

Mechanical Design

**Nine<sup>9</sup>**®

**EMB**

Eccentric Mechanism Boring bars



Economic

#### **Mechanical Design**

- Adjusted by eccentric mechanism, it is simple and backlash free.  
(Patented in ROC Taiwan, patent no. 108599, PR China ZL96 2 01178.9)
- It can replace end mill and brazed tool bits.

#### **Easy Handling**

- Each division shown on the tools, they are easily adjustable on the tool presetter or machine.
- Minimum readout division is 0.01 mm, it is easy for setting up fine boring.

#### **Application**

- Ideal as small hole boring tool with excellent accuracy.
- For fine boring operation on milling machines, machining centres and special purpose machines.

#### **Economic**

- Low cost, high efficiency.
- The indexable insert allows a variety of materials to be cut .

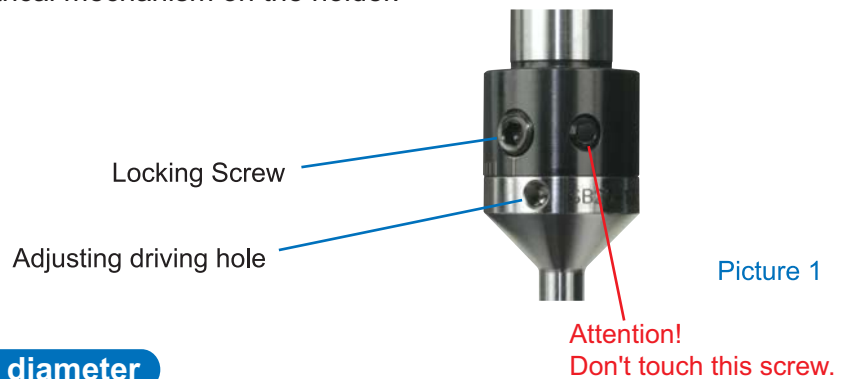
Easy Handling

Application

Cat. No. 01

## Principle

Boring bars are adjusted by eccentric mechanism on the holder.  
 Maximum adjustable range:  
 00-99121: +/- 0.1 mm  
 00-99101: +/- 0.5 mm



## Procedures for setting boring diameter

• on tool presetter.

1. Clamp the boring bar 99101/99121 using the weldon tool holder. All of these boring bars have a 20mm shank.
2. Set the boring bar at the neutral position, as [picture 2](#).
3. Measure the boring diameter using the tool presetter and compare with the required diameter.
4. If boring diameter is too big or too small, please put an allen-key into the adjusting driving hole. Turn to " + " to increase and turn to " - " to reduce boring diameter. ([picture 3](#))



## Procedures for setting boring diameter

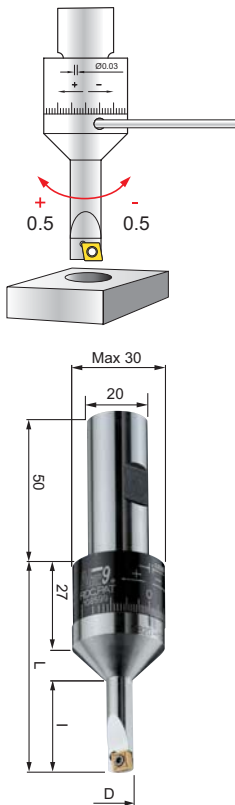
• on milling machine and machining centers.

1. Clamp the boring bar 99101/99121 using the weldon tool holder. All of these boring bars have a 20mm shank.
2. Set the boring bar at the neutral position, as [picture 2](#).
3. Test cut on work piece, about 3-5mm depth.
4. Measure the boring diameter of workpiece and compare with the required diameter.
5. If boring diameter is too big or too small, please put an allen-key into the adjusting driving hole. Turn to " + " to increase and turn to " - " to reduce boring diameter.
6. All of these boring tools can be set to required diameter on tool presetter.



## 99101

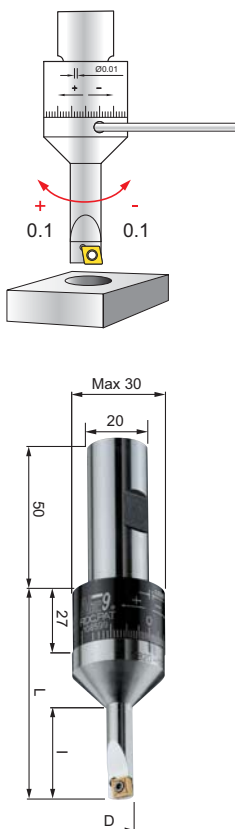
\* H type with internal coolant can be ordered on request from Dia. 7mm.  
Ordering example: 00-99101-07H.



