separately  
 ※ Clamp screw, wrench and locator are supplied as standard accessories  
 ※ Please refer to angle dimension table (P-36)

< $\theta F^\circ$ > Angle Dimension Table 1 (MAM32-50S)

$\theta F^\circ$	$\phi D$	$\phi D1$	S1	L
0°	φ8.3	φ40	15.9	145
5°	φ11.3	φ42.1	1.3	145.2
10°	φ13.6	φ44	2.7	145.2
15°	φ15.9	φ45.7	4.0	145.2
20°	φ18.1	φ47.1	5.3	145.1
25°	φ20.4	φ48.3	6.5	144.8
30°	φ22.6	φ49.3	7.7	144.5
35°	φ24.7	φ49.9	8.8	144.1
40°	φ26.7	φ50.3	9.9	143.6
45°①	φ28.7	φ50.5	10.9	143
45°②	φ14.3	φ36	10.9	150.2
50°	φ17.4	φ37.2	11.8	150.2
55°	φ20.5	φ38.2	12.6	150
60°	φ23.6	φ39.1	13.4	149.6
65°	φ26.7	φ39.7	14	149.2
70°	φ29.6	φ40.1	14.5	148.6
75°	φ32.4	φ40.4	14.9	147.8
80°	φ35.1	φ40.5	15.2	147
85°	φ37.6	φ40.3	15.4	146.1

< $\theta R^\circ$ > Angle Dimension Table 2 ( $\theta R^\circ = 90^\circ - \theta F^\circ$ )

$\theta R^\circ$	$\phi D1$	$\phi dn$	S2	S3
85°	φ42.1	φ39.4	1.7	15.4
80°	φ44	φ38.6	3.1	15.2
75°	φ45.7	φ38.0	4.4	14.3
70°	φ47.1	φ38.0	5.6	12.5
65°	φ48.3	φ38.0	6.9	11.1
60°	φ49.3	φ38.0	8	9.7
55°	φ49.9	φ38.0	9.2	8.5
50°	φ50.3	φ38.0	10.2	7.4
45°	φ50.5	φ38.0	11.2	6.2

## Cutting Conditions

		SDET150404	SDMT150404	
Material	Material Model	ZA10N	ZA20N	AC15N
	Feed per blade (fz)	Cutting speed (m/min)		
General Steel	0.05~0.15		100~150	100~150
Alloy Steel	0.05~0.15		100~150	100~150
Stainless Steel	0.05~0.15		80~120	80~120
Aluminum, Resin, Brass	0.08~0.2	150~400		
Castings	0.05~0.15		100~150	

● In case of Stainless steel processing, please take down cut

## Processing Example

## [Perimetry C5 Chamfering]

- Body : MAM32-50S
- Body : SDMT150404 ZA20N
- Material.....S45C
- Rotation Speed...630.p.m.
- Table feed.....63mm/min
- Depth of Cut.....C5
- Cutting Oil.....None



Dry cutting

## Result

Good!  
No secondary burrs and, No chattering after processing

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable Corner	Quantity per box
	SDET150404 ZA10N	Carbide K10	Sharp edge	None	2	3
	SDMT150404 ZA20N	Carbide M20	Honing edge	None	4	3
	SDMT150404 AC15N	Fine particles Carbide	Honing edge	AlCrN	4	3

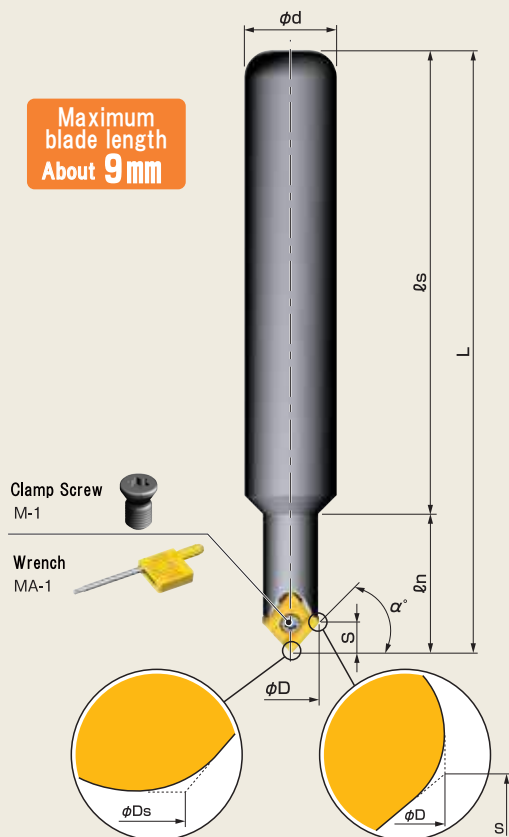


Applications use	Capacity												
	SNK1516C	SNK2016C	SNK2515C	SNK3015C	SNK3514C	SNK4013C	SNK4512C	SNK5014C	SNK5514C	SNK6015C	SNK6515C	SNK7014C	SNK7514C
$\alpha^\circ$	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°
Bore chamfering	$\phi 1.0 \sim \phi 16.0\text{mm}$	$\phi 2.0 \sim \phi 16.5\text{mm}$	$\phi 1.5 \sim \phi 15.5\text{mm}$	$\phi 1.5 \sim \phi 15.0\text{mm}$	$\phi 1.5 \sim \phi 14.0\text{mm}$	$\phi 1.5 \sim \phi 13.5\text{mm}$	$\phi 1.5 \sim \phi 12.5\text{mm}$	$\phi 5.0 \sim \phi 14.5\text{mm}$	$\phi 6.0 \sim \phi 14.5\text{mm}$	$\phi 7.5 \sim \phi 15.0\text{mm}$	$\phi 8.5 \sim \phi 15.0\text{mm}$	$\phi 9.5 \sim \phi 14.5\text{mm}$	$\phi 10.5 \sim \phi 14.0\text{mm}$

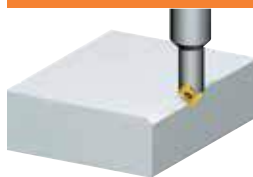
## Small Diameter type!

- This tool was developed for Small Diameter processing
- You can choose angle  $15^\circ \sim 75^\circ$  (with  $5^\circ$  increments)
- Rich Inserts can be selected for various workpiece Processing

Maximum  
blade length  
About 9mm



### Corner chamfering



### Body

Model, No.	Blades	Dimensions (mm)							$\alpha^\circ$
		$\phi D$	Minimum Processing diameter ( $\phi D_s$ )	$\phi d$	L	$\ell_s$	$\ell_n$	S	
SNK1516C	1	18.0	0.5	20	125	95	30	2.1	15
SNK2016C	1	18.2	1.1	20	125	95	30	2.8	20
SNK2515C	1	17.0	0.6	20	125	95	30	3.5	25
SNK3015C	1	16.3	0.7	20	125	95	30	4.5	30
SNK3514C	1	15.5	0.7	20	125	95	30	5.2	35
SNK4013C	1	14.6	0.8	20	125	95	30	5.9	40
SNK4512C	1	13.5	0.9	20	125	95	30	6.4	45
SNK5014C	1	15.5	4.0	20	125	95	30	7.0	50
SNK5514C	1	15.2	5.0	20	125	95	30	7.5	55
SNK6015C	1	15.6	6.7	20	125	95	30	7.3	60
SNK6515C	1	15.5	8.0	20	125	95	30	8.4	65
SNK7014C	1	15.1	9.0	20	125	95	30	8.7	70
SNK7514C	1	14.5	10.0	20	125	95	30	9.0	75

※ Inset is not equipped as standard accessory. Please purchase it separately.

※ Clamp screw is equipped as standard accessory

### Processing Example

#### [ $\phi 7\text{mm}$ Bore chamfering]

- Body : SNK6015C
- Insert : C32GUX AC15D
- Material.....SUS304
- Rotation Speed....3,000r.p.m.
- Cutting Speed....150mm/m
- Depth of Cut.....Z-4.0
- Cutting Oil.....Yes

#### Result

Good finish



### Cutting Conditions

C32GUX												
	material Model	NK2001	NK1010	NK2020	NK3030	NK5050	NK6060	NK8080	AC15D	AC25D	HSS	HSS TiN
Material	Feed per blade (fz)	Cutting speed (m / min)										
General Steel	0.08~0.2	200~250		150~200	150~200		150~200		150~200	150~200	13~23	15~25
Alloy Steel	0.08~0.2	200~250		150~200	150~200		150~200		150~200	150~200	10~20	13~22
Stainless Steel	0.08~0.2			120~180	150~200	120~180	150~200	150~200 ※SUS316	150~200	150~200	10~15	11~17
Aluminum,Resin,Brass	0.08~0.3		250~800			250~800		300~1,000			31~40	31~47
Castings	0.08~0.3	200~250 ※FCD										

● According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.

● Yellow marked condition is recommended for the material listed

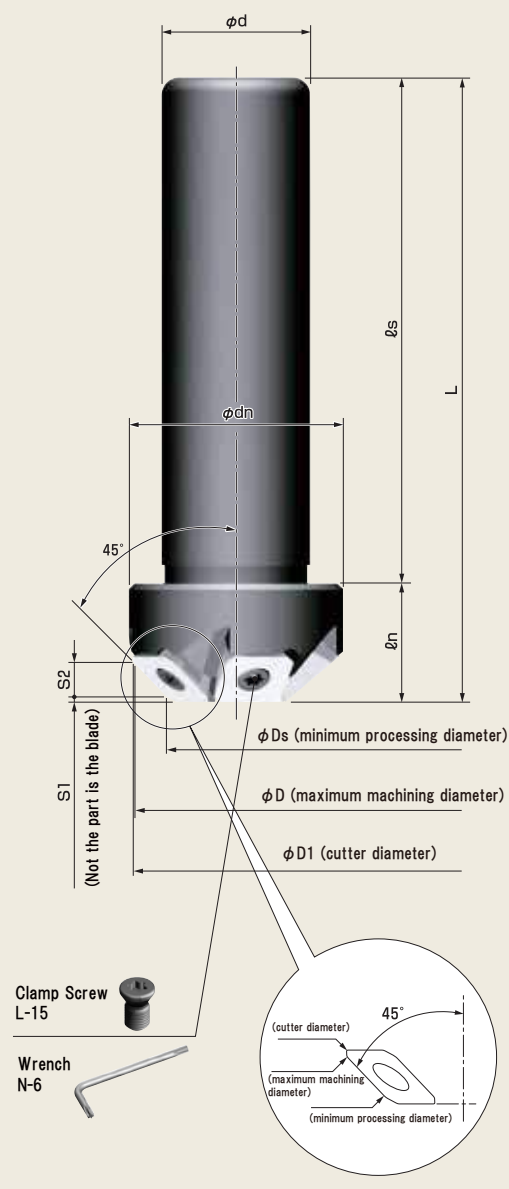
● In case of chamfering process of Stainless steel, kindly take down cutting

### Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>(Except nose R)</p>	C32GUX NK2001	Cermet	Honing edge	None	2	12
	C32GUX NK1010	Carbide K10	Sharp edge	None	2	12
	C32GUX NK2020	Carbide M20	Honing edge	None	2	12
	C32GUX NK3030	Carbide M20	Honing edge	TiN	2	12
	C32GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	C32GUX NK6060	Carbide M20	Honing edge	TiAlN	2	12
	C32GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	C32GUX AC15D	Fine particles Carbide	Honing edge	AlCrN	2	12
	C32GUX AC25D	Fine particles Carbide	Sharp edge	AlCrN	2	12
	C32GUX HSS	HSS	Sharp edge	None	2	12
	C32GUX HSS TiN	HSS	Sharp edge	TiN	2	12

# Shortening working time!

- High Speed processing is ensured by the special shape tip



Corner Chamfering



Tip special shape



## Body

Model. No.	Blades	Dimensions (mm)									
		$\phi D$	$\phi D1$	$\phi Ds$	$\phi d$	$\phi dn$	L	$\ell s$	$\ell n$	S1	S2
KMC25-34S	5	34.9	36.4	24	25	36	105	85	20	1.2	5.3

※ Insert is not equipped as standard accessory. Please purchase it separately

※ Clamp screw is equipped as standard accessory

## Cutting Conditions

Material	Rotation speed (r.p.m.)	Table feed	Recommended Insert	Coolant
General Steel	2,000~	2,000	S3H3MNZ NK2020	Yes
Alloy Steel	2,000~	2,000	S3H3MNZ NK2020	Yes
Stainless Steel	2,000~	500~1,000	S3H3MNZ AC15D	Yes
Aluminum, Resin, Brass	2,000~	2,000	S3H3GNZ NK1010	Yes
Castings	2,000~	2,000	S3H3GNZ NK1010	Yes

● In case of chamfering process of Stainless steel, kindly take down cutting

## Processing Example

### [C2 Chamfering]

Body : KMC25-34S

Insert : S3H3MNZ AC15D

- Material.....SUS304
- Rotation Speed.....5,000r.p.m
- Table feed.....1,500mm/min
- Cutting Depth.....C2
- Cutting Oil.....Yes

Wet Processing



Result

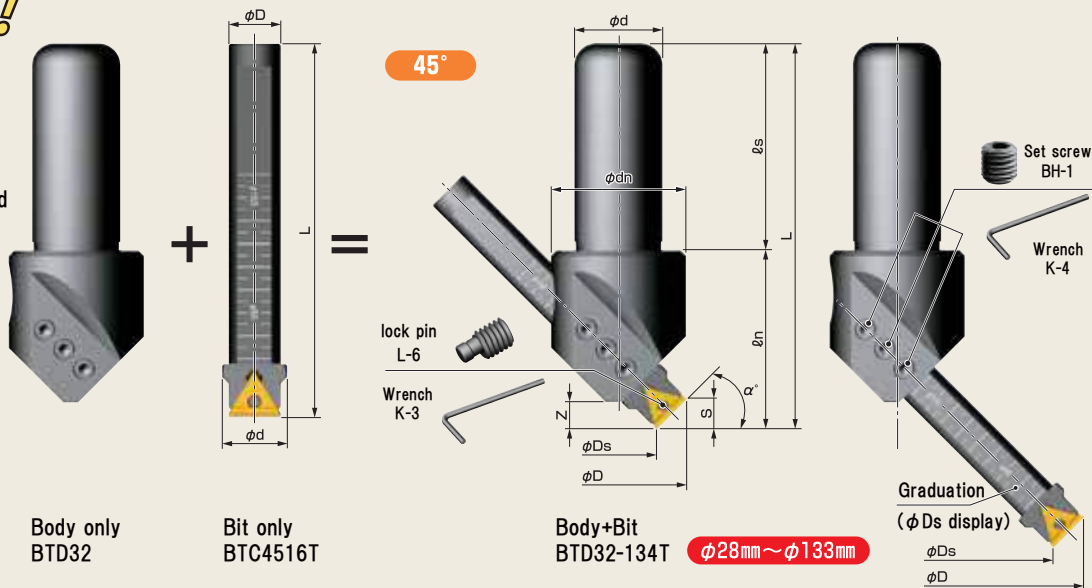
Good !  
No secondary burrs and  
No chattering after processing

## Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	S3H3MNZ NK2001	Cermet	Honing edge	None	4	12
	S3H3GNZ NK1010	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ NK2020	Carbide M20	Honing edge	None	4	12
	S3H3GNZ NK9090 (Mirror polished finish)	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ AC15D	Fine particles Carbide	Honing edge	AlCrN	4	12

**Bit Type!**

- Expansion Bit type for wide range chamfering !
- Bore Chamfering Capacity:  $\phi 28 \sim \phi 133$
- T32-type insert can be used



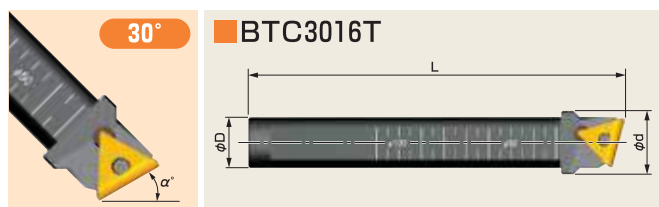
Model. No.	Blades	Dimensions (mm)									$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d_n$	$\phi d$	L	$\ell_s$	$\ell_n$	Z	S	
BTD32-134T	1	49.85 134.6	28 112.8	49	32	190 232.8	125	65 107.8	9.8 52.6	10.9	45°
BTD32				49	32	180.2	125	55.2			

Option Bit **45°**

Model. No.	Dimensions (mm)		
	$\phi D$	$\phi d$	L
BTC4516T	16	20	115

※ Inset is not supplied as standard accessory. Please order separately.  
 ※ Lock Pin, set screw and wrench supplied as standard accessory

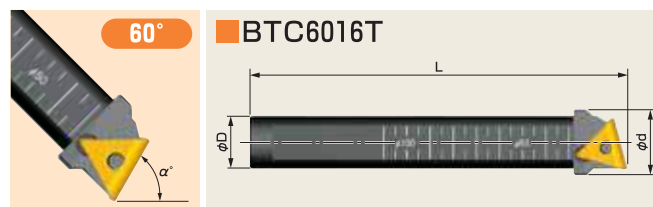
## Option Bit



Model. No.	Dimensions (mm)		
	$\phi D$	$\phi d$	L
BTC3016T	16	20	119

BTC3016T(Optional) is mounted  **$\phi 28 \text{ mm} \sim \phi 138 \text{ mm}$** 

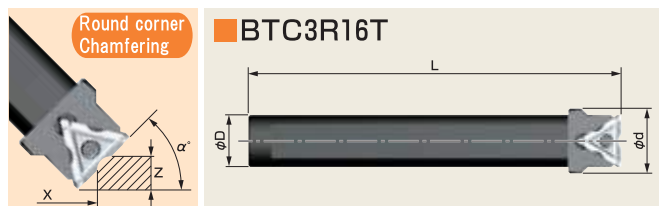
Blades	Dimensions (mm)									$\alpha^\circ$
	$\phi D$	$\phi D_s$	$\phi d_n$	$\phi d$	L	$\ell_s$	$\ell_n$	Z	S	
1	54.82 139.6	28 112.8	49	32	190 232.4	125	65 107.4	9.8 52.6	7.7	30°



Model. No.	Dimensions (mm)		
	$\phi D$	$\phi d$	L
BTC6016T	16	20	115

BTC6016T(Optional) is mounted  **$\phi 28 \text{ mm} \sim \phi 126 \text{ mm}$** 

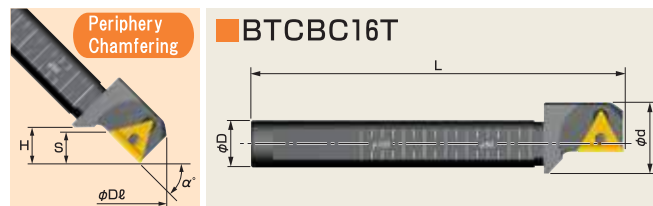
Blades	Dimensions (mm)									$\alpha^\circ$
	$\phi D$	$\phi D_s$	$\phi d_n$	$\phi d$	L	$\ell_s$	$\ell_n$	Z	S	
1	43.37 128.2	28 112.8	49	32	190 232.5	125	65 107.5	9.8 52.5	13.3	60°



Model. No.	Dimensions (mm)		
	$\phi D$	$\phi d$	L
BTC3R16T	16	20	115

BTC3R16T(Optional) is mounted **R1~R3**

Blades	Dimensions (mm)									$\alpha^\circ$
	$\phi D$	$\phi D_s$	$\phi d_n$	$\phi d$	L	$\ell_s$	$\ell_n$	Z	S	
1	49.9 134.6	28 112.8	49	32	190 232.4	125	65 107.4	9.8 52.6	10.9	45°



Model. No.	Dimensions (mm)		
	$\phi D$	$\phi d$	L
BTCBC16T	16	24	126

BTCBC16T(Optional) is mounted  **$\phi 28 \text{ mm} \sim \phi 133 \text{ mm}$** 

Blades	Dimensions (mm)											$\alpha^\circ$
	$\phi D$	$\phi D_s$	$\phi D_\ell$	$\phi d_n$	$\phi d$	L	$\ell_s$	$\ell_n$	Z	H	S	
1	50.6 134.7	28 112.8	71.5 155.2	49	32	194 236.5	125	69 111.5	13.9 56.4	(12.9)	10.9	~45°

※ Inset is not supplied as standard accessory. Please order separately.  
 ※ Lock Pin, set screw and wrench supplied as standard accessory

Corner chamfering



Round corner Chamfering



Bore Chamfering



Periphery Chamfering



## Processing Example

[ $\phi 50$  Bore chamfering (C5)]

Dry cutting

- Body : BTD32-134T
- Insert : TT32GUR NK2001
- Material : S45C
- Rotation Speed : 400r.p.m
- Table feed : 24/min
- Cutting Depth : C5
- Cutting Oil : None



## Result

Good! No secondary burrs and No chattering after processing

## Cutting Conditions

T32MOR						
Material	Material Model	NK2001	NK1010	NK2020	NK3030	AC16N
General Steel	0.08~0.2	200~250		150~200	150~200	
Alloy Steel	0.08~0.2	200~250		150~200	150~200	
Stainless Steel	0.08~0.2			100~150	100~150	100~150
Aluminum, Resin, Brass						
Castings	0.08~0.2	200~250 *FCD	100~150			

TT32GUR										
Material	Material Model	NK2001	NK1010	NK2020	NK3030	NK5050	NK8080	AC15N	HSS	HSS TiN
General Steel	0.08~0.2	200~250		150~200	150~200			150~200	13~23	15~25
Alloy Steel	0.08~0.2	200~250		150~200	150~200			150~200	10~20	13~22
Stainless Steel	0.08~0.2			120~180	150~200		150~200 *SUS316	150~200	10~15	11~17
Aluminum, Resin, Brass	0.08~0.3		250~800			250~800	300~1,000		31~40	31~47
Castings	0.08~0.3	200~250 *FCD								

● According to the shape of work, large or small chamfering, amount and position of blade, the cutting condition will have to be adjusted.

● In case of process with large amount chamfer, please reduce cutting condition

● Yellow marked condition is recommended for the material listed

● In case of chamfering process of Stainless steel, kindly take down cutting

● For Bore Chamfering, please reduce the cutting condition to 1/3

## Insert

Figure	Model, No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	T32MOR NK2001	Cermet	Honing edge	None	6	12
	T32MOR NK1010	Carbide K10	Sharp edge	None	6	12
	T32MOR NK2020	Carbide M20	Honing edge	None	6	12
	T32MOR NK3030	Carbide M20	Honing edge	TiN	6	12
	T32MOR AC16N	Fine particles Carbide	Honing edge	AlCrN	6	12
	TT32GUR NK2001	Cermet	Honing edge	None	2	12
	TT32GUR NK1010	Carbide K10	Sharp edge	None	2	12
	TT32GUR NK2020	Carbide M20	Honing edge	None	2	12
	TT32GUR NK3030	Carbide M20	Honing edge	TiN	2	12
	TT32GUR NK5050	Carbide K10	Sharp edge	TiN	2	12
	TT32GUR NK8080	Carbide K10	Honing edge	TiAlN	2	12
	TT32GUR AC15N	Fine particles Carbide	Sharp edge	AlCrN	2	12
	TT32GURF TC16N	Fine particles Carbide	Honing edge	TiSiN	2	12
	TT32GUR HSS	HSS	Sharp edge	None	2	12
	TT32GUR HSS TiN	HSS	Sharp edge	TiN	2	12
	TNEA160304 TC16N	Fine particles Carbide	Honing edge	TiSiN	6	12
	T32GSR-1R NK2020	Carbide M20		None	3	3
	T32GSR-2R NK2020	Carbide M20		None	3	3
	T32GSR-3R NK2020	Carbide M20		None	3	3



When mounting insert, please do not take reverse tightening.

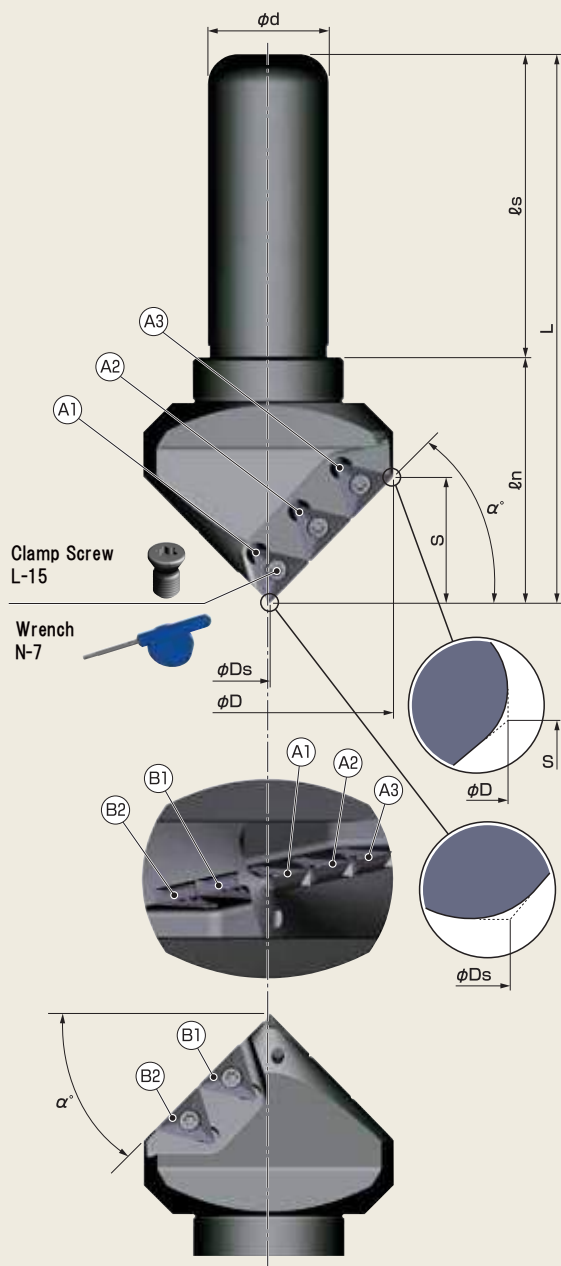
Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred

When replacing insert, please confirm whether you have been taking reserve tightening or not.

Attention ...P.114

## Various sizes

Bore Chamfering process from  $\phi 1.0\text{mm} \sim \phi 81.4\text{mm}$  is possible !



B1 · B2 is an auxiliary blade.  
Cutting conditions, please be calculated with a single blade.

### Bore Chamfering



Model. No.	Capacity
	Bore chamfering
TYOU3082T	$\phi 1.0\text{mm} \sim \phi 81.4\text{mm}$
TYOU4567T	$\phi 1.2\text{mm} \sim \phi 66.6\text{mm}$
TYOU6066T	$\phi 20.4\text{mm} \sim \phi 66.8\text{mm}$

※ we recommend the 10C below for chamfering amount.

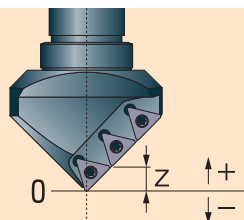
Model. No.	Remaining stage(step) Range
TYOU3082T	( $\phi 26.59\text{mm} \sim \phi 28.46\text{mm}$ ) and ( $\phi 54.33\text{mm} \sim \phi 56.20\text{mm}$ )
TYOU4567T	( $\phi 21.63\text{mm} \sim \phi 23.76\text{mm}$ ) and ( $\phi 44.15\text{mm} \sim \phi 46.27\text{mm}$ )
TYOU6066T	( $\phi 34.93\text{mm} \sim \phi 36.02\text{mm}$ ) and ( $\phi 50.95\text{mm} \sim \phi 52.04\text{mm}$ )

### Body

Model. No.	Blades	Dimensions (mm)							$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$	S	
TYOU3082T	5	82.1	0.71	32	145	80	65	23.5	30°
TYOU4567T	5	67.0	0.88	32	145	80	65	33.1	45°
TYOU6066T	5	67.0	20.0	32	155	80	75	40.7	60°

※ Inset is not equipped as standard accessory. Please purchase it separately.

※ Clamp screw is equipped as standard accessory



### Z-value compensate standard

※ Please note that this value may be getting little errors

$\alpha^\circ = 30^\circ \rightarrow +0.20$

$\alpha^\circ = 45^\circ \rightarrow +0.44$

$\alpha^\circ = 60^\circ \rightarrow +17.32$

[Example]

In case of  $\phi 5\text{mm}$  Centering process at  $\alpha^\circ = 45^\circ$   
Correct Z-value (-2.5) to -2.06

### Cutting Conditions

Material	Material Model	ZA10N	AC15N
		Feed per blade (fz)	Cutting speed (m / min)
General Steel	0.05~0.1		20~50
Alloy Steel	0.05~0.1		20~50
Stainless Steel	0.05~0.1		20~50
Aluminum, Resin, Brass	0.05~0.1	40~100	
Castings	0.05~0.1		20~50

● According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.

● Yellow marked condition is recommended for the material listed

● In case of chamfering process of Stainless steel, kindly take down cutting

### Processing Example

[ $\phi 25$  C10 Bore Chamfering]

- Body : TYOU4567T
- Insert : TXMT16T306
- Material : ..... SUS304
- Rotation Speed : ..... 320r.p.m.
- Feed (Z-axis) : ..... 19.2/min
- Cutting Depth : ..... C10
- Cutting Oil : ..... Yes

### Result

Good! No secondary burrs and  
No chattering after processing



Wet Processing

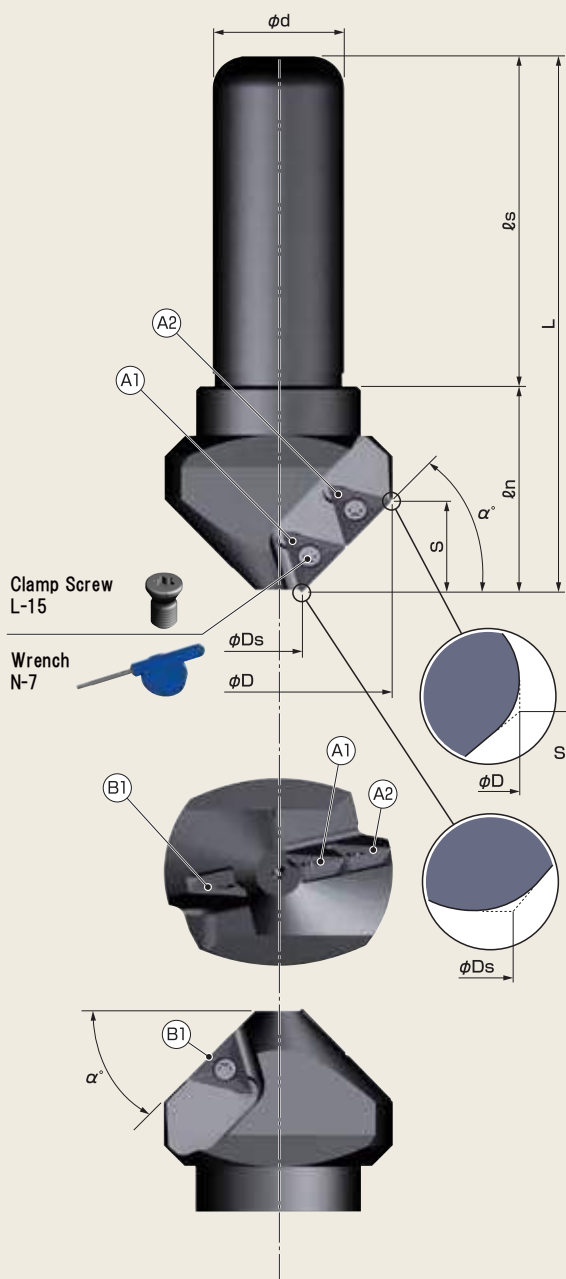
### Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	TXMT16T306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT16T306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12



## Various sizes

**Bore Chamfering Various large and small !**




B1 + B2 is an auxiliary blade.  
Cutting conditions, please be calculated with a single blade.

## Bore Chamfering



Model, No.	Capacity
	Bore chamfering
TYOU3068TB	φ14.87mm〜φ67.6mm
TYOU4555TB	φ12.5mm〜φ55.4mm
TYOU6058TB	φ28.36mm〜φ58.8mm

※ we recommend the 10C below for chamfering amount.

Model. No.	 Remaining stage(step) Range
TYOU3068TB	φ40.46mm~φ42.33mm
TYOU4555TB	φ33.25mm~φ34.65mm
TYOU6058TB	φ42.94mm~φ44.03mm

## ■ Body

Model. No.	Blades	Dimensions (mm)							$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$	S	
TYOU3068TB	3	68.2	14.6	32	125	80	45	15.5	30°
TYOU4555TB	3	55.8	12.1	32	130	80	50	21.8	45°
TYOU6058TB	3	59.0	28.0	32	130	80	50	26.8	60°

※ Inset is not equipped as standard accessory. Please purchase it separately.

※ Clamp screw is equipped as standard accessory

### ■ Cutting Conditions

Material Model		ZA10N	AC15N
Material	Feed per blade (fz)	Cutting speed (m / min)	
General Steel	0.05~0.1		20~50
Alloy Steel	0.05~0.1		20~50
Stainless Steel	0.05~0.1		20~50
Aluminum,Resin,Brass	0.05~0.1	40~100	
Castings	0.05~0.1		20~50

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- Yellow marked condition is recommended for the material listed
- In case of chamfering process of Stainless steel, kindly take down cutting

## Processing Example

[ $\phi 21$  C10 Bore Chamfering]

- Body : TYOU4555TB
- Insert : TXMT16T306 AC15N
- Material.....SUS304
- Rotation Speed...400r.p.m.
- Feed (Z-axis) ....Manual feed
- Cutting Depth...C5mm
- Cutting Oil.....none

## Result

Good!	No secondary burrs and No chattering after processing
-------	--



## Dry cutting

**Insert**

Figure	ModelNo.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	TXMT16T306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT16T306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12

# MEMO

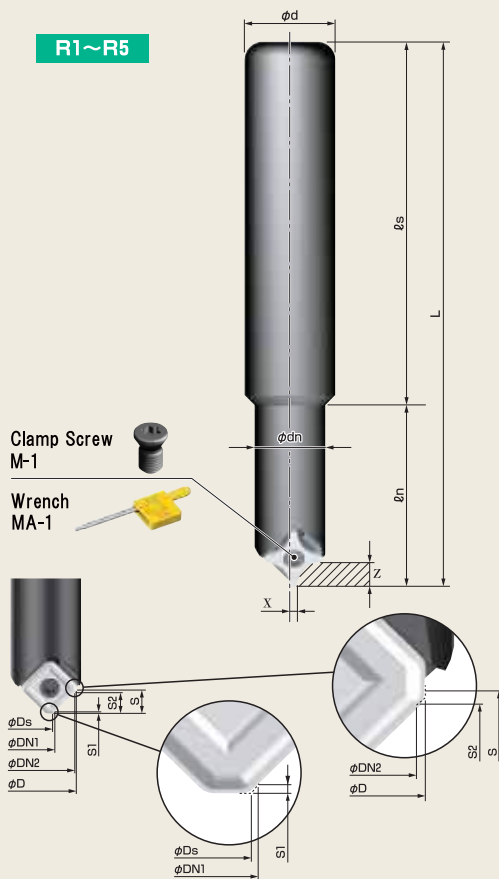


# MEMO



## Possible R-Chamfering And C-Chamfering process !

- 8 corners of inserts can be usable.
- Possible R-Chamfering And C-Chamfering process ensured by changing insert



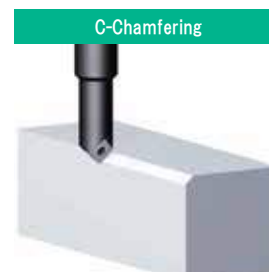
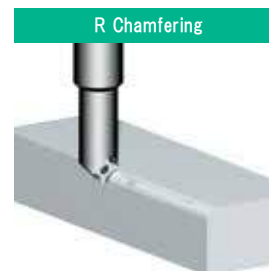
## Setting numerical values

Processing R	X-axis position (mm)	Z-axis position (mm)
R1	4.46	3.46
R2	3.99	3.94
R3	3.53	4.43
R4	3.09	4.91
R5	2.67	5.40

- numeric value might get some errors, please acknowledge.

## Cutting Conditions

SNEQ090308 / S32MOZ		
Material	Feed per blade (fz)	Cutting speed (m/min)
General Steel	0.05~0.2	100~150
Alloy Steel	0.05~0.2	100~150
Stainless Steel	0.05~0.2	80~120
Aluminum,Resin,Brass	0.08~0.25	150~400
Cast Steel	0.05~0.2	100~150



## Body

Model. No.	blades	Dimensions (mm)				
		$\phi d$	$\phi dn$	L	$l_s$	$l_n$
MR20-16S	1	20	15.6	120	80	40

※ Insert is not equipped as standard accessory. Please purchase it separately  
※ Clamp screw, screw wrench and locator are supplied as standard accessories

## Processing Example (Mini-R)

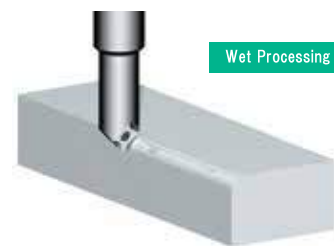
[Periphery R3 Chamfering process]

■ Body : MR20-16S  
■ Insert: : SNEQ090308-3RM ZA20N

- Material ..... SUS304
- Rotational speed ... 3,000r.p.m.
- Table feed ..... 150mm/min

## Result

Surface Accuracy is good when the processing was made without rough cutting



### S32MOZ Insert Dimension Table

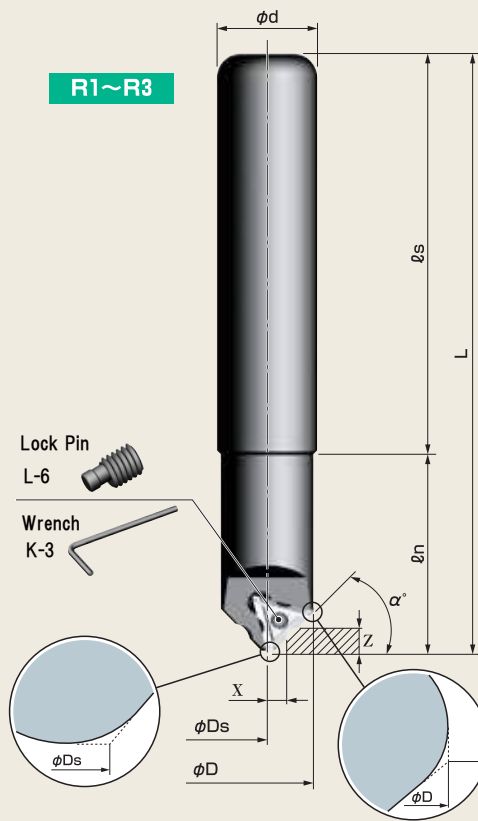
Model. No.	insert	blades	Dimensions (mm)								ability (mm)			
			$\phi d$	$\phi dn$	L	$\ell s$	$\ell n$	$\phi Ds$	$\phi D$	S	$\phi DN1$	$\phi DN2$	S1	S2
MR20-16S	S32MOZ	1	20	15.6	119.61	80	39.61	5.15	15.12	5.1	5.53	14.66	0.23	4.89

**Insert ✖XRM, you can not use**

Figure	ModelNo.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>〈SNEQ090308-□RM〉</p> <p>(8 Corner)</p>	SNEQ090308-1RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-2RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-3RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-4RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-5RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
<p>〈S32MOZ〉</p> <p>(Except nose R)</p>	S32MOZ NK2001	Cermet	Honing edge	None	8	12
	S32MOZ NK2050	Cermet	Honing edge	None	8	12
	S32MOZ AB01F	Cermet	Honing edge	AlCrN	8	12
	S32MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	S32MOZ NK2020	Carbide M20	Honing edge	None	8	12
	S32MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	S32MOZ AC15T	Fine particles Carbide	Honing edge	AlCrN	8	12

## Easy Radius change !!

- Possible R-Chamfering And C-Chamfering process ensured by changing insert



### Setting numerical values

Processing R	X-axis position (mm)	Z-axis position (mm)
R1	6.40	5.81
R2	5.90	6.30
R3	5.40	6.78

numeric value might get some errors, please acknowledge.

