



# DINOX HIGHLIGHTS 2025

TOTAL TOOLING SOLUTION

**DINE Inc.** makes a better world  
with its **technologies and quality**  
in addition to **customer confidence.**

By supplying our customers with high-quality products, we contribute to the development of the automobile, aerospace, electronics, machinery, and plant industries. Furthermore, we will make every effort to demonstrate the excellence of Korean cutting tools to the world by exporting our superior-quality cutting tools overseas.



## **DINOX T/S**

We have also manufactured MCT (Machining Center) tools and T/S (Tooling System).

## **DINOX cBN**

We have manufactured cBN and PCD tools essential for machining automobiles, airplanes, and ships, etc.

## **DINOX T/H**

We have manufactured high-quality T/H products using high-precision equipment and advanced CAM software.



## Contents.

<b>DHE</b> ( Hydraulic expansion chuck )	<b>04</b>
<b>DHE/S</b> ( Slim hydraulic expansion chuck )	<b>08</b>
<b>DHE/G</b> ( Hydraulic Expansion Chuck for Tool Grinding )	<b>10</b>
<b>DHE-Swiss turn</b> ( Hydraulic Expansion Chuck for Swiss Turn )	<b>12</b>
<b>FBH/B</b> ( FBH Back boring & balanced type )	<b>16</b>
<b>FBH/D</b> ( Micro Boring Bar (Damping Type) )	<b>20</b>
<b>DBC/A</b> ( New balance cut tool )	<b>22</b>
<b>ATU</b> ( Air Turbine Universal Type )	<b>25</b>
<b>ATM</b> ( Air Turbine Machine )	<b>26</b>
<b>CTS</b> ( Coolant Turbine Spindle )	<b>28</b>
<b>KAH</b> ( Modular type KAH(90° type) )	<b>30</b>
<b>KAH/C</b> ( Coolant Turbine Spindle )	<b>31</b>
<b>DNC100</b> ( Coated cBN )	<b>32</b>
<b>DNC250</b> ( Coated cBN )	<b>33</b>
<b>DNC300</b> ( Coated cBN )	<b>34</b>
<b>DNC350</b> ( Coated cBN )	<b>35</b>
<b>CV JOINT</b>	<b>36</b>



# DHE

## Hydraulic Expansion Chuck

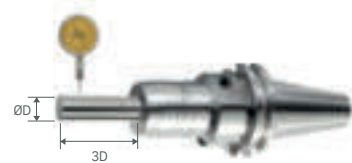
- G6.3  
G value
- 25,000  
Max RPM
- 5 $\mu$ m  
Run-out
- C  
Coolant System
- Milling
- Drilling
- Reaming

### Features

- Improved work efficiency through the convenient attachment/detachment of tools
- Improved tool life due to high-precision
- Reduced vibration during machining through the damping effects of the hydraulic chamber
- Tool clamping range :  $\varnothing$ 4~ $\varnothing$ 32mm

### High Precision

- Run-out : 5 $\mu$ m or Below
- L = 3 x  $\varnothing$ D
- Shank : Tolerance of  $\varnothing$ D : h6



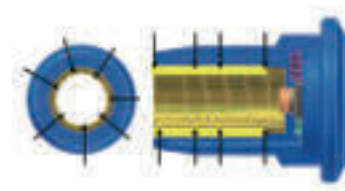
### Removal Availability by Using T-wrench Tool

- Clamping/unclamping structure that only requires simple operation (convenience)
- Reduces operator fatigue
- Enhances the operation rate of equipment



### Completely Closed Inside Construction(Durability)

- The completely closed system of its inner diameter prevents dust, cutting oil, lubricant, and chips, etc. from penetrating it
- Maintains clamping force and precision for a long time



### Stable Clamping Force

- Provides clamping force by fixing the space of the holder and tool with hydraulic pressure



Shank	Grade	Max. RPM
BT50, SK50, HSK100A	G6.3	15,000
BT40, SK40, HSK63A	G6.3	20,000
BT30	G6.3	25,000

# DBT-DHE

Hydraulic Expansion Chuck



DBT G6.3 25,000 5 $\mu$ m C

Shank      G value      Max RPM      Run-out      Coolant System      Milling      Drilling      Reaming

Fig.1

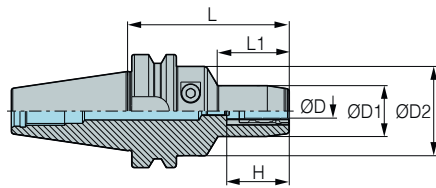
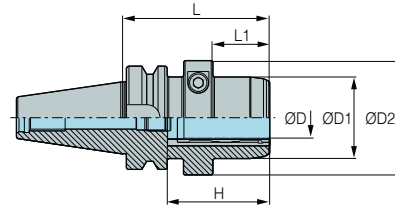


Fig.2



- : Stock
- H : Depth of tool insertion (Min.~Max.)
- C Internal coolant system is basic

- For more information on product features, see 004P
- For more information on the related part, see 006P
- For BT,SK and HSK shanks, please contact us.