Ordering Code	Part No.		ØD	I	L	Insert	Key / Screw
00-99101-07	SB20-0721-03	Adjustment range:±0.5mm Each Division 0.03mm	6.5-7.5	21	60	CC040102	NK-T6 NS-20045
00-99101-08	SB20-0824-03		7.5-8.5	24	63		
00-99101-09	SB20-0927-03		8.5-9.5	27	65	CC060204	NK-T7 NS-25045
00-99101-10	SB20-1030-03		9.5-10.5	30	68		
00-99101-11	SB20-1133-03		10.5-11.5	33	70		
00-99101-12	SB20-1236-03		11.5-12.5	36	73		
00-99101-13	SB20-1339-03		12.5-13.5	39	75		
00-99101-14	SB20-1442-03		13.5-14.5	42	78	CC060204	NK-T7 NS-25060
00-99101-15	SB20-1545-03		14.5-15.5	45	80		
00-99101-16	SB20-1648-03		15.5-16.5	48	83		
00-99101-17	SB20-1751-03		16.5-17.5	51	85		
00-99101-18	SB20-1850-03		17.5-18.5	50	82		
00-99101-19	SB20-1950-03		18.5-19.5	50	82	CC060204	NK-T7 NS-25060
00-99101-20	SB20-2050-03		19.5-20.5	50	82		
00-99101-21	SB20-2150-03		20.5-21.5	50	82		
00-99101-22	SB20-2250-03		21.5-22.5	50	82		
00-99101-23	SB20-2350-03		22.5-23.5	50	82		
00-99101-24	SB20-2450-03		23.5-24.5	50	82		
00-99101-25	SB20-2550-03		24.5-25.5	50	82		

## 99121

\* H type with internal coolant can be ordered on request from Dia. 7mm.  
Ordering example: 00-99121-07H.



Ordering Code	Part No.		ØD	I	L	Insert	Key / Screw
00-99121-05	SB20-0515-01	Adjustment range:±0.1mm Each Division 0.01mm	4.9-5.1	15	54	CC030102	NK-T6 NS-16030
00-99121-06	SB20-0618-01		5.9-6.1	18	57		
00-99121-07	SB20-0721-01		6.9-7.1	21	60	CC040102	NK-T6 NS-20045
00-99121-08	SB20-0824-01		7.9-8.1	24	63		
00-99121-09	SB20-0927-01		8.9-9.1	27	65	CC060204	NK-T7 NS-25045
00-99121-10	SB20-1030-01		9.9-10.1	30	68		
00-99121-11	SB20-1133-01		10.9-11.1	33	70		
00-99121-12	SB20-1236-01		11.9-12.1	36	73		
00-99121-13	SB20-1339-01		12.9-13.1	39	75		
00-99121-14	SB20-1442-01		13.9-14.1	42	78	CC060204	NK-T7 NS-25060
00-99121-15	SB20-1545-01		14.9-15.1	45	80		
00-99121-16	SB20-1648-01		15.9-16.1	48	83		
00-99121-17	SB20-1751-01		16.9-17.1	51	85		
00-99121-18	SB20-1850-01		17.9-18.1	50	82		
00-99121-19	SB20-1950-01		18.9-19.1	50	82	CC060204	NK-T7 NS-25060
00-99121-20	SB20-2050-01		19.9-20.1	50	82		
00-99121-21	SB20-2150-01		20.9-21.1	50	82		
00-99121-22	SB20-2250-01		21.9-22.1	50	82		
00-99121-23	SB20-2350-01		22.9-23.1	50	82		
00-99121-24	SB20-2450-01		23.9-24.1	50	82		
00-99121-25	SB20-2550-01		24.9-25.1	50	82		

## Precisely ground Inserts

### -CC030102, CC040102, CC060204

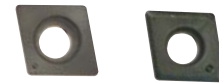
- **NC30:** K20F carbide insert, TiAlN coated, universal grade for casting iron, carbon steel, alloy steel, stainless steel.



NC30

### -CC060204

- **NC2032:** K20F carbide insert, AlTiN coated, for high speed cutting of casting iron.
- **NC2033:** K20F carbide insert, TiAlN coated, good for carbon steel, alloy steel, stainless steel.
- **NC9031:** K20F carbide insert, TiN coated, good for Al, Al-alloy, Copper and non ferrous metal.
- **NC9036:** K20F carbide insert, DLC coated, long tool life. Good for Al, Al-alloy, Copper and non ferrous metal.
- **U-NC9036:** U Super finishing insert for Al, Al-alloy and non ferrous metal, with large corner radius for super finishes and high feed rate.(Patent pending)
- **DM:** PCD brazed tip insert, fine polished and honed cutting edge for very fine surface finishes.