### R Chamfering



### C-Chamfering



### Processing Example

[Periphery R3 Chamfering process]

- Body : CR25-05T
- Insert : T32GSR-3R NK2020
- Table feed ..... Bakelite
- Material ..... 4,000r.p.m.
- Rotational speed ... 800mm/min



### Dry cutting

### Result

Good discharge of chips, surface accuracy also good Results came out.

### Insert

T32GSR		
Material	Feed PerBlade (fz)	Cutting speed (m / min)
General Steel	0.08~0.2	150~200
Alloy Steel	0.08~0.2	150~200
Stainless Steel	0.08~0.2	120~180
Aluminum, Resin, Brass	0.08~0.3	200~800
Castings	0.08~0.2	150~200

### Body

Model. No.	blades	Dimensions (mm)							$\alpha^\circ$
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$	S	
CR25-05T	1	25	3.8	25	150	100	50	10.6	45°

- ※ Insert is not included. Please Order Separately.
- ※ Lock pin Wrench we have Standard Equipment.



When mounting insert, please do not take reverse tightening.  
Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred  
When replacing insert, please confirm whether you have been taking reserve tightening or not.

### Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	T32GSR-1R NK2020	Carbide M20		None	3	3
	T32GSR-2R NK2020	Carbide M20		None	3	3
	T32GSR-3R NK2020	Carbide M20		None	3	3
	T32MOR NK2001	Cermet	Honing edge	None	6	12
	T32MOR NK1010	Carbide K10	Sharp edge	None	6	12
	T32MOR NK2020	Carbide M20	Honing edge	None	6	12
	T32MOR NK3030	Carbide M20	Honing edge	TiN	6	12
	T32MOR AC16N	Fine particles Carbide	Honing edge	AlCrN	6	12
	TT32GUR NK2001	Cermet	Honing edge	None	2	12
	TT32GUR NK1010	Carbide K10	Sharp edge	None	2	12
	TT32GUR NK2020	Carbide M20	Honing edge	None	2	12
	TT32GUR NK3030	Carbide M20	Honing edge	TiN	2	12
	TT32GUR NK5050	Carbide K10	Sharp edge	TiN	2	12
	TT32GUR NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	TT32GUR AC15N	Fine particles Carbide	Honing edge	AlCrN	2	12
	TT32GURF TC16N	Fine particles Carbide	Sharp edge	TiSiN	2	12
	TT32GUR HSS	HSS	Sharp edge	None	2	12
	TT32GUR HSS TiN	HSS	Sharp edge	TiN	2	12
	TNEA160304 TC16N	Fine particles Carbide	Honing edge	TiSiN	6	12

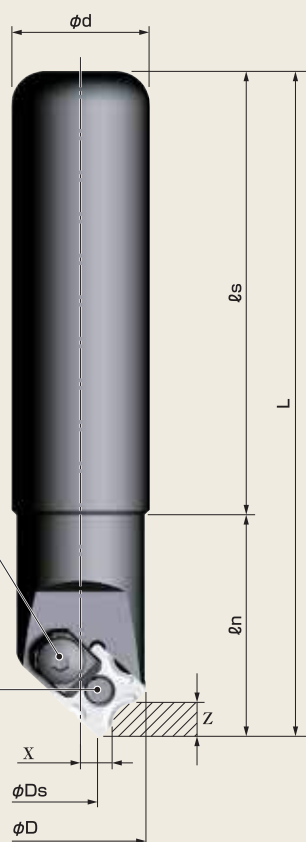


# R-Special Jr. / R-Special

## R-Special Jr.

R0.5~R5

1 Blade

Clamp piece  
CL-1SWrench  
K-3Lock Pin  
L-14Wrench  
K-4

## Easy Radius change !!

● Various Radius chamfering can be made by just exchanging Inserts

### Setting numerical values

Processing R	X-axis position (mm)	Z-axis position (mm)
R0.5	8.05	4.42
R0.75	7.93	4.55
R1	7.80	4.67
R1.5	7.55	4.92
R2	7.30	5.17
R2.5	7.06	5.42
R3	6.81	5.67
R3.5	6.56	5.91
R4	6.31	6.16
R4.5	6.06	6.41
R5	5.82	6.66

● numeric value might get some errors, please acknowledge.

R Chamfering



### Body

Model. No.	Blades	Dimensions (mm)					
		φD	φDs	φd	L	ℓs	ℓn
NK20-05R	1	25	8.4	20	120	80	40
NK25-05R	1	25	8.4	25	120	80	40

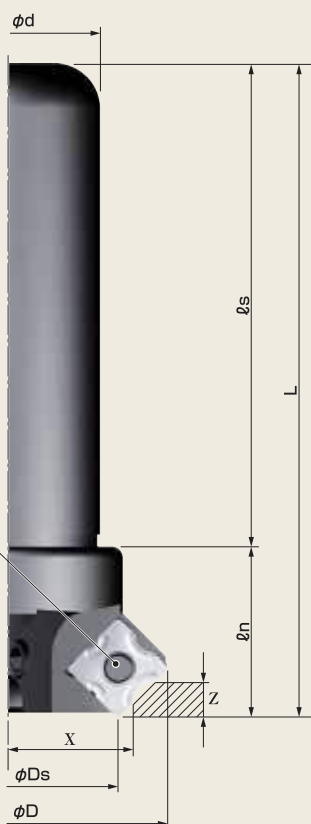
※ Inset is not supplied as standard accessory. Please order separately.

※ look pin and wrench are supplied as standard accessory.

## R-Special

R0.5~R5

3 Blade

Lock Pin  
L-12Wrench  
K-4

## Easy Radius change !!

● Various Radius chamfering can be made by just exchanging Inserts

### Setting numerical values

Processing R	X-axis position (mm)	Z-axis position (mm)
R0.5	23.54	4.42
R0.75	23.42	4.54
R1	23.29	4.66
R1.5	23.04	4.91
R2	22.79	5.16
R2.5	22.54	5.41
R3	22.29	5.66
R3.5	22.04	5.91
R4	21.78	6.16
R4.5	21.53	6.41
R5	21.28	6.65

● numeric value might get some errors, please acknowledge.

R Chamfering



### Body

Model. No.	Blades	Dimensions (mm)					
		φD	φDs	φd	L	ℓs	ℓn
NK20-40R-3	3	56	39.3	20	115	85	30
NK25-40R-3	3	56	39.3	25	115	85	30
NK32-40R-3	3	56	39.3	32	115	85	30



When mounting insert, please do not take reverse tightening.

Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred

When replacing insert, please confirm whether you have been taking reserve tightening or not.

## Processing Example (R-Special Jr.)

[R5 Chamfering process of  $\phi 20$  hole Result]

- Body: NK25-05R
- Insert: N43GXR8-5R NK2020
- Material .....S45C
- Rotational speed ...2,500r.p.m.
- Table feed .....400mm/min

Dry cutting



Result

Surface Accuracy is good when the processing was made without rough cutting

## Processing Example (R-Special)

[Periphery R4 Chamfering process]

- Body: NK32-40R-3
- Insert: N43GXR8-4R AC16N
- Material .....SKD11
- Rotational speed ...1,200r.p.m.
- Table feed .....576mm/min

Dry cutting



Result

Surface Accuracy is good when the processing was made without rough cutting

## Cutting Conditions

N43GXR					
Material	Material Model	NK2001	NK1010	NK2020	AC16N
	Feed Per Blade (fz)	Cutting Speed (m / min)			
General Steel	0.1~0.2	100~250		100~200	
Alloy Steel	0.1~0.2	100~250		100~200	150~200
Stainless Steel	0.1~0.2			80~160	150~200
Aluminum, Resin, Brass	0.1~0.3		150~300	150~300	
Castings	0.1~0.3	80~150 ※FCD	80~150	80~150	

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- Yellow marked condition is recommended for the material listed
- In case of chamfering process of Stainless steel, kindly take down cutting

## Insert

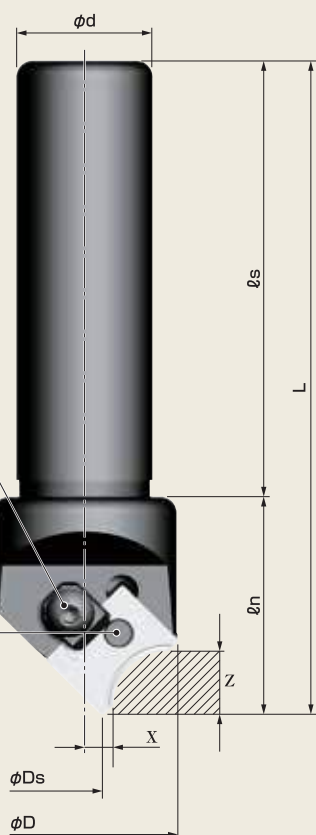
Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
(N43GXR8) 	N43GXR8 NK2001	Cermet	R1・2・3・4	None	8	3/12
	N43GXR8-1R NK2001	Cermet	The Same R Each corner	None	8	3/12
	N43GXR8-2R NK2001	Cermet	The Same R Each corner	None	8	3/12
	N43GXR8-3R NK2001	Cermet	The Same R Each corner	None	8	3/12
	N43GXR8-4R NK2001	Cermet	The Same R Each corner	None	8	3/12
	Semi standard					
(N43GXR) 	NEW N43GXR8-5R NK2001	Cermet	The Same R Each corner	None	8	3/12
	N43GXR NK1010	Carbide K10	R1・2・3・4	None	4	3/12
	NEW N43GXR8 NK2020	Carbide M20	R1・2・3・4	None	8	3/12
	NEW N43GXR8-1R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-2R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-3R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-4R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	Semi standard					
	NEW N43GXR8-0.5R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-0.75R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
(N43GXR8 Semistandard Insert) 	NEW N43GXR8-1.5R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-2.5R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-3.5R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-4.5R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8-5R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	NEW N43GXR8 AC16N	Fine particles Carbide	R1・2・3・4	AICrN	8	3/12
	NEW N43GXR8-1R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-2R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-3R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-4R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	Semi standard					
	NEW N43GXR8-0.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-0.75R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-1.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-2.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-3.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-4.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12
	NEW N43GXR8-5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3/12

※ R0.5~R3.5 insert can be used for R Bit  
 ※ Semi standard Insert have no breaker

## R-Nouveau Jr.

R5~R10

1 Blade

Clamp piece  
CL-1SWrench  
K-3Lock Pin  
L-12Wrench  
K-4

## Easy Radius change !!

● Various Radius chamfering can be made by just exchanging Inserts

## Setting numerical values

Processing R	X-axis position (mm)	Z-axis position (mm)
R5	6.00	6.70
R6	5.41	7.21
R7	5.64	8.42
R8	6.00	9.65
R9	5.41	10.16
R10	6.00	11.62

● numeric value might get some errors, please acknowledge.

## R Chamfering



## Body

Model. No.	Blades	Dimensions (mm)					
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$
NK20-10R	1	35.4	8.9	20	120	80	40
NK25-10R	1	35.4	8.9	25	120	80	40

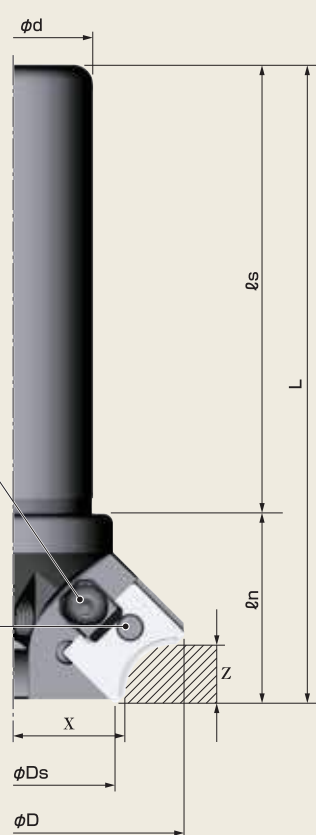
※ Inset is not supplied as standard accessory. Please order separately.

※ look pin and wrench are supplied as standard accessory.

## R-Nouveau

R5~R10

3 Blade

Clamp piece  
CL-1SWrench  
K-3Lock Pin  
L-12Wrench  
K-4

## Easy Radius change !!

● Various Radius chamfering can be made by just exchanging Inserts

## Setting numerical values

Processing R	X-axis position (mm)	Z-axis position (mm)
R5	22.80	6.80
R6	22.25	7.32
R7	22.49	8.56
R8	22.80	9.80
R9	22.25	10.32
R10	22.80	11.80

● numeric value might get some errors, please acknowledge.

## R Chamfering



## Body

Model. No.	Blades	Dimensions (mm)					
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$
NK25-70R	3	69.2	42.3	25	130	90	40
NK32-70R	3	69.2	42.3	32	130	90	40
NK32-70RL	3	69.2	42.3	32	200	150	50

※ Inset is not supplied as standard accessory. Please order separately.

※ look pin and wrench are supplied as standard accessory.



When mounting insert, please do not take reverse tightening.

Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred

When replacing insert, please confirm whether you have been taking reserve tightening or not.

## Processing Example (R-Nouveau Jr.)

### [Periphery R10 Chamfering process]

- Body : NK25-10R
- Insert : N54GCR-10R NK2020
- Material : Aluminum
- Rotational speed : 4,000r.p.m.
- Table feed : 800mm/min



### Result

Surface Accuracy is good when the processing was made without rough cutting

## Processing Example (R-Nouveau)

- Body : NK32-70R
- Insert : N54GCR-10R NK2020
- Material : S50C
- Rotational speed : 1,300r.p.m.
- Table feed : 700mm/min



### Result

Surface Accuracy is good when the processing was made without rough cutting

## Insert

N54GCR			
Material	Feed PerBlade (fz)	NK2020	NK6060
		Cutting speed(m / min)	
General Steel	0.1~0.3	100~250	
Alloy Steel	0.1~0.3	100~250	150~250
Stainless Steel	0.1~0.25	80~160	150~250
Aluminum,Resin,Brass	0.1~0.3	150~400	
Castings	0.1~0.3	80~200	

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- Yellow marked condition is recommended for the material listed
- In case of chamfering process of Stainless steel, kindly take down cutting

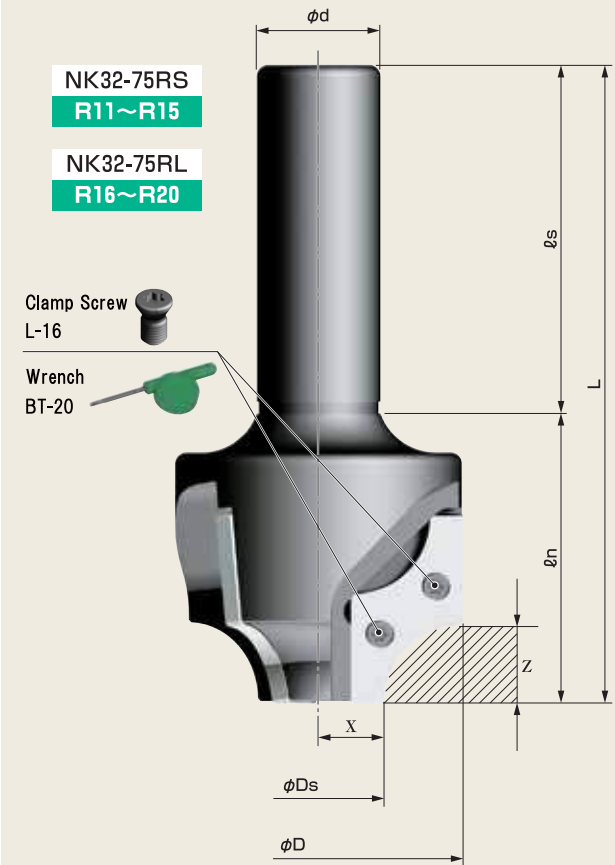
## Insert

Figure	ModelNo.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>&lt;N54GCR&gt;</b> 	N54GCR-5R NK2020	Carbide M20		None	1	3
	N54GCR-8R NK2020	Carbide M20		None	1	3
	N54GCR-10R NK2020	Carbide M20		None	1	3
	N54GCR-5R NK6060	Carbide M20		TiAlN	1	3
<b>&lt;N54GCR Semistandard Insert&gt;</b> 	N54GCR-8R NK6060	Carbide M20		TiAlN	1	3
	N54GCR-10R NK6060	Carbide M20		TiAlN	1	3
	N54GCR-6R NK2020	Carbide M20		None	1	3
	N54GCR-7R NK2020	Carbide M20		None	1	3
	N54GCR-9R NK2020	Carbide M20		None	1	3

※ Semi standard Insert have no breaker

## Easy Radius change !!

● Various Radius chamfering can be made by just exchanging Inserts



This is not standard production model.  
Please check the delivery time when ordering

### Setting numerical values

Processing R	X-axis position (mm)	Z-axis position (mm)
R11	17.50	11.77
R12	17.50	12.70
R13	17.50	13.63
R14	17.50	14.56
R15	17.50	15.48
R16	17.50	16.41
R17	17.50	17.34
R18	17.50	18.27
R19	17.50	19.20
R20	17.50	20.12

● numeric value might get some errors, please acknowledge.

### R Chamfering



### Cutting Conditions

Material model number		NK2020
Material		
General Steel	0.1~0.3	100~250
Alloy Steel	0.1~0.3	100~250
Stainless Steel	0.1~0.25	80~160
Aluminum, Resin, Brass	0.1~0.3	150~400
Castings	0.1~0.3	80~200

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- Yellow marked condition is recommended for the material listed
- In case of chamfering process of Stainless steel, kindly take down cutting

### Processing Example

#### [Periphery R20 Chamfering process]

- Body : NK32-75RL
- Insert : XNEW3004-20R NK2020
- Material : S50C
- Rotational speed : 750r.p.m.
- Table feed : 225mm/min

#### Wet Processing



#### Result

Surface Accuracy is good when the processing was made without rough cutting

### Body

Model. No.	Blades	Dimensions (mm)					
		$\phi D$	$\phi D_s$	$\phi d$	$L$	$\ell_s$	$\ell_n$
NK32-75RS	R11~R15	75.5	35	32	165	90	75
NK32-75RL	R16~R20	75.5	35	32	165	90	75

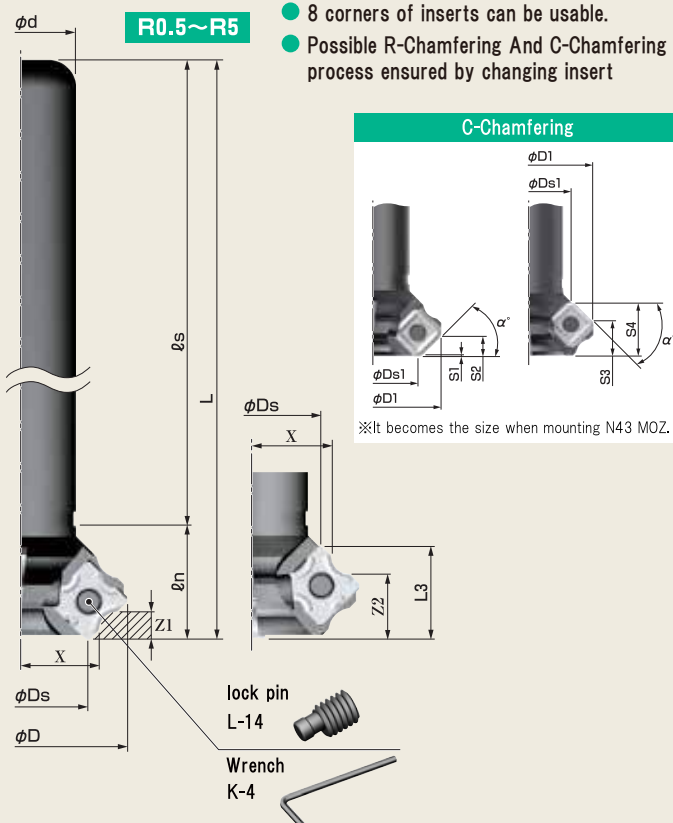
※ Insert is not equipped as standard accessory. Please purchase it separately  
 ※ Clamp screw, screw, wrench and locator are supplied as standard accessories

### Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	XNEW3004-11R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-12R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-13R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-14R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-15R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-16R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-17R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-18R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-19R NK2020	Carbide M20	Honing edge	None	2	3
	XNEW3004-20R NK2020	Carbide M20	Honing edge	None	2	3

This is not standard production model.  
Please check the delivery time when ordering



Possible R-Chamfering And  
C-Chamfering process !

C-Chamfering

R Chamfering

## Cutting Conditions

Material	Material model number	Cutting speed (m/min)			
		NK2001	NK1010	NK2020	AC16N
General Steel	0.1~0.2	100~250		100~200	
Alloy Steel	0.1~0.2	100~250		100~200	150~200
Stainless Steel	0.1~0.2			80~160	150~200
Aluminum, Resin, Brass	0.1~0.3		150~300	150~300	
Cast Steel	0.1~0.3	80~150 ※FCD	80~150	80~150	

- According to the shape of work, clamp condition and large or small chamfering amount, the cutting condition will have to be adjusted.
- Yellow marked condition is recommended for the material listed
- In case of chamfering process of Stainless steel, kindly take down cutting

## Processing Example

[Periphery R5 Chamfering process]

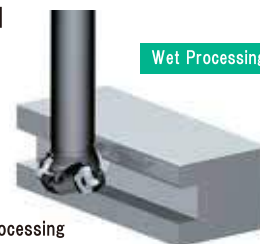
- Body : RR25-48N
- Insert : N43GXR8-5R NK2020

- Material : SUS304
- Rotational speed : 3,000r.p.m.
- Table feed : 200mm/min

Wet Processing

## Result

Surface Accuracy is good when the processing was made without rough cutting



## Body

Model. No.	blades	Dimensions (mm)						
		$\phi D$	$\phi Ds$	$\phi d$	L	$\ell s$	$\ell n$	L3
RR25-48N	4	48	31.3	25	200	175	25	20.5

- ※ Insert is not equipped as standard accessory. Please purchase it separately
- ※ Clamp screw, screw, wrench and locator are supplied as standard accessories

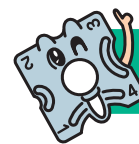
## Setting numerical values

Processing R	X-axis position (mm)	Z1-axis position (mm)	Z2-axis position (mm)
R0.5	19.55	4.42	16.08
R0.75	19.42	4.54	15.96
R1	19.30	4.66	15.84
R1.5	19.05	4.91	15.59
R2	18.80	5.16	15.34
R2.5	18.55	5.41	15.09
R3	18.29	5.66	14.84
R3.5	18.04	5.91	14.59
R4	17.79	6.16	14.34
R4.5	17.54	6.41	14.09
R5	17.29	6.65	13.85

- numeric value might get some errors, please acknowledge.



C chamfer insert  
For details, see P105



R chamfer insert  
For details, see P102

Insert	Processing type	RR25-48N						
		$\phi D1$	$\phi Ds1$	S1	S2	S3	S4	$\alpha^\circ$
N43MOZ	C-Chamfering	32.99	46.32	—	6.62	12.22	18.84	45°

- C-Chamfering : RR25-48N (N43MOZ :  $\phi 33.57 \sim \phi 45.73$ )
- numeric value might get some errors, please acknowledge.

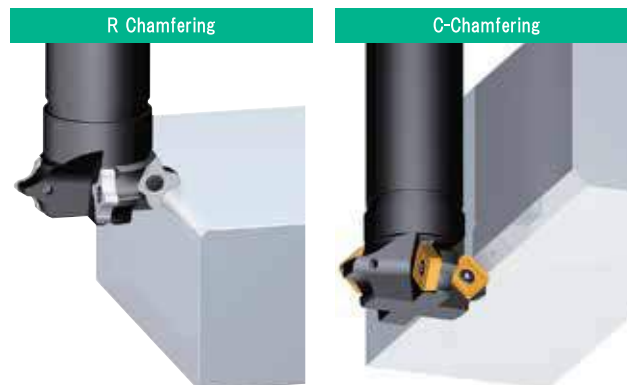
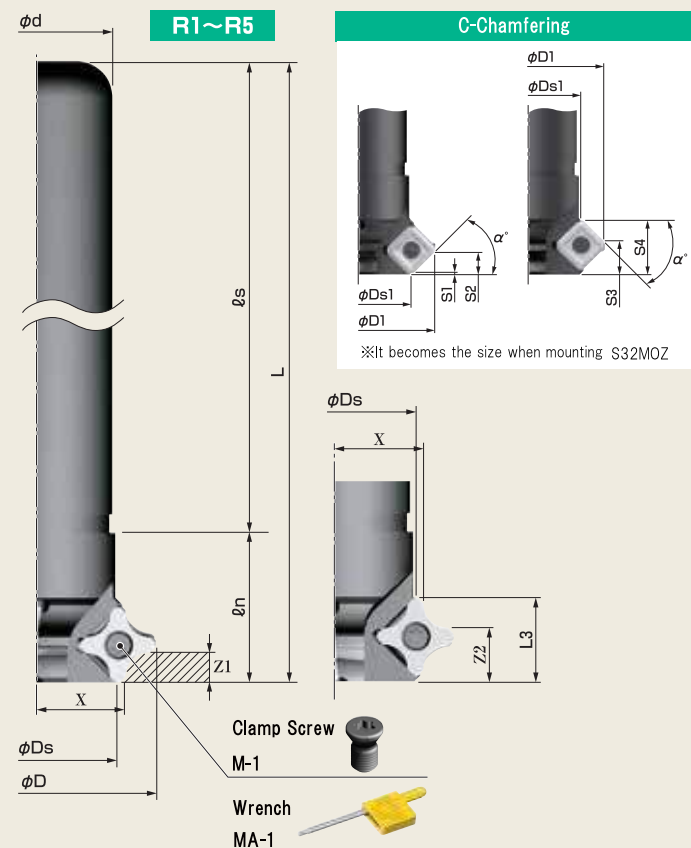


When mounting insert, please do not take reverse tightening.  
Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred  
When replacing insert, please confirm whether you have been taking reserve tightening or not.

...P.114

## Possible R-Chamfering And C-Chamfering process !

- 8 corners of inserts can be usable.
- Possible R-Chamfering And C-Chamfering process ensured by changing insert



### ■ Cutting Conditions

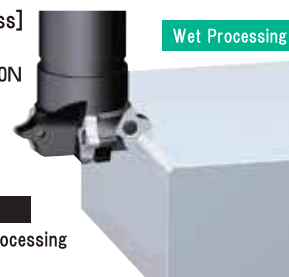
Material	Feed per blade (fz)	Cutting speed (m/min)
General Steel	0.05~0.2	100~150
Alloy Steel	0.05~0.2	100~150
Stainless Steel	0.05~0.2	80~120
Aluminum,Resin,Brass	0.08~0.25	150~400
Cast Steel	0.05~0.2	100~150

## Processing Example

[Periphery R4 Chamfering process]

- Body : RR25-40S-4R  
 ■ Insert : SNEQ090308-4RM ZA20N  
 ● Material ..... SUS304  
 ● Rotational speed ... 3,000r.p.m.  
 ● Table feed ..... 200mm/min

## Wet Processing



## Result

Surface Accuracy is good when the processing was made without rough cutting

## Body

Model. No.	Blades	Dimensions (mm)						
		$\phi D$	$\phi D_s$	$\phi d$	L	$\ell_s$	$\ell_n$	L3
RR16-30S-4R	2	30	17.9	16	200	175	25	16
RR16-30S-5R	2	30	17.9	16	200	175	25	16
RR25-40S-4R	4	40	27.8	25	200	175	25	16
RR25-40S-5R	4	40	27.8	25	200	175	25	16

\* Insert is not equipped as standard accessory. Please purchase it separately

\* Clamp screw, screw wrench and locator are supplied as standard accessories

## Setting numerical values

Insert	Processing R	RR16-30S			RR25-40S		
		X-axis position (mm)	Z1-axis position (mm)	Z2-axis position (mm)	X-axis position (mm)	Z1-axis position (mm)	Z2-axis position (mm)
SNEQ090308-1RY ZA20N	1R	9.48	1.53	14.47	14.44	1.53	14.47
SNEQ090308-2RY ZA20N	2R	9.48	2.52	13.48	14.44	2.52	13.48
SNEQ090308-3RY ZA20N	3R	9.48	3.52	12.48	14.44	3.52	12.48
SNEQ090308-4RY ZA20N	4R	9.48	4.51	11.49	14.44	4.51	11.49
SNEQ090308-XRY ZA20N	1·2·3·4R	—	—	—	—	—	—
SNEQ090308-1RM ZA20N	1R	11.44	3.55	12.45	16.42	3.55	12.45
SNEQ090308-2RM ZA20N	2R	10.94	4.04	11.96	15.92	4.04	11.96
SNEQ090308-3RM ZA20N	3R	10.45	4.54	11.46	15.42	4.54	11.46
SNEQ090308-4RM ZA20N	4R	9.95	5.04	10.96	14.92	5.04	10.96
SNEQ090308-5RM ZA20N	5R	9.46	5.50	10.5	14.42	5.5	10.5
SNEQ090308-XRM ZA20N	1·2·3·4R	—	—	—	—	—	—

Insert	Processing type	RR16-30S							RR25-40S						
		$\phi D1$	$\phi Ds1$	S1	S2	S3	S4	$\alpha^\circ$	$\phi D1$	$\phi Ds1$	S1	S2	S3	S4	$\alpha^\circ$
S32MOZ	C-Chamfering	29.19	18.70	0.40	5.64	10.36	15.60	45°	39.19	28.61	0.40	5.64	10.36	15.60	45°

- C-Chamfering . . .

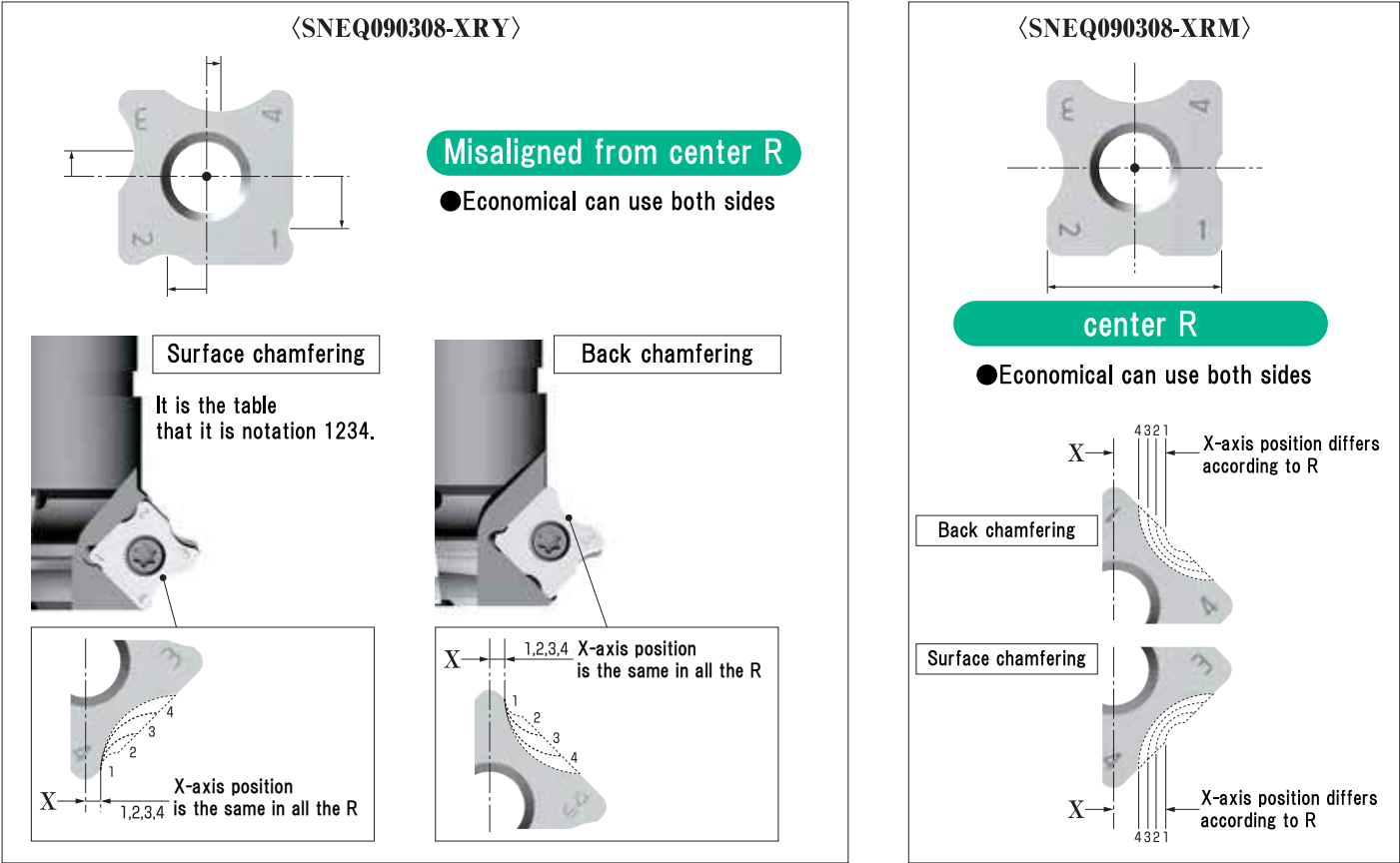
RR16-30S (S32MOZ :  $\phi 19.16 \sim \phi 28.72$ )    RR25-40S (S32MOZ :  $\phi 29.08 \sim \phi 38.72$ )

- numeric value might get some errors, please acknowledge.



## Notes on using RY Insert

Please install on the reverse side, front side correctly.

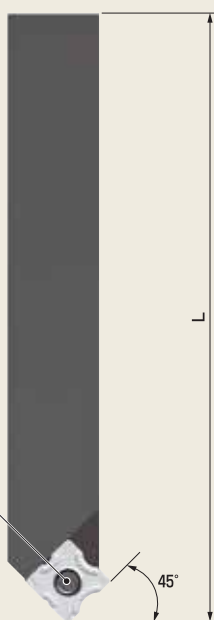
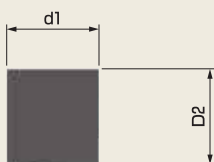


Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<div>〈SNEQ090308-□RY〉</div> <div></div> <div>Misaligned from center R</div>	SNEQ090308-1RY ZA20N	Carbide M20	The Same R Each corner	None	4+4	12
	SNEQ090308-2RY ZA20N	Carbide M20	The Same R Each corner	None	4+4	12
	SNEQ090308-3RY ZA20N	Carbide M20	The Same R Each corner	None	4+4	12
	SNEQ090308-4RY ZA20N	Carbide M20	The Same R Each corner	None	4+4	12
	SNEQ090308-XRY ZA20N	Carbide M20	R1·2·3·4	None	4+4	12
<div>〈SNEQ090308-□RM〉</div> <div></div> <div>center R</div>	SNEQ090308-1RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-2RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-3RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-4RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-5RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-XRM ZA20N	Carbide M20	R1 2 3 4	None	8	12
<div>〈S32MOZ〉</div> <div></div>	S32MOZ NK2001	Cermet	Honing edge	None	8	12
	S32MOZ NK2050	Cermet	Honing edge	None	8	12
	S32MOZ AB01F	Cermet	Honing edge	AlCrN	8	12
	S32MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	S32MOZ NK2020	Carbide M20	Honing edge	None	8	12
	S32MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	S32MOZ AC15T	Fine particles Carbide	Honing edge	AlCrN	8	12

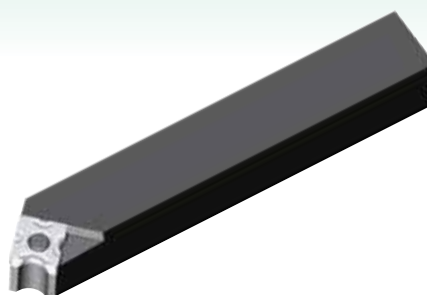
**R-Bit** 1 Blade

R0.5~R4

Specific  
agency  
Itemslock pin  
L-12Wrench  
K-4

# !! For general-purpose lathe

R0.5~R4 Chamfering process can be made by lathe



Round corner Chamfering

**BODY**

Product name	Model No.	blades	Dimensions (mm)			Inserts
			d1	D2	L	
<b>R-Bit</b> Specific agency Items	20XR	1	19	20	126	N43GXR NK1010 N43GXR8-0.5R~4R

※ Insert is not supplied as standard accessory. Please purchase it separately.

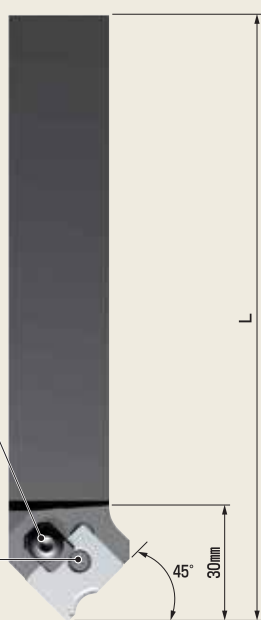
※ Lock Pin and wrench are supplied as standard accessory



Insert information P.102

**10R-Bit** 1 Blade

R5~R10

Clamp Screw  
CL-1SWrench  
K-3lock pin  
L-12Wrench  
K-4

# !! For general-purpose lathe

● R5~R10 Chamfering process can be made by lathe



Round corner Chamfering

**BODY**

Product name	Model No.	blades	Dimensions (mm)			Inserts
			d1	D2	L	
<b>10R-Bit</b>	25CR	1	25	25	150	N54GCR-5R~10R



Insert information P.103

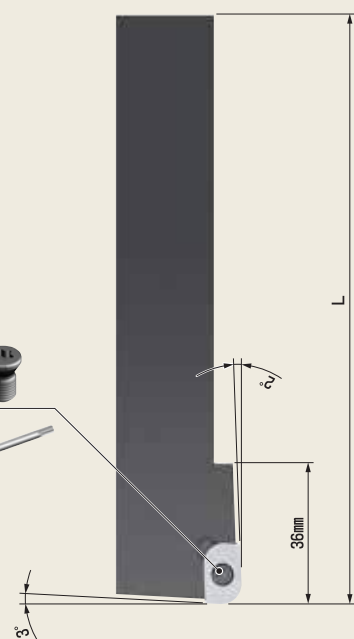


When mounting insert, please do not take reverse tightening.  
Poor accuracy or finish or breakage of insert may be occurred due to the Eccentricity looking mechanism  
When replacing insert, please make sure that the reserve tightening Was not made.

...P.114

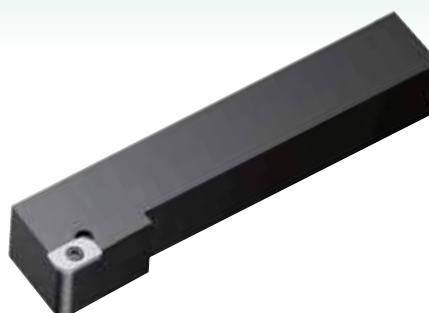
## Sumicco R-Bit 1 Blade

R0.5~R5

Clamp Screw  
L-15Wrench  
N-6

!! For general-purpose lathe

● R0.5~R5 Corner round chamfering process can be made by Lathe



Corner R shoulder processing



## BODY

Product name	Model No.	blades	Dimensions (mm)			Inserts
			d1	D2	L	
Sumicco R-Bit	25SKB	1	25	25	150	A52GNR-0.5R~5R

※ Inset is not supplied as standard accessory. Please purchase it separately.