	Designation	ØD	L	ØD1	ØD2	L1	H	ADJ	RPM	Fig.	kg	Package Weight(kg)	Stock	
DBT30	DBT30-DHE6-65	6	65	29	46	33	30~40	M5	25,000	1	0.7	0.8		
	DBT30-DHE8-65	8	65	31	46	33	30~40	M5	25,000	1	0.7	0.8		
	DBT30-DHE10-65	10	65	33	46	34	35~45	M5	25,000	1	0.7	0.8		
	DBT30-DHE12-70	12	70	35	46	34	36~46	M5	25,000	1	0.8	0.8		
	DBT30-DHE14-90	14	90	36	46	40	43~53	M5	25,000	1	1	1.1		
	DBT30-DHE16-90	16	90	40	46	45	46~56	M5	25,000	1	1	1.1		
	DBT30-DHE18-90	18	90	42	46	40	49~59	M5	25,000	1	1.1	1.2		
	DBT30-DHE20-90	20	90	44	46	45	49~59	M5	25,000	1	1.1	1.2	●	
DBT40	DBT40-DHE6-90	6	90	29	50	40	30~40	M5	20,000	1	1.4	1.6	●	
	DBT40-DHE6-140	6	140	29	50	40	30~40	M5	20,000	1	2.2	2.5		
	DBT40-DHE8-90	8	90	31	50	40	30~40	M5	20,000	1	1.4	1.6	●	
	DBT40-DHE8-140	8	140	31	50	40	30~40	M5	20,000	1	2.2	2.5		
	DBT40-DHE10-90	10	90	33	50	40	35~45	M5	20,000	1	1.5	1.7	●	
	DBT40-DHE10-140	10	140	33	50	40	35~45	M5	20,000	1	2.2	2.4		
	DBT40-DHE12-90	12	90	35	50	40	41~51	M10	20,000	1	1.5	1.7	●	
	DBT40-DHE12-140	12	140	35	50	40	41~51	M10	20,000	1	2.3	2.5		
	DBT40-DHE14-90	14	90	36	50	40	43~53	M10	20,000	1	1.5	1.7	●	
	DBT40-DHE14-140	14	140	36	50	40	43~53	M10	20,000	1	2.2	2.4		
	DBT40-DHE16-90	16	90	40	50	45	46~56	M10	20,000	1	1.5	1.7	●	
	DBT40-DHE16-140	16	140	40	50	45	46~56	M10	20,000	1	2.2	2.5		
	DBT40-DHE18-90	18	90	42	50	45	49~59	M10	20,000	1	1.5	1.7	●	
	DBT40-DHE18-140	18	140	42	50	45	49~59	M10	20,000	1	2.2	2.5		
	DBT40-DHE20-90	20	90	44	50	47	49~59	M10	20,000	1	1.5	1.7	●	
	DBT40-DHE20-140	20	140	44	50	50	49~59	M10	20,000	1	2.3	2.5		
	DBT40-DHE25-90	25	90	50	70	35	58~68	M16	20,000	2	2	2.2	●	
	DBT40-DHE32-90	32	90	63	75	35	58~68	M16	20,000	2	2.3	2.5	●	

(Unit : mm)

# DBT-DHE

Hydraulic Expansion Chuck

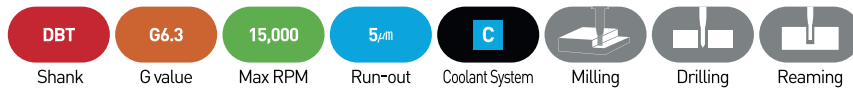


Fig.1

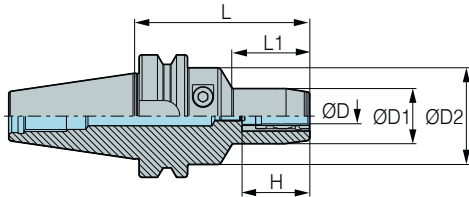
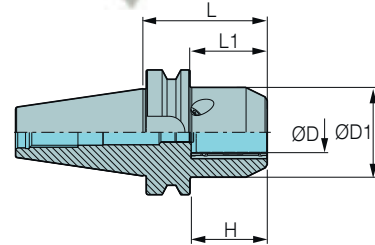


Fig.2



- ● : Stock
- H : Depth of tool insertion (Min.~Max.)
- Internal coolant system is basic

- For more information on product features, see **004P**
- For more information on the related part, see **006P**
- For BT,SK and HSK shanks, please contact us.