NC2032

NC9036



NC2033

U-NC9036

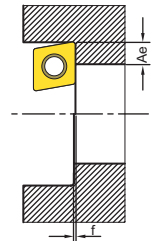


NC9031

DM

## Cutting Data

- Note: Super fine finishing insert **U-NC9036** and **DM** with special specified cutting width **0.15mm**.(Radius) (see table below)

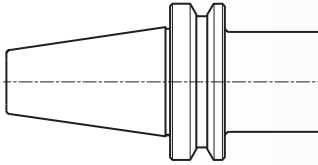


Formulas of spindle speed and feed rate :

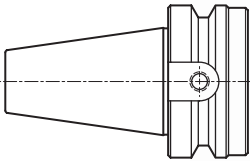
$$\text{Spindle speed } S = \frac{V_c \times 1000}{\pi \times D} \text{ r.p.m.} \quad \text{Feed rate: } f \times S \text{ mm/min.}$$

Material	Cutting conditions or surface finishes	Grade of insert	Ae Max mm	Cutting Speed Vc(m/min.)	feed rate f (mm/rev.)
Carbon Steel	Regular cutting	NC2033	0.5	120-150-200	0.05-0.07-0.10
	Interrupted cutting	NC30	0.3	100-120-140	0.04-0.05-0.08
Alloy Steel	Regular cutting	NC2033	0.5	100-120-140	0.05-0.07-0.10
	Interrupted cutting	NC30	0.3	80-100-120	0.04-0.05-0.08
Hardened Steel <HRC 50	Regular cutting	NC30	0.3	80-100-120	0.04-0.06-0.08
Stainless Steel	Regular cutting	NC2033	0.5	80-100-120	0.05-0.07-0.10
	Interrupted cutting	NC30	0.3	70-80-100	0.05-0.07-0.10
Casting Iron	Regular cutting	NC2032   NC30	0.5	80-100-120	0.05-0.07-0.10
Brass, Bronze and Al-alloy si >6%	Regular cutting	NC9036   NC9031	0.5	150-200-300	0.05-0.07-0.10
	Super mirror finish	U-NC9036	0.15	150-200-300	0.15-0.2-0.25
Al, Al-alloy, non-ferrous metal	Regular cutting	NC9036   NC9031	0.5	150-200-300	0.05-0.07-0.10
	Super finished	DM	0.3	500-1000-2000	0.05-0.07-0.10
	Super mirror finish	U-NC9036	0.15	150-200-300	0.15-0.20-0.25

Side lock holders  
Hydraulic chucks  
Spring collet chucks

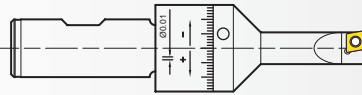


Stubby design  
JIS 6339/MAS BT 30/40  
00-99013-xxx



00-99101-05...25

00-99121-05...25



Dia. 5-25 mm



Insert

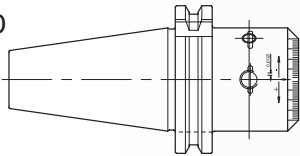
CCGT030102  
CCGT040102  
CCGT060204

Quick Change High Speed Boring Tools

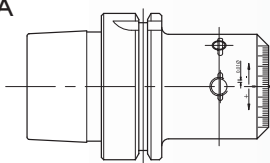
- Boring bars are interchangeable.
- G6.3 10000 r.p.m. pre-balanced.
- Catalogue is available on request.

00-99146-05...50

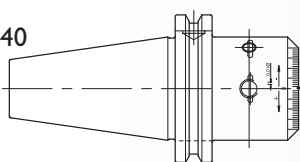
SK40



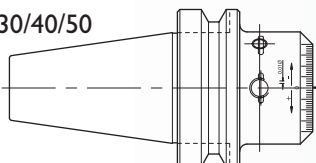
HSK63A



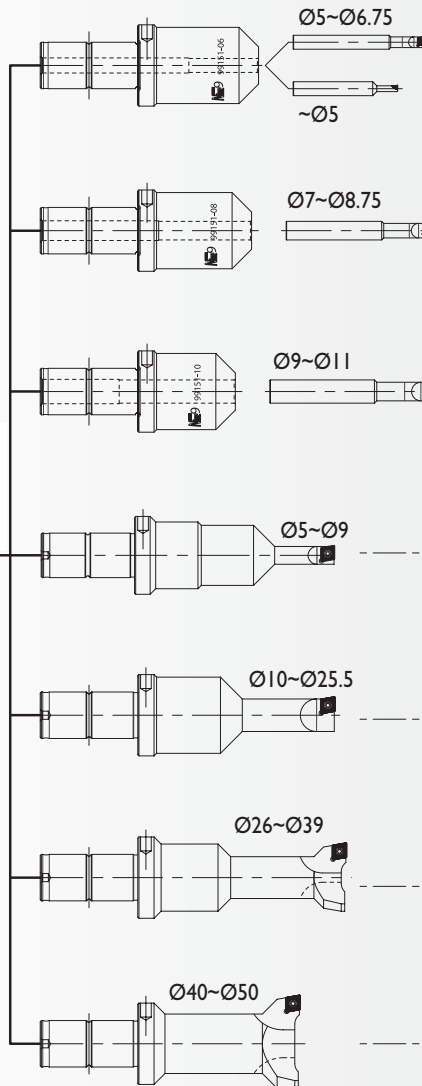
CAT40



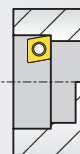
BT30/40/50



Standard



Dia. 5-50 mm



Insert

CCGT030102  
CCGT040102  
CCGT060204



- ***Super Power Drill***
- ***High Speed Boring Tools***
- ***NC-Spot Drill***
- ***Power Mill***
- ***Solid Carbide End Mill***
- ***Tool Holder***



**Jimmore International Corp.**

**Distributor:**