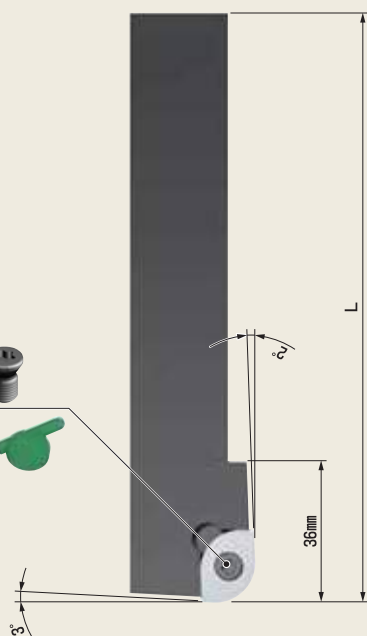
※ Lock Pin and wrench are supplied as standard accessory



Insert information P.107

## Dekasumi R-Bit 1 Blade

R5~R10

Clamp Screw  
L-16Wrench  
BT-20

!! For general-purpose lathe

● R5~RE10 Corner round chamfering process can be made by Lathe



Corner R shoulder processing



## BODY

Product name	Model No.	blades	Dimensions (mm)			Inserts
			d1	D2	L	
Dekasumi R-Bit	25DCB	1	25	25	150	ADEW19T3-5R~10R

※ Inset is not supplied as standard accessory. Please purchase it separately.

※ Lock Pin and wrench are supplied as standard accessory



Insert information P.107

# Eaglecut / Birdiecut

## Cap Bolt Spot Facing Process (Eagle cut)

## Cap Bolt Spot Facing Process (Birdie cut)

## Shortening the process!

- By using our original Geometric insert, we successfully secured shortening time and saving manufacturing cost tremendously

### geometric Insert

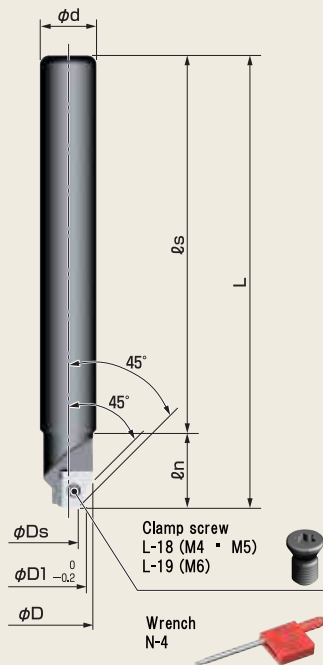


- Lower stage when using corner
- Upper stage when using corner

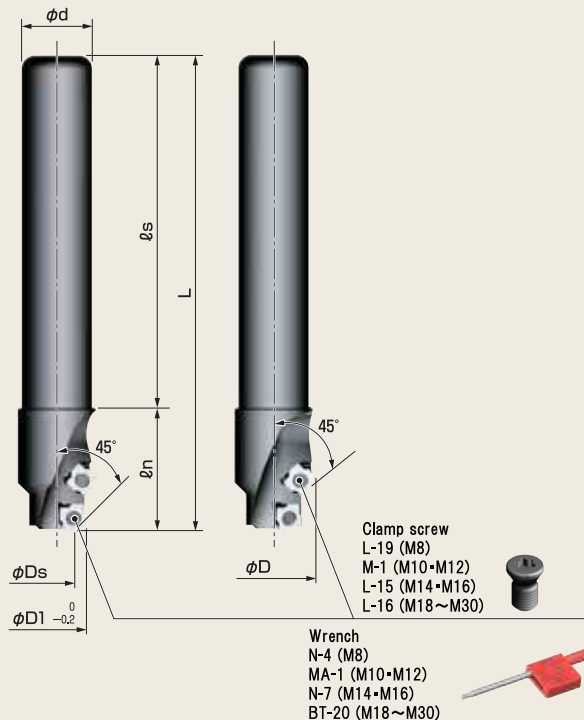
Our own geometric Insert realized cost down and shorten the working time very much



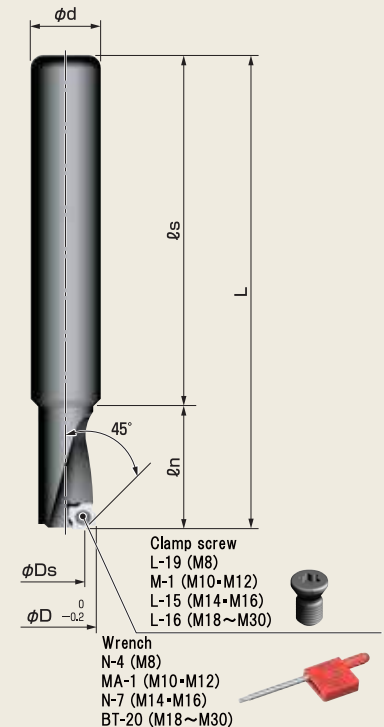
### 1 Eaglecut M4~M6



### 2 Eaglecut M8~M30



### 3 Birdiecut M8~M30



## Processing Example

### Data Example 1

#### [Insert life test]

- Body : EC12-8XX-M4
- Insert : XX21MNX-M4 NK2020
- Material : SKD11
- Cutting Conditions : S3000 F100  
Water-soluble coolant  
0.5 step sends

#### Result

1760 places / 1 Corner  
Good surface finish and a stable cutting result is obtained

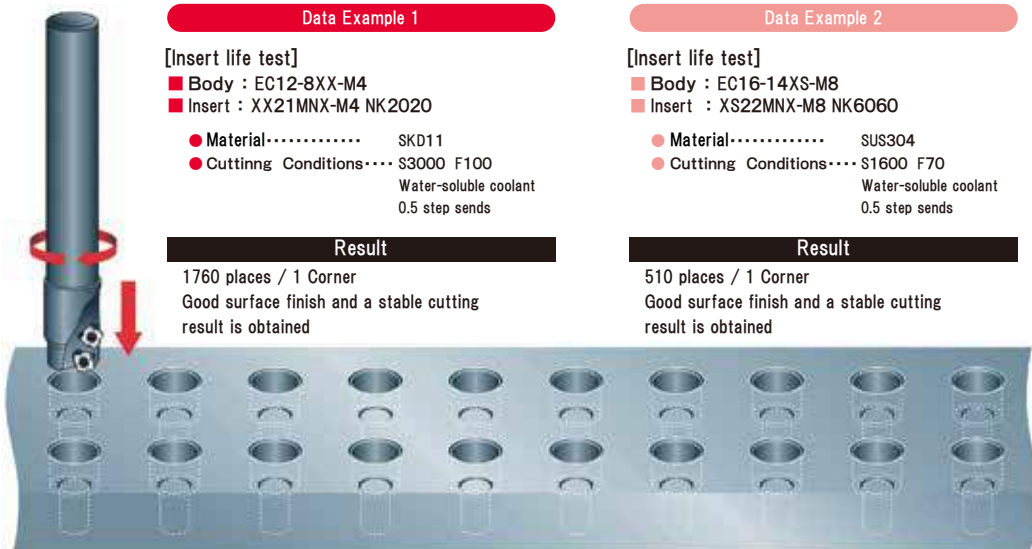
### Data Example 2

#### [Insert life test]

- Body : EC16-14XS-M8
- Insert : XS22MNX-M8 NK6060
- Material : SUS304
- Cutting Conditions : S1600 F70  
Water-soluble coolant  
0.5 step sends

#### Result

510 places / 1 Corner  
Good surface finish and a stable cutting result is obtained





**1Blade**  
Eaglecut  
(M4・M6)

**2Blade**  
Birdiecut  
(M8・M30)

**1Blade**  
Birdiecut

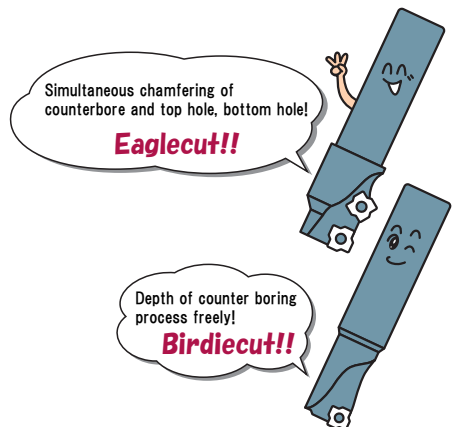
	Model No.	Fig.	blades	Dimensions (mm)							Inserts	
				φD	φD1	φDs	φd	L	ℓs	ℓn		
Eaglecut	EC12-8XX-M4	①	1	10.5	8	4	12	96	80	16	XX21MNX	
	EC12-9.5XX-M5	①	1	11	9.5	5	12	99	80	19	XX21MNX	
	EC12-11XX-M6	①	1	13	11	6	12	102	80	22	XX31MNX	
	EC16-14XS-M8	②	2	19	14	8.4	16	108	80	28	XS22MNX	
	EC20-17.5XS-M10	②	2	24	17.5	10.2	20	115	80	35	XS22MNX	
	EC25-20XS-M12	②	2	26.6	20	13	25	120	80	40	XS22MNX	
	EC25-23XS-M14	②	2	30.5	23	15	25	126	80	46	XS32MNX	
	EC32-26XS-M16	②	2	33.7	26	17	32	132	80	52	XS32MNX	
	EC32-29XS-M18	②	2	38	29	18.4	32	138	80	58	XS42MNX	
	EC32-32XS-M20	②	2	41.7	32	20.4	32	144	80	64	XS42MNX	
	EC32-35XS-M22	②	2	44.6	35	22.8	32	150	80	70	XS42MNX	
	EC32-39XS-M24	②	2	50.2	39	24.2	32	158	80	78	XS53MNX	
	EC32-43XS-M27	②	2	54.1	43	28.2	32	166	80	86	XS53MNX	
Birdiecut	EC32-48XS-M30	②	2	60.5	48	31.2	32	176	80	96	XS53MNX	
	BC16-14XS-M8	③	1	14		8.4	16	108	80	28	XS22MNX	
	BC20-17.5XS-M10	③	1	17.5		10.2	20	115	80	35	XS22MNX	
	BC20-20XS-M12	③	1	20		13	20	120	80	40	XS22MNX	
	BC25-23XS-M14	③	1	23		15	25	126	80	46	XS32MNX	
	BC32-26XS-M16	③	1	26		17	32	132	80	52	XS32MNX	
	BC32-29XS-M18	③	1	29		18.4	32	138	80	58	XS42MNX	
	BC32-32XS-M20	③	1	32		20.4	32	144	80	64	XS42MNX	
	BC32-35XS-M22	③	1	35		22.8	32	150	80	70	XS42MNX	
	BC32-39XS-M24	③	1	39		24.2	32	158	80	78	XS53MNX	
	BC32-43XS-M27	③	1	43		28.2	32	166	80	86	XS53MNX	
	BC32-48XS-M30	③	1	48		31.2	32	176	80	96	XS53MNX	

※ Above Tools are supplied with NK2020 Insert

## Cutting Conditions

Material	material Model	NK2020	NK6060
	Feed per blade (fz)	Cutting speed (m / min)	
General steel	0.05~0.1	50~100	50~100
Alloy steel	0.05~0.1	50~100	50~100
Stainless steel	0.05~0.1	40~80	40~80
Aluminum, resin, brass	×	×	×
Cast steel	0.05~0.1	50~100	50~100

- According to workpiece shape, large or small chamfering amount and position of blade the cutting conditions will have to be adjusted
- When chamfering in large amount, please take lowering cutting condition
- Coolant will be recommended
- Inset recommended for the workpiece



Technical drawing of the Eaglecut tool. The drawing shows a side view of the tool with dimensions labeled: F (total height), H (height of the cutting edge), φD3 (outer diameter), φd3 (inner diameter), CB (corner radius), and CA (corner radius).

Eaglecut Processing Dimensional drawing

	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
φd3	φ4.5mm	φ5.5mm	φ6.6mm	φ9mm	φ11mm	φ14mm	φ16mm	φ18mm	φ20mm	φ22mm	φ24mm	φ26mm	φ30mm	φ33mm
φD3	φ8mm	φ9.5mm	φ11mm	φ14mm	φ17.5mm	φ20mm	φ23mm	φ26mm	φ29mm	φ32mm	φ35mm	φ39mm	φ43mm	φ48mm
CA	C0.3	C0.3	C0.3	C0.5	C0.5	C0.5	C0.5	C0.5	C0.5	C0.5	C1	C1	C1	C1
CB	C0.5	C0.5	C0.5	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1
H	4.4mm	5.4mm	6.5mm	8.6mm	10.8mm	13mm	15.2mm	17.5mm	19.5mm	21.5mm	23.5mm	25.5mm	29mm	32mm
F	4.95mm	5.95mm	7.1mm	9.4mm	11.7mm	14mm	16.2mm	18.5mm	20.8mm	22.8mm	25.1mm	27.4mm	30.9mm	33.9mm

Birdiecut Processing Dimensional drawing

The diagram illustrates the Birdiecut tool, a specialized cutting tool used for creating precise holes in materials. The tool is shown in a cross-sectional view, highlighting its unique design. The outer diameter is labeled as  $\phi D3$ , and the inner diameter is labeled as  $\phi d3$ . The cutting angle, which is the angle between the tool's cutting edge and the vertical axis, is labeled as  $CA$ . The tool is shown cutting through a material, with the resulting hole having a smooth, finished surface.

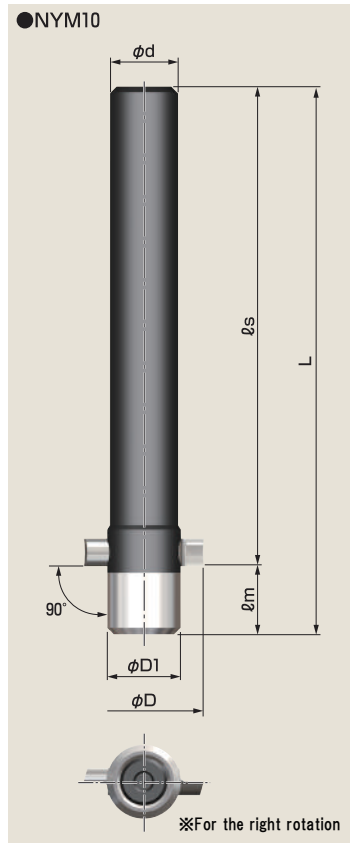
	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
$\phi d3$	$\phi 9\text{mm}$	$\phi 11\text{mm}$	$\phi 14\text{mm}$	$\phi 16\text{mm}$	$\phi 18\text{mm}$	$\phi 20\text{mm}$	$\phi 22\text{mm}$	$\phi 24\text{mm}$	$\phi 26\text{mm}$	$\phi 30\text{mm}$	$\phi 33\text{mm}$
$\phi D3$	$\phi 14\text{mm}$	$\phi 17.5\text{mm}$	$\phi 20\text{mm}$	$\phi 23\text{mm}$	$\phi 26\text{mm}$	$\phi 29\text{mm}$	$\phi 32\text{mm}$	$\phi 35\text{mm}$	$\phi 39\text{mm}$	$\phi 43\text{mm}$	$\phi 48\text{mm}$
CA	C0.5	C0.5	C0.5	C0.5	C0.5	C0.5	C0.5	C1	C1	C1	C1



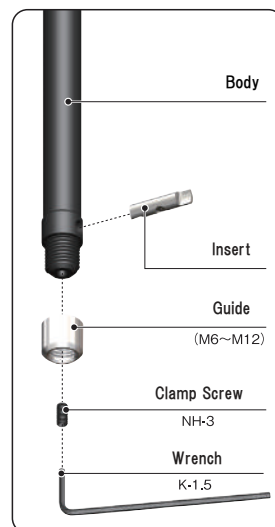
## Drilling machine for spot facing tool

- It has designed to fit the size of the cap bolt.
- M4,M5,M6,M8,M10,M12 6 kinds of available

**Body SKH51 Adoption**  
M6,M8,M10,M12,Guide section only



### Spot facing processing



### Body

Model. No.	blades	Dimensions (mm)						guide(option)	Inserts
		$\phi D$	$\phi D1$	$\phi d$	$\ell s$	$\ell m$	L	Model. No.	
NYM4	2	8	4.3	5	39	6	45	NG-6 NG-8 NG-10 NG-12	NB104 HSS
NYM5		9.5	5.3	5.3	39	6	45		NB105 HSS
NYM6		11	6.4	6.4	52	8	60		NB106 HSS
NYM8		14	8.8	8.8	60	10	70		NB108 HSS
NYM10		17.5	10.8	10	70	10	80		NB110 HSS
NYM12		20	13.8	10	73	12	85		NB112 HSS

- Insert is not supplied as standard accessory. Please order separately.
- Clamp screw wrench are supplied as standard accessory.

### Cutting Conditions

Model. No.	size	Rotation Speed (r.p.m.)	Insert
NYM4	M4	600~1,000	NB04 HSS
NYM5	M5	500~1,000	NB05 HSS
NYM6	M6	400~800	NB06 HSS
NYM8	M8	350~700	NB08 HSS
NYM10	M10	300~600	NB10 HSS
NYM12	M12	200~500	NB12 HSS

- Depending on the Machine's rigidity, above conditions may not be Suitable.
- In case the chattering is occurred, rotation speed will have to be reduced and use cutting oil
- Please use our original Insert for our tool

### Processing Example

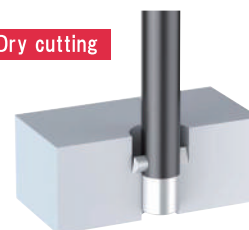
#### 【Spot facing processing】

■ Body : NYM8

■ Insert : NB08HSS

- Material ..... SKD11
- Rotation Speed ..... 500r.p.m.
- Use machine .... Bench type Drilling Machine

Dry cutting



#### Result

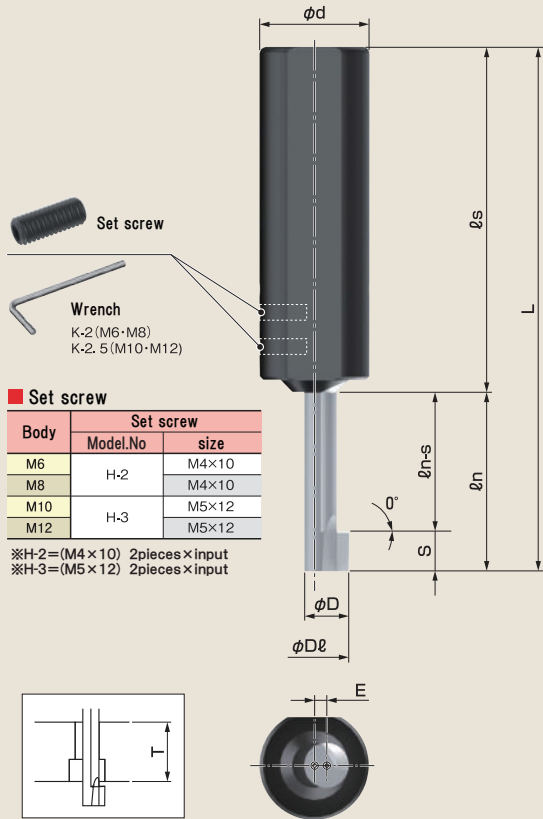
Good!  
Without secondary burrs and chattering

### Insert

Figure	Model. No.	D	$\phi dt$	Material	Blade Shape	Coating	Usable Corner	Quantity per box
	NB104 HSS	8	3	HSS	Sharp edge	None	1Corner 2Blade	3
	NB105 HSS	9.5	3	HSS	Sharp edge	None	1Corner 2Blade	3
	NB106 HSS	11	4	HSS	Sharp edge	None	1Corner 2Blade	3
	NB108 HSS	14	4	HSS	Sharp edge	None	1Corner 2Blade	3
	NB110 HSS	17.5	4	HSS	Sharp edge	None	1Corner 2Blade	3
	NB112 HSS	20	4	HSS	Sharp edge	None	1Corner 2Blade	3

## Bit type Back Counter Bore Cutter!

- Back Counter Bore processing are ensured without turning workpiece
- Designed for Cap bolt sizes
- M6,M8,M10 and M12 Back Counter Bore Cutters are available

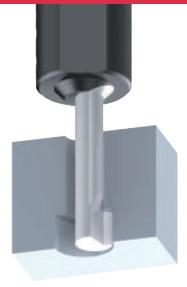


### Cutting Conditions

Material	Material Model	Coating	
		None	AlCrN
Feed per blade (fz)		Cutting speed (m / min)	
General steel	0.08~0.12	—	30~50
Alloy steel	0.08~0.12	—	30~50
Stainless Steel	0.02~0.05	—	20~40
Aluminum, resin,brass	0.08~0.12	60~90	—
Cast steel	0.08~0.12	30~50	—

● Coolant will be recommended

### Back Counter Bore processing



### Body

Model. No.	Blades	Dimensions (mm)									
		$\phi D$	$\phi D\ell$	$\phi d$	L	$\ell s$	$\ell n$	$\ell n-s$	S	T	E
NEW UZHS-M6	1	5.6	11	20	106	80	26	20.5	5.5	15	2.7
NEW UZHS-M8	1	8	14	25	113	80	33	25.5	7.5	20	3
NEW UZHS-M10	1	10	17.5	32	140	100	40	30.5	9.5	25	3.75
NEW UZHS-M12	1	13	20	32	152	100	52	40.5	11.5	35	3.5

※ Inset is not supplied as standard accessory. Please order separately.

※ Set screw and wrench are supplied as standard accessory.

### Processing Example

#### [Eccentric Back Counter Bore Cutter-TEST]

##### Body : UZHS-M12

##### Insert: UZHS-M12B

- Material ..... S50C
- Rotation Speed ... 320r.p.m.
- Cutting Speed .... 20m/min
- Table Feed ..... 10mm/min
- Blade Feed ..... 0.03mm/tooth
- Hole diameter .... 14mm
- Cutting Depth .... 13mm

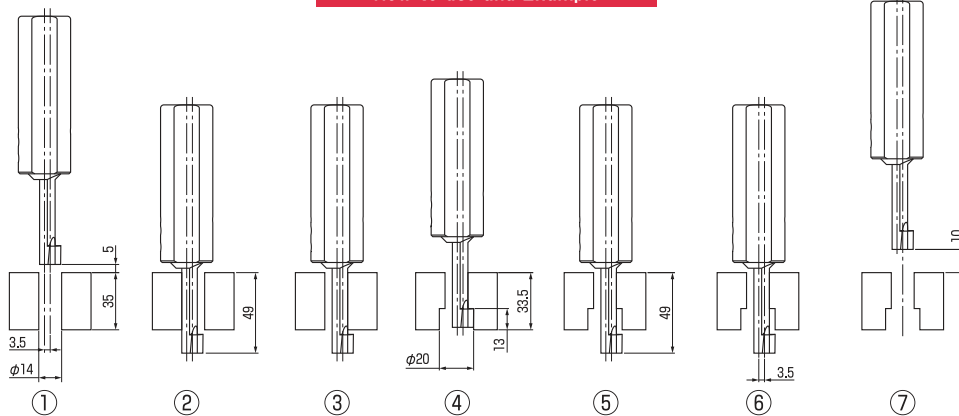
#### Result

Good! Without secondary burrs and chattering



### Dry cutting

### How to use and Example



※ Correction will be necessary according to the specification of the machines to be used when using this cutter

### Example program [UZHS-M12]

- N10
- G90 G00 G54 X-3.5 Y0 M19
- G43 Z5.0 H3 T11.....①
- Z-49.0 F200.....②
- X0.....③
- M3 S320
- M8
- G01 Z-33.5 F22.....④
- Z-49.0 F200.....⑤
- M19
- G00 X-3.5.....⑥
- Z10.0.....⑦
- G91 G30 Z0

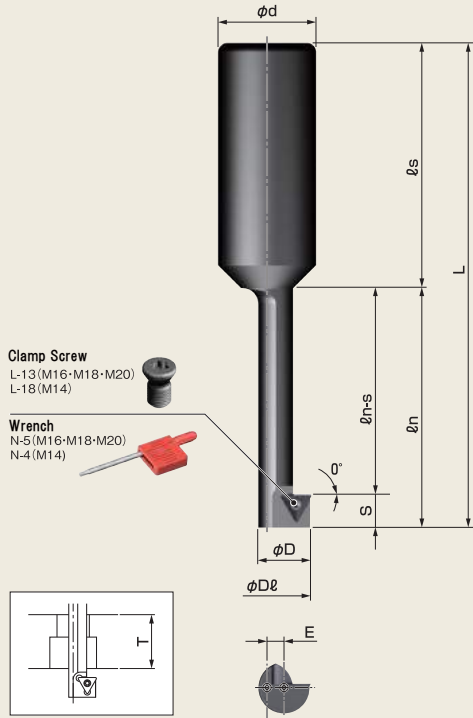
Max. processing thickness: T  
Chamfer amount: LZ Z = -(T+S-LZ)

### Insert

Figure	Model.No.	D	L	Material	Coating	Usable corner	Quantity per box
	UZHS-M6B	5.6	46	Fine particles Carbide	None	1	1
	UZHS-M8B	8	53	Fine particles Carbide	None	1	1
	UZHS-M10B	10	65	Fine particles Carbide	None	1	1
	UZHS-M12B	13	80	Fine particles Carbide	None	1	1
	UZHS-M6BC	5.6	46	Fine particles Carbide	AlCrN	1	1
	UZHS-M8BC	8	53	Fine particles Carbide	AlCrN	1	1
	UZHS-M10BC	10	65	Fine particles Carbide	AlCrN	1	1
	UZHS-M12BC	13	80	Fine particles Carbide	AlCrN	1	1

## TA type Back Counter Bore Cutter!

- Back Counter Bore processing are ensured without turning workpiece
- Designed for Cap bolt sizes
- M14, M16, M18 and M20 Back Counter Bore Cutters are available



### Cutting Conditions

Material	Material Model	AC15N	ZA10N
	Feed per blade (fz)	Cutting speed (m / min)	
General steel	0.03~0.05	15~20	—
Alloy steel	0.03~0.05	15~20	—
Aluminum, resin, brass	0.03~0.05	—	35~80
Cast steel	0.03~0.05	30~40	—

● Coolant will be recommended

### Back Counter Bore processing



### Body

Model. No.	Blades	Dimensions (mm)									
		$\phi D$	$\phi D\ell$	$\phi d$	L	$\ell s$	$\ell n$	$\ell n-s$	S	T	E
NEW UZH25-16T-M14CS	1	14	23	25	133	80	53	45	8	40	4.55
NEW UZH25-18T-M16CS	1	16	26	25	146	80	66	55	11	50	5.04
NEW UZH32-20T-M18CS	1	18	29	32	158	80	78	67	11	61	5.54
NEW UZH32-22T-M20CS	1	20	32	32	168	80	88	77	11	71	6.03

※ Inset is not supplied as standard accessory. Please order separately.  
※ Clamp screw and wrench are supplied as standard accessory.

### Processing Example

#### [Eccentric Back Counter Bore Cutter-TEST]

- Body : UMZH25-16S-M14CS
- Insert : SPET06T104 NK2020

- Material : S50C
- Rotation Speed : 415r.p.m.
- Cutting Speed : 30m/min
- Table Feed : 12.45mm/min
- Blade Feed : 0.03mm/tooth
- Hole diameter : 16mm
- Cutting Depth : 15.2mm

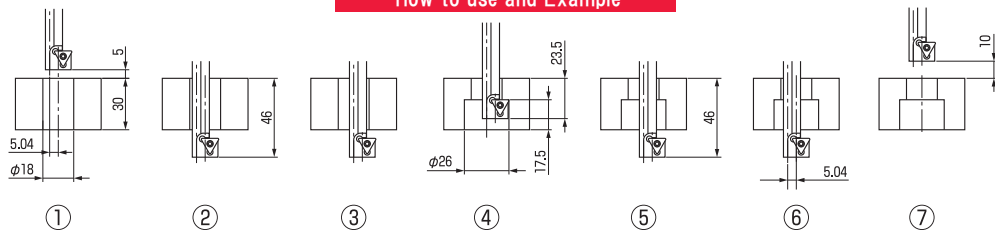
#### Result

Good!  
Without secondary burrs and chattering



Dry cutting

### How to use and Example



※ Correction will be necessary according to the specification of the machines to be used when using this cutter

### Example program [UZH25-18T-M16CS(M16)]

- N10
- G90 G00 G54 X-5.04 Y0 M19
- G43 Z5.0 H3 T11.....①
- Z-46.0 F200.....②
- X0.....③
- M3 S415
- M8
- G01 Z-23.5 F12.....④
- Z-46.0 F200.....⑤
- M19
- G00 X-5.04.....⑥
- Z10.0.....⑦
- G91 G30 Z0

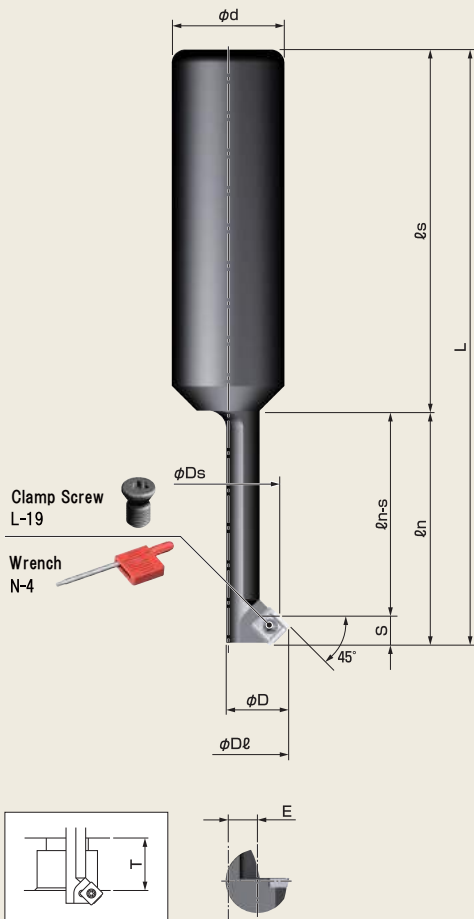
Max. processing thickness: T  
Chamfer amount: LZ Z = -(T+S-C)

### Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● M14</b> 	TXMT080206 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT080206 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12
<b>● M16-M18-M20</b> 	TXMT110306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT110306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12

## Exclusive Cutter for Back Counter Bore processing!

- Chamfering can be done for Counter Boring mouth
- Designed for Cap bolt sizes
- M14,M16,M18 and M20 Back Counter Bore Cutters are available



Model. No.	Hole diameter	Capacity
		Bore chamfering
UMZH25-16S-M14CS	φ16mm	φ23mm~φ27mm
UMZH25-18S-M16CS	φ18mm	φ26mm~φ30mm
UMZH32-20S-M18CS	φ20mm	φ29mm~φ33mm
UMZH32-22S-M20CS	φ22mm	φ32mm~φ36mm



### Cutting Conditions

Material	Material Model	Feed per blade (fz)	NK1010	NK2020	NK6060
			Cutting speed (m / min)		
General steel		0.03~0.05	—	25~30	25~30
Alloy steel		0.03~0.05	—	25~30	25~30
Stainless steel		0.03~0.05	—	20~25	25~30
Aluminum, resin, brass		0.03~0.05	30~40	—	—
Cast steel		0.03~0.05	10~30	—	—

● Coolant will be recommended

### Body

Model. No.	Blades	Dimensions (mm)										
		φD	φD <sub>L</sub>	φDs	φd	L	ls	ln	ln-s	S	T	E
UMZH25-16S-M14CS	1	14	27	23	25	132	80	52	45.5	6.5	40	6.52
UMZH25-18S-M16CS	1	16	30	26	25	142	80	62	55.5	6.5	50	7.01
UMZH32-20S-M18CS	1	18	33	29	32	154	80	74	67.5	6.5	61	7.51
UMZH32-22S-M20CS	1	20	36	32	32	164	80	84	77.5	6.5	71	8.01

※ Inset is not supplied as standard accessory. Please order separately.  
※ Clamp screw and wrench are supplied as standard accessory.

### Processing Example

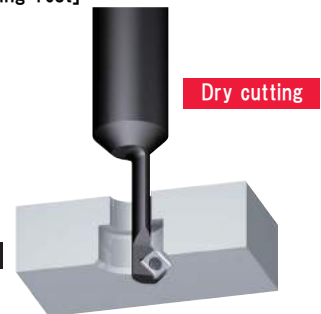
#### [Eccentric Back Counter Bore mouth Chamfering-Test]

- Body : UMZH25-16S-M14CS
- Insert : SPET06T104 NK2020

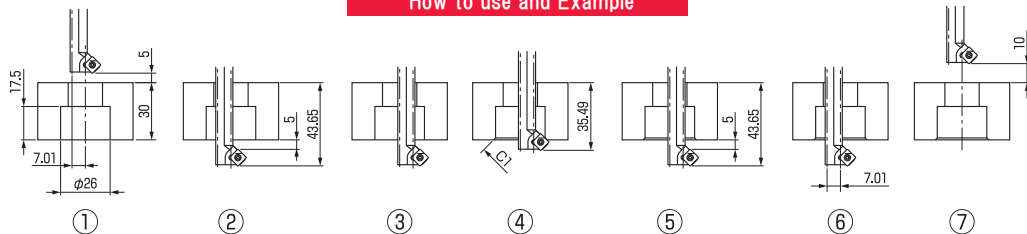
- Material ..... 50C
- Rotation Speed ... 420r.p.m.
- Cutting Speed ... 30m/min
- Table Feed ..... 21/min
- Blade Feed ..... 0.05mm/tooth
- Hole diameter .... 23mm
- Cutting Depth .... 1mm

#### Result

Good!  
Without secondary burrs and chattering



### How to use and Example



※ Correction will be necessary according to the specification of the machines to be used when using this cutter

### Example program [UMZH25-18S-M16CS(M16)]

- N10
- G90 G00 G54 X-7.01 Y0 M19
- G43 Z5.0 H3 T11.....①
- Z-43.65.....②
- X0.....③
- M3 S370
- G01 Z-35.49 F19.....④
- Z-43.65 F200.....⑤
- M19
- G00 X-7.01.....⑥
- Z10.0.....⑦
- G91 G30 Z0

Max. processing thickness: T  
Chamfer amount: C Z = -(T+S-C)

### Insert

Figure	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
(SPET06T104) 	SPET06T104 NK1010	Carbide K10	Sharp edge	None	4	12
	SPET06T104 NK2020	Carbide M20	Honing edge	None	4	12
	SPET06T104 NK6060	Carbide M20	Honing edge	TiAlN	4	12



## Smaller Shank !

- Consider to use this Aeromill for Non-Rigidity Machines like Tapping Center !
- Choose various workpiece with Negative and Positive type Face Milling Cutters !

Aeromill  
**φ30mm • φ40mm**



Face Milling (Aeromill)



φ30mm • φ40mm

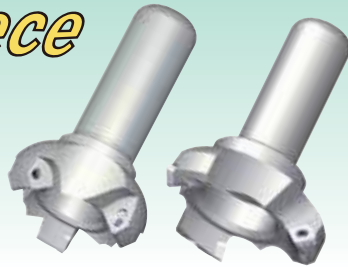
Face Milling (NEW Tiko Cutter, NS type)



φ60mm • φ80mm

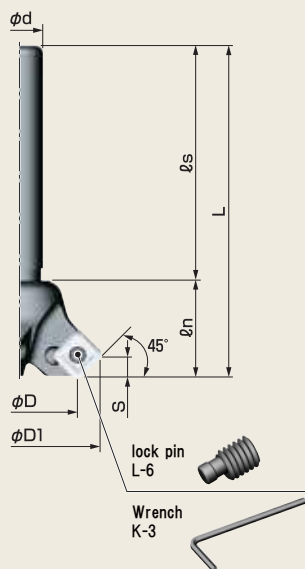
## Thin workpiece processing!