DBT50	Designation	ØD	L	ØD1	ØD2	L1	H	ADJ	Fig.	kg	Package Weight(kg)	Stock
	DBT50-DHE6-90	6	90	29	50	34	30~40	M5	1	3.9	4.2	
DBT50-DHE6-140	6	140	29	50	40	30~40	M5	1	4.5	4.8		
DBT50-DHE8-90	8	90	31	50	34	30~40	M5	1	4.2	4.5		
DBT50-DHE8-140	8	140	31	50	40	30~40	M5	1	4.6	5		
DBT50-DHE10-90	10	90	33	50	34	35~45	M5	1	3.9	4.2		
DBT50-DHE10-140	10	140	33	50	40	35~45	M5	1	4.5	4.9		
DBT50-DHE12-90	12	90	35	50	34	41~51	M10	1	4	4.3		
DBT50-DHE12-140	12	140	35	50	40	41~51	M10	1	4.6	5		
DBT50-DHE14-90	14	90	36	50	34	43~53	M10	1	3.9	4.2		
DBT50-DHE14-140	14	140	36	50	40	43~53	M10	1	4.5	4.9		
DBT50-DHE16-90	16	90	40	50	34	46~56	M10	1	4.1	4.4		
DBT50-DHE16-140	16	140	40	50	40	46~56	M10	1	4.7	5.1		
DBT50-DHE18-90	18	90	42	50	40	49~59	M10	1	4	4.3		
DBT50-DHE18-140	18	140	42	50	45	49~59	M10	1	4.5	4.9		
DBT50-DHE20-90	20	90	44	50	34	49~59	M10	1	4.2	4.3		
DBT50-DHE20-140	20	140	44	50	47	49~59	M10	1	4.5	4.9		
DBT50-DHE25-90	25	90	66	-	52	58~68	M16	2	4.7	5		
DBT50-DHE32-90	32	90	72	-	52	58~68	M16	2	4.8	6.2		

# DHE Spare Parts

Hydraulic Expansion Chuck Related Parts

SPARE PART	Type	Main Components	Type	Main Components
		Clamp Bolt		Adjust Screw
	Images		Images	
	Designation		Designation	
	DHE 4, 5, 6, 8, 10, 12, 14, 16, 18, 20	BTF1010	DHE 6, 8, 10	DHE-M5(ADJ)
	DHE 25, 32	BTF1212-1.5	DHE 12, 14, 16, 18, 20	DHE-M10(ADJ)
			DHE 25, 32	DHE-M16(ADJ)

※ DBT30, BT30, HSK50A is Exception

SPARE PART	Type	Accessories
		Wrench
	Images	
	Designation	
	DHE 4, 5, 6, 8, 10, 12, 14, 16, 18, 20	DHETW-5
	DHE 25,32	DHETW-6

# DHC Collet (General Type & Sealed Type)

DHC Collet (General Type) / DHC Collet (Sealed Type)

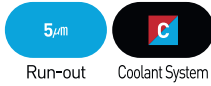


Fig.1

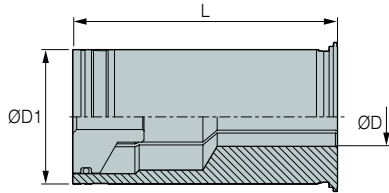
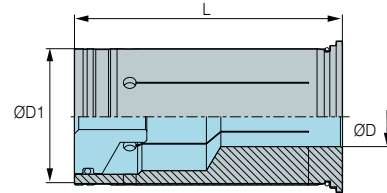