NEW Tiko Cutter  
**φ60mm • φ80mm**



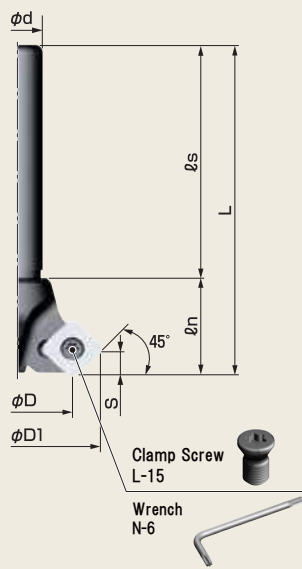
### 1 Aeromill

NS type (Negative S)



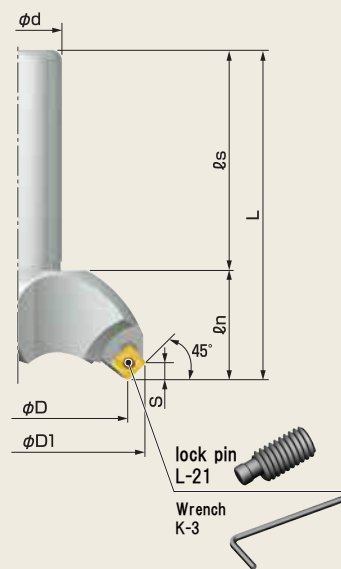
### 2 Aeromill

PS type (Positive S)



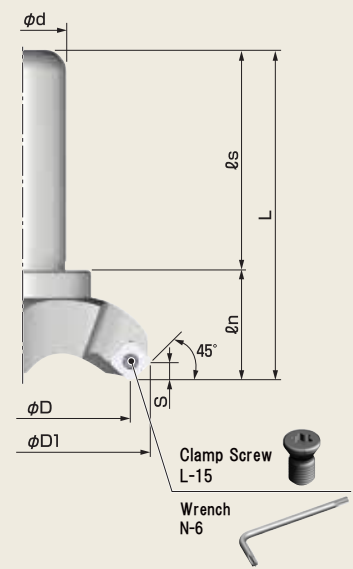
### 3 NEW Tiko Cutter

NS type (Negative S)



### 4 NEW Tiko Cutter

PS type (Positive S)



## Body

Product name	Model No.		Fig.	blades	Dimensions (mm)						Weight (g)	Inserts	
					φD	φD1	φd	L	ℓs	ℓn			S
Aeromill	NS	ARN12-30S	①	3	30	42	12	85	60	25	5.0	132	S32MOZ / S32GUR
		ARN16-40S	①	3	40	52	16	85	60	25	5.0	210	S32MOZ / S32GUR
	PS	ARP12-30S	②	3	30	43.2	12	85	60	25	6.0	116	S3H3MNZ / S3H3GNZ
		ARP16-40S	②	3	40	53.6	16	85	60	25	6.0	224	S3H3MNZ / S3H3GNZ
NEW Tiko Cutter	NS	TKN20-60S-03	③	3	60	73	20	120	80	40	5.0	668	S32MOZ / S32GUR
		TKN20-80S-03	③	3	80	93	20	120	80	40	5.0	826	S32MOZ / S32GUR
		TKN32-60S-03	③	3	60	73	32	120	80	40	5.0	968	S32MOZ / S32GUR
		TKN32-80S-03	③	3	80	93	32	120	80	40	5.0	1,126	S32MOZ / S32GUR
	PS	TKP20-60S-03	④	3	60	74	20	120	80	40	6.0	600	S3H3MNZ / S3H3GNZ
		TKP20-80S-03	④	3	80	94	20	120	80	40	6.0	780	S3H3MNZ / S3H3GNZ
		TKP32-60S-03	④	3	60	74	32	120	80	40	6.0	900	S3H3MNZ / S3H3GNZ
		TKP32-80S-03	④	3	80	94	32	120	80	40	6.0	1,070	S3H3MNZ / S3H3GNZ

※ Insert is not supplied as standard accessory

※ Clamp Screw, Lock Pin and wrench are supplied as standard accessories



Do not take reverse tightening when mounting or replacing insert

Due to the eccentricity locking mechanism, poor accuracy or breakage of Insert may be occurring.(Excepting PS type)

...P.114

## Cutting Conditions

S32MOZ								
	Material Model	NK2001	NK2050	AB01F	NK1010	NK2020	NK3030	AC15T
Material	Feed per blade (fz)	Cutting speed (m / min)						
General Steel	0.1～0.3	200～300	200～300	200～300		150～200	150～250	
Alloy Steel	0.1～0.3	200～250	200～250	200～250		150～200	150～250	
Stainless Steel	0.1～0.25					120～180	150～200	150
Aluminum, Resin,Brass								
Castings	0.1～0.3	200～250 ※FCD		200～250 ※FCD	150～200			

- Chamfered Insert nose increase feed speed per I-blade and make a good surface finishing
- Yellow marked rate is recommended for the workpiece listed

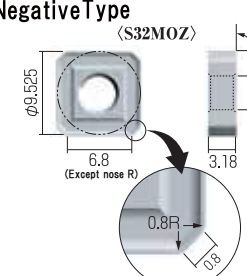
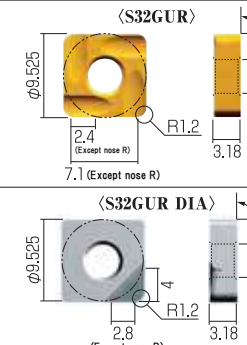
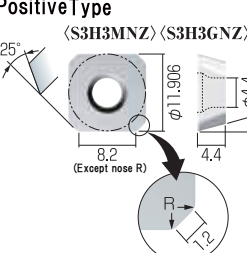
S32GUR									
	Material Model	NK2001	NK1010	NK2020	NK3030	NK5050	NK6060	NK8080	DIA
Material	Feed per blade (fz)	Cutting speed (m / min)							
General Steel	0.08~0.2	200~300		150~200					
Alloy Steel	0.08~0.2	200~250		150~200					
Stainless Steel	0.08~0.2			120~180	150~200		150~250	150~250 #SUS16	
Aluminum, Resin,Brass	0.08~0.3		250~800			200~800		200~800	500~2,000
Castings	0.08~0.2	200~250 #FCD	100~150						

- Insert breaker ensures sharp processing and R shaped nose ensure less cutting resistance, and recommended the workpiece which are easily chattered and a distortion arises
- Yellow marked rate is recommended for the workpiece listed

S3H3MNZ				S3H3GNZ		
Material	Material Model	NK2001	NK2020	AC15D	NK1010	NK9090
Material	Feed per blade (fz)	Cutting speed (m / min)				
General Steel	0.08~0.2	200~300	150~200			
Alloy Steel	0.08~0.2	200~300	150~200			
Stainless Steel	0.1			150		
Aluminum, Resin, Brass	0.1~0.2				500~1,000	500~1,000
Castings						

- Chamfered Insert nose increase feed speed per I-blade and make a good surface finishing
- Yellow marked rate is recommended for the workpiece listed

## Insert

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● Negative Type</b> 	S32MOZ NK2001	Cermet	Honing edge	None	8	12
	S32MOZ NK2050	Cermet	Honing edge	None	8	12
	S32MOZ AB01F	Cermet	Honing edge	AlCrN	8	12
	S32MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	S32MOZ NK2020	Carbide M20	Honing edge	None	8	12
	S32MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	S32MOZ AC15T	Fine particles Carbide	Honing edge	AlCrN	8	12
	S32GUR NK2001	Cermet	Honing edge	None	8	12
	S32GUR NK1010	Carbide K10	Sharp edge	None	8	12
	S32GUR NK2020	Carbide M20	Honing edge	None	8	12
	S32GUR NK3030	Carbide M20	Honing edge	TiN	8	12
	S32GUR NK5050	Carbide K10	Sharp edge	TiN	8	12
<b>● Positive Type</b> 	S32GUR NK6060	Carbide M20	Honing edge	TiAlN	8	12
	S32GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12
	S32GUR DIA	DIA	Sharp edge	None	1	1
	S3H3MNZ NK2001	Cermet	Honing edge	None	4	12
	S3H3GNZ NK1010	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ NK2020	Carbide M20	Honing edge	None	4	12
	S3H3GNZ NK9090 (Mirror polished finish)	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ AC15D	Fine particles Carbide	Honing edge	AlCrN	4	12

## Processing Example (Aeromill)

### [Face Milling (PS type)]

- Body : ARP16-40S
- Insert : S3H3MNZ NK1010
- Material..... A5052
- Rotation Speed... 1,000r.p.m.
- Table feed..... 300mm/min
- Depth of Cut.... 0.5mm
- Cutting Oil..... None

#### Result

Machined surface good.



## Processing Example (NEW TikoCutter)

### [Face Milling (PS type)]

- Body : TKP32-80S-03
- Insert : S3H3MNZ NK1010
- Material..... S50C
- Rotation Speed... 1,060r.p.m.
- Table feed..... 636mm/min
- Depth of Cut.... 3mm
- Cutting Oil..... None

#### Result

Machined surface good.



### [Face Milling (NS type)]

- Body : TKN32-60S-03
- Insert : S32MOZ AC15T
- Material..... SUS304
- Rotation Speed... 1,000r.p.m.
- Table feed..... 300mm/min
- Depth of Cut.... 2mm
- Cutting Oil..... None

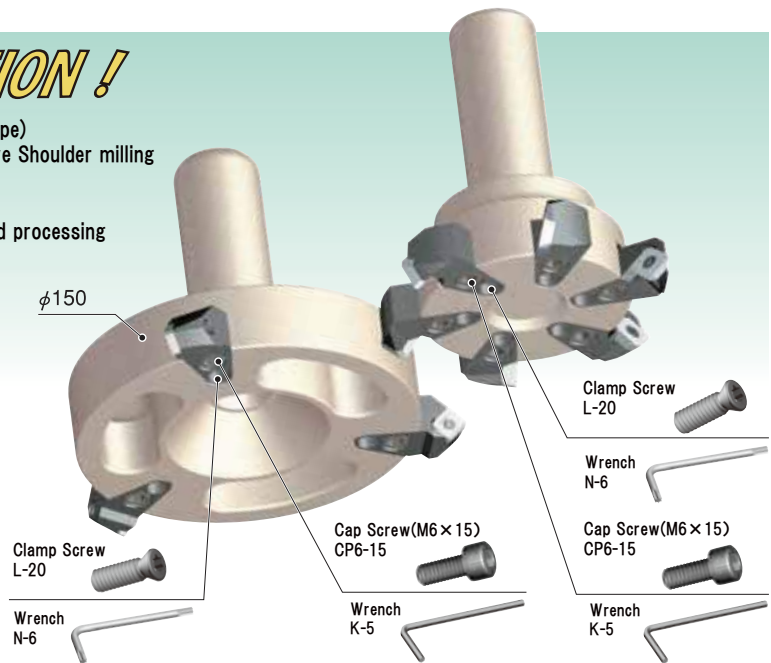
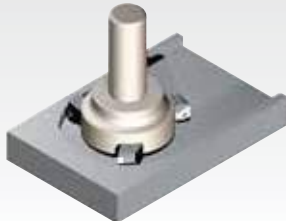
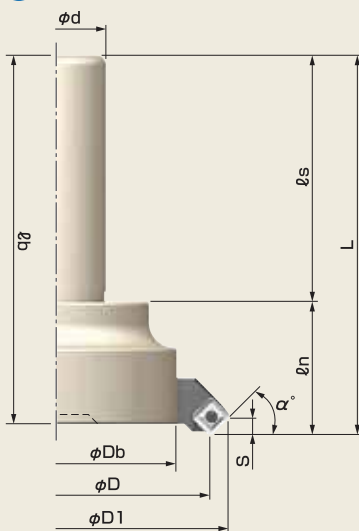
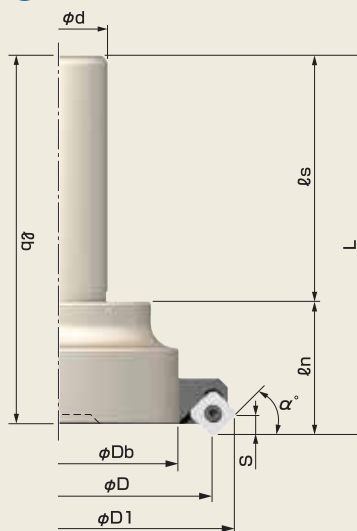
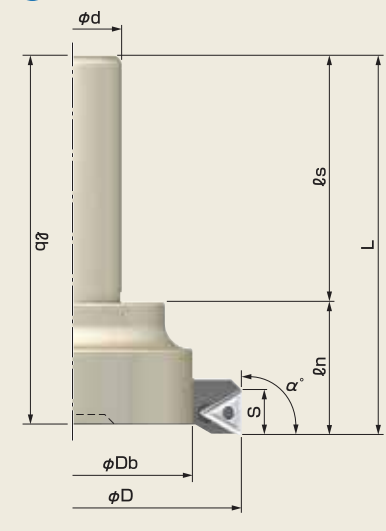
#### Result

Machined surface good.



**NEW INNOTIVE EVOLUTION !**

- NS (negative S type) ▪ PS (positive S type) ▪ NT (negative T type)
- Multi-Structure realized Negative/Positive face milling and Negative Shoulder milling
- Exchangeable processing diameter by changing BASE and again exchangeable processing type by changing ARM
- 3-blades and 6-blades are available and can be used for high speed processing

Face Milling  
[NS-PS type]Shoulder Milling  
[NT type]**1** NS type (Negative S)**2** PS type (Positive S)**3** NT type (Negative T)**Body**

Model No.		Fig.	Blades	Dimensions (mm)									(g)	α°	Inserts	base	arm
				φD	φD1	φDb	φd	L	ℓs	ℓn	ℓb	S					
NS	NKN20-100S-03	①	3	100	112	78	20	123.5	80	43.5	120	5.0	1,525	45	S32MOZ / S32GUR		AMNS-03
	NKN32-100S-03	①	3	100	112	78	32	123.5	80	43.5	120	5.0	1,825	45	S32MOZ / S32GUR	NK32078-03	AMNS-03
	NKN20-130S-03	①	3	130	142	108	20	123.5	80	43.5	120	5.0	2,755	45	S32MOZ / S32GUR		AMNS-03
	NKN32-130S-03	①	3	130	142	108	32	123.5	80	43.5	120	5.0	3,055	45	S32MOZ / S32GUR	NK32108-03	AMNS-03
	NKN32-150S-03	①	3	150	162.5	128	32	120	85	35	116.5	5.0	2,505	45	S32MOZ / S32GUR	NK32128-03	AMNS-03
	NKN32-100S-06	①	6	100	112	78	32	123.5	80	43.5	120	5.0	1,890	45	S32MOZ / S32GUR	NK32078-06	AMNS-06
PS	NKN32-130S-06	①	6	130	142	108	32	123.5	80	43.5	120	5.0	3,120	45	S32MOZ / S32GUR	NK32108-06	AMNS-06
	NKP32-100S-03	②	3	100	115	78	32	123.5	80	43.5	120	6.2	1,834	45	S3H3MNZ / S3H3GNZ	NK32078-03	AMPS-03
	NKP32-130S-03	②	3	130	145	108	32	123.5	80	43.5	120	6.2	3,064	45	S3H3MNZ / S3H3GNZ	NK32108-03	AMPS-03
	NKP32-150S-03	②	3	150	164.7	128	32	120	85	35	116.5	6.2	2,514	45	S3H3MNZ / S3H3GNZ	NK32128-03	AMPS-03
	NKP32-100S-06	②	6	100	115	78	32	123.5	80	43.5	120	6.2	1,908	45	S3H3MNZ / S3H3GNZ	NK32078-06	AMPS-06
	NKP32-130S-06	②	6	130	145	108	32	123.5	80	43.5	120	6.2	3,138	45	S3H3MNZ / S3H3GNZ	NK32108-06	AMPS-06
NT	NKN32-110T-03	③	3	110		78	32	123.5	80	43.5	120	14.5	1,849	90	T33MOZ / T33MOR / T33GUR	NK32078-03	AMNT-03
	NKN32-140T-03	③	3	140		108	32	123.5	80	43.5	120	14.5	3,079	90	T33MOZ / T33MOR / T33GUR	NK32108-03	AMNT-03
	NKN32-160T-03	③	3	160		128	32	120	85	35	116.5	14.5	2,529	90	T33MOZ / T33MOR / T33GUR	NK32128-03	AMNT-03
	NKN32-110T-06	③	6	110		78	32	123.5	80	43.5	120	14.5	1,938	90	T33MOZ / T33MOR / T33GUR	NK32078-06	AMNT-06
	NKN32-140T-06	③	6	140		108	32	123.5	80	43.5	120	14.5	3,168	90	T33MOZ / T33MOR / T33GUR	NK32108-06	AMNT-06

※ Insert is not equipped as standard accessories. Please order separately

※ Clamp screw, lock pin, cap screw and wrench are supplied as standard accessories

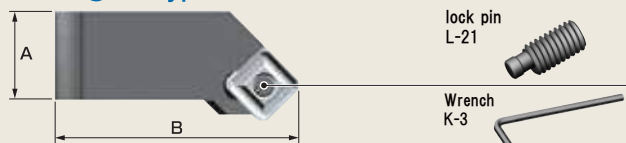


When mounting or replacing insert, please do not take reverse tightening.

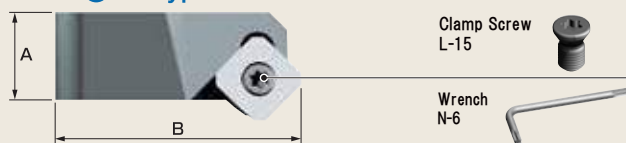
Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred by reverse tightening (NS, NT)

...P.114

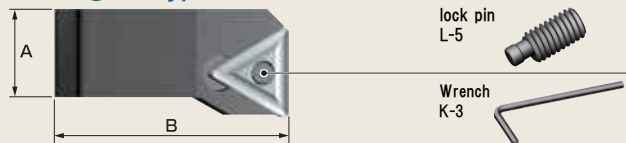
#### 4 NS type Weight: 49g I (excluding Insert)



#### 5 PS type Weight: 52g I (excluding Insert)



#### 6 NT type Weight: 57g I (excluding Insert)



● Arm for New NICECUT cannot be used for Old model

### Arm

Model No.	Fig.	Blades	Dimensions (mm)		Type	Quantity per box
			A	B		
AMNS-03	4	3	15.0	40.5	NS	(Three 1 set)
AMPS-03	5	3	15.0	41.8	PS	(Three 1 set)
AMNT-03	6	3	15.0	39.5	NT	(Three 1 set)
AMNS-06	4	6	15.0	40.5	NS	(Six 1 set)
AMPS-06	5	6	15.0	41.8	PS	(Six 1 set)
AMNT-06	6	6	15.0	39.5	NT	(Six 1 set)

※ arm(3pcs/set or 6pcs/set) is supplied per set. Individual pieces Arm cannot be supplied

※ A set of arm will have to be purchased

※ Insert, wrench is not equipped as standard accessories. Please order separately

※ Clamp screw, lock pin, as standard accessories

### Cutting Conditions

S32MOZ							
Material	Material Model	NK2001	NK2050	AB01F	NK1010	NK2020	NK3030
Feed per blade (fz)	Cutting speed (m / min)						
General Steel	0.1~0.3	200~300	200~300		200~300	150~200	150~250
Alloy Steel	0.1~0.3	200~250	200~250		200~250	150~200	150~250
Stainless Steel	0.1~0.25					120~180	150~200
Aluminum, Resin, Brass							150
Castings	0.1~0.3	200~250 ※FCD		200~250 ※FCD	150~200		

● Our original Insert have "Chamfered nose" which ensure a good surface finishing even feed speed per blade are increased

● Yellow marked rate is recommended for the workpiece listed

T33MOR					
Material	Material Model	NK2001	NK1010	NK2020	NK3030
Feed per blade (fz)	Cutting speed (m / min)				
General Steel	0.1~0.2	200~220		150~180	150~220
Alloy Steel	0.1~0.2	200~220		150~180	150~220
Stainless Steel	0.1~0.15			120~160	150~180
Aluminum, Resin, Brass					150~200
Castings	0.1~0.2	200~220 ※FCD	150~180		

● Original Insert breaker realize a sharp processing. Insert nose chamfered minimize cutting resistance.

● Yellow marked rate is recommended for the workpiece listed

T33GUR							
Material	Material Model	NK2001	NK1010	NK2020	NK3030	NK5050	NK6060
Feed per blade (fz)	Cutting speed (m / min)						
General Steel	0.08~0.2	200~220		150~180			
Alloy Steel	0.08~0.2	200~220		150~180			
Stainless Steel	0.08~0.2			120~180	150~180		150~220 ※SUS316
Aluminum, Resin, Brass	0.08~0.3		250~750		200~750		200~750
Castings	0.08~0.2	200~220 ※FCD					150~220

● Original Insert breaker realize a sharp processing. Insert nose chamfered minimize cutting resistance. Suitable for thin materials(easy to deform or chatter) processing

● Yellow marked rate is recommended for the workpiece listed

### Base

#### 3 Blade

φ100mm  
φ110mm

NK32078-03  
Weight: 1,678g

#### 3 Blade

φ130mm  
φ140mm

NK32108-03  
Weight: 2,908g

#### 3 Blade

φ150mm  
φ160mm

NK32128-03  
Weight: 2,358g

#### 6 Blade

φ100mm  
φ110mm

NK32078-06  
Weight: 1,556g

#### 6 Blade

φ130mm  
φ140mm

NK32108-06  
Weight: 2,826g

#### Standard Equipment

- Clamp Screw... L-20×(The number of blades)
- Cap Screw(M6×15)... CP6-15×(The number of blades)
- Wrench... N-6×1 K-5×1

### Processing Example

#### [Face Milling]

- Body : NKP32-100S-06
- Insert : S3H3MNZ NK2020
- Material.....SUS304
- Work length.....700mm
- Rotation Speed...500r.p.m
- Feed (X-axis)...300mm
- Cutting Depth...1mm

#### Result

Good!  
No secondary burrs and  
no chattering process



Dry cutting

S32GUR									
Material	Material Model	NK2001	NK1010	NK2020	NK3030	NK5050	NK6060	NK8080	DIA
Feed per blade (fz)	Cutting speed (m / min)								
General Steel	0.08~0.2	200~300		150~200					
Alloy Steel	0.08~0.2	200~250		150~200					
Stainless Steel	0.08~0.2			120~180	150~200		150~250	150~250 ※SUS316	
Aluminum, Resin, Brass	0.08~0.3		250~800			200~800		200~800	500~2,000
Castings	0.08~0.2	200~250 ※FCD	100~150						

● Original Insert breaker realize a sharp processing. Insert nose chamfered minimize cutting resistance. Suitable for thin materials(easy to deform or chatter) processing

● Yellow marked rate is recommended for the workpiece listed

T33MOZ					
Material	Material Model	NK2001	NK1010	NK2020	NK3030
Feed per blade (fz)	Cutting speed (m / min)				
General Steel	0.1~0.3	200~220		150~180	150~200
Alloy Steel	0.1~0.3	200~220		150~180	150~200
Stainless Steel	0.1~0.25			120~160	120~180
Aluminum, Resin, Brass					150~200
Castings	0.1~0.3	200~220 ※FCD	150~180		

● Our original Insert have "Chamfered nose" which ensure a good surface finishing even feed speed per blade are increased

● Yellow marked rate is recommended for the workpiece listed

S3H3MNZ					S3H3GNZ	
Material	Material Model	NK2001	NK2020	AC15D	NK1010	NK9090
Feed per blade (fz)	Cutting speed (m / min)					
General Steel	0.08~0.2	200~300	150~200			
Alloy Steel	0.08~0.2	200~300	150~200			
Stainless Steel	0.1			150		
Aluminum, Resin, Brass	0.1~0.2				500~1,000	500~1,000
Castings						

● Our original Insert have "Chamfered nose" which ensure a good surface finishing even feed speed per blade are increased

● Yellow marked rate is recommended for the workpiece listed



Insert information P.67

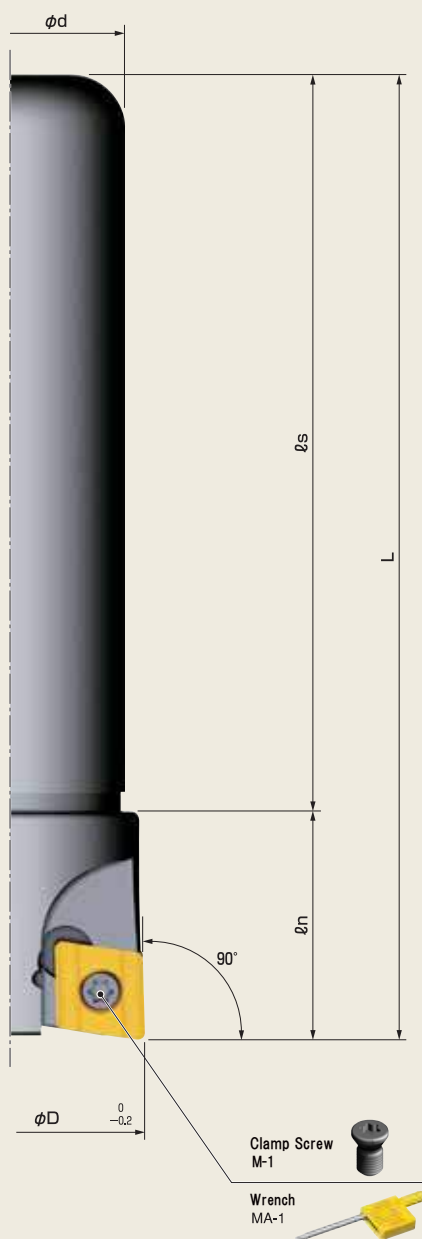


## Insert

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>〈S32MOZ〉</p>	S32MOZ NK2001	Cermet	Honing edge	None	8	12
	S32MOZ NK2050	Cermet	Honing edge	None	8	12
	S32MOZ AB01F	Cermet	Honing edge	AlCrN	8	12
	S32MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	S32MOZ NK2020	Carbide M20	Honing edge	None	8	12
	S32MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	S32MOZ AC15T	Fine particles Carbide	Honing edge	AlCrN	8	12
<p>〈S32GUR〉</p>	S32GUR NK2001	Cermet	Honing edge	None	8	12
	S32GUR NK1010	Carbide K10	Sharp edge	None	8	12
	S32GUR NK2020	Carbide M20	Honing edge	None	8	12
	S32GUR NK3030	Carbide M20	Honing edge	TiN	8	12
	S32GUR NK5050	Carbide K10	Sharp edge	TiN	8	12
	S32GUR NK6060	Carbide M20	Honing edge	TiAlN	8	12
	S32GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12
<p>〈S32GUR DIA〉</p>	S32GUR DIA	DIA	Sharp edge	None	1	1
<p>〈S3H3MNZ〉 〈S3H3GNZ〉</p>	S3H3MNZ NK2001	Cermet	Honing edge	None	4	12
	S3H3GNZ NK1010	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ NK2020	Carbide M20	Honing edge	None	4	12
	S3H3GNZ NK9090 (Mirror polished finish)	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ AC15D	Fine particles Carbide	Honing edge	AlCrN	4	12
<p>〈T33MOZ〉</p>	T33MOZ NK2001	Cermet	Honing edge	None	6	12
	T33MOZ NK1010	Carbide K10	Sharp edge	None	6	12
	T33MOZ NK2020	Carbide M20	Honing edge	None	6	12
	T33MOZ NK3030	Carbide M20	Honing edge	TiN	6	12
	T33MOZ NK6060	Carbide M20	Honing edge	TiAlN	6	12
<p>〈T33MOR〉</p>	T33MOR NK2001	Cermet	Honing edge	None	6	12
	T33MOR NK1010	Carbide K10	Sharp edge	None	6	12
	T33MOR NK2020	Carbide M20	Honing edge	None	6	12
	T33MOR NK3030	Carbide M20	Honing edge	TiN	6	12
	T33MOR NK6060	Carbide M20	Honing edge	TiAlN	6	12
<p>〈T33GUR〉</p>	T33GUR NK2001	Cermet	Honing edge	None	6	12
	T33GUR NK1010	Carbide K10	Sharp edge	None	6	12
	T33GUR NK2020	Carbide M20	Honing edge	None	6	12
	T33GUR NK3030	Carbide M20	Honing edge	TiN	6	12
	T33GUR NK5050	Carbide K10	Sharp edge	TiN	6	12
	T33GUR NK6060	Carbide M20	Honing edge	TiAlN	6	12
	T33GUR NK8080	Carbide K10	Sharp edge	TiAlN	6	12

**Economical Milling Cutters !**  
**Selectable R0.2, R0.4, and R0.8**  
**nose insert and usable 4-corners**

**$\phi 20\text{mm} \sim \phi 50\text{mm}$**



Shoulder Milling (NC type)



The high feed by  
 multi-blade  
 Capable of  
 high-speed cutting!

**Shurillin**



## Body

Model. No.	blades	Dimensions (mm)					Weight (g)
		$\phi D$	$\phi d$	L	$\ell s$	$\ell n$	
NC2-1620	2	20	16	100	80	20	152
NC3-2530	3	30	25	105	80	25	394
NC4-3240	4	40	32	105	80	25	656
NC5-3250	5	50	32	105	80	25	752

※ Insert is not equipped as standard accessories. Please order separately

※ Clamp screw, and wrench are supplied as standard accessories

## Cutting Conditions

Material	Material Model Feed per blade (fz)	Cutting speed (m / min)		
		NK1010	NK2020	NK3030
General Steel	0.08~0.2		100~200	100~200
Alloy Steel	0.08~0.2		100~200	100~200
Stainless Steel	0.08~0.2		100~150	100~150
Aluminum, Resin,	0.08~0.3	150~400		
Castings	0.08~0.2		100~200	100~200

## Processing Example

### [Shoulder Milling (NT)]

- Body : NC3-2530
- Insert : C32GUR-0.8R NK3030

- Material.....SUS304
- Work length.....300mm
- Rotation Speed...2,000r.p.m
- Feed (X-axis) ....800mm/min
- Cutting Depth....1mm

### Result

Good!  
 No secondary burrs and  
 no chattering process

**Dry cutting**



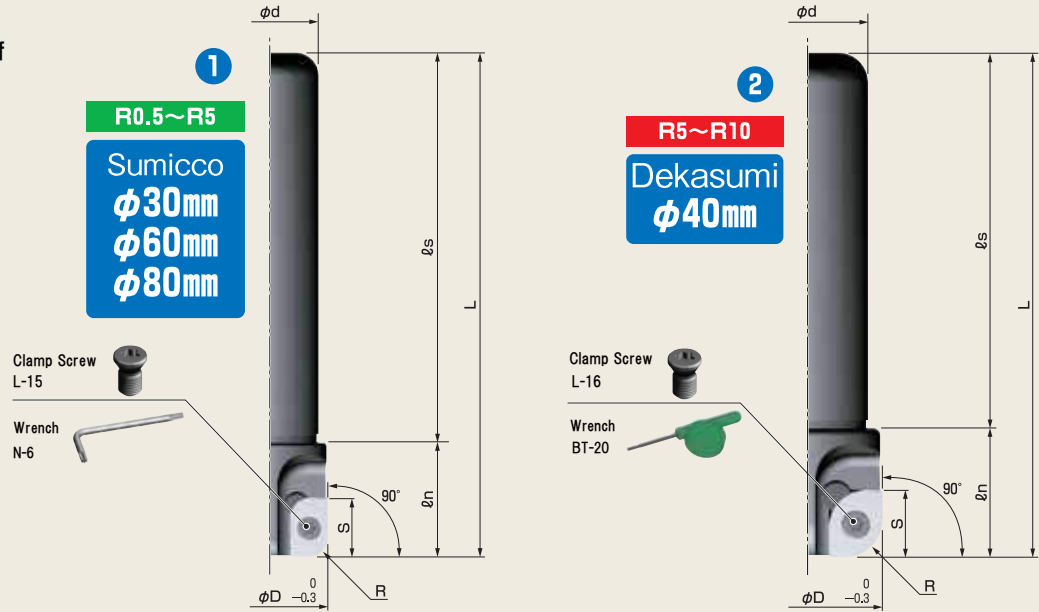
## Insert

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
(C32GUR) R0.2/R0.4/R0.8 90° 9.3(R0.2) 8.9(R0.4) 8.0(R0.8) (Except nose R) 3.18	C32GUR-0.2R NK2020	Carbide M20	Honing edge	None	4	12
	C32GUR-0.4R NK2020	Carbide M20	Honing edge	None	4	12
	C32GUR-0.8R NK2020	Carbide M20	Honing edge	None	4	12
	C32GUR-0.2R NK1010	Carbide K10	Sharp edge	None	4	12
	C32GUR-0.2R NK3030	Carbide M20	Honing edge	TiN	4	12
	C32GUR-0.4R NK3030	Carbide M20	Honing edge	TiN	4	12
	C32GUR-0.8R NK3030	Carbide M20	Honing edge	TiN	4	12



## Corner R processing!

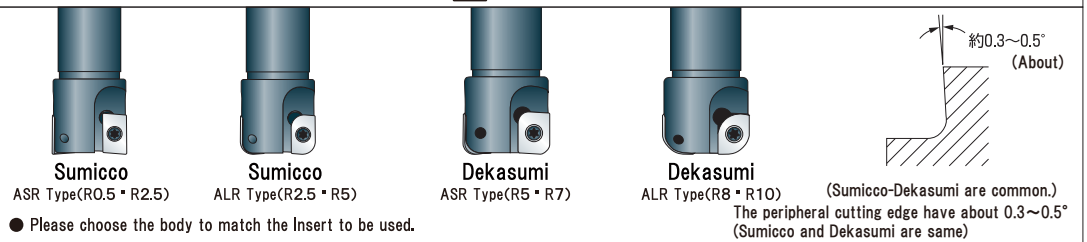
- by the chip exchange,  
It allows a wide variety of  
Corner R processing.



### Shoulder Milling (R)



### Cautions



### Body

Product name	Model No.	Fig.	blades	Dimensions (mm)						Inserts	Weight (g)
				φD	φd	L	ℓs	ℓn	S		
Sumicco	SK25-30ASR	①	2	30	25	130	100	30	15	A52GNR-0.5R~2.5R	478
	SK25-30ASRL	①	2	30	25	200	170	30	15	A52GNR-0.5R~2.5R	748
	SK25-30ALR	①	2	30	25	130	100	30	15	A52GNR-2.5R~5R	474
	SK25-30ALRL	①	2	30	25	200	170	30	15	A52GNR-2.5R~5R	746
	SK32-60ASR	①	4	60	32	105	80	25	15	A52GNR-0.5R~2.5R	798
	SK32-60ASRL	①	4	60	32	175	150	25	15	A52GNR-0.5R~2.5R	1,240
	SK32-60ALR	①	4	60	32	105	80	25	15	A52GNR-2.5R~5R	784
	SK32-60ALRL	①	4	60	32	175	150	25	15	A52GNR-2.5R~5R	1,240
	SK32-80ASR	①	4	80	32	105	80	25	15	A52GNR-0.5R~2.5R	1,100
	SK32-80ASRL	①	4	80	32	175	150	25	15	A52GNR-0.5R~2.5R	1,560
Dekasumi	SK32-80ALR	①	4	80	32	105	80	25	15	A52GNR-2.5R~5R	1,120
	SK32-80ALRL	①	4	80	32	175	150	25	15	A52GNR-2.5R~5R	1,550
	DC32-40ASR	②	2	40	32	135.0	100	35.0	18.1	ADEW19T3-5R~7R	820
	DC32-40ASRL	②	2	40	32	185.0	150	35.0	18.1	ADEW19T3-5R~7R	1,140
	DC32-40ALR	②	2	40	32	134.6	100	34.6	17.6	ADEW19T3-8R~10R	813
	DC32-40ALRL	②	2	40	32	184.6	150	34.6	17.6	ADEW19T3-8R~10R	1,140

※ Insert is not equipped as standard accessories. Please order separately

※ Clamp screw, and wrench are supplied as standard accessories

### Cutting Conditions

Sumicco				
Material	Material Model	NK1010	NK2020	AC16N
Feed per blade (fz)	Cutting speed (m / min)			
General Steel	0.1~0.2		100~150	150~200
Alloy Steel	0.1~0.2		100~150	150~200
Stainless Steel	0.1~0.2		80~120	120~160
Aluminum, Resin,	0.1~0.3	250~600		
Castings	0.1~0.2	80~150		

Dekasumi				
Material	Material Model	NK1010	NK2020	AC16N
Feed per blade (fz)	Cutting speed (m / min)			
General Steel	0.1~0.2		100~150	150~200
Alloy Steel	0.1~0.2		100~150	150~200
Stainless Steel	0.1~0.2		80~120	120~160
Aluminum, Resin,	0.1~0.3	250~600		
Castings	0.1~0.2	80~150		

● Work shape, clamping state, tool protrusion length, please adjust the conditions by cutting amount  
● You have been to the workpiece by recommended Insert.

● Work shape, clamping state, tool protrusion length, please adjust the conditions by cutting amount  
● You have been to the workpiece by recommended Insert.

## Processing Example

Sumicco

[Shoulder Milling (R3)]

- Body : SK25-30ALR
- Insert : A52GNR-3R NK2020
- Material.....SKD11
- Work length.....200mm
- Rotation Speed.....1,600r.p.m
- Feed (X-axis).....320mm/min
- Down cut air blow
- Cutting Oil.....None

## Result

Good!  
No secondary burrs and  
no chattering process

### Dry cutting



## Processing Example Dekasumi

[Shoulder Milling (R10)]

- Body : DC32-40ALR
- Insert : ADEW 19T3-R NK2020
- Material-----S50C
- Rotation Speed---1,500r.p.m
- Feed (X-axis)---450mm/min
- Cutting Depth---11mm
- Cutting Oil----None

## Result

Good!  
No secondary burrs and  
no chattering process

## Dry cutting



## Insert

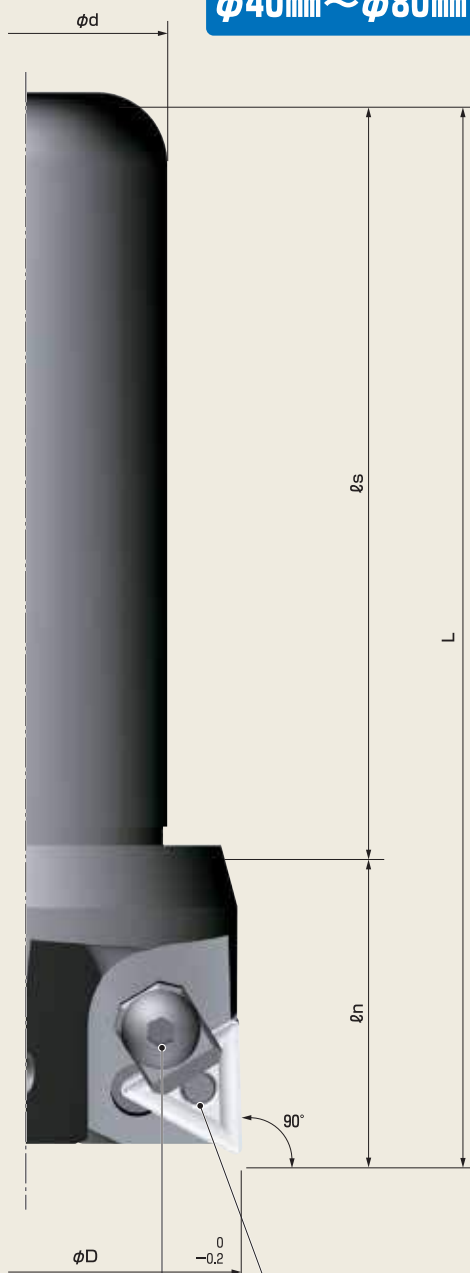
</

## Right angle processing!

The back and front corners are usable due to negative/positive Insert

Durability has been increased due to the double clamp mechanism

$\phi 40\text{mm} \sim \phi 80\text{mm}$



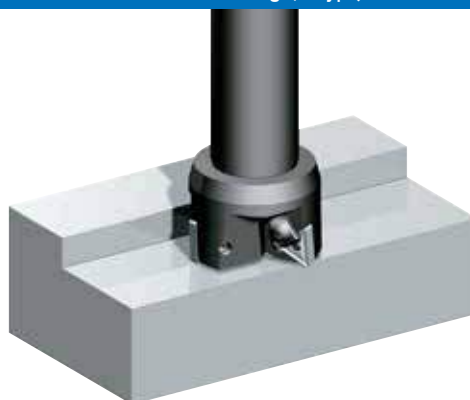
Clamp piece  
CL-1S

Wrench  
K-3

lock pin  
L-5

Wrench  
K-3

### Shoulder Milling (T type)



### Processing Example

#### [Shoulder Milling]

Body : NK9050T

Insert : T33GURNK1010

Material : A5052

Rotation Speed : 6,000r.p.m

Feed (X-axis) : 1,200mm/min

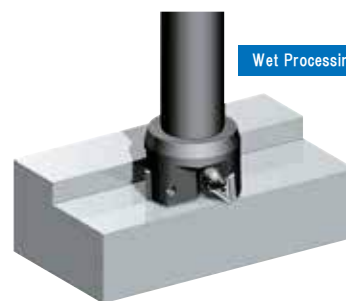
Cutting Depth : 2mm

#### Result

Good!

No secondary burrs and  
no chattering process

Wet Processing



### Cutting Conditions

T33MOZ					
Material	Material Model	NK2001	NK1010	NK2020	NK3030 NK6060
Cutting speed (m / min)					
General Steel	0.1~0.3	200~220		150~180	150~200
Alloy Steel	0.1~0.3	200~220		150~180	150~200
Stainless Steel	0.1~0.25			120~160	120~180 150~200
Aluminum, Resin, Brass					
Castings	0.1~0.3	200~220 ※FCD	150~180		

● Our original Insert have "chamfered nose" which ensure a good surface finishing even feed speed per blade are increased

● Yellow marked condition is recommended for the material listed

T33MOR					
Material	Material Model	NK2001	NK1010	NK2020	NK3030 NK6060
Cutting speed (m / min)					
General Steel	0.1~0.2	200~220		150~180	150~220
Alloy Steel	0.1~0.2	200~220		150~180	150~220
Stainless Steel	0.1~0.15			120~160	150~180 150~200
Aluminum, Resin, Brass					
Castings	0.1~0.2	200~220 ※FCD	150~180		

● Original Inset Insert breaker realize a sharp processing. Insert nose chamfered minimize cutting resistance

● Yellow marked condition is recommended for the material listed

T33GUR							
Material	Material Model	NK2001	NK1010	NK2020	NK3030	NK5050	NK6060 NK8080
Cutting speed (m / min)							
General Steel	0.08~0.2	200~220		150~180			
Alloy Steel	0.08~0.2	200~220		150~180			
Stainless Steel	0.08~0.2			120~180	150~180		150~220 ※SUS316
Aluminum, Resin, Brass	0.08~0.3		250~750			200~750	200~750
Castings	0.08~0.2	200~220 ※FCD					150~220

● Original Inset Insert breaker realize a sharp processing. Insert nose chamfered minimize cutting resistance Suitable for thin materials(easy to deform or chatter)processing.

● Yellow marked condition is recommended for the material listed



When mounting or replacing insert, please do not take reverse tightening.

Due to the eccentricity looking mechanism, poor accuracy or breakage of insert may be occurred by reverse tightening (NS, NT)

...P.114

## Body

Model. No.	blades	Dimensions (mm)					Weight (g)
		$\phi D$	$\phi d$	L	$\ell s$	$\ell n$	
NK9040T-20	3	40	20	120	85	35	0.52
NK9040T-25	3	40	25	120	85	35	0.64
NK9040T	3	40	32	120	85	35	0.7
NK9050T-20	3	50	20	120	85	35	0.54
NK9050T-25	3	50	25	120	85	35	0.68
NK9050T	3	50	32	120	85	35	0.8
NK9050T-42	3	50	42	120	85	35	1.1
NK9060T	3	60	32	120	85	35	0.95
NK9060T-42	3	60	42	120	85	35	1.3
NK9070T	3	70	32	120	85	35	1.2
NK9070T-42	3	70	42	120	85	35	1.4
NK9080T	3	80	32	120	85	35	1.2

※ Inset is not included. Please order separately.

※ lock pin wrench clamp piece we have standard equipment.

## Insert

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
	T33MOZ NK2001	Cermet	Honing edge	None	6	12
	T33MOZ NK1010	Carbide K10	Sharp edge	None	6	12
	T33MOZ NK2020	Carbide M20	Honing edge	None	6	12
	T33MOZ NK3030	Carbide M20	Honing edge	TiN	6	12
	T33MOZ NK6060	Carbide M20	Honing edge	TiAlN	6	12
	T33MOR NK2001	Cermet	Honing edge	None	6	12
	T33MOR NK1010	Carbide K10	Sharp edge	None	6	12
	T33MOR NK2020	Carbide M20	Honing edge	None	6	12
	T33MOR NK3030	Carbide M20	Honing edge	TiN	6	12
	T33MOR NK6060	Carbide M20	Honing edge	TiAlN	6	12
	T33GUR NK2001	Cermet	Honing edge	None	6	12
	T33GUR NK1010	Carbide K10	Sharp edge	None	6	12
	T33GUR NK2020	Carbide M20	Honing edge	None	6	12
	T33GUR NK3030	Carbide M20	Honing edge	TiN	6	12
	T33GUR NK5050	Carbide K10	Sharp edge	TiN	6	12
	T33GUR NK6060	Carbide M20	Honing edge	TiAlN	6	12
	T33GUR NK8080	Carbide K10	Sharp edge	TiAlN	6	12

## Product Number notation example simple order

① Base ..... Aluminum Body

④ Arm ..... NS type

② Processing diameter .....  $\phi 200\text{mm}$ 

⑤ Base Color ..... RED

③ Blades ..... 6Blade

In the case of, please notation as described below with reference to the ①~⑤ of "Easy Order" below.

① Base      ② Processing diameter      ③ Blades      ④ Arm      ⑤ Base color

KK

200

—

6

NS

—

RD

A

Product model number, "KK200-6NS-RD ※ This item only We will stock. It will be."

※ In the case of base only, please put the last A product model number.

## ① Base : Please choose the body type.

Model number notation ① ..... Steel Body is "NK", aluminum body will be "KK".

## Steel Body (NK type)

It's more commonly used for is, it will be the low-cost steel body.



Or

## Aluminum body (KK type)

It weighs 1/3 compared to steel cutters and are available at lower horsepower machines Aluminum body type.

② Processing diameter ( $\phi$ ): Please choose the processing diameter from between the  $\phi 120 \sim 500$ .

Model number notation ② ..... It will be 120-500.

## ③ Blade number : Please choose the number of blade from the 3-36 sheets.

※ blade number you can send quickly a lot made and feed speed.

Model number notation ③ ..... It will be 3-36.

## ④ Arm : Please choose the Arm type.

Model number notation ④ ..... It becomes the "NS" or "PS" or "NT".

## NS type

FujiGen chattering is hardly out by its own negative-positive method, it can be a good cut into thin processing.

Insert both sides is possible economic use of the "face processing Negachippu" is → [S type]



Or

## PS type

The "face processing Pojichippu" that enables optimum cutting in stainless by new materials and coating Inserts → [P Type]



Or

## NT type

The "shoulder processing" and → [T type]



## ⑤ Base Color: Please choose only the aluminum Body Color.

※ Steel body color is only black.

Gold

GL

Silver

SV

Red

RD

Blue

BL

Black

BK

Model number notation ⑤ ..... Steel Body is "BK"  
Aluminum body will be "GL" or "SV" or "RD" or "BL" or "BK".

According to the machining and the size of the customer's necessity will be provided!

Conventional nice cut series that had been our patronage (arbor type)

It becomes the order system, now that it can be widely available.

A combination of the diameter and number of blades

You can order We wish you the customer. According to the machining and the size of the customer's necessity will be provided!

## Weight Table

Body type	Steel Body				
Cutter diameter	φ 120 • φ 140	φ 150 • φ 190	φ 200 • φ 240	φ 250 • φ 290	φ 300 • φ 340
Cutter height (L)	45	60		70	
Arbor diameter	25.4	38.1	50.8	47.625	
Number of blades					
3	2.6kg	7.1kg	11.2kg	19.3kg	28.7kg
4	2.6kg	7.1kg	11.2kg	19.4kg	28.7kg
5	2.6kg	7.1kg	11.2kg	19.4kg	28.7kg
6	2.6kg	7.1kg	11.3kg	19.4kg	28.7kg
7	2.6kg	7.1kg	11.3kg	19.4kg	28.7kg
8	2.6kg	7.1kg	11.3kg	19.4kg	28.8kg
9	2.7kg	7.1kg	11.3kg	19.4kg	28.8kg
10		7.1kg	11.3kg	19.4kg	28.8kg
11		7.1kg	11.3kg	19.4kg	28.8kg
12		7.2kg	11.3kg	19.5kg	28.8kg
13			11.3kg	19.5kg	28.8kg
14			11.4kg	19.5kg	28.8kg
15			11.4kg	19.5kg	28.8kg
16				19.5kg	28.8kg
17				19.5kg	28.9kg
18				19.5kg	28.9kg
19				19.5kg	28.9kg
20				19.6kg	28.9kg
21				19.6kg	28.9kg
22					28.9kg
23					28.9kg
24					28.9kg
Body type	Aluminum body				
Cutter diameter	φ 120 • φ 140	φ 150 • φ 190	φ 200 • φ 240	φ 250 • φ 290	φ 300 • φ 340
Cutter height (L)	45	60		70	
Arbor diameter	25.4	38.1	50.8	47.625	
Number of blades					
3	1.0kg	2.6kg	4.1kg	7.0kg	10.4kg
4	1.1kg	2.7kg	4.1kg	7.1kg	10.4kg
5	1.1kg	2.7kg	4.2kg	7.1kg	10.5kg
6	1.1kg	2.7kg	4.2kg	7.1kg	10.5kg
7	1.2kg	2.8kg	4.2kg	7.2kg	10.5kg
8	1.2kg	2.8kg	4.3kg	7.2kg	10.6kg
9	1.2kg	2.8kg	4.3kg	7.2kg	10.6kg
10		2.9kg	4.3kg	7.3kg	10.6kg
11		2.9kg	4.4kg	7.3kg	10.6kg
12		2.9kg	4.4kg	7.3kg	10.7kg
13			4.4kg	7.4kg	10.7kg
14			4.5kg	7.4kg	10.7kg
15			4.5kg	7.4kg	10.8kg
16				7.5kg	10.8kg
17				7.5kg	10.8kg
18				7.5kg	10.9kg
19				7.6kg	10.9kg
20				7.6kg	10.9kg
21				7.6kg	11.0kg
22					11.0kg
23					11.0kg
24					11.1kg

※Cutter diameter, it will can offer to φ 10 unit.

※Cutter diameter φ 350 more Arbor size and other will necessary separately estimates.

※Arbor diameter, it is determined by the cutter diameter, the Company in accordance with the face mill arbor A type.

※ Depending on the cutter diameter, there are times when it is not possible to put a Number of blades of hope.

※ If you have any questions, please feel free to contact us. TEL. (06) 6911-3588



- can not be canceled after your order, please understand.
  - for non-standard products, made to order products.
- Delivery times, each time please verify.



Cutting conditions to P.66  
Insert for more information to P.67



## Greatly increase life of Insert !

- Suitable for Inner Diameter and boring process with Turning Center etc
- Sleeve with step structure cutting oil spread in whole places of insert during processing of inner diameter and the life of insert has been increasing more Than 20%.
- Adjustable screw is located at the front.  
You can easily adjust the Boring bar length without removing from holder.



Set screw 1

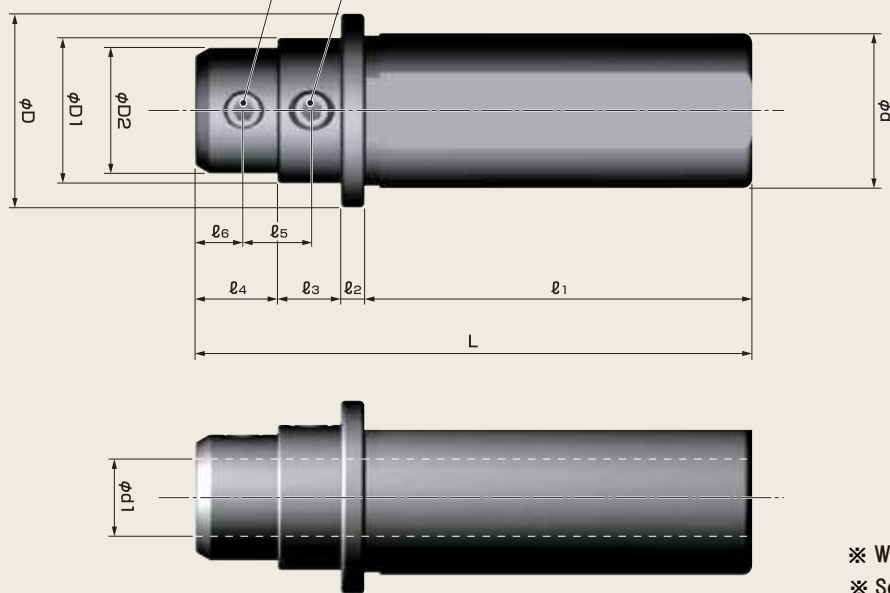
Set screw 2

Wrench  
K-3(KH-1S)  
K-4(KH-2S / KH-3S / KH-4S)  
K-5(KH-5S / KH-6S)

### Set screw

Model No.	Dimensions (mm)	
	Set screw 1	Set screw 2
KH-1S	M6×8	M6×10
KH-2S	M8×6	M8×6
KH-3S	M8×8	M8×8
KH-4S	M8×10	M8×8
KH-5S	M10×8	M10×8
KH-6S	M10×8	M10×10

※1SET include (each of set screw-1 and set screw-2)



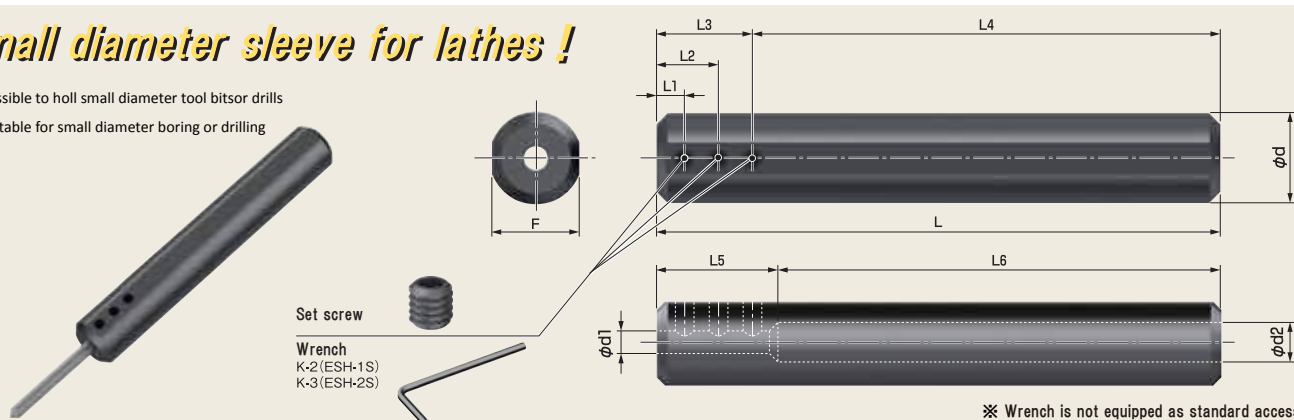
- ※ Wrench is not equipped as standard accessory
- ※ Set surew are supplied as standard accessory

### Body

Model No.	Dimensions (mm)													Set surew
	$\phi D$	$\phi D1$	$\phi D2$	$\phi d$	$\phi d1$	L	$\ell_1$	$\ell_2$	$\ell_3$	$\ell_4$	$\ell_5$	$\ell_6$	F	
KJD32S08	40	28	24	32	8	115	80	5	15	15	14	10	30	KH-1S
KJD32S10	40	25	—	32	10	115	80	5	30	—	14	10	30	KH-2S
KJD32S12	40	25	—	32	12	115	80	5	30	—	14	10	30	KH-2S
KJD32S16	40	30	26	32	16	115	80	5	13	17	14	10	30	KH-2S
KJD32S20	40	32	—	32	20	115	80	5	30	—	13	11	30	KH-2S
KJD40S08	47	28	24	40	8	120	80	5	15	20	16	12	38	KH-1S
KJD40S10	47	32	28	40	10	120	80	5	15	20	15	13	38	KH-3S
KJD40S12	47	32	28	40	12	120	80	5	15	20	15	13	38	KH-3S
KJD40S16	47	34	31	40	16	120	80	5	15	20	15	13	38	KH-4S
KJD40S20	47	35	—	40	20	120	80	5	35	—	15	13	38	KH-5S
KJD40S25	48	40	—	40	25	120	80	15	25	—	17.5	15	38	KH-6S

## Small diameter sleeve for lathes !

- Possible to hold small diameter tool bit or drills
- Suitable for small diameter boring or drilling



※ Wrench is not equipped as standard accessory  
 ※ Set screw are supplied as standard accessory

### Body

Model No.	Dimensions (mm)											Set screw
	$\phi d$	$\phi d1$	$\phi d2$	L	L1	L2	L3	L4	L5	L6	F	
ESL0416	16	4	10	100	5	11	17	83	20	80	15	ESH-1S
ESL0516	16	5	10	100	5	11	17	83	20	80	15	ESH-1S
ESL0616	16	6	10	100	5	11	17	83	20	80	15	ESH-1S
ESL0816	16	8	10	100	6	16	26	74	40	60	15	ESH-2S
ESL1016	16	10	12	100	6	16	26	74	40	60	15	ESH-2S
ESL0420	20	4	10	100	5	11	17	83	20	80	19	ESH-1S
ESL0520	20	5	10	100	5	11	17	83	20	80	19	ESH-1S
ESL0620	20	6	10	100	5	11	17	83	20	80	19	ESH-1S
ESL0820	20	8	10	100	6	16	26	74	40	60	19	ESH-2S
ESL1020	20	10	12	100	6	16	26	74	40	60	19	ESH-2S
ESL1220	20	12	14	100	6	16	26	74	40	60	19	ESH-2S

### Set screw

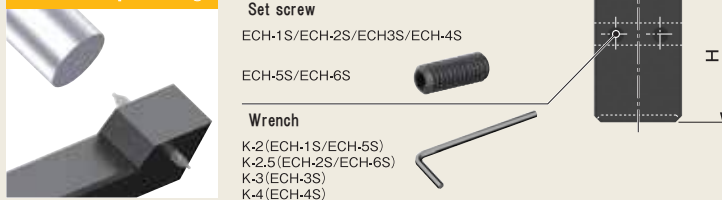
Model No.	Dimensions (mm)	
	Set screw	1SET
ESH-1S	M4×4	3
ESH-2S	M6×6	3

※ 1SET include (set screw × 3)

## Center hole machining is possible!

- Shaped as outer tool bit, but used for innertool bit center drill etc
- Possible to use holders for outer cutting and shorten setup change time
- Useful when the number of inner and diameter cutting tool holder is limited

### Center hole processing



※ Wrench is not equipped as standard accessory  
 ※ Set screw are supplied as standard accessory

### Body

Model No.	Dimensions (mm)							Set screw
	$\phi d$	d1	d2	L	$\phi 1$	$\phi 2$	H	
ESB2020K05	5	20	20	125	35	15	30	ECH-1S
ESB2020K06	6	20	20	125	35	15	30	ECH-2S
ESB2020K08	8	20	20	125	35	15	30	ECH-3S
ESB2020K10	10	20	20	125	35	15	30	ECH-4S
ESB2020K12	12	20	20	125	35	15	30	ECH-4S
ESB2525M05	5	25	25	150	35	15	35	ESH-5S
ESB2525M06	6	25	25	150	35	15	35	ESH-6S
ESB2525M08	8	25	25	150	35	15	35	ESH-3S
ESB2525M10	10	25	25	150	35	15	35	ESH-4S
ESB2525M12	12	25	25	150	35	15	35	ESH-4S

### Set screw

Model No.	Dimensions (mm)	
	Set screw	1SET
ECH-1S	M4×10	2
ECH-2S	M5×10	2
ECH-3S	M6×10	2
ECH-4S	M8×10	2
ECH-5S	M4×10	3
ECH-6S	M5×10	3

※ 1SET include (set screw × 2 or 3)

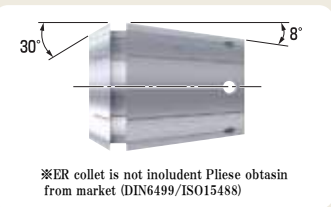
## Applying General Spring Collet, -Usabul Various Sizes Drills!

- Concentric with ER collet
- Used with lathe, mount inner tool bit holder
- Inner lubrication is possible by using center-thruring collet



ER20 type

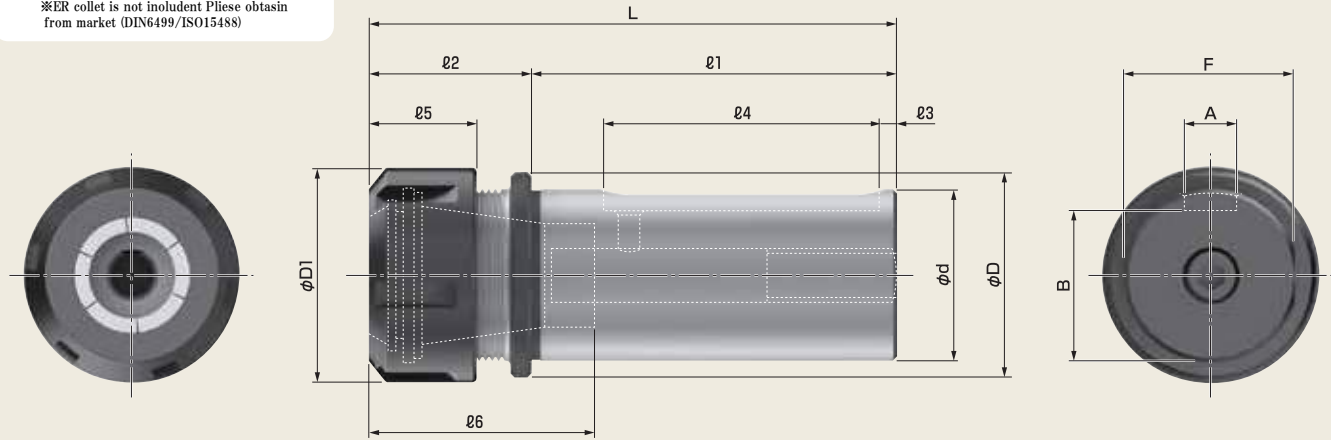
ER25/ER32 type



### Set screw

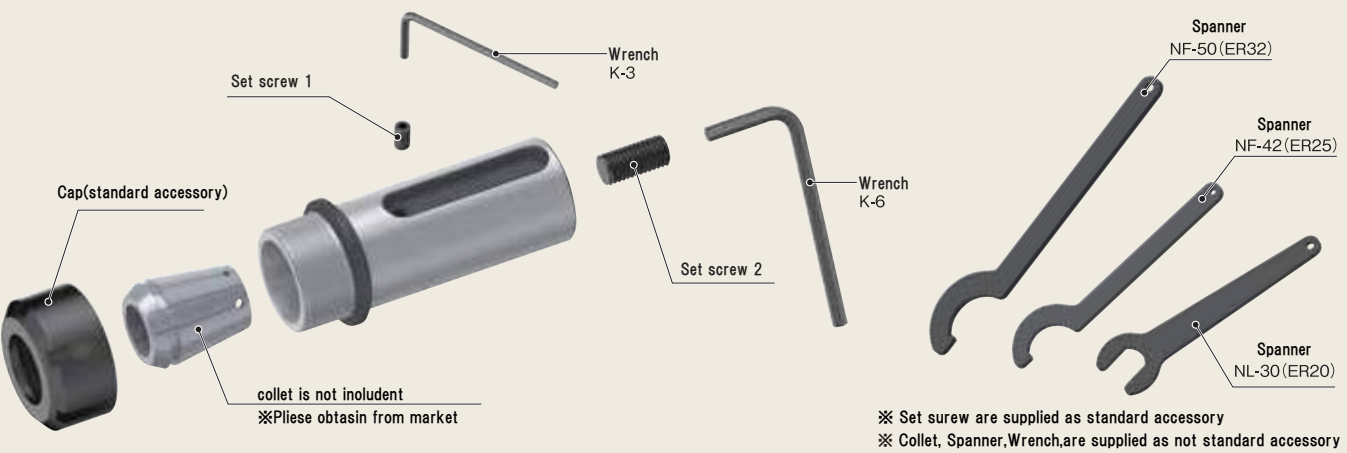
Model No.	Dimensions (mm)	
	Set screw1	Set screw2
ERSH-1S	M6×6	M12×25
ERSH-2S	M6×10	M12×25

※1SET include (Set screw1×1+Set screw2×1)



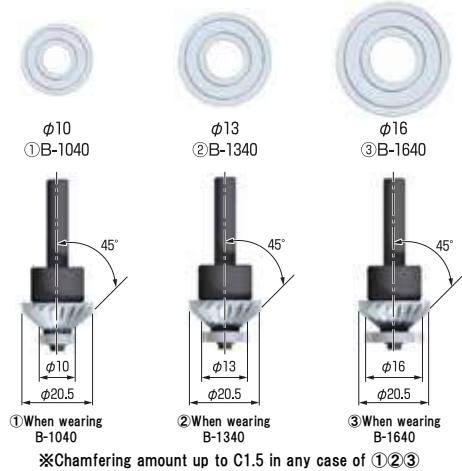
### Body

Model No.	Dimensions (mm)															
	φD	φD1	φd	L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	ℓ <sub>3</sub>	ℓ <sub>4</sub>	ℓ <sub>5</sub>	ℓ <sub>6</sub>	A	B	F	Collet	Set screw	Spanner
<div>NEW</div> CER20-C32-120	38	34	32	121	85	36	14	54	21.7	51	12	27	31	ER20	ERSH-1S	NL-30
<div>NEW</div> CER20-C40-120	48	34	40	121	85	36	14	54	21.7	51	12	35	39	ER20	ERSH-2S	NL-30
<div>NEW</div> CER25-C32-120	38	42	32	121	85	36	14	54	24	51	12	27	31	ER25	ERSH-1S	NF-42
<div>NEW</div> CER25-C40-120	48	42	40	121	85	36	14	54	24	51	12	35	39	ER25	ERSH-2S	NF-42
<div>NEW</div> CER32-C40-120	48	50	40	123	85	38	14	54	25	52	12	35	39	ER32	ERSH-2S	NF-50

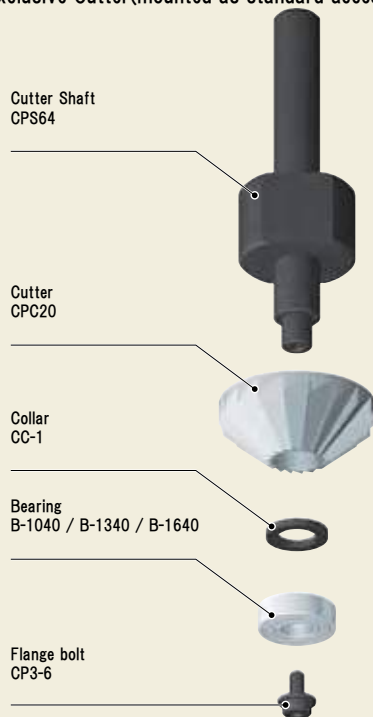


### Adopt 3 types of bearings Reduced running costs

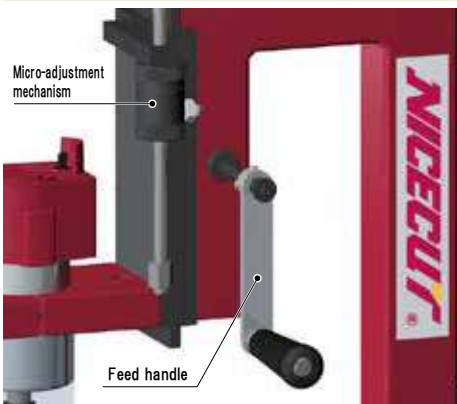
By using three different types of beveling, the position of the blade is changed, and you can use the cutter surface part without any leeway.



### Exclusive Cutter(mounted as standard accessory)



2 kings up/down adjustment mechanism  
can select smooth chamfering amount



## High Rotation Motor & Multi-Blade Cutter !

- Combination of High Rotation Motor, Multi- Blade Cutter and Bearing Guide ensured smooth surface processing
- One spot hold Open-Close mechanism ensured simple inside chamfering process



Chamfer Processing  
**C1.5**



### Body

Model. NO.	CP-0
Power supply	100V
Generating	200W
Rotational speed	15,000r.p.m.
Max workpiece height	150mm
Dimension	W300×D480×H560mm
Weight	24kg



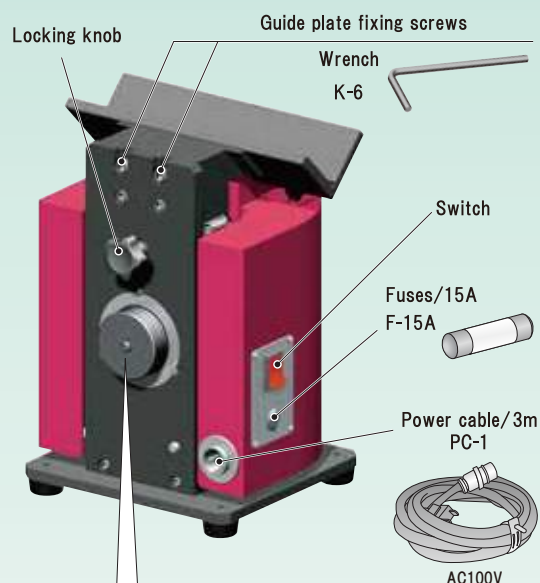
- Realized high speed cutting with 8000 rpm
- You can find chamfering amount with a single glance and can adjust chamfering amount simply
- Chamfer processing without scratching materials can be realized by using linear slide guide (Option)



~C3

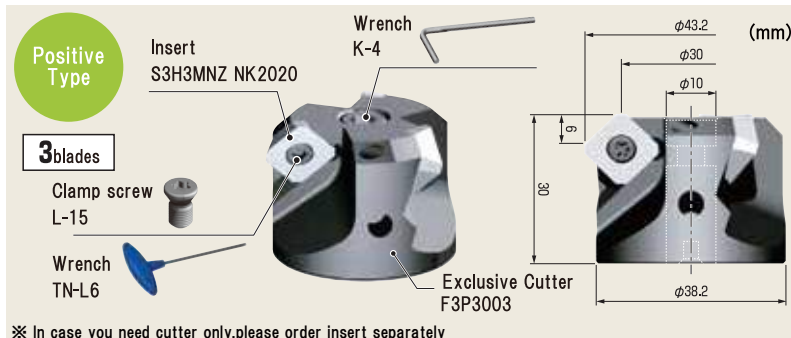
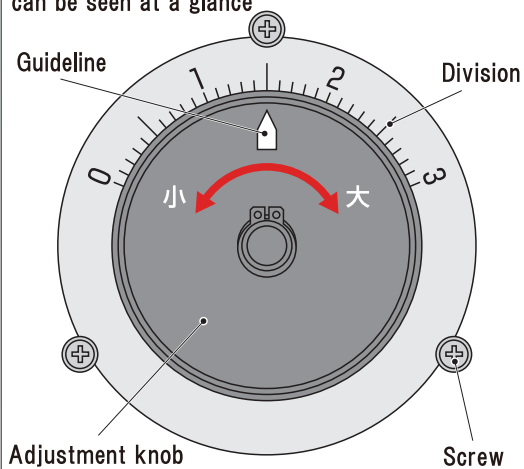
Shooter

Exhaust port newly designed eliminates  
Chip(powders) from machine(Body)



## Adjustment knob

Easy adjustment by chamfering amount notation  
can be seen at a glance



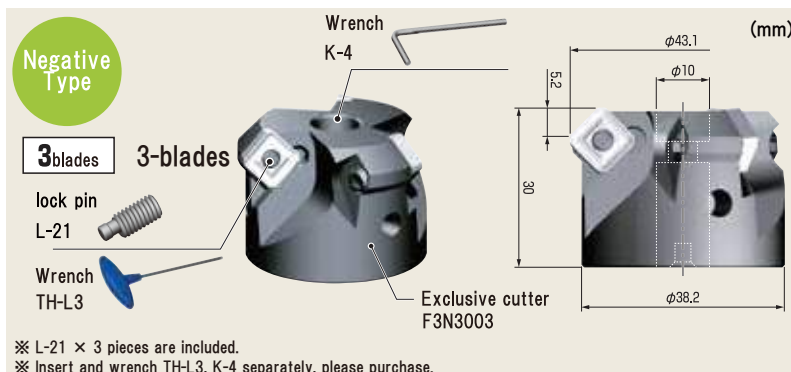
※ In case you need cutter only, please order insert separately

## BODY

Model number	Fixed plate F3	Fixed plate (thin plate) F3-250T	Slide plate F3-400S	Slide plate (thin plate) F3-400ST
Power Supply	AC100V or 120V/240V	AC100V or 120V/240V	AC100V or 120V/240V	AC100V or 120V/240V
Rotation speed	8,000r.p.m.	8,000r.p.m.	8,000r.p.m.	8,000r.p.m.
Dimension	W230×D250×H327mm	W230×D250×H327mm	W230×D400×H362mm	W230×D400×H362mm
Weight (Kg)	23(Except power cable)	23(Except power cable)	28(Except power cable)	28(Except power cable)
Guide plate	F3L-250	F3L-250T	F3S-400	F3S-400T
Insert	S3H3MNZ NK2020	S3H3MNZ NK2020	S3H3MNZ NK2020	S3H3MNZ NK2020

## List of Standard Accessories

Product Name	Model number	Quantity
Exclusive cutter	F3P3003	1
Clamp screw	L-15	3
Wrench	K-4 / K-6 / N-6	One each
Fuses	F-15A	1 (one spare)
power cable	PC-1	1
Insert	S3H3MNZ NK2020	3



※ L-21 × 3 pieces are included.

※ Insert and wrench TH-L3, K-4 separately, please purchase.

## BODY

Model number	Fixed plate F3-N	Fixed plate (thin plate) F3-250T-N	Slide plate F3-400S-N	Slide plate (thin plate) F3-400ST-N
Power Supply	AC100V or 120V/240V	AC100V or 120V/240V	AC100V or 120V/240V	AC100V or 120V/240V
Rotation speed	8,000r.p.m.	8,000r.p.m.	8,000r.p.m.	8,000r.p.m.
Dimension	W230×D250×H327mm	W230×D250×H327mm	W230×D400×H362mm	W230×D400×H362mm
Weight (Kg)	23(Except power cable)	23(Except power cable)	28(Except power cable)	28(Except power cable)
Guide plate	F3L-250	F3L-250T	F3S-400	F3S-400T
Insert	S3H3MNZ NK2020	S3H3MNZ NK2020	S3H3MNZ NK2020	S3H3MNZ NK2020

## List of Standard Accessories

Product Name	Model number	Quantity
Exclusive cutter	F3N3003	1
lock pin	L-21	3
Wrench	K-4 / K-6 / TH-L3	One each
Fuses	F-15A	1 (one spare)
power cable	PC-1	1
Insert	S32MOZ NK2001	3

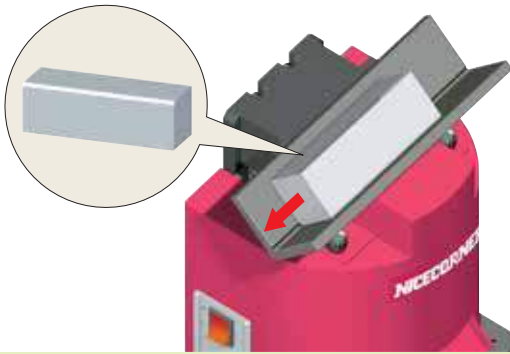


When mounting or replacing inserts, poor accuracy and breakage of  
inserts may occur due to reserve tightening and/or the eccentric locking system

...P.114

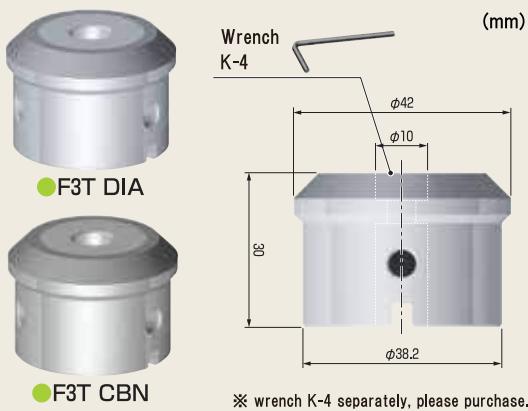


### Corner Chamfering Process



Slight-chamfering to C3(3mm)  
※ Depending on work material.

### Exclusive use Electrodeposition grindstone (Options)



※ wrench K-4 separately, please purchase.

Subject cuttings	Model number
Ceramics General	F3T DIA (DIA #100)
Glasses General	
Carbide material	
HSS Hardness	F3T CBN (CBN #100)
HRC45 or more of steel	

### Applicable Insert

Workpiece material	P-Type	N-Type
General steel	S3H3MNZ NK2020	S32MOZ NK2001
Alloy steel,SKD,SCM	S3H3MNZ NK2020	S32MOZ NK2001
Aluminum,resin,brass	S3H3GNZ NK1010	S32GUR NK1010
Cast steel,FC,FCD	S3H3GNZ NK1010	S32MOZ NK1010

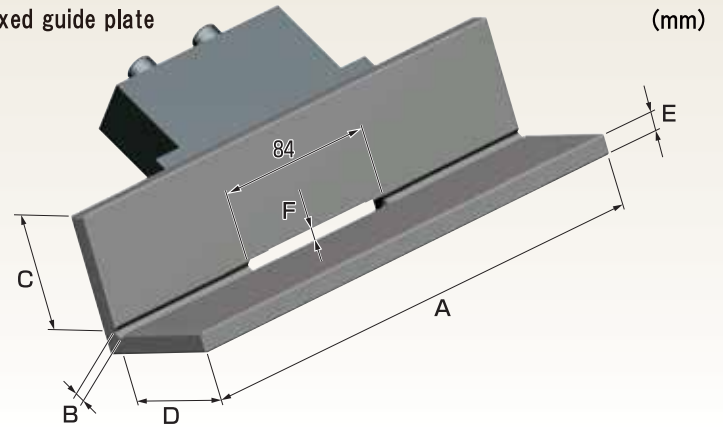
※ In case of Stainless Steel materials,blade retention time may become Short

### Insert

Figure	Model number	Material	Blade shape	Coating	Usable corners	Quantity per box
<b>PositiveType</b> (S3H3MNZ) (S3H3GNZ) (S3H3GNXE) 	S3H3MNZ NK2001	Cermet	Honing edge	None	4	12
	S3H3GNZ NK1010	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ NK2020	Carbide M20	Honing edge	None	4	12
	S3H3GNZ NK9090 (Mirror polished finish)	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ AC15D	Fine particles Carbide	Honing edge	AlCrN	4	12
	S3H3GNXE AC16N	Fine particles Carbide	Honing edge	AlCrN	4	12

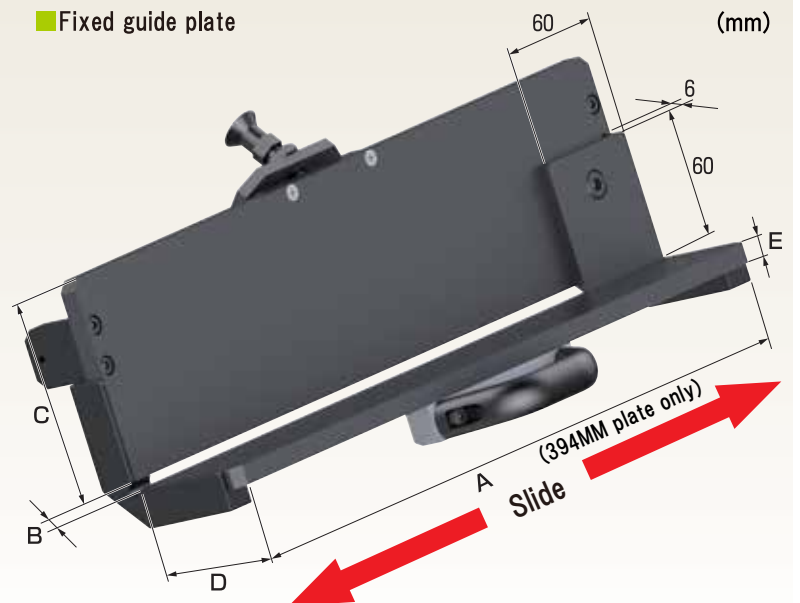
⚠ Insert details for N-type F3N3003, please refer to P.105

### Fixed guide plate



Model number	A	B	C	D	E	F	Maximum possible plate length	Maximum possible thickness	Maximum C chamfer
F3L-250	250mm	5mm	55mm	55mm	10mm	5.5mm	—	6mm or more	MAX C3
F3L-250T	250mm	2mm	55mm	55mm	10mm	2mm	—	2.5mm or more	MAX C1

### Fixed guide plate



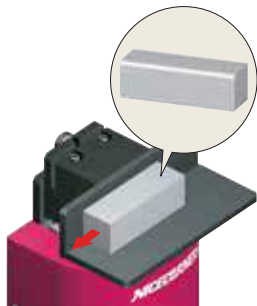
※ Chamfer can be made by 250mm work

Model number	A	B	C	D	E	F	Maximum possible plate length	Maximum possible thickness	Maximum C chamfer
F3S-400	400mm	5mm	100mm	60mm	10mm	5mm	250mm	6mm or more	MAX C3
F3S-400T	400mm	2mm	100mm	60mm	10mm	2mm	250mm	2.5mm or more	MAX C1



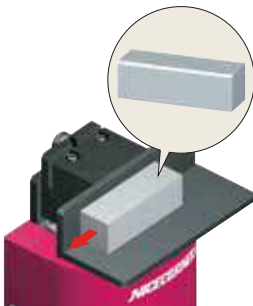


## Corner Rounding Process



R1 to R=3(mm)  
※ Depending on work material.