Fig.2



● : Stock

■ This product does not support the internal coolant system

	Designation (General Type)	ØD	L	ØD1	Fig.	kg	Stock
DHC12	DHC12-3	3	47	12	1	0.06~0.08	●
	DHC12-4	4	47	12	1	0.06~0.08	●
	DHC12-5	5	47	12	1	0.06~0.08	●
	DHC12-6	6	47	12	1	0.06~0.08	●
	DHC12-8	8	47	12	1	0.06~0.08	●
DHC20	DHC20-3	3	52	20	1	0.04~0.06	●
	DHC20-4	4	52	20	1	0.04~0.06	●
	DHC20-5	5	52	20	1	0.04~0.06	●
	DHC20-6	6	52	20	1	0.04~0.06	●
	DHC20-7	7	52	20	1	0.04~0.06	●
	DHC20-8	8	52	20	1	0.04~0.06	●
	DHC20-9	9	52	20	1	0.04~0.06	●
	DHC20-10	10	52	20	1	0.04~0.06	●
	DHC20-11	11	52	20	1	0.04~0.06	●
	DHC20-12	12	52	20	1	0.04~0.06	●
	DHC20-14	14	52	20	1	0.04~0.06	●
DHC20-16	16	52	20	1	0.04~0.06	●	
DHC32	DHC32-6	6	63	32	1	0.2~0.5	●
	DHC32-8	8	63	32	1	0.2~0.5	●
	DHC32-10	10	63	32	1	0.2~0.5	●
	DHC32-12	12	63	32	1	0.2~0.5	●
	DHC32-14	14	63	32	1	0.2~0.5	●
	DHC32-16	16	63	32	1	0.2~0.5	●
	DHC32-18	18	63	32	1	0.2~0.5	●
	DHC32-19	19	63	32	1	0.2~0.5	●
	DHC32-20	20	63	32	1	0.2~0.5	●
	DHC32-25	25	63	32	1	0.2~0.5	●

• Other sizes are customizable.

(Unit : mm)

● : Stock

■ Internal coolant system is basic

	Designation (Sealed Type)	ØD	L	ØD1	Fig.	kg	Stock
DHC12	DHC12-3(P)	3	47	12	2	0.04	●
	DHC12-4(P)	4	47	12	2	0.04	●
	DHC12-5(P)	5	47	12	2	0.04	●
	DHC12-6(P)	6	47	12	2	0.04	●
	DHC12-8(P)	8	47	12	2	0.04	●
DHC20	DHC20-3(P)	3	52	20	2	0.06~0.1	●
	DHC20-4(P)	4	52	20	2	0.06~0.1	●
	DHC20-5(P)	5	52	20	2	0.06~0.1	●
	DHC20-6(P)	6	52	20	2	0.06~0.1	●
	DHC20-7(P)	7	52	20	2	0.06~0.1	●
	DHC20-8(P)	8	52	20	2	0.06~0.1	●
	DHC20-9(P)	9	52	20	2	0.06~0.1	●
	DHC20-10(P)	10	52	20	2	0.06~0.1	●
	DHC20-11(P)	11	52	20	2	0.06~0.1	●
	DHC20-12(P)	12	52	20	2	0.06~0.1	●
	DHC20-14(P)	14	52	20	2	0.06~0.1	●
DHC20-16(P)	16	52	20	2	0.06~0.1	●	
DHC32	DHC32-6(P)	6	63	32	2	0.2~0.3	●
	DHC32-8(P)	8	63	32	2	0.2~0.3	●
	DHC32-10(P)	10	63	32	2	0.2~0.3	●
	DHC32-12(P)	12	63	32	2	0.2~0.3	●
	DHC32-14(P)	14	63	32	2	0.2~0.3	●
	DHC32-16(P)	16	63	32	2	0.2~0.3	●
	DHC32-18(P)	18	63	32	2	0.2~0.3	●
	DHC32-19(P)	19	63	32	2	0.2~0.3	●
	DHC32-20(P)	20	63	32	2	0.2~0.3	●
	DHC32-25(P)	25	63	32	2	0.2~0.3	●

• Other sizes are customizable.

(Unit : mm)



# DHE/S

## Slim Hydraulic Expansion Chuck

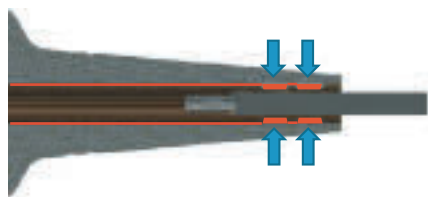
G6.3	25,000	5~8 $\mu$ m	C			
G value	Max RPM	Run-out	Coolant System	Milling	Drilling	Reaming

### Features

- Excellent workpiece accessibility due to slim design
- Improved tool life due to high-precision
- Reduced vibration during machining through the damping effects of the hydraulic chamber
- Tool clamping range :  $\varnothing 4$ – $\varnothing 20$ mm