## Corner Chamfering Process



Slight-chamfering to C3(3mm)  
※ Depending on work material.

- Realized high speed cutting with 8000 rpm
- You can find chamfering amount with a single glance and can adjust chamfering amount simply
- Chamfer processing without scratching materials can be realized by using linear slide guide (Option)



## Exclusive Cutter built in(Standard) 3 Blade

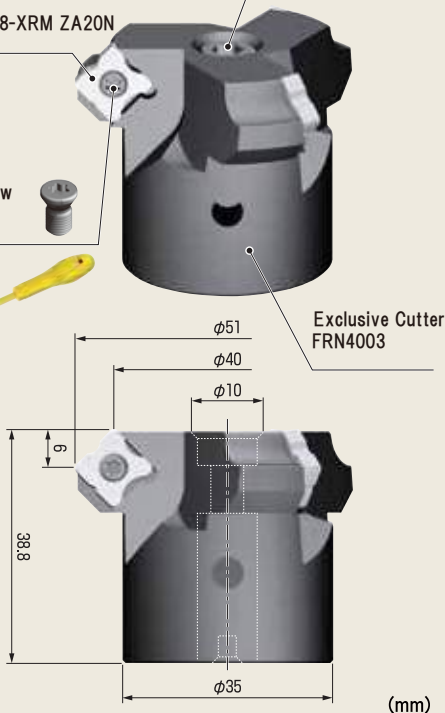
### NegativeType

Insert  
SNEQ090308-XRM ZA20N

Clamp screw  
M-1

Wrench  
TL-T9

Wrench  
K-4



※ In case you need cutter only, please order insert separately

## BODY

Model number	Fixed plate	Slide plate
	FR	FR-400S
Power Supply	AV100V or 120V/240V	AV100V or 120V/240V
Rotation speed	8,000r.p.m.	8,000r.p.m.
Dimension	W240×D250×H360	W290×D400×H400
Weight	27kg(Except power cable)	32kg(Except power cable)
Guide plate	FRL-250	FRS-400
Insert	SNEQ090308-XRM ZA20N	SNEQ090308-XRM ZA20N



When mounting or replacing inserts, poor accuracy and breakage of inserts may occur due to reserve tightening and/or the eccentric locking system

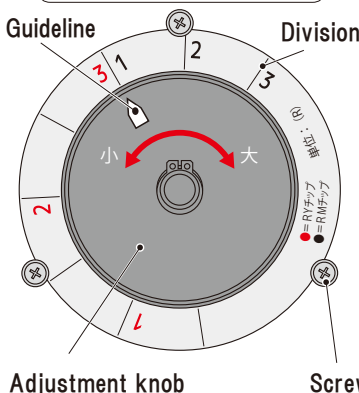
...P.114

## List of Standard Accessories

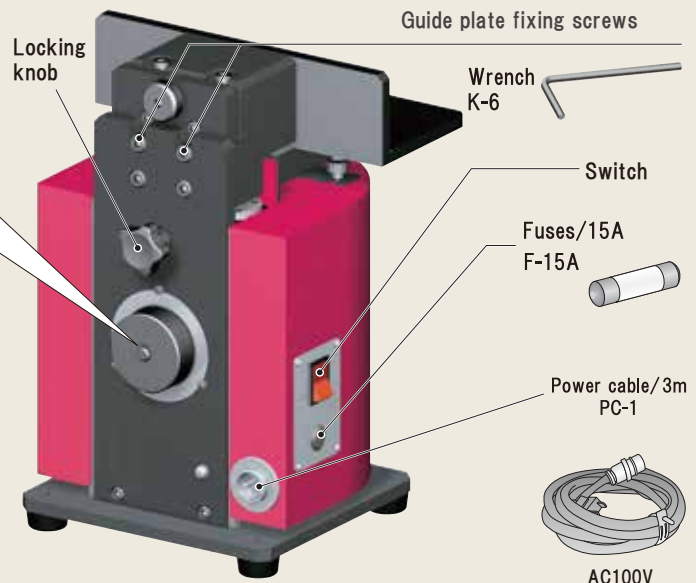
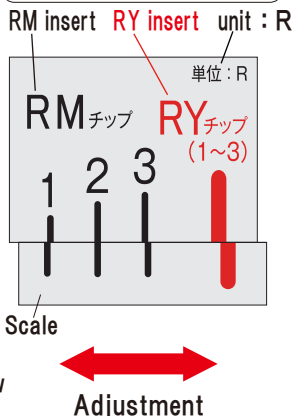
Product Name	Model number	Quantity
Exclusive cutter	FRN4003	1
Clamp screw	M-1	3
Wrench	K-4 / K-6 / TL-T9	One each
Fuses	F-15A	1 (one spare)
Power cable	PC-1	1
Insert	SNEQ090308-XRM ZA20N	3

Adjustment of R (C) chamfering amount  
in two division has been simplified.

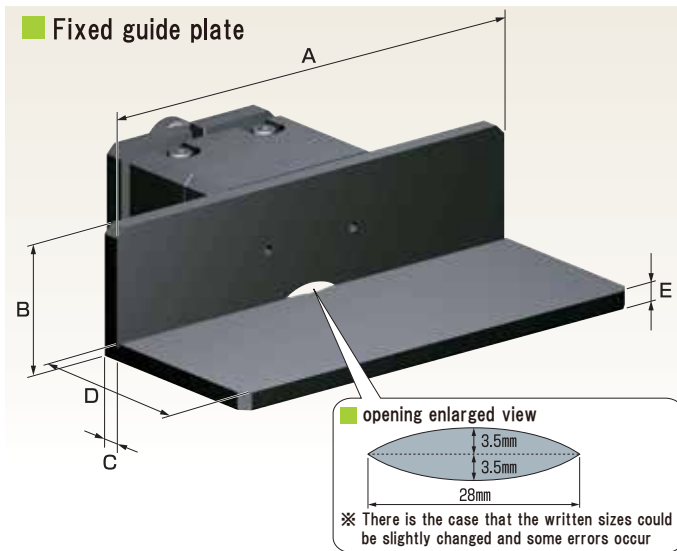
### Z axis adjustment knob



### X axis adjustment knob



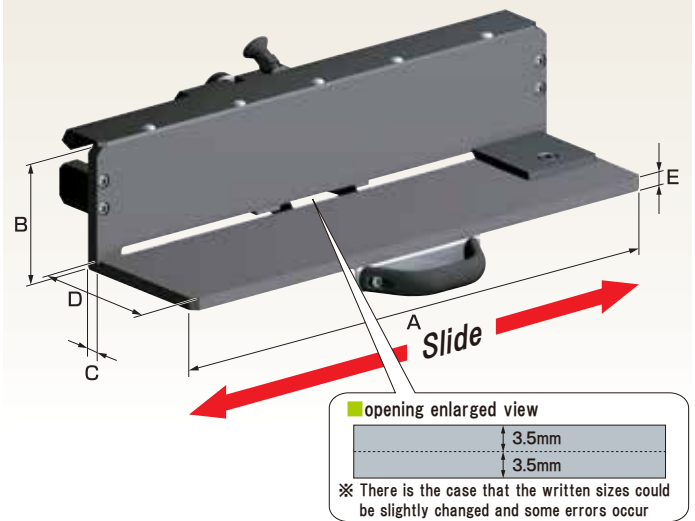
## ■ Fixed guide plate



Model number	A	B	C	D	E	Maximum C chamfer	Maximum R chamfer
FRL-250	250mm	70mm	10mm	100mm	10mm	MAX C3	MAX R3

※ workable thickness will be more than 4mm.

## ■ Slide guide plate ※ Chamfer can be made by 250mm work



Model number	A	B	C	D	E	Maximum C chamfer	Maximum R chamfer
FRS-400	400mm	90mm	10mm	105mm	10mm	MAX C3	MAX R3

※ workable thickness will be more than 4mm.

## ■ Applicable Insert

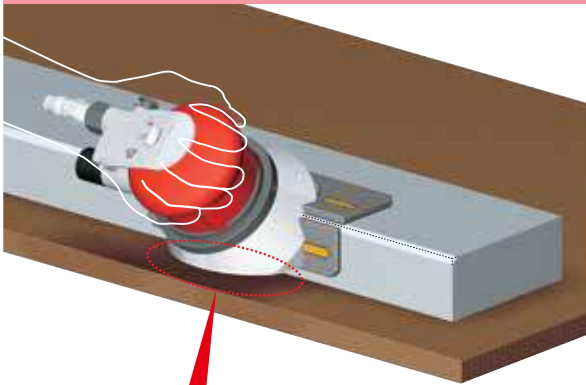
Workpiece material	Recommended Insert	
	For R chamfering	For C chamfering
General steel	SNEQ090308	S32MOZ NK2001
Alloy steel,SKD,SCM	SNEQ090308	S32MOZ NK2001
Aluminum,resin,brass	SNEQ090308	S32GUR NK1010
Castings,FC,FCD	SNEQ090308	S32MOZ NK1010

※ In case of Stainless Steel materials,blade retention time may become Short

## ■ Insert

Figure	Model number	Material	Blade shape	Coating	Usable corners	Quantity per box
<b>Is deviated R (SNEQ090308-□RY)</b> <p>※CA20N is dedicated to aluminum.</p>	SNEQ090308-1RY ZA20N	Carbide M20	The Same R Each corner	None	4	12
	SNEQ090308-2RY ZA20N	Carbide M20	The Same R Each corner	None	4	12
	SNEQ090308-3RY ZA20N	Carbide M20	The Same R Each corner	None	4	12
	SNEQ090308-XRY ZA20N	Carbide M20	R1-2-3-4	None	4	12
	<b>NEW</b> SNEQ090308-1RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	<b>NEW</b> SNEQ090308-2RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	<b>NEW</b> SNEQ090308-3RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	SNEQ090308-1RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-2RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-3RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
<b>Center R (SNEQ090308-□RM)</b> <p>※CA20N is dedicated to aluminum.</p>	SNEQ090308-XRM ZA20N	Carbide M20	R1-2-3-4	None	8	12
	<b>NEW</b> SNEQ090308-1RM CA20N	Carbide M20	The Same R Each corner	DLC	8	12
	<b>NEW</b> SNEQ090308-2RM CA20N	Carbide M20	The Same R Each corner	DLC	8	12
	<b>NEW</b> SNEQ090308-3RM CA20N	Carbide M20	The Same R Each corner	DLC	8	12
<b>〈S32MOZ〉</b> <p>(Except nose R)</p>	S32MOZ NK2001	Cermet	Honing edge	None	8	12
	S32MOZ NK2050	Cermet	Honing edge	None	8	12
	S32MOZ AB01F	Cermet	Honing edge	AlCrN	8	12
	S32MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	S32MOZ NK2020	Carbide M20	Honing edge	None	8	12
	S32MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	S32MOZ AC15T	Fine particles Carbide	Honing edge	AlCrN	8	12
<b>〈S32GUR〉</b> <p>(Except nose R)</p>	S32GUR NK2001	Cermet	Honing edge	None	8	12
	S32GUR NK1010	Carbide K10	Sharp edge	None	8	12
	S32GUR NK2020	Carbide M20	Honing edge	None	8	12
	S32GUR NK3030	Carbide M20	Honing edge	TiN	8	12
	S32GUR NK5050	Carbide K10	Sharp edge	TiN	8	12
	S32GUR NK6060	Carbide M20	Honing edge	TiAlN	8	12
	S32GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12

Corner Chamfering



This corner designed do not touch the bottom

### Specification

Air Pressure	0.49 • 0.68MPa(5 • 7kg/cm <sup>2</sup> )
Non-Load Rotational	10,000r.p.m.
Air Consumption	0.19m <sup>3</sup> /min
Capacity	• C4
Work Thickness	more than 6mm
Weight	2kg

### Processing Example

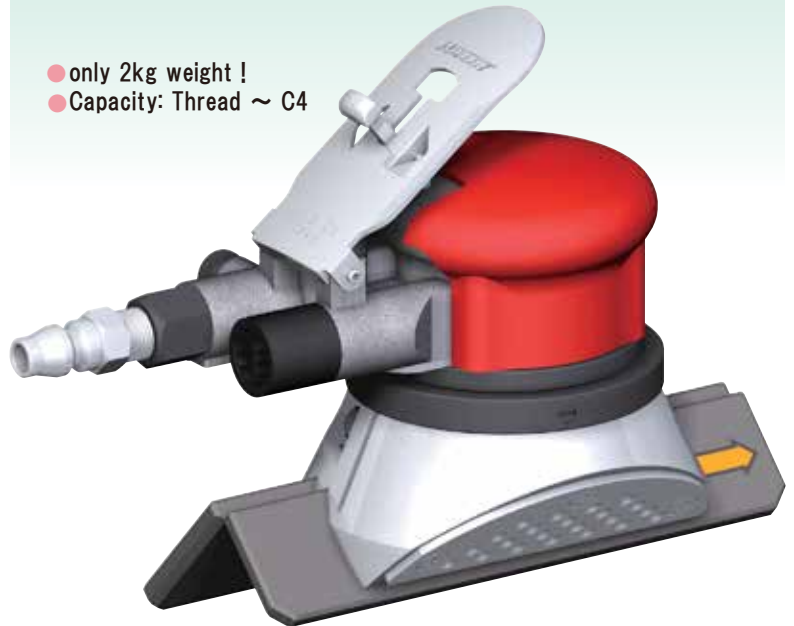
[Chamfering of one corner per 20m in the processing of 1C]

■ Insert : SDM W11T4AFEN12 ZA20D

● Material..... SUS304

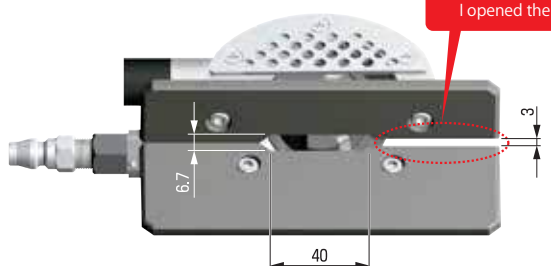
Unique and advanced  
Air operated Portable  
Handy Chamfering machine !

- only 2kg weight !
- Capacity: Thread ~ C4



(mm)

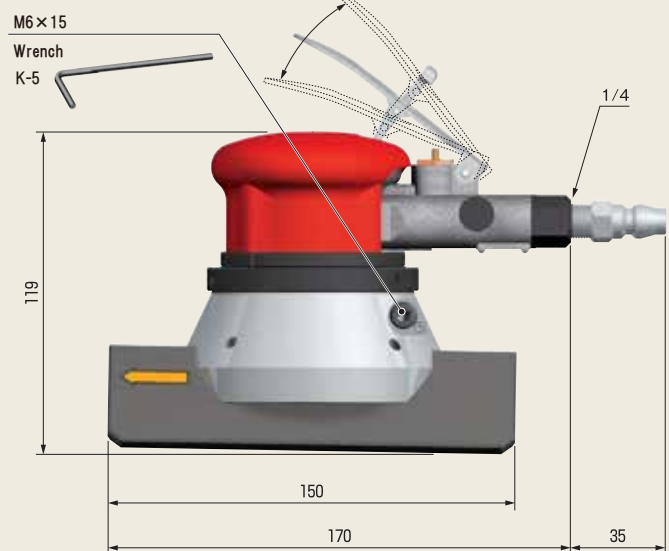
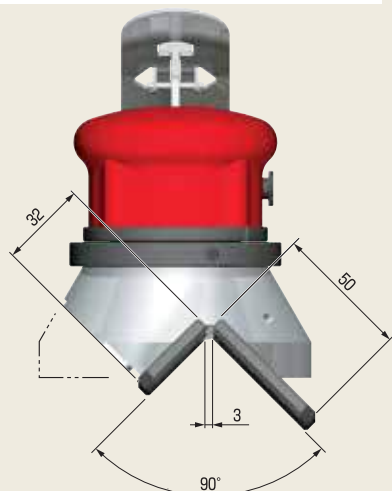
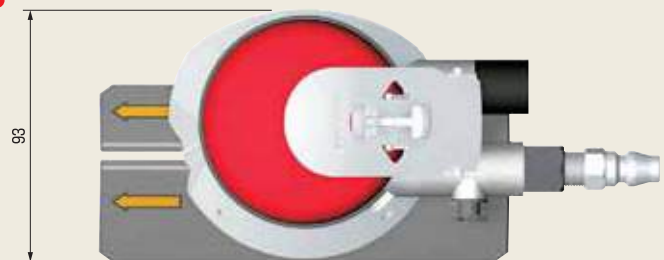
### The Openings Enlarged Photo



burr In order to avoid,  
I opened the gap.

For burr-removal, we make a space Cutter area  
of Guide Plate groove is widen

※ The dimension could be little different



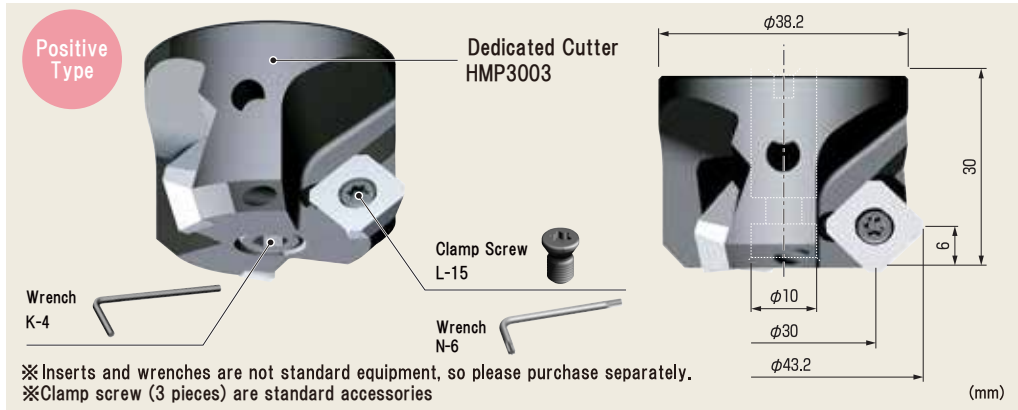
Body

Model No.	Blade	Dimensions(mm)	Guide plate overall length (mm)	Inserts	Weight
HAM4-150CP3003	3	W93×D205×H119	150	SDMW type or SDEW type	2kg

※ Insert is not equipped as standard accessory  
 ※ Clamp screw and wrench are supplied as standard accessory

Standard Equipment

Dedicated Cutter (equipped with Body)



Accessories



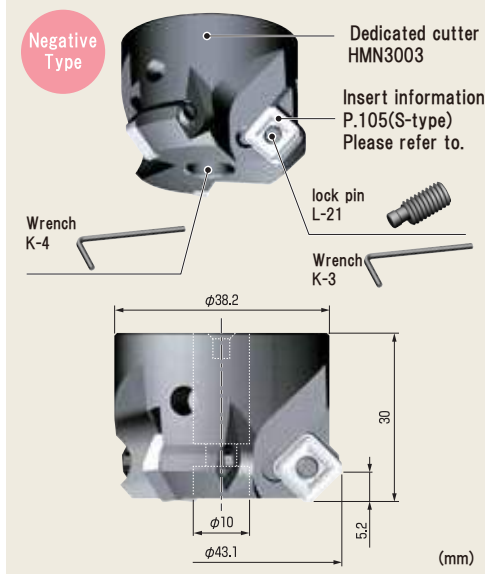
Mini oil (one)

Model No.	MO-20
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Options

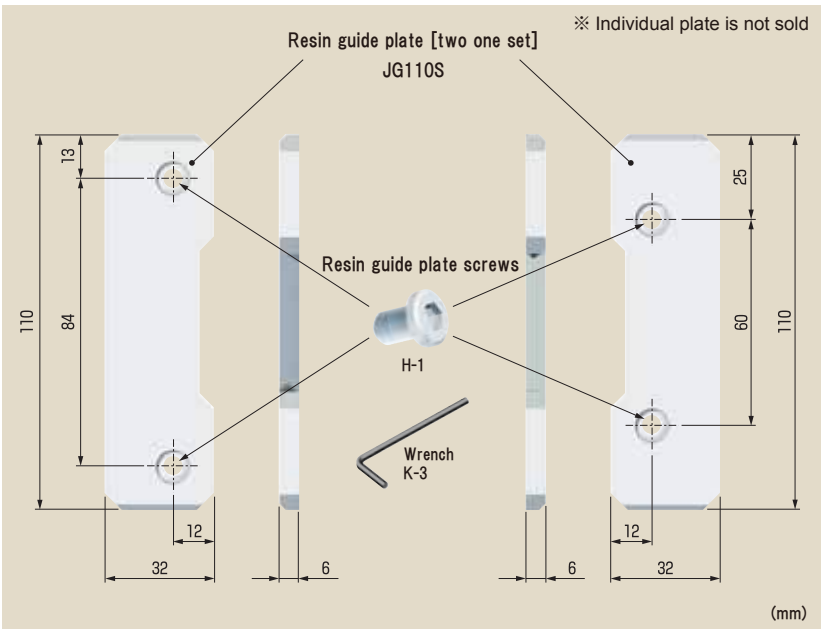
Dedicated Cutter(option)

3Blade



※ Inserts and wrenches are not standard equipment, so please purchase separately.  
 ※ lock pin (3 pieces) are standard accessories

Resin Guide Plate(option)



Insert

Figure	Model number	Material	Blade shape	Coating	Usable corners	Quantity per box
<p>(Except nose R)</p> <p>SDEW11T4ZFEN08 SDEW11T4AFEN12 SDEW11T4AFFN12</p>	SDMW11T4AFEN12 ZB01N	Cermet	Honing edge	None	4	10
	SDEW11T4AFFN12 ZA10D	Carbide K10	Sharp edge	None	4	10
	SDMW11T4AFEN12 ZA20D	Carbide M20	Honing edge	None	4	10
	SDEW11T4AFFN12 ZA10DL (Mirror polished finish)	Carbide K10	Sharp edge	None	4	10
	SDMW11T4AFEN12 AC15D	Fine particles Carbide	Honing edge	AlCrN	4	10
	SDEW11T4ZFEN08 AC16N	Fine particles Carbide	Sharp edge	AlCrN	4	10

Corner Chamfering

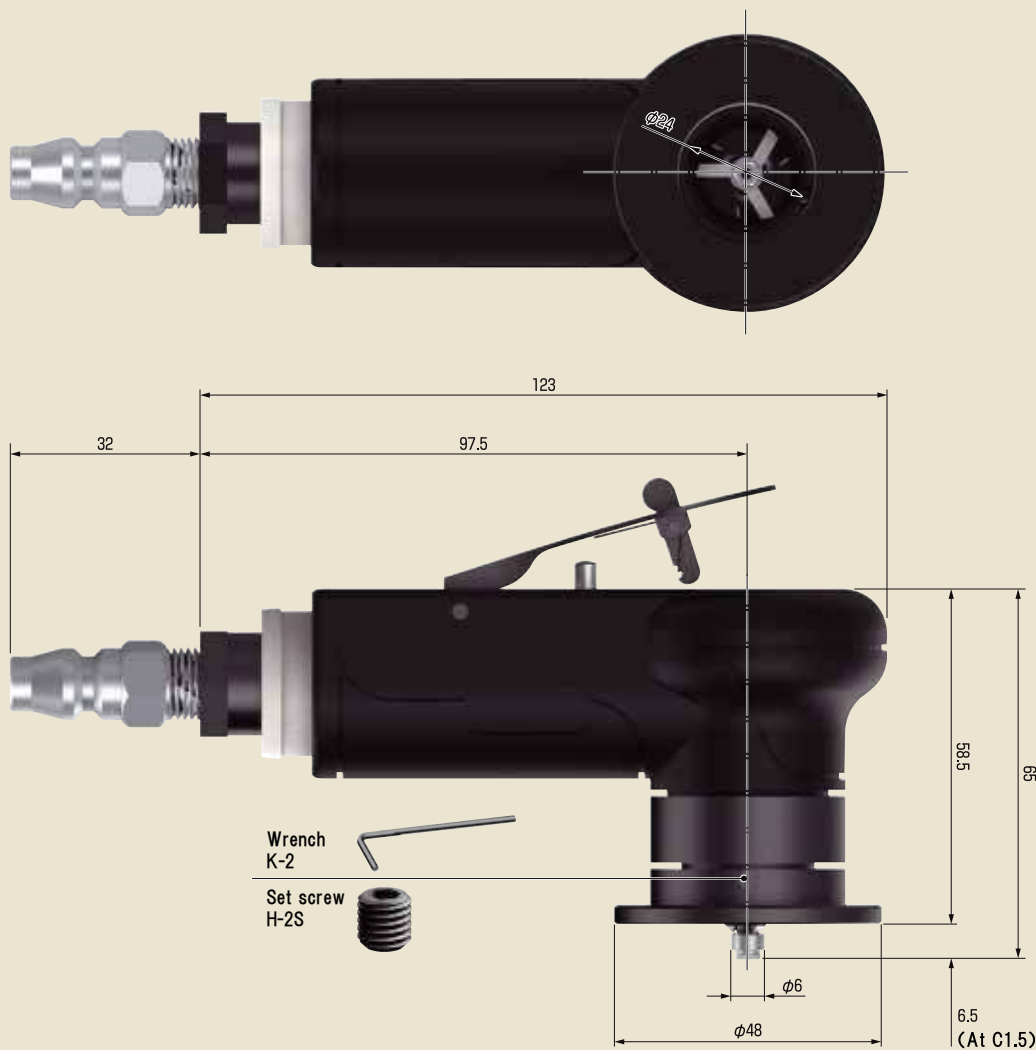
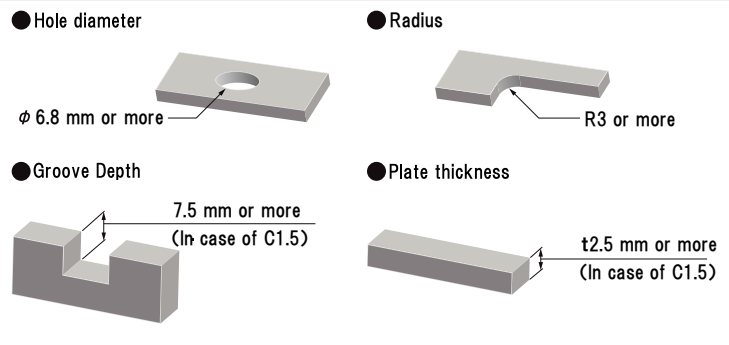


Specification

Air Pressure	0.49 ~ 0.68MPa(5 ~ 7f/cm <sup>2</sup> )
Non-Load Rotational	19,000~23,000r.p.m.
Air Consumption	0.5m <sup>3</sup> /min
Capacity	Until the C1.5
Work Thickness	7.5mm * (In case of setting the material flat)
Weight	About 0.4kg

Unique and advanced  
Air operated Portable  
Handy Chamfering machine !

- only 0.4kg weight !
- Capacity: Thread ~ C4
- Chamferable material dimensions (Example based on processing shape)





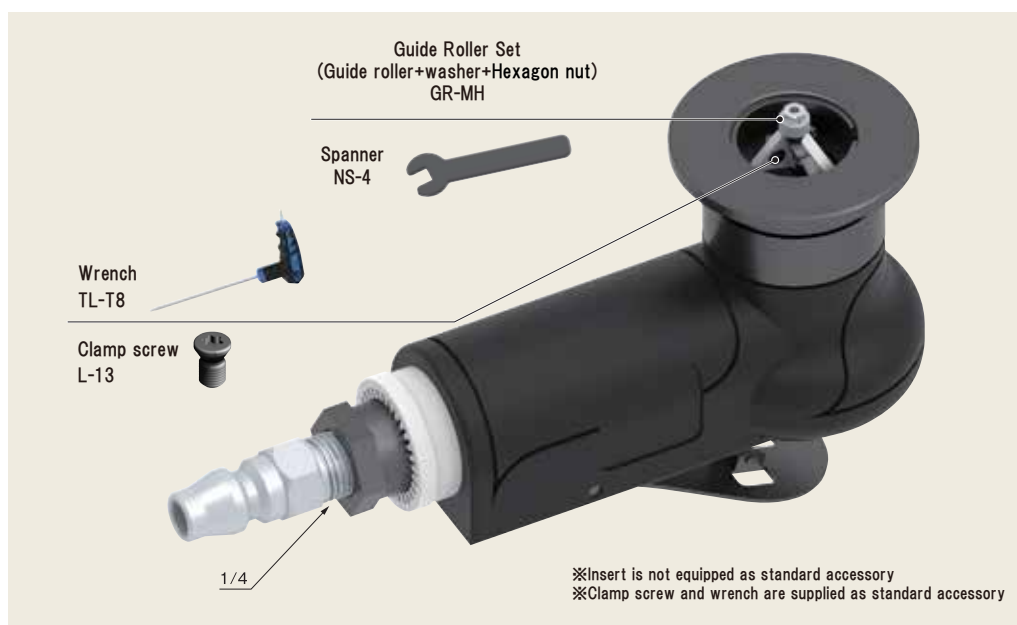
## Body

Model No.	Blades	Dimensions(mm)	Inserts	Weight
HAM1.5-48TP0603	3	W48×D155×H85	TPGT090204ER ZB01N	0.4kg

※ Insert is not equipped as standard accessory

※ Clamp screw and wrench are supplied as standard accessory

## Standard Equipment



## Accessory

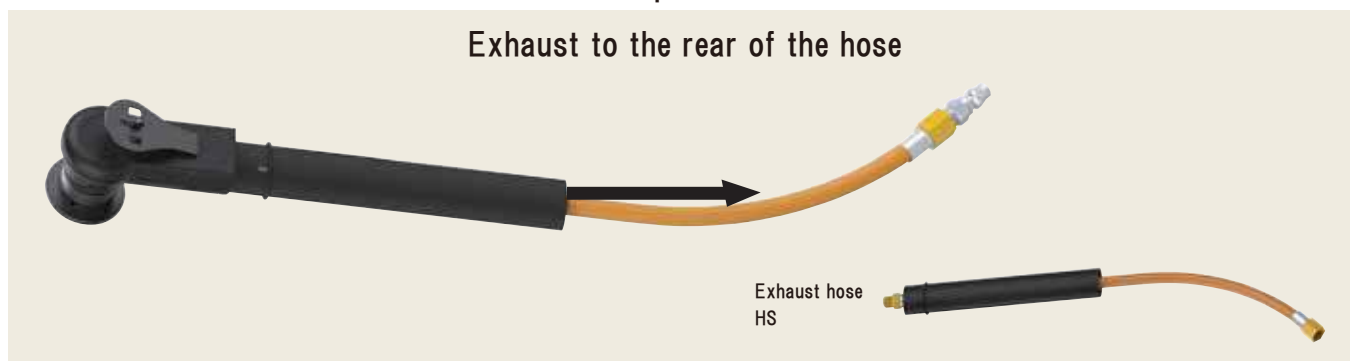


Mini Oil (1piece)

Model number MO-20

## Options

### Exhaust to the rear of the hose



## Insert

Figure	Model number	Material	Blade shape	Coating	Usable corners	Quantity per box
<p>〈TPGT090204ER〉</p>	TPGT090204ER ZB01N (General Steel)	Cermet	Honing edge	None	3	12
<p>〈TPGT090204FR-U〉 〈TPGT090204ER-U〉</p>	<p><b>NEW</b> TPGT090204FR-U ZC16N (Aluminum, Resin, Brass)</p> <p><b>NEW</b> TPGT090204ER-U AC16N (Stainless Steel)</p>	<p>Fine Particles Carbide</p> <p>Fine Particles Carbide</p>	<p>Sharp edge</p> <p>Honing edge</p>	<p>None</p> <p>AlCrN</p>	<p>3</p> <p>3</p>	<p>12</p> <p>12</p>

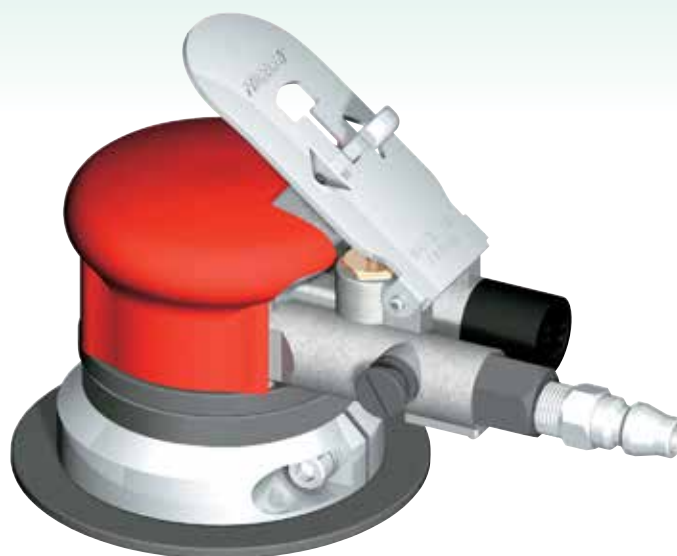


## Round corner Chamfering



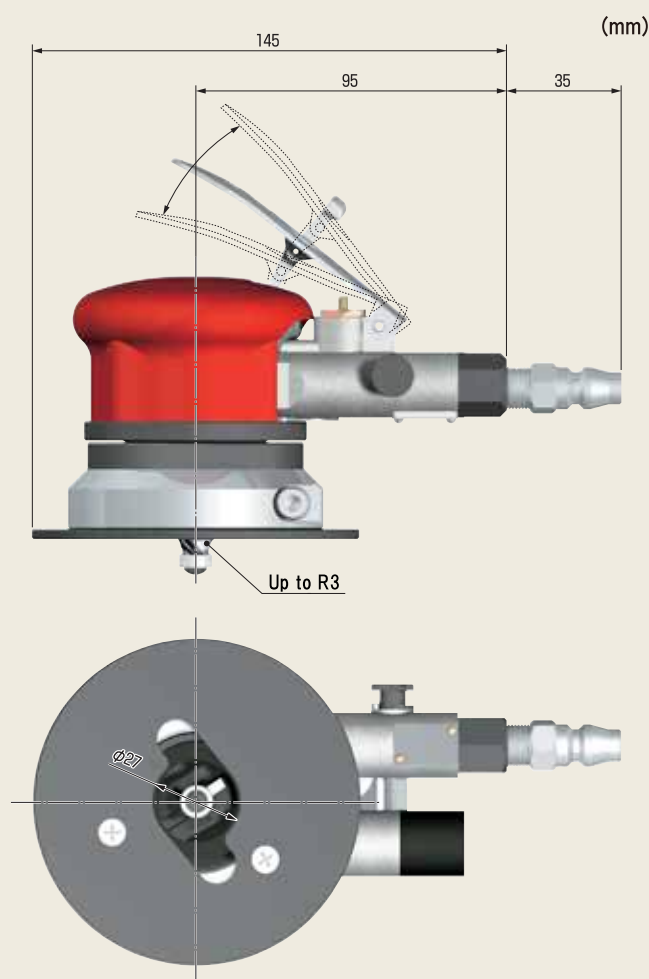
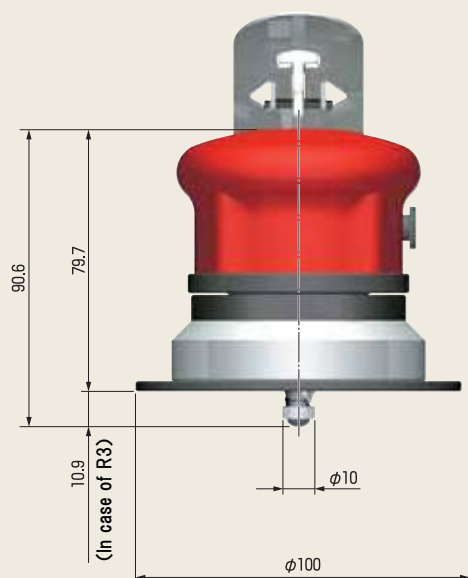
## !! Round corner Chamfering machine Handy type Air-driven

- Lightweight (about 1.3) It is possible to process up to R3 (C3) in the handy type.
- low-cost small Insert.



### Specification

Air Pressure	0.49 ~ 0.68MPa(5 ~ 7f/cm <sup>2</sup> )
Non-Load Rotational	10,000r.p.m.
Air Consumption	0.19m <sup>3</sup> /min
Capacity	Until the R3 (~C3)
Work Thickness	12mm * (In the case of flat material placement with R3)setting
Weight	About 1.3kg



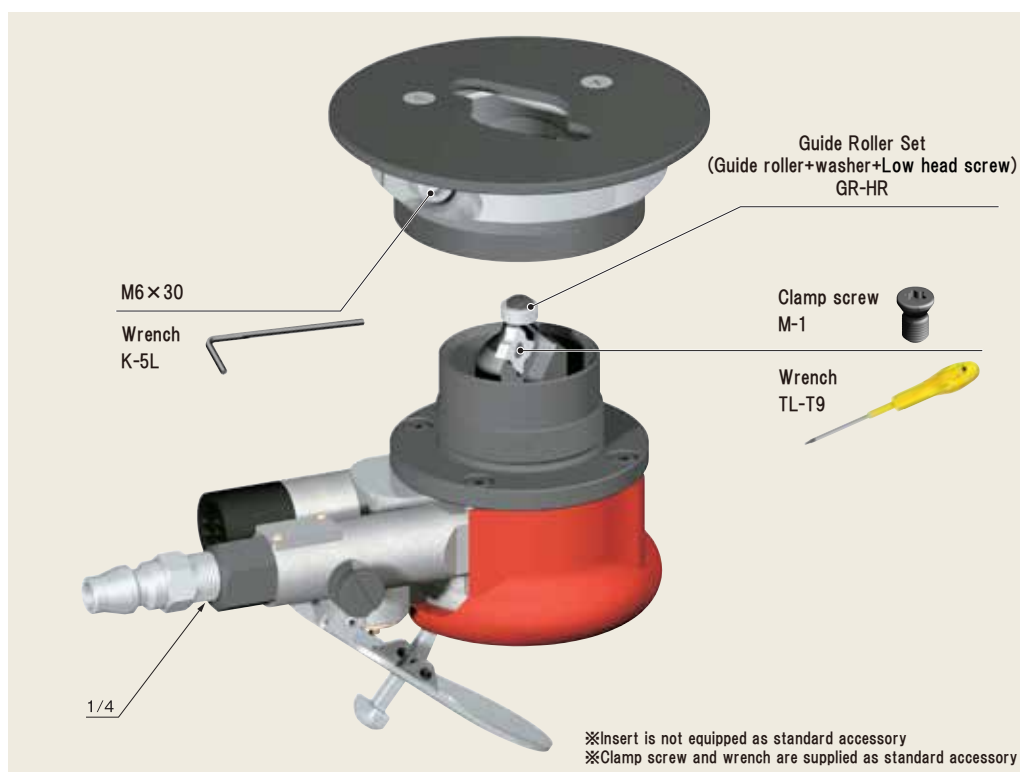
## Body

Model No.	Blades	Dimensions(mm)	Inserts	Weight
HAM3R-100S	1	W100×D180×H90.6	SNEQ090308 / S32MOZ / S32GUR	1.3kg

※ Insert is not equipped as standard accessory

※ Clamp screw and wrench are supplied as standard accessory

## Standard Equipment



## Accessory



Mini Oil (1piece)

Model number	MO-20
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## Insert

Figure	Model number	Material	Blade shape	Coating	Usable corner	Quantity per box
(SNEQ090308-□RY)  ※CA20N is dedicated to aluminum.	SNEQ090308-1RY ZA20N	Carbide M20	The Same R Each corner	None	4	12
	SNEQ090308-2RY ZA20N	Carbide M20	The Same R Each corner	None	4	12
	SNEQ090308-3RY ZA20N	Carbide M20	The Same R Each corner	None	4	12
	SNEQ090308-XRY ZA20N (R4 can not be used)	Carbide M20	R1·2·3·4	None	3	12
	<b>NEW</b> SNEQ090308-1RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	<b>NEW</b> SNEQ090308-2RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	<b>NEW</b> SNEQ090308-3RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
(S32MOZ)  (Except nose R)	S32MOZ NK2001	Cermet	Honing edge	None	8	12
	S32MOZ NK2050	Cermet	Honing edge	None	8	12
	S32MOZ AB01F	Cermet	Honing edge	AlCrN	8	12
	S32MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	S32MOZ NK2020	Carbide M20	Honing edge	None	8	12
	S32MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	S32MOZ AC15T	Fine particles Carbide	Honing edge	AlCrN	8	12
(S32GUR)  (Except nose R)	S32GUR NK2001	Cermet	Honing edge	None	8	12
	S32GUR NK1010	Carbide K10	Sharp edge	None	8	12
	S32GUR NK2020	Carbide M20	Honing edge	None	8	12
	S32GUR NK3030	Carbide M20	Honing edge	TiN	8	12
	S32GUR NK5050	Carbide K10	Sharp edge	TiN	8	12
	S32GUR NK6060	Carbide M20	Honing edge	TiAlN	8	12
	S32GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12

## Round corner Chamfering



## High-Power !! Air operated Portable Handy Chamfering Machine

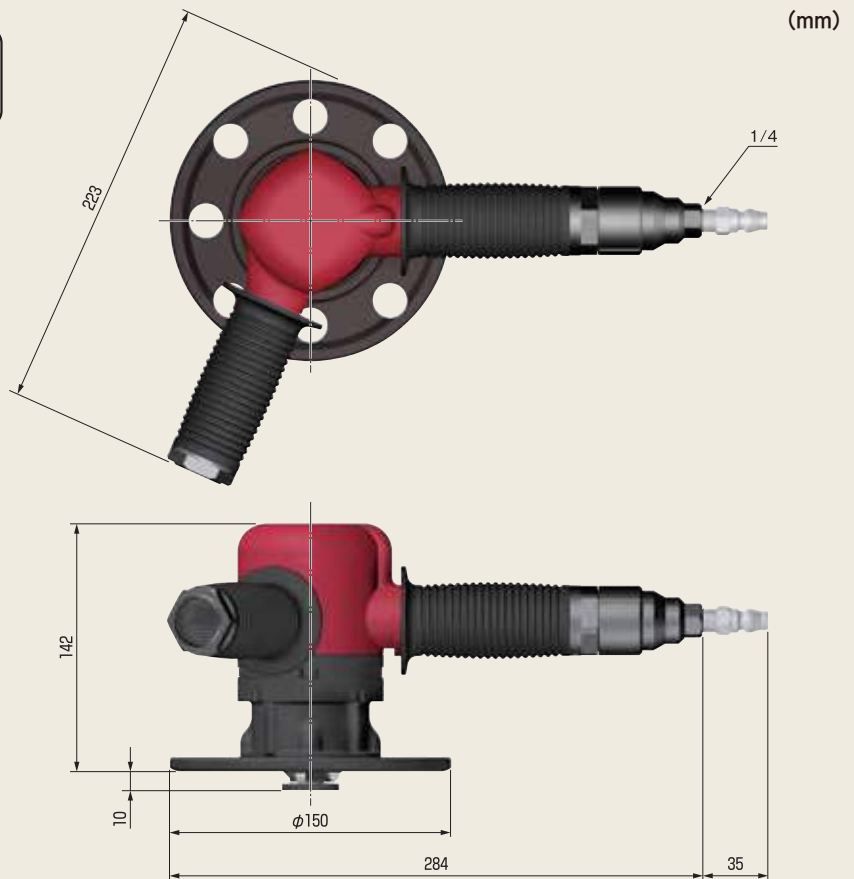
- Only 3.4kg weight Handy type
- Capacity: R3(C3), R4(C4), R5(C5)



### Specification

Model number	HAM3R-150N	HAM4R-150N	HAM5R-150N
Air Pressure	0.49 ~ 0.68MPa(5 ~ 7f/cm <sup>2</sup> )		
Non-Load Rotational	10,000r.p.m.		
Air Consumption	0.96m <sup>3</sup> /min		
Capacity	Until the R3 (C3)	Until the R4 (C4)	Until the R5 (C5)
Work Thickness	12mm *		
Weight	About 3.4kg		

※The amount of chamfer of this product is dedicated size.



### Body

Model No.	Blades	φ D	Dimensions(mm)	Inserts	Weight
NEW HAM3R-150N	3	30.7mm	W223×D319×H142	N43GXR / N43MOZ / N43GUR	3.4Kg
NEW HAM4R-150N	3	29.7mm	W223×D319×H142	N43GXR / N43MOZ / N43GUR	3.4Kg
NEW HAM5R-150N	3	28.7mm	W223×D319×H142	N43GXR / N43MOZ / N43GUR	3.4Kg

※ Insert is not equipped as standard accessory

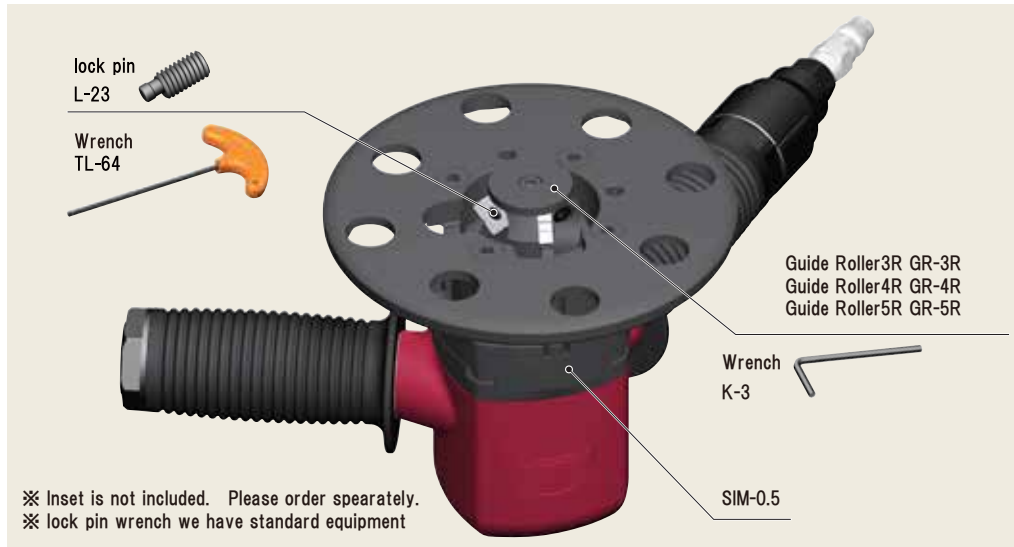
※ Clamp screw and wrench are supplied as standard accessory



During the insert mounting, because of the eccentric lock system, and poor accuracy due to the reverse lock, may lead to insert damage. During the insert replacement, please be sure to confirm whether the reverse lock is not.

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## Standard Equipment



## Accessory



Mini oil (one)

Model number MO-20

## Insert

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>〈N43GXR8〉</p> <p>〈N43GXR Semi-Standard〉</p> <p>※ Semi-Standard Insert have no braker ※ CA20N is dedicated to aluminum.</p>	N43GXR8-3R NK2001	Cermet	The Same R Each corner	None	8	3/12
	N43GXR8-4R NK2001	Cermet	The Same R Each corner	None	8	3/12
	<b>NEW</b> Semi standard N43GXR8-5R NK2001	Cermet	The Same R Each corner	None	8	3/12
	<b>NEW</b> N43GXR8-3R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	<b>NEW</b> N43GXR8-4R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	<b>NEW</b> Semi standard N43GXR8-5R NK2020	Carbide M20	The Same R Each corner	None	8	3/12
	<b>NEW</b> N43GXR8-3R AC16N	Fine particles Carbide	The Same R Each corner	AlCrN	8	3/12
	<b>NEW</b> N43GXR8-4R AC16N	Fine particles Carbide	The Same R Each corner	AlCrN	8	3/12
	<b>NEW</b> Semi standard N43GXR8-5R AC16N	Fine particles Carbide	The Same R Each corner	AlCrN	8	3/12
	<b>NEW</b> N43GXR8-3R CA20N	Carbide M20	The Same R Each corner	DLC	8	3/12
	<b>NEW</b> N43GXR8-4R CA20N	Carbide M20	The Same R Each corner	DLC	8	3/12
	<b>NEW</b> Semi standard N43GXR8-5R CA20N	Carbide M20	The Same R Each corner	DLC	8	3/12
<p>〈N43MOZ〉</p> <p>(Except nose R)</p>	N43MOZ NK2001	Cermet	Honing edge	None	8	12
	N43MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	N43MOZ NK2020	Carbide M20	Honing edge	None	8	12
	N43MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	N43MOZ NK6060	Carbide M20	Honing edge	TiAlN	8	12
	N43MOZ NK8080	Carbide K10	Sharp edge	TiAlN	8	12
<p>〈N43GUR〉</p> <p>(Except nose R)</p>	N43GUR NK2001	Cermet	Honing edge	None	8	12
	N43GUR NK1010	Carbide K10	Sharp edge	None	8	12
	N43GUR NK2020	Carbide M20	Honing edge	None	8	12
	N43GUR NK3030	Carbide M20	Honing edge	TiN	8	12
	N43GUR NK6060	Carbide M20	Honing edge	TiAlN	8	12
	N43GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12

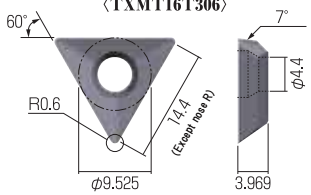
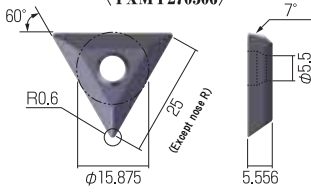
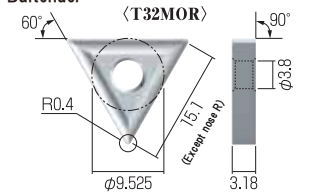
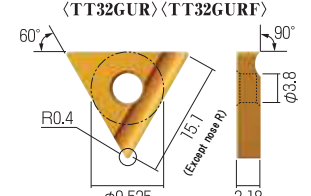
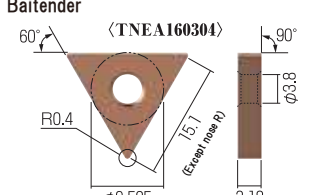
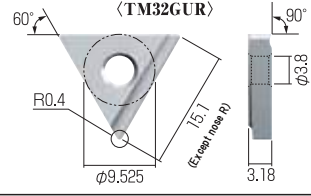
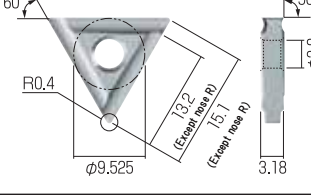
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# Inserts

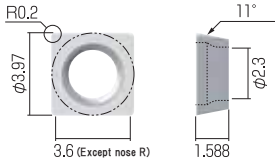
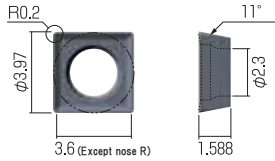
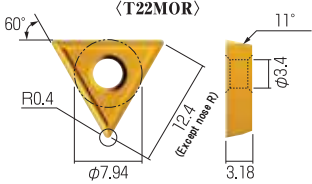
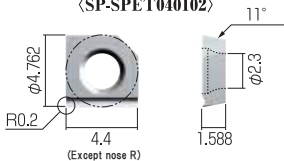
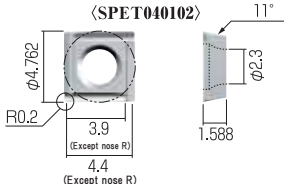
Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● Momimen Nano</b> <b>〈ENGX040102〉</b> 	<b>NEW</b> ENGX040102F ZC16N	Fine particles Carbide	Sharp edge	None	2	12
	ENGX040102 AC15N	Fine particles Carbide	Honing edge	AlCrN	2	12
<b>● Chibimomi</b> <b>〈C22GUX〉〈C22GUXF〉〈C22GUXT〉</b> 	C22GUX NK1010	Carbide K10	Sharp edge	None	2	12
	C22GUX NK2020	Carbide M20	Honing edge	None	2	12
	C22GUX NK3030	Carbide M20	Honing edge	TiN	2	12
	C22GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	C22GUX NK6060	Carbide M20	Honing edge	TiAlN	2	12
	C22GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	C22GUXF AC16N	Fine particles Carbide	Sharp edge	AlCrN	2	12
	C22GUXT AC16N	Fine particles Carbide	Honing edge	AlCrN	2	12
<b>● Momimen/Men men</b> <b>〈C32GUX〉</b> 	C32GUX NK2001	Cermet	Honing edge	None	2	12
	C32GUX NK1010	Carbide K10	Sharp edge	None	2	12
	C32GUX NK2020	Carbide M20	Honing edge	None	2	12
	C32GUX NK3030	Carbide M20	Honing edge	TiN	2	12
	C32GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	C32GUX NK6060	Carbide M20	Honing edge	TiAlN	2	12
	C32GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	C32GUX AC15D	Fine particles Carbide	Honing edge	AlCrN	2	12
	C32GUX AC25D	Fine particles Carbide	Sharp edge	AlCrN	2	12
	C32GUX HSS	HSS	Sharp edge	None	2	12
	C32GUX HSS TiN	HSS	Sharp edge	TiN	2	12
<b>● Dekamomi</b> <b>〈T32GUX〉〈T32GUXF〉〈T32GUXT〉</b> 	T32GUX NK2001	Cermet	Honing edge	None	2	12
	T32GUX NK1010	Carbide K10	Sharp edge	None	2	12
	T32GUX NK2020	Carbide M20	Honing edge	None	2	12
	T32GUX NK3030	Carbide M20	Honing edge	TiN	2	12
	T32GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	T32GUX NK6060	Carbide M20	Honing edge	TiAlN	2	12
	T32GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	T32GUXF AC16N	Fine particles Carbide	Sharp edge	AlCrN	2	12
	T32GUXT AC16N	Fine particles Carbide	Honing edge	AlCrN	2	12
	T32GUX HSS	HSS	Sharp edge	None	2	12
	T32GUX HSS TiN	HSS	Sharp edge	TiN	2	12
<b>● 60° Momimen</b> <b>〈D43GUX〉</b> 	D43GUX NK1010	Carbide K10	Sharp edge	None	2	12
	D43GUX NK5050	Carbide K10	Sharp edge	TiN	2	12
	D43GUX NK8080	Carbide K10	Sharp edge	TiAlN	2	12
<b>● 60° Momimen (SC1660DS)</b> <b>〈DCET11X304〉〈DCET11X304E〉</b> 	DCET11X304 ZA10N	Carbide K10	Sharp edge	None	2	12
	DCET11X304 AC15N	Fine particles Carbide	Sharp edge	AlCrN	2	12
	DCET11X304E AC16N	Fine particles Carbide	Honing edge	AlCrN	2	12
<b>● Chibieco /Chibieco2</b> <b>〈TXMT080206〉</b> 	TXMT080206 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT080206 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12
<b>● Momieco/Momieco2</b> <b>〈TXMT110306〉</b> 	TXMT110306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT110306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12



Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● Ecomen/Ecomen2/Choumen</b>  <b>&lt;TXMT16T306&gt;</b>	TXMT16T306 ZA10N	Carbide K10	Sharp edge	None	3	12
	TXMT16T306 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	12
<b>● Dodekaeco</b>  <b>&lt;TXMT270506&gt;</b>	<b>NEW</b> TXMT270506 ZA10N	Carbide K10	Sharp edge	None	3	3
	<b>NEW</b> TXMT270506 AC16N	Fine particles Carbide	Honing edge	AlCrN	3	3
<b>● Chamfering Cutter/RCindo-Cutter</b> <b>Baitender</b>  <b>&lt;T32MOR&gt;</b>	T32MOR NK2001	Cermet	Honing edge	None	6	12
	T32MOR NK1010	Carbide K10	Sharp edge	None	6	12
	T32MOR NK2020	Carbide M20	Honing edge	None	6	12
	T32MOR NK3030	Carbide M20	Honing edge	TiN	6	12
	T32MOR AC16N	Fine particles Carbide	Honing edge	AlCrN	6	12
<b>● Chamfering Cutter/RCindo-Cutter</b> <b>Baitender</b>  <b>&lt;TT32GUR&gt; &lt;TT32GURF&gt;</b>	TT32GUR NK2001	Cermet	Honing edge	None	2	12
	TT32GUR NK1010	Carbide K10	Sharp edge	None	2	12
	TT32GUR NK2020	Carbide M20	Honing edge	None	2	12
	TT32GUR NK3030	Carbide M20	Honing edge	TiN	2	12
	TT32GUR NK5050	Carbide K10	Sharp edge	TiN	2	12
	TT32GUR NK8080	Carbide K10	Sharp edge	TiAlN	2	12
	TT32GUR AC15N	Fine particles Carbide	Honing edge	AlCrN	2	12
	TT32GURF TC16N	Fine particles Carbide	Sharp edge	TiSiN	2	12
	TT32GUR HSS	HSS	Sharp edge	None	2	12
	TT32GUR HSS TiN	HSS	Sharp edge	TiN	2	12
<b>● Chamfering Cutter/RCindo-Cutter</b> <b>Baitender</b>  <b>&lt;TNEA160304&gt;</b>	TNEA160304 TC16N	Fine particles Carbide	Honing edge	TiSiN	6	12
<b>● Mentrube</b>  <b>&lt;TM32GUR&gt;</b>	TM32GUR HSS	HSS	Sharp edge	None	2	3
	TM32GUR HSS TiAlN	HSS	Sharp edge	TiAlN	2	3
<b>● Mentrube</b>  <b>&lt;TM32GSR&gt;</b>	TM32GSR HSS	HSS	Sharp edge	None	6	3
	TM32GSR HSS TiAlN	HSS	Sharp edge	TiAlN	6	3
	<b>NEW</b> TM32GSR AC16N	Fine particles Carbide	Honing edge	AlCrN	6	3

# Inserts

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● Mentrueee</b> 	TNEG160304XR HSS	HSS	Sharp edge	None	2	3
	TNEG160304ER HSS	HSS	Honing edge	None	2	3
<b>● Mentrueee</b> 	<b>NEW</b> TNXT160304FR HSS	HSS	Sharp edge	None	3	3
	<b>NEW</b> TNXT160304ER HSS	HSS	Honing edge	None	3	3
	<b>NEW</b> TNXT160304ER HSS AICrN	HSS	Honing edge	AICrN	3	3
<b>● Mentrudee</b> 	<b>NEW</b> TCXT080102F ZC16N	Fine particles Carbide	Sharp edge	None	3	3
	<b>NEW</b> TCXT080102E AC16N	Fine particles Carbide	Honing edge	AICrN	3	3
<b>● Youngmen</b> 	TNEX270412 ZA10T	Carbide K10	Sharp edge	None	2	3
<b>● Youngmen</b> 	TNEQ270412 ZA10N	Carbide K10	Honing edge	None	6	3
<b>● Youngmen</b> 	TNMX270412 AC15N	Fine particles Carbide	Honing edge	AICrN	6	3
<b>● Gentlemen</b> 	X63GUR NK1010	Carbide K10	Sharp edge	None	2	3
	X63GUR NK2020	Carbide M20	Honing edge	None	2	3
	X63GUR AC15N	Fine particles Carbide	Honing edge	AICrN	2	3

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>● Chibi Ryanmen</p> <p>〈SPEW030102〉</p> 	SPEW030102 ZA10N	Carbide K10	Sharp edge	None	4	12
<p>● Chibi Ryanmen</p> <p>〈SPMT030102〉</p> 	SPMT030102 ZA20N	Carbide M20	Sharp edge	None	4	12
	<b>NEW</b> SPMT030102 AC16N	Fine particles Carbide	Sharp edge	AlCrN	4	12
<p>● Ryanmencut-V</p> <p>〈T22MOR〉</p> 	T22MOR NK5050	Carbide K10	Sharp edge	TiN	3	12
<p>● Ryanmencut-V</p> <p>〈SPMT090304〉</p> 	SPMT090304 NK6060	Carbide M20	Honing edge	TiAlN	4	12
<p>● Uratorimen-C (M8)</p> <p>〈SP-SPET040102〉</p> 	SP-SPET040102 NK1010	Carbide K10	Sharp edge	None	1	12
	SP-SPET040102 NK2020	Carbide M20	Honing edge	None	1	12
	<b>NEW</b> SP-SPET040102 AC16N	Fine particles Carbide	Honing edge	AlCrN	1	12
<p>● Uratorimen-C (M10)</p> <p>〈SPET040102〉</p> 	SPET040102 NK1010	Carbide K10	Sharp edge	None	4	12
	SPET040102 NK2020	Carbide M20	Honing edge	None	4	12
	<b>NEW</b> SPET040102 AC16N	Fine particles Carbide	Honing edge	AlCrN	4	12
<p>● Uratorimen-C (M12~18/UM12-16S)</p> <p>Urazagurimen-C</p> <p>〈SPET06T104〉</p> 	SPET06T104 NK1010	Carbide K10	Sharp edge	None	4	12
	SPET06T104 NK2020	Carbide M20	Honing edge	None	4	12
	<b>NEW</b> SPET06T104 AC16N	Fine particles Carbide	Honing edge	AlCrN	4	12

# Inserts

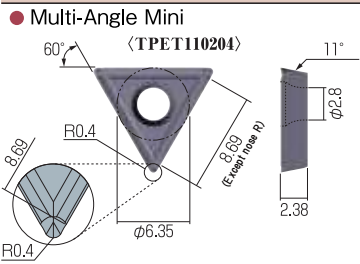
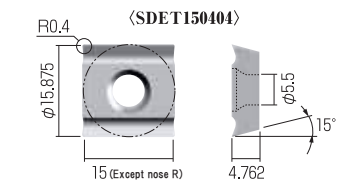
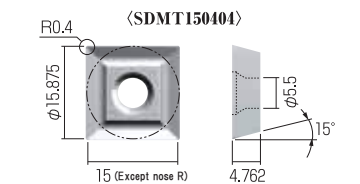
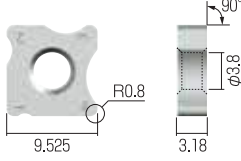
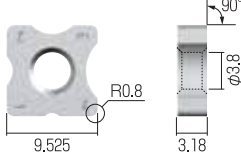
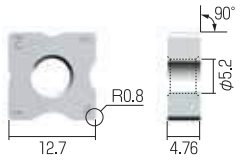
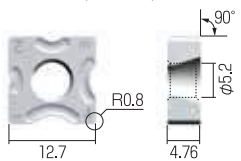
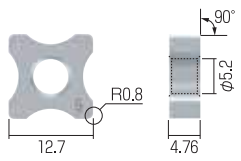
Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<div>● Multi-Angle Mini</div> <div></div>	TPET110204 ZA10N	Carbide K10	Sharp edge	None	3	3
	TPET110204 AC15N	Fine particles Carbide	Honing edge	AlCrN	3	3
<div>● Multi-Angle Mini</div> <div></div>	SDET150404 ZA10N	Carbide K10	Sharp edge	None	2	3
<div>● Multi-Angle Mini</div> <div></div>	SDMT150404 ZA20N	Carbide M20	Honing edge	None	4	3
	SDMT150404 AC15N	Fine particles Carbide	Honing edge	AlCrN	4	3

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<p>● Han-Chan-man R/Nice-Corner FR Ryanmencut-R(RR16-30S-RR25-40S) (SNEQ090308-□RY)</p> 	SNEQ090308-1RY ZA20N	Carbide M20	The Same R Each corner	None	4/8	12
	SNEQ090308-2RY ZA20N	Carbide M20	The Same R Each corner	None	4/8	12
	SNEQ090308-3RY ZA20N	Carbide M20	The Same R Each corner	None	4/8	12
	SNEQ090308-4RY ZA20N	Carbide M20	The Same R Each corner	None	4/8	12
	SNEQ090308-XRY ZA20N	Carbide M20	R1-2-3-4	None	4/8	12
	<b>NEW</b> SNEQ090308-1RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	<b>NEW</b> SNEQ090308-2RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	<b>NEW</b> SNEQ090308-3RY CA20N	Carbide M20	The Same R Each corner	DLC	4	12
	※CA20A is for aluminum only.					
<p>● Ryanmencut-R(RR16-30S-RR25-40S) Mini-R/Nice-Corner FR (SNEQ090308-□RM)</p> 	SNEQ090308-1RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-2RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-3RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-4RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-5RM ZA20N	Carbide M20	The Same R Each corner	None	8	12
	SNEQ090308-XRM ZA20N	Carbide M20	R1-2-3-4	None	8	12
	<b>NEW</b> SNEQ090308-1RM CA20N	Carbide M20	The Same R Each corner	DLC	8	12
	<b>NEW</b> SNEQ090308-2RM CA20N	Carbide M20	The Same R Each corner	DLC	8	12
	<b>NEW</b> SNEQ090308-3RM CA20N	Carbide M20	The Same R Each corner	DLC	8	12
	※CA20A is for aluminum only.					
<p>● R-Special/R-Special Jr./R-Bit Ryanmencut-R(RR25-48N) Nice-Corner VR/Han-Chan-manR-HYPER</p> <p>(N43GXR8)</p>  <p>(N43GXR)</p>  <p>(N43GXR8 Semistandard Insert)</p> 	N43GXR8 NK2001	Cermet	R1-2-3-4	None	8	3or12
	N43GXR8-1R NK2001	Cermet	The Same R Each corner	None	8	3or12
	N43GXR8-2R NK2001	Cermet	The Same R Each corner	None	8	3or12
	N43GXR8-3R NK2001	Cermet	The Same R Each corner	None	8	3or12
	N43GXR8-4R NK2001	Cermet	The Same R Each corner	None	8	3or12
	<b>Semi Standard</b>	Cermet	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-5R NK2001	Cermet	The Same R Each corner	None	8	3or12
	N43GXR NK1010	Carbide K10	R1-2-3-4	None	4	3or12
	<b>NEW</b> N43GXR8 NK2020	Carbide M20	R1-2-3-4	None	8	3or12
	<b>NEW</b> N43GXR8-1R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-2R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-3R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-4R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-0.5R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-0.75R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-1.5R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-2.5R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-3.5R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-4.5R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8-5R NK2020	Carbide M20	The Same R Each corner	None	8	3or12
	<b>NEW</b> N43GXR8 AC16N	Fine particles Carbide	R1-2-3-4	AICrN	8	3or12
	<b>NEW</b> N43GXR8-1R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-2R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-3R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-4R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>Semi Standard</b>	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-0.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-0.75R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-1.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-2.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-3.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-4.5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-5R AC16N	Fine particles Carbide	The Same R Each corner	AICrN	8	3or12
	<b>NEW</b> N43GXR8-3R CA20N	Carbide M20	The Same R Each corner	DLC	8	3or12
	<b>NEW</b> N43GXR8-4R CA20N	Carbide M20	The Same R Each corner	DLC	8	3or12
	<b>Semi Standard</b>	Carbide M20	The Same R Each corner	DLC	8	3or12
	<b>NEW</b> N43GXR8-5R CA20N	Carbide M20	The Same R Each corner	DLC	8	3or12

※ For the Semi-Standard Insert, breaker does not contain.  
※CA20A is for aluminum only.

# Inserts

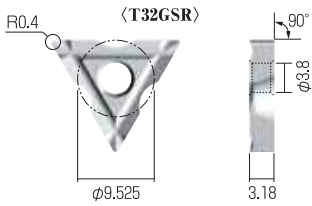
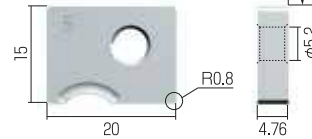
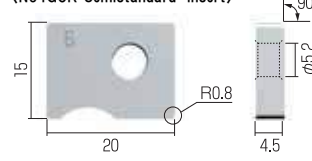
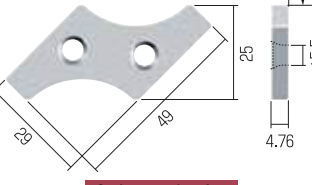
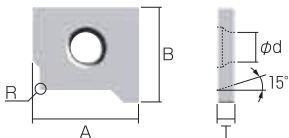
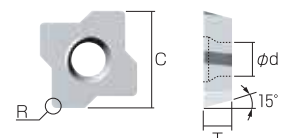
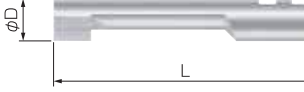
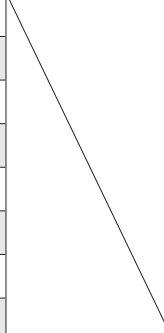
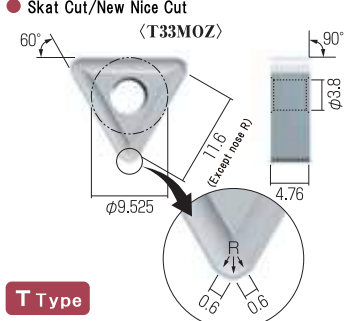
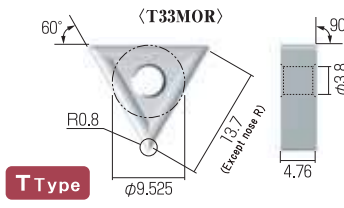
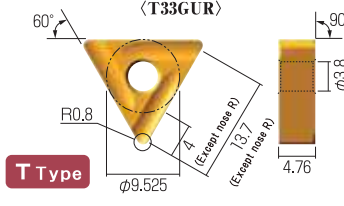
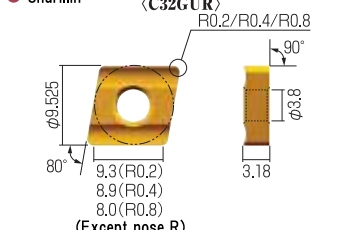
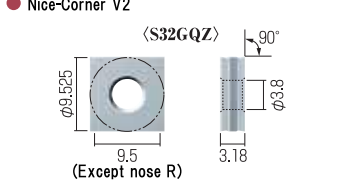
Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● RCIndo-Cutter</b>  <b>&lt;T32GSR&gt;</b>	T32GSR-1R NK2020	Carbide M20		None	3	3
	T32GSR-2R NK2020	Carbide M20		None	3	3
	T32GSR-3R NK2020	Carbide M20		None	3	3
<b>● R-Nouveau/R-Nouveau Jr./10R-bit</b> <b>&lt;N54GCR&gt;</b>  <b>&lt;N54GCR Semistandard Insert&gt;</b>  ※ For the Semistandard Insert, breaker does not contain.	N54GCR-5R NK2020	Carbide M20		None	1	3
	N54GCR-8R NK2020	Carbide M20		None	1	3
	N54GCR-10R NK2020	Carbide M20		None	1	3
	N54GCR-5R NK6060	Carbide M20		TiAlN	1	3
	N54GCR-8R NK6060	Carbide M20		TiAlN	1	3
	N54GCR-10R NK6060	Carbide M20		TiAlN	1	3
	N54GCR-6R NK2020	Carbide M20		None	1	3
	N54GCR-7R NK2020	Carbide M20		None	1	3
	N54GCR-9R NK2020	Carbide M20		None	1	3
<b>● R-Giga</b> <b>&lt;XNEW3004&gt;</b>  <b>Order production</b>	XNEW3004-11R NK2020	Carbide M20		None	2	3
	XNEW3004-12R NK2020	Carbide M20		None	2	3
	XNEW3004-13R NK2020	Carbide M20		None	2	3
	XNEW3004-14R NK2020	Carbide M20		None	2	3
	XNEW3004-15R NK2020	Carbide M20		None	2	3
	XNEW3004-16R NK2020	Carbide M20		None	2	3
	XNEW3004-17R NK2020	Carbide M20		None	2	3
	XNEW3004-18R NK2020	Carbide M20		None	2	3
	XNEW3004-19R NK2020	Carbide M20		None	2	3
	XNEW3004-20R NK2020	Carbide M20		None	2	3



Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box																																																																																																																																																																																					
<div>● Eaglecut(M4・M6)</div> <div>⟨XX21MNX⟩⟨XX31MNX⟩</div> <div></div> <table><thead><tr><th>Model.No.</th><th>A</th><th>B</th><th>T</th><th>R</th><th>ϕd</th></tr></thead><tbody><tr><td>XX21MNX-M4</td><td>8mm</td><td>6.548mm</td><td>1.59mm</td><td>R0.2</td><td>2.3mm</td></tr><tr><td>XX21MNX-M5</td><td>8mm</td><td>6.841mm</td><td>1.59mm</td><td>R0.2</td><td>2.3mm</td></tr><tr><td>XX31MNX-M6</td><td>9mm</td><td>8.084mm</td><td>1.59mm</td><td>R0.2</td><td>2.5mm</td></tr></tbody></table>	Model.No.	A	B	T	R	ϕd	XX21MNX-M4	8mm	6.548mm	1.59mm	R0.2	2.3mm	XX21MNX-M5	8mm	6.841mm	1.59mm	R0.2	2.3mm	XX31MNX-M6	9mm	8.084mm	1.59mm	R0.2	2.5mm	XX21MNX-M4 NK2020	Carbide M20	Honing edge	None	1	12																																																																																																																																																													
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XX21MNX-M5 NK6060	Carbide M20	Honing edge	TiAlN	1	12																																																																																																																																																																																						
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<div>● Eaglecut(M4・M6)</div> <div>Birdcut</div> <div>⟨XS22MNX⟩⟨XS42MNX⟩</div> <div>⟨XS32MNX⟩⟨XS53MNX⟩</div> <div></div> <table><thead><tr><th>Model.No.</th><th>C</th><th>T</th><th>R</th><th>ϕd</th></tr></thead><tbody><tr><td>XS22MNX-M8</td><td>6.35mm</td><td>2.38mm</td><td>R0.4</td><td>2.5mm</td></tr><tr><td>XS22MNX-M10</td><td>7.938mm</td><td>2.38mm</td><td>R0.4</td><td>3.4mm</td></tr><tr><td>XS22MNX-M12</td><td>7.938mm</td><td>2.38mm</td><td>R0.4</td><td>3.4mm</td></tr><tr><td>XS32MNX-M14</td><td>9.525mm</td><td>3.18mm</td><td>R0.8</td><td>4.4mm</td></tr><tr><td>XS32MNX-M16</td><td>9.525mm</td><td>3.18mm</td><td>R0.8</td><td>4.4mm</td></tr><tr><td>XS42MNX-M18</td><td>12.7mm</td><td>3.18mm</td><td>R0.8</td><td>5.5mm</td></tr><tr><td>XS42MNX-M20</td><td>12.7mm</td><td>3.18mm</td><td>R0.8</td><td>5.5mm</td></tr><tr><td>XS42MNX-M22</td><td>12.7mm</td><td>3.18mm</td><td>R0.8</td><td>5.5mm</td></tr><tr><td>XS53MNX-M24</td><td>15.875mm</td><td>4.76mm</td><td>R0.8</td><td>5.5mm</td></tr><tr><td>XS53MNX-M27</td><td>15.875mm</td><td>4.76mm</td><td>R0.8</td><td>5.5mm</td></tr><tr><td>XS53MNX-M30</td><td>15.875mm</td><td>4.76mm</td><td>R0.8</td><td>5.5mm</td></tr><tr><td>XS22MNX-M8 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS22MNX-M8 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS22MNX-M10 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS22MNX-M10 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS22MNX-M12 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS22MNX-M12 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS32MNX-M14 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS32MNX-M14 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS32MNX-M16 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS32MNX-M16 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS42MNX-M18 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS42MNX-M18 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS42MNX-M20 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS42MNX-M20 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS42MNX-M22 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS42MNX-M22 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS53MNX-M24 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS53MNX-M24 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS53MNX-M27 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS53MNX-M27 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr><tr><td>XS53MNX-M30 NK2020</td><td></td><td></td><td></td><td></td></tr><tr><td>XS53MNX-M30 NK6060</td><td>Carbide M20</td><td>Honing edge</td><td>TiAlN</td><td>4</td><td>12</td></tr></tbody></table>	Model.No.	C	T	R	ϕd	XS22MNX-M8	6.35mm	2.38mm	R0.4	2.5mm	XS22MNX-M10	7.938mm	2.38mm	R0.4	3.4mm	XS22MNX-M12	7.938mm	2.38mm	R0.4	3.4mm	XS32MNX-M14	9.525mm	3.18mm	R0.8	4.4mm	XS32MNX-M16	9.525mm	3.18mm	R0.8	4.4mm	XS42MNX-M18	12.7mm	3.18mm	R0.8	5.5mm	XS42MNX-M20	12.7mm	3.18mm	R0.8	5.5mm	XS42MNX-M22	12.7mm	3.18mm	R0.8	5.5mm	XS53MNX-M24	15.875mm	4.76mm	R0.8	5.5mm	XS53MNX-M27	15.875mm	4.76mm	R0.8	5.5mm	XS53MNX-M30	15.875mm	4.76mm	R0.8	5.5mm	XS22MNX-M8 NK2020					XS22MNX-M8 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS22MNX-M10 NK2020					XS22MNX-M10 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS22MNX-M12 NK2020					XS22MNX-M12 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS32MNX-M14 NK2020					XS32MNX-M14 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS32MNX-M16 NK2020					XS32MNX-M16 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS42MNX-M18 NK2020					XS42MNX-M18 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS42MNX-M20 NK2020					XS42MNX-M20 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS42MNX-M22 NK2020					XS42MNX-M22 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS53MNX-M24 NK2020					XS53MNX-M24 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS53MNX-M27 NK2020					XS53MNX-M27 NK6060	Carbide M20	Honing edge	TiAlN	4	12	XS53MNX-M30 NK2020					XS53MNX-M30 NK6060	Carbide M20	Honing edge	TiAlN	4	12	NBI04 HSS	HSS	Sharp edge	None	1 corner 2 piece blade	3
	Model.No.	C	T	R	ϕd																																																																																																																																																																																						
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XS53MNX-M30 NK2020																																																																																																																																																																																											
XS53MNX-M30 NK6060	Carbide M20	Honing edge	TiAlN	4	12																																																																																																																																																																																						
NBI05 HSS	HSS	Sharp edge	None	1 corner 2 piece blade	3																																																																																																																																																																																						
NBI06 HSS	HSS	Sharp edge	None	1 corner 2 piece blade	3																																																																																																																																																																																						
NBI08 HSS	HSS	Sharp edge	None	1 corner 2 piece blade	3																																																																																																																																																																																						
NBI10 HSS	HSS	Sharp edge	None	1 corner 2 piece blade	3																																																																																																																																																																																						
NBI12 HSS	HSS	Sharp edge	None	1 corner 2 piece blade	3																																																																																																																																																																																						
<div>● Urazaguru-solid</div> <div></div> <table><thead><tr><th>Model.No.</th><th>ϕD</th><th>L</th></tr></thead><tbody><tr><td>UZHS-M6B</td><td>5.6mm</td><td>46mm</td></tr><tr><td>UZHS-M8B</td><td>8mm</td><td>53mm</td></tr><tr><td>UZHS-M10B</td><td>10mm</td><td>65mm</td></tr><tr><td>UZHS-M12B</td><td>13mm</td><td>80mm</td></tr><tr><td>UZHS-M6BC</td><td>5.6mm</td><td>46mm</td></tr><tr><td>UZHS-M8BC</td><td>8mm</td><td>53mm</td></tr><tr><td>UZHS-M10BC</td><td>10mm</td><td>65mm</td></tr><tr><td>UZHS-M12BC</td><td>13mm</td><td>80mm</td></tr></tbody></table>	Model.No.	ϕD	L	UZHS-M6B	5.6mm	46mm	UZHS-M8B	8mm	53mm	UZHS-M10B	10mm	65mm	UZHS-M12B	13mm	80mm	UZHS-M6BC	5.6mm	46mm	UZHS-M8BC	8mm	53mm	UZHS-M10BC	10mm	65mm	UZHS-M12BC	13mm	80mm	UZHS-M6B	Fine particles Carbide		None	1	1																																																																																																																																																										
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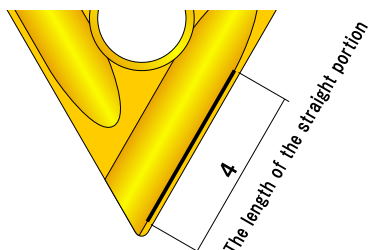
Fig.	Model.No.	Material	Blade Shape	Coating	Use Corner Number	Number 1 Case Input
<p>● S-Type/Aeromill(negative) Nice-Corner V3/Nice-Corner F3 Han-Chan-man/Ryanmencut-R Han-Chan-man R/New Nice Cut Nice-Corner FR</p> <p>(S32MOZ)</p> <p>S Type</p>	S32MOZ NK2001	Cermet	Honing edge	None	8	12
	S32MOZ NK2050	Cermet	Honing edge	None	8	12
	S32MOZ AB01F	Cermet	Honing edge	AlCrN	8	12
	S32MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	S32MOZ NK2020	Carbide M20	Honing edge	None	8	12
	S32MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	S32MOZ AC15T	Fine particles Carbide	Honing edge	AlCrN	8	12
<p>(S32GUR)</p> <p>S Type</p>	S32GUR NK2001	Cermet	Honing edge	None	8	12
	S32GUR NK1010	Carbide K10	Sharp edge	None	8	12
	S32GUR NK2020	Carbide M20	Honing edge	None	8	12
	S32GUR NK3030	Carbide M20	Honing edge	TiN	8	12
	S32GUR NK5050	Carbide K10	Sharp edge	TiN	8	12
	S32GUR NK6060	Carbide M20	Honing edge	TiAlN	8	12
	S32GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12
<p>(S32GUR DIA)</p> <p>S Type</p>	S32GUR DIA	Sintering diamond	Sharp edge	None	1	1
<p>● N-type/Han-Chan-manR-HYPER (N43MOZ)</p> <p>N Type</p>	N43MOZ NK2001	Cermet	Honing edge	None	8	12
	N43MOZ NK1010	Carbide K10	Sharp edge	None	8	12
	N43MOZ NK2020	Carbide M20	Honing edge	None	8	12
	N43MOZ NK3030	Carbide M20	Honing edge	TiN	8	12
	N43MOZ NK6060	Carbide M20	Honing edge	TiAlN	8	12
<p>(N43GUR)</p> <p>N Type</p>	N43GUR NK2001	Cermet	Honing edge	None	8	12
	N43GUR NK1010	Carbide K10	Sharp edge	None	8	12
	N43GUR NK2020	Carbide M20	Honing edge	None	8	12
	N43GUR NK3030	Carbide M20	Honing edge	TiN	8	12
	N43GUR NK6060	Carbide M20	Honing edge	TiAlN	8	12
	N43GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12
	N43GUR NK8080	Carbide K10	Sharp edge	TiAlN	8	12
<p>● Aeromill(positive)/Kame Cutter New Nice Cut/Nice-Corner F3</p> <p>(S3H3MNZ) (S3H3GNZ) (S3H3GNXE)</p> <p>S3H3GNXE S3H3MNZ S3H3GNZ</p>	S3H3MNZ NK2001	Cermet	Honing edge	None	4	12
	S3H3GNZ NK1010	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ NK2020	Carbide M20	Honing edge	None	4	12
	S3H3GNZ NK9090 (Mirror polished finish)	Carbide K10	Sharp edge	None	4	12
	S3H3MNZ AC15D	Fine particles Carbide	Honing edge	AlCrN	4	12
	S3H3GNXE AC16N	Fine particles Carbide	Honing edge	AlCrN	4	12
	S3H3GNXE AC16N	Fine particles Carbide	Honing edge	AlCrN	4	12

Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box
<b>● Skat Cut/New Nice Cut</b>  <b>T Type</b>	T33MOZ NK2001	Cermet	Honing edge	None	6	12
	T33MOZ NK1010	Carbide K10	Sharp edge	None	6	12
	T33MOZ NK2020	Carbide M20	Honing edge	None	6	12
	T33MOZ NK3030	Carbide M20	Honing edge	TiN	6	12
	T33MOZ NK6060	Carbide M20	Honing edge	TiAlN	6	12
 <b>T Type</b>	T33MOR NK2001	Cermet	Honing edge	None	6	12
	T33MOR NK1010	Carbide K10	Sharp edge	None	6	12
	T33MOR NK2020	Carbide M20	Honing edge	None	6	12
	T33MOR NK3030	Carbide M20	Honing edge	TiN	6	12
	T33MOR NK6060	Carbide M20	Honing edge	TiAlN	6	12
 <b>T Type</b>	T33GUR NK2001	Cermet	Honing edge	None	6	12
	T33GUR NK1010	Carbide K10	Sharp edge	None	6	12
	T33GUR NK2020	Carbide M20	Honing edge	None	6	12
	T33GUR NK3030	Carbide M20	Honing edge	TiN	6	12
	T33GUR NK5050	Carbide K10	Sharp edge	TiN	6	12
	T33GUR NK6060	Carbide M20	Honing edge	TiAlN	6	12
	T33GUR NK8080	Carbide K10	Sharp edge	TiAlN	6	12
<b>● Shurillin</b>  <b>T Type</b>	C32GUR-0.2R NK2020	Carbide M20	Honing edge	None	4	12
	C32GUR-0.4R NK2020	Carbide M20	Honing edge	None	4	12
	C32GUR-0.8R NK2020	Carbide M20	Honing edge	None	4	12
	C32GUR-0.2R NK1010	Carbide K10	Sharp edge	None	4	12
	C32GUR-0.2R NK3030	Carbide M20	Honing edge	TiN	4	12
	C32GUR-0.4R NK3030	Carbide M20	Honing edge	TiN	4	12
	C32GUR-0.8R NK3030	Carbide M20	Honing edge	TiN	4	12
<b>● Nice-Corner V2</b>  <b>T Type</b>	S32GQZ NK2001	Cermet		None	16	12
	S32GQZ NK2020	Carbide M20		None	16	12
	S32GQZ NK6060	Carbide M20		TiAlN	16	12



S32GUR (diamond except), N43GUR, the length of the straight portion of T33GUR is, It becomes a thick line part.

Example) T33GUR



# Inserts

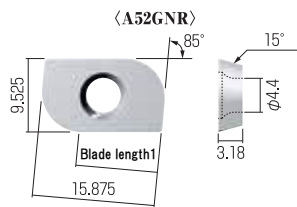
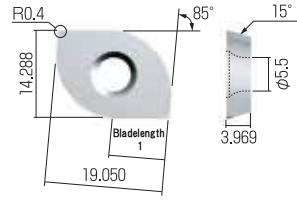
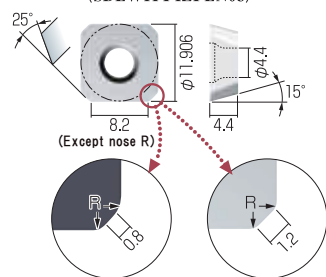
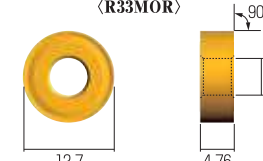

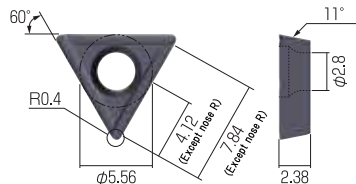
Fig.	Model.No.	Material	Blade Shape	Coating	Usable corner	Quantity per box																						
<div>● Sumicco/Sumicco R-Bit</div> <div></div> <div>※ 1 stocks for each R0.5.</div> <div>■ Blade length (Except nose R)</div> <table><thead><tr><th>Insert</th><th>Blade length 1</th></tr></thead><tbody><tr><td>0.5R</td><td>15mm</td></tr><tr><td>1R</td><td>14.4mm</td></tr><tr><td>1.5R</td><td>13.9mm</td></tr><tr><td>2R</td><td>13.3mm</td></tr><tr><td>2.5R</td><td>12.8mm</td></tr><tr><td>3R</td><td>12.2mm</td></tr><tr><td>3.5R</td><td>11.7mm</td></tr><tr><td>4R</td><td>11.1mm</td></tr><tr><td>4.5R</td><td>10.5mm</td></tr><tr><td>5R</td><td>10mm</td></tr></tbody></table>	Insert	Blade length 1	0.5R	15mm	1R	14.4mm	1.5R	13.9mm	2R	13.3mm	2.5R	12.8mm	3R	12.2mm	3.5R	11.7mm	4R	11.1mm	4.5R	10.5mm	5R	10mm	A52GNR-0.5R NK1010 A52GNR-1R NK1010 A52GNR-1.5R NK1010 A52GNR-2R NK1010 A52GNR-2.5R NK1010 A52GNR-3R NK1010 A52GNR-3.5R NK1010 A52GNR-4R NK1010 A52GNR-4.5R NK1010 A52GNR-5R NK1010	Carbide K10	Sharp edge	None	2	12
Insert	Blade length 1																											
0.5R	15mm																											
1R	14.4mm																											
1.5R	13.9mm																											
2R	13.3mm																											
2.5R	12.8mm																											
3R	12.2mm																											
3.5R	11.7mm																											
4R	11.1mm																											
4.5R	10.5mm																											
5R	10mm																											
	A52GNR-0.5R NK2020 A52GNR-1R NK2020 A52GNR-1.5R NK2020 A52GNR-2R NK2020 A52GNR-2.5R NK2020 A52GNR-3R NK2020 A52GNR-3.5R NK2020 A52GNR-4R NK2020 A52GNR-4.5R NK2020 A52GNR-5R NK2020	Carbide M20	Honing edge	None	2	12																						
	A52GNR-0.5R AC16N A52GNR-1R AC16N A52GNR-1.5R AC16N A52GNR-2R AC16N A52GNR-2.5R AC16N A52GNR-3R AC16N A52GNR-3.5R AC16N A52GNR-4R AC16N A52GNR-4.5R AC16N A52GNR-5R AC16N	Fine particles Carbide	Honing edge	AlCrN	2	12																						
<div>● Dekasumi/Dekasumi R-Bit</div> <div></div> <div>※ 1 stocks for each R1</div> <div>■ Blade length (Except nose R)</div> <table><thead><tr><th>Insert</th><th>Blade length 1</th></tr></thead><tbody><tr><td>5R</td><td>13.2mm</td></tr><tr><td>6R</td><td>12mm</td></tr><tr><td>7R</td><td>11mm</td></tr><tr><td>8R</td><td>9.8mm</td></tr><tr><td>9R</td><td>8.7mm</td></tr><tr><td>10R</td><td>7.7mm</td></tr></tbody></table>	Insert	Blade length 1	5R	13.2mm	6R	12mm	7R	11mm	8R	9.8mm	9R	8.7mm	10R	7.7mm	ADEW19T3-5R NK1010 ADEW19T3-6R NK1010 ADEW19T3-7R NK1010 ADEW19T3-8R NK1010 ADEW19T3-9R NK1010 ADEW19T3-10R NK1010	Carbide K10	Sharp edge	None	2	4								
Insert	Blade length 1																											
5R	13.2mm																											
6R	12mm																											
7R	11mm																											
8R	9.8mm																											
9R	8.7mm																											
10R	7.7mm																											
	ADEW19T3-5R NK2020 ADEW19T3-6R NK2020 ADEW19T3-7R NK2020 ADEW19T3-8R NK2020 ADEW19T3-9R NK2020 ADEW19T3-10R NK2020	Carbide M20	Honing edge	None	2	4																						
	ADEW19T3-5R AC16N ADEW19T3-6R AC16N ADEW19T3-7R AC16N ADEW19T3-8R AC16N ADEW19T3-9R AC16N ADEW19T3-10R AC16N	Fine particles Carbide	Honing edge	AlCrN	2	4																						
<div>● Han-Chan-man</div> <div></div> <div>SDEW11T4ZFEN08 SDMW11T4AFEN12 SDEW11T4AFFN12</div>	SDMW11T4AFEN12 ZB01N	Cermet	Honing edge	None	4	10																						
	SDEW11T4AFFN12 ZA10D	Carbide K10	Sharp edge	None	4	10																						
	SDMW11T4AFEN12 ZA20D	Carbide M20	Honing edge	None	4	10																						
	SDEW11T4AFFN12 ZA10DL	Carbide K10	Sharp edge	None	4	10																						
	SDMW11T4AFEN12 AC15D (Mirror polished finish)	Fine particles Carbide	Honing edge	AlCrN	4	10																						
	SDEW11T4ZFEN08 AC16N	Fine particles Carbide	Honing edge	AlCrN	4	10																						
<div>● Maru-chan</div> <div></div>	R33MOR NK2001	Cermet	Honing edge	None	360 ° both sides	12																						
	R33MOR NK1010	Carbide K10	Sharp edge	None	360 ° both sides	12																						
	R33MOR NK5050	Carbide K10	Sharp edge	TiN	360 ° both sides	12																						

Fig.	Model.No.	Material	Blade shape	Coating	Usable corners	Quantity per box
<p>● Mini Han-Chan</p> <p>〈TPGT090204ER〉</p> 	TPGT090204ER ZB01N (General Steel)	Cermet	Honing edge	None	3	12
<p>● Mini Han-Chan</p> <p>〈TPGT090204FR-U〉〈TPGT090204ER-U〉</p> 	<p><b>NEW</b></p> TPGT090204FR-U ZC16N (Aluminum, Resin, Brass)	Fine Particles Carbide	Sharp edge	None	3	12
	<p><b>NEW</b></p> TPGT090204ER-U AC16N (Stainless Steel)	Fine Particles Carbide	Honing edge	AlCrN	3	12

# MEMO













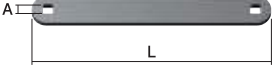




# MEMO





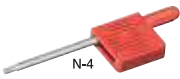
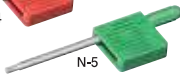
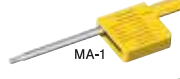








# Spare Parts List

Lock pin	Model No.	A	B	C	Winding direction	Wrench	Fit body
	L-1	20mm	M6×1	4mm	R	NL-4	NK4560S / Nice-CornerV2 / Nice-CornerV3
	L-2	24mm	M8×1	5.5mm	R	NL-4	NK4536N / Nice-CornerVR
	L-4	27mm	M8×1	5.5mm	R	NL-4	NK4560N
	L-9	22mm	M6×1	4mm	R	NL-4	NK Face Mill B / FK Face Mill B / NK6.Face Mill / BK8.Deka-Cutter BK12.Deka-Cutter / KK6.Karu-Cutter / KK8.Karu-Cutter
※ L-3・L-8 was changed to L-5. 	L-5	14mm	M6×1	5.5mm	L	K-3	Skat Cut / New Nice Cut
	L-6	9.5mm	M6×0.75	3.5mm	R	K-3	Momimen / Chamferring Cutter / RCIndo-Cutter Aeromill(negative S Type) / Baitender
	L-10	14mm	M6×0.75	3.5mm	R	K-3	Dekamomi
	L-11	16.5mm	M8×1	5.5mm	L	K-4	Maru-chan
	L-12	16.5mm	M8×1	5.5mm	R	K-4	R-Nouveau Jr. / R-Special/R-Nouveau / R-bit/10R-bit
	L-14	13mm	M8×1	5.5mm	R	K-4	R-Special Jr. / Ryanmencut-R(RR25-48N)
	L-17	13mm	M8×1	5.5mm	L	K-4	Maru-chan
	L-21	14mm	M6×1	4mm	L	K-3	New Nice Cut / New Tiko Cutter / Han-Chan-man / Nice-Corner F3
	L-23	13mm	M8×1.25	5mm	R	TL-64	Han-Chan-man R-HYPER
Clamp Screw	Model No.	A	B	C	Winding direction	Wrench	Fit body
	L-13	4.8mm	M2.5×0.45		R	N-5	Chibimomi / Momieco / Momieco2/Urazaguru
	L-15	6.5mm	M4×0.7		R	N-6/N-7	60° Momimen/Ecomen/Ecomen2/Kame Cutter/Choumen/ ChoumenB/ Sumicco R-Bit/Eaglecut(M14・M16)/Birdiecut(M14・M16)/Sumicco/ Aeromill(positive S type)/Nice-Corner F3/New Nice Cut/Han-Chan-man
	L-16	9.5mm	M5×0.8		R	BT-20	Youngmen / Gentlemen / R-Giga / Dekasumi R-Bit Eaglecut(M18 ~ M30) / Birdiecut(M18 ~ M30) Dekasumi / Multi-Angle mill/Dodekaeco ~
	L-18	3.3mm	M2×0.4		R	N-4	Momimen nano / Chibieco / Chibieco2 / Mentrucee/Chibi Ryanmen/ Uratorimen-C(M8 ~ M10)/Eaglecut(M4・M5)/Urazaguru/Urazagurimen-C
	L-19	4.5mm	M2.2×0.45		R	N-4	Uratorimen-C(M12 ~ M18・UM12-16S) / Eaglecut(M6・M8) /Birdiecut(M8)
	L-20	12mm	M4×0.7		R	N-6	New Nice Cut
	M-1	6.3mm	M3×0.5		R	MA-1	Mentruce/Mentrucee/Ryanmencut-V/Eaglecut(M10・M12) Birdiecut(M10・M12)/Shurillin/Multi-Angle mill/Men men Ryanmencut-R(RR16-30S・RR25-40S)/Mini-R/Han-Chan-man R
Set screw	Model No.	A	B	C	Winding direction	Wrench	Fit body
	NH-3	6mm	M3×6		R	K-1.5	Nyoro nyoro
guide	Model No.	A	B	C	Winding direction	Wrench	Fit body
	NG-6	7mm	M5×0.8	6.4mm	R		Nyoro nyoro
	NG-8	9mm	M6×1	8.8mm			
	NG-10	9mm	M8×1.25	10.8mm			
	NG-12	11mm	M10×1.5	13.8mm			
With ball screw	Model No.	A	B	C	Winding direction	Wrench	Fit body
	B-1	18mm	M6×1		R	K-3	NK Face Mill / FK Face Mill
	B-2	21mm	M8×1.25		R	K-4	NK Face Mill B/FK Face Mill B/NK6.Face Mill/BK8.Deka-Cutter BK12.Deka-Cutter/KK6.Karu-Cutter/KK8.Karu-Cutter
	B-1s	12.5mm	M6×1		R	K-3	Tiko Cutter/KK3.Karu-Cutter/KK5.Karu-Cutter
Cap Screw	Model No.	A	B	C	Winding direction	Wrench	Fit body
	CP6-15	15mm	M6	6mm	R	K-5	New Nice Cut
Resin guide plate screws	Model No.	A	B	C	Winding direction	Wrench	Fit body
	H-1	8mm	M5×0.8	1.5mm	R	K-3	Han-Chan-man
Button bolt	Model No.	A	B	C	Winding direction	Wrench	Fit body
	BB3-4	4mm	M3×0.5	2mm	R	K-2	Multi-Angle mini
Clamp piece	Model No.	Dimensions			Winding direction	Wrench	Fit body
	CL-2SI					K-2	Multi-Angle mill
	CL-1S					K-3	R-Nouveau Jr. / R-Nouveau / R-SpecialJr. / 10R-Bit Skat Cut / Multi-Angle mill
Locator	Model No.	Dimensions			Winding direction	Wrench	Fit body
	ML-T11I						Multi-Angle mini
	ML-S15						Multi-Angle mill

# Spare Parts List

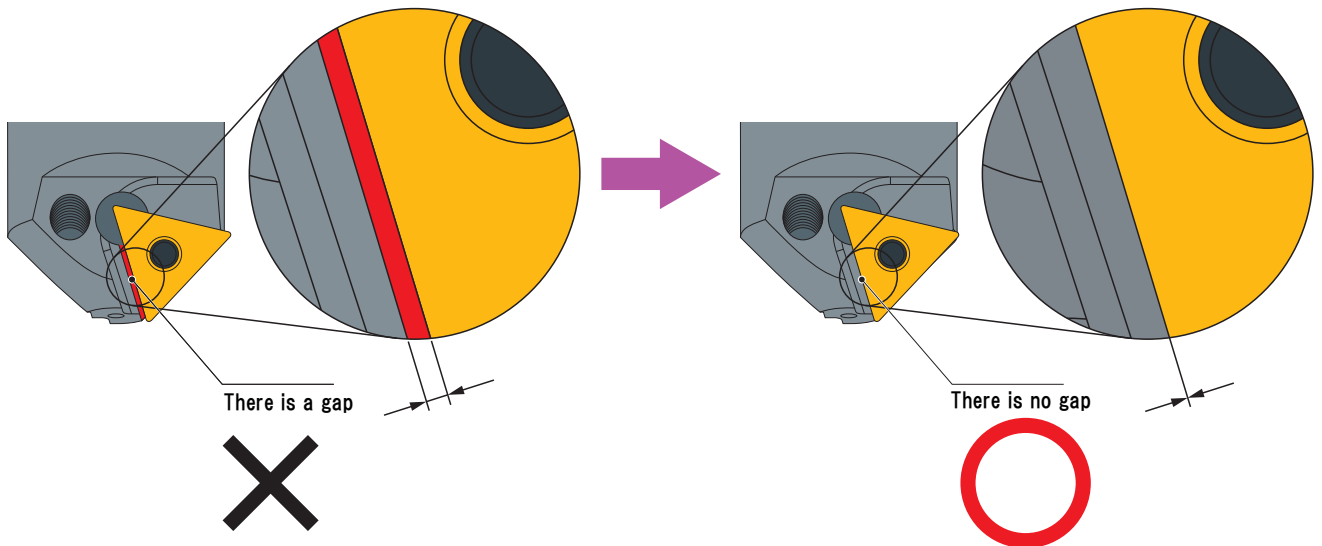
Locator received	Model No.	Dimensions		Wrench	Fit body
	MLH-1				Multi-Angle mill
Set screw	Model No.	Dimensions		Wrench	Fit body
		screw 1	screw 2		
 (1 each)	KH-1S	M6×8	M6×10	K-3	Oilsshar
	KH-2S	M8×6	M8×6	K-4	
	KH-3S	M8×8	M8×8	K-4	
	KH-4S	M8×10	M8×8	K-4	
	KH-5S	M10×8	M10×8	K-5	
	KH-6S	M10×8	M10×10	K-5	
	BH-1			M8×10 K-4	Baitender
 (2 piece)	H-2	M4×10		K-2	Urazaguru-solid
	H-3	M5×12		K-2.5	
 (3 piece)	ESH-1S	M4×4		K-2	Estleeve
	ESH-2S	M6×4		K-3	
 (2 piece) (3 piece)	ECH-1S	M4×10		K-2	Outdriller
	ECH-2S	M5×10		K-2.5	
	ECH-3S	M6×10		K-3	
	ECH-4S	M8×10		K-4	
	ECH-5S	M4×10		K-2	
	ECH-6S	M5×10		K-2.5	
 screw 1 screw 2 (1 each)	ERSH-1S	M6×6	M12×25	K-3/K-6	Colesleeve
	ERSH-2S	M6×10	M12×25	K-3/K-6	
	H-2S	M4×5		K-2	Mini Han-Chan-man
spanner	Model No.	A	L		Fit body
	NL-4	4mm	90		NK4560S/NK4536N/NK4560N NK Face Mill B/FK Face Mill B/NK6.Face Mill/BK8.Deka-Cutter BK12.Deka-Cutter/KK6.Karu-Cutter/KK8.Karu-Cutter/ /Nice-CornerV2/Nice-CornerV3/Nice-CornerVR
	NF-50	φ50mm	244		Colesleeve
	NF-42	φ42mm	219		Colesleeve
	NL-30	30mm	265		Colesleeve
	NS-4	4mm	40		Mini Han-Chan-man

# Spare Parts List

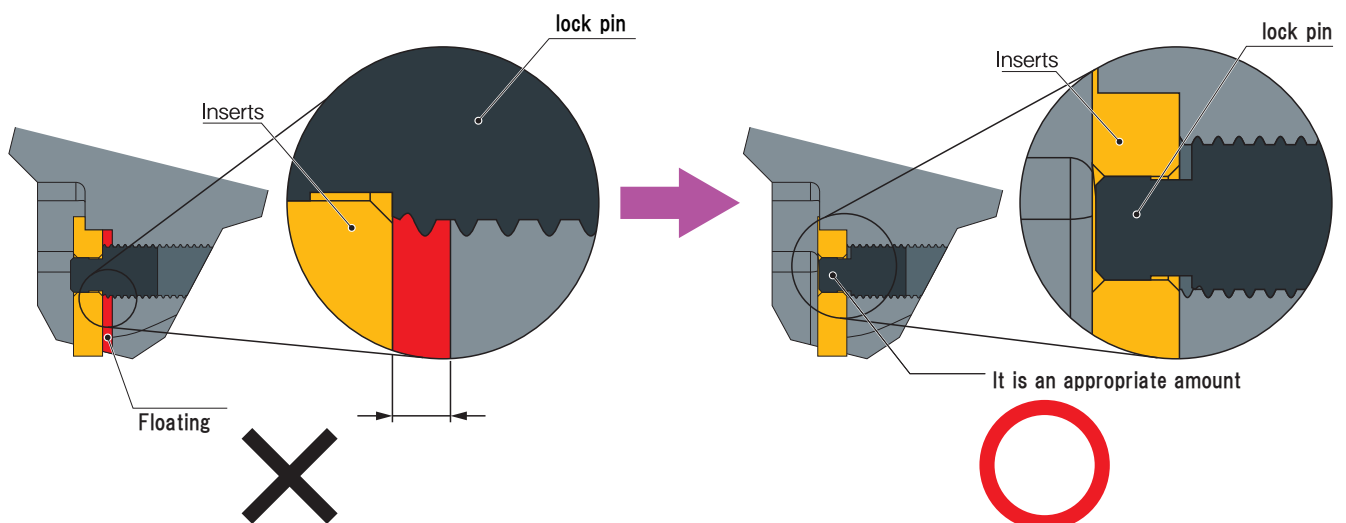
Wrench	Model No.	Shape	Dimensions		Fit body
	K-1.5	Hexagonal	1.5		Nyoro nyoro
	K-2	Hexagonal	2		Multi-Angle mill/Urazaguru-solid/Choi-Pro
	K-2.5	Hexagonal	2.5		Urazaguru-solid/Choi-Pro
	K-3	Hexagonal	3		Momimen/Dekamomi/Chanmferring Cutter/RCindo-Cutter R-Nouveau Jr./R-Nouveau/10R-Bit/Aeromill(negative S Type) Skat Cut/Multi-Angle mill/New Tiko Cutter/Nice-Corner F3/Oilsshar/ Colesleeve/Baitender/Han-Chan-man R-HYPER/Choi-Pro
	K-4	Hexagonal	4		R-NouveauJr./R-SpecialJr./R-Special/R-Nouveau/R-Bit/10R-Bit Han-Chan-man/Nice-CornerF3/Oilsshar/Ryanmencut-R(RR25-48N)
	K-5	Hexagonal	5		New Nice Cut/Han-Chan-man/Oilsshar/Han-Chan-manR
	K-5L	Hexagonal	5		Han-Chan-man/Han-Chan-manR
	K-6	Hexagonal	6		Colesleeve/Nice-Corner V2/Nice-Corner V3/Nice-Corner VR
	TL-64	Hexagonal	4		Han-Chan-man R-HYPER
   	N-4	T-6			Momimen nano/Uratorimen-C/Chibieco /Chibieco2/Chibi Ryanmen/Mentrudee/ Eaglecut(M4~M8)/Birdiecut(M8)/Urazaguru/Urazagurimen-C
	N-5	T-8			Chibimomi / Momieco / Momieco2/Urazaguru
	N-7	T-15			Eaglecut(M14・M16)/Birdiecut(M14・M16) Ecomen/Ecomen2/Choumen/ChoumenB
	MA-1	T-9			Mentrube/Mentrudee/Ryanmencut-V/Eaglecut(M10・M12) Birdiecut(M10・M12)/Shurillin/Multi-Angle mill/Men men Ryanmencut-R(RR16-30S・RR25-40S)/Mini-R
	BT-20	T-20			Youngmen/Gentlemen/R-Giga/Dekasumi/R-Bit Eaglecut(M18 ~ M30)/Birdiecut(M18 ~ M30) Dekasumi/Multi-Angle mill/Dodekaeco
	N-6	T-15			60° Momimen/Sumicco R-Bit/Aeromill(positive S type)/Sumicco New Nice Cut/Han-Chan-man/Kame Cutter
	TH-L3	6角	3		Nice-Corner F3(negative S Type)
	TN-L6	T-15			Nice-Corner F3(positive S type)
	TL-T8	T-8			Mini Han-Chan-man
	TL-T9	T-9			Han-Chan-man R/Nice-Corner FR
Power cord	Model No.	Dimensions			Fit body
	PC-1	3m			V2 / V3 / VR / F3 / FR
	PC-0	1.8m			Choi-Pro
Fuses/15A	Model No.	A	B	electric current	Fit body
	F-15A	19mm	φ5mm	15A	V2 / V3 / VR / F3 / FR
	F-10A	20mm	φ5mm	10A	Choi-Pro
Exhaust hose	Model No.	Dimensions			Fit body
	HS	450mm			Mini Han-Chan-man

# Be careful about reverse tightening of lock pin

Please correctly mounted as described below.  
Reverse tightening of the lock pin may cause chipping and chipping problems.

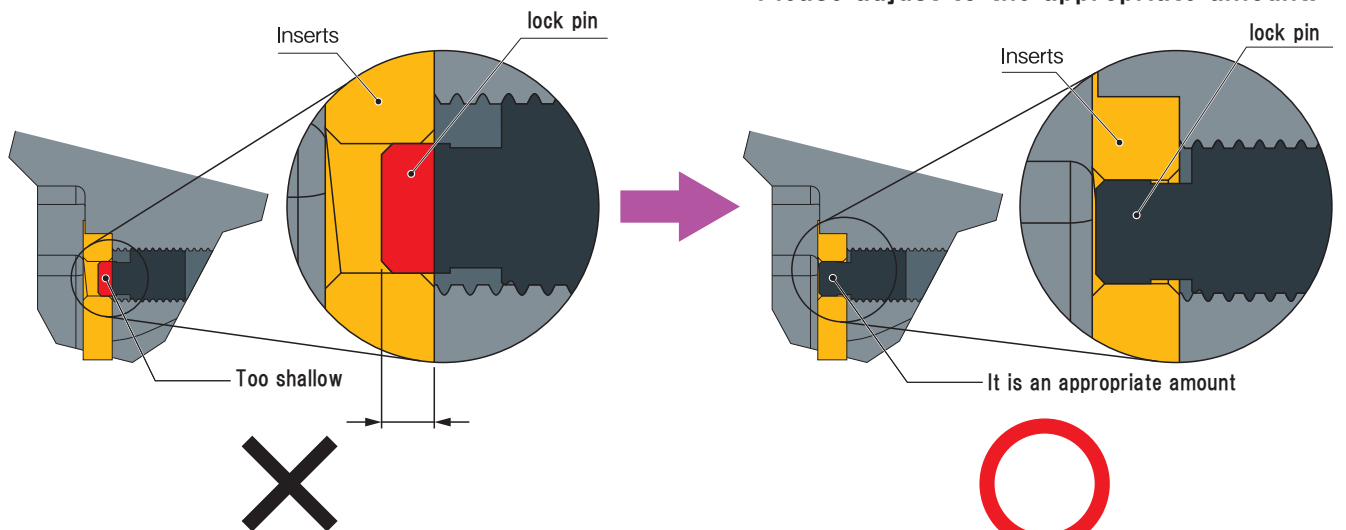


Please strangled in the right direction.



The lock pin is floating from the seat surface

Turn the lock pin with a wrench  
Please adjust to the appropriate amount.



The lock pin catch is shallow  
I can not clamp properly.

Turn the lock pin with a wrench  
Please adjust to the appropriate amount.

# Basic Theory !!

## Basic Theory !!

### Calculating formula of cutting speed

● Cutting speed (Vc) = 
$$\frac{3.14 \times \text{cutter diameter (D)} \times \text{rotational speed (n)}}{1000}$$

● Rotation speed (n) = 
$$\frac{1000 \times \text{cutting speed (Vc)}}{\text{Cutter diameter (D)} \times 3.14}$$

### Rotational speed Simplified chart

(r.p.m.)

Cutter diameter(D)	Cutting speed (m/min)								
	30	100	120	150	180	200	220	250	300
10	955	3185	3822	4777	5732	6369	7006	7962	9554
20	478	1592	1911	2389	2866	3185	3503	3981	4777
30	318	1062	1274	1592	1911	2123	2335	2654	3185
40	239	796	955	1194	1433	1592	1752	1990	2389
50	191	637	764	955	1146	1274	1401	1592	1911
60	159	531	637	796	955	1062	1168	1327	1592
70	136	455	546	682	819	910	1001	1137	1365
80	119	398	478	597	717	796	876	995	1194
90	106	354	425	531	637	708	778	885	1062
100	95	318	382	478	573	637	701	796	955
120	80	265	318	398	478	531	584	663	796
130	73	245	294	367	441	490	539	612	735
150	64	212	255	318	382	425	467	531	637
160	60	199	239	299	358	398	438	498	597
180	53	177	212	265	318	354	389	442	531
200	48	159	191	239	287	318	350	398	478
270	35	118	142	177	212	236	259	295	354
315	30	101	121	152	182	202	222	253	303

※ numeric data decimal point below It is expressed in rounding off.

### Feed formula

● Feed per blade (fz) = 
$$\frac{\text{Table feed (Vf)}}{\text{rotational speed (n)} \times \text{Blades(Z)}}$$

● Table feed (F) = 
$$\text{rotational speed (n)} \times \text{Blades(Z)} \times \text{Feed per blade (fz)}$$



# Trouble Shooting

Series	Type of Trouble	Problem	Problem Origin/Solution(s)
C h a m f e r i n g / R c h a m f e r i n g / F a i t h s h o u l d e r	Leaving secondary burrs	Feed rate is too high	<ul style="list-style-type: none"> <li>● Increase rotation</li> <li>● Decrease the feed rate</li> </ul>
		Poor process by edge wearing	Change corner of insert edge
		Aluminum/Stainless Steel process with honing insert	Change to sharp edge type insert
		Aluminum/Stainless Steel process with MOR-MOZ type insert	Change to GUR type insert
		Cutting heat with dry cutting	Use cutting oil
	Chipping of Insert	Reverse mounting of eccentricity locking system tools	Correct direction when mounting
		No Screw for holding Insert	Mount clamp screw for clamp screw type cutters
		Poor cutting edge with GUR Insert	Change it to MOR type Insert
		Low rotation (Chipping of edge of corner)	Increase the rotation rate
		Low insert rigidity	<ul style="list-style-type: none"> <li>● NK2050→NK2001→NK6060→NK3030→NK2020→AC15→HSS</li> <li>● NK8080→NK5050→NK1010→HSS</li> </ul>
	Excessive insert wear	Lower hardness of insert	Reverse above
		Hardness wear due to high heat generation on insert edge	<ul style="list-style-type: none"> <li>● Increase rotation rate</li> <li>● Change coolant supply or increase oil volume</li> <li>● Use Cermet coating insert</li> </ul>
		Crushing of the insert edge on Stainless Steel processing	Increase the rotation rate
	Chattering	Cutting condition is too high	Decrease the rotation rate or the feed rate
		Extension of tool is large	Minimize extension of tool
		Point shape is inappropriate	<ul style="list-style-type: none"> <li>● sharp edge → honing edge</li> <li>● honing edge → sharp edge</li> </ul>
		Using MOR type Insert	Use GUR type Insert
	Bad surface finish	Poor accuracy on cutting edge	Repairing or adjustment of accuracy
		Honing Edge (Aluminum)	Use Sharp edge type insert
		Using MOR/MOZ type Insert	Use GUR type Insert
		Dry Cutting (high heat generation)	Use coolant
	Poor process accuracy	Reverse clamping(mounting)	Correct clamping direction
	Poor process accuracy (R Chamfering)	Reverse Insert mounting	Correct mounting direction
		Reverse Insert position(front or back)	Correct Insert clamp position
		Programing Error	Confirm numerically-control
	Plucking workpiece Poor surface finish (Aluminum)	Dry cutting (high heat generation)	Change to Wet cutting (coolant)
		Honing edge insert(Aluminum)	Use sharp edge type insert
	Insert mount trouble Insert is flying	Poor clamping on lock pin wear	Exchange to new lock pin
		Poor accuracy clamp position	Mount Lock pin position correctly
Portable Chamfering Machine	Poor thin material process	Take guide clearance in large	Change the guide for thin material use
	Poor processing by using slide guide	Cannot standardize surface process by using slide guide	Adjustment and repairing

# Repair request



Request date \_\_\_\_\_

## ● About repair

For repair and maintenance requests, please contact the retailer you purchased.  
For models that have passed seven years since the sale was discontinued, parts may not be in stock and repairs may not be possible.  
Partial repair, repair of specified parts can not be received because the operation can not be confirmed.

Company name	
Name of person in charge	
Your address	
Contact information	

Product type		
	Repair contents	Please fill in other matters and symptoms.
	<div>[ Air tools ] <input type="checkbox"/> When the coupler is connected, it operates even though the switch is not pressed. <input type="checkbox"/> Rotation and power are decreasing. <input type="checkbox"/> Air is leaking from the main unit <input type="checkbox"/> The body is broken. <input type="checkbox"/> Slide cap does not tighten or does not come off  [ Tabletop chamfering machine ] <input type="checkbox"/> Motor does not turn <input type="checkbox"/> Motor reverse rotation. <input type="checkbox"/> Noise from the motor. <input type="checkbox"/> The power lamp does not light even if the outlet plug is plugged. <input type="checkbox"/> It is electric leakage.  [ Slide guide plate ] <input type="checkbox"/> Abnormal noise during the rail operation. <input type="checkbox"/> I do not slide smoothly. <input type="checkbox"/> There are scratches and dents on the guide plate.  [ Common ] <input type="checkbox"/> Abnormal noise, offensive odor. <input type="checkbox"/> It does not operate even put the switch. <input type="checkbox"/> Bad finish of the chamfered than before <input type="checkbox"/> Adjustment mechanism does not move or Adjustment parts do not come off <input type="checkbox"/> Tick marks disappear or it becomes difficult to see. <input type="checkbox"/> Cutter breakage <input type="checkbox"/> The screw is licking <input type="checkbox"/> Component is damaged Please fill in the right such as the contents in the range to understand</div>	

● We will estimate the repair request product we have received by disassembling.  
Please note that you can not return the product in the state of keeping it.  
If you wish to your return without a repair, but will be your return in the assembly repair

 Fujigen kogyo corporation

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# MEMO





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