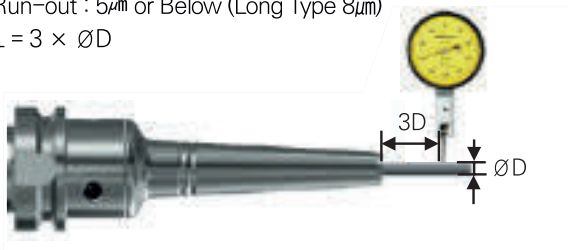
### Stable Clamping Force

- 2-Point clamping provides strong grip and stable clamping performance



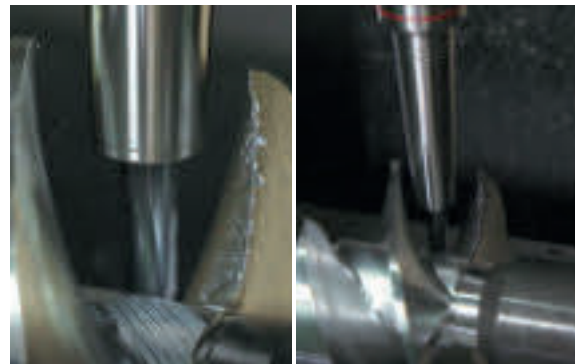
### High Precision

- Run-out : 5 $\mu$ m or Below (Long Type 8 $\mu$ m)
- $L = 3 \times \varnothing D$



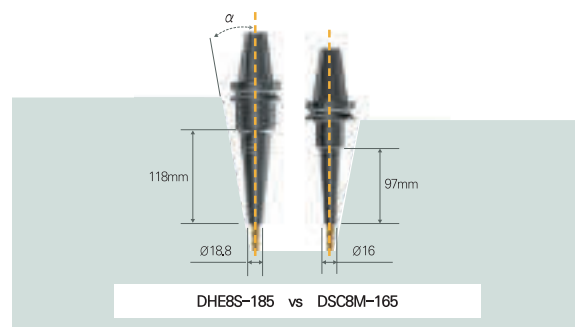
### Recommended Machining Works

- Optimized for machining that requires high-precision
- Enables challenging narrow and deep machining
- Products that require finishing



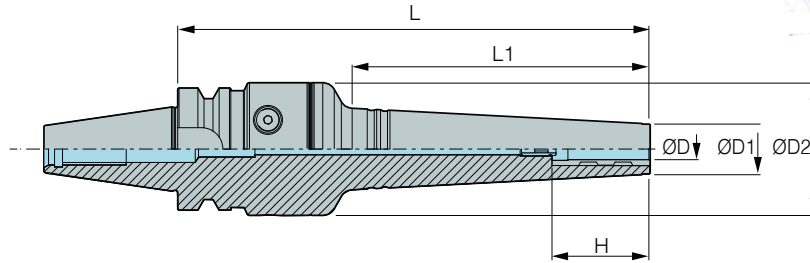
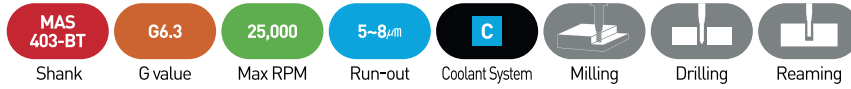
### Product Comparison

- Length and thickness are the same as those of DSC/M Type (If the tool projection length is 40mm, difference of  $\alpha =$  around 2°)
- Longer gauge line and higher rigidity (versus the DSC/M Type)
- Ideal for mold machining due to its 3-degree taper shape



# BT-DHE/S

Slim Hydraulic Expansion Chuck



- : Stock
- H : Depth of tool insertion (Min.)
- C Internal coolant system is basic

- For more information on product features, see **008P**
- For more information on the related part, see **015P**
- For HSK shanks, please contact us.

	Designation	ØD	L	ØD1	ØD2	L1	H	RPM	Run-out	kg	Package Weight (kg)	Stock
<b>BT30</b>	BT30-DHE4S-115	4	115	16.8	50	50	22	25,000	5 µm	1.1	1.2	●
	BT30-DHE5S-115	5	115	16.8	50	50	24	25,000	5 µm	1.1	1.2	●
	BT30-DHE6S-115	6	115	16.8	50	50	26	25,000	5 µm	1.1	1.2	●
	BT30-DHE6S-180	6	180	16.8	50	115	26	25,000	8 µm	1.4	1.5	●
	BT30-DHE8S-115	8	115	18.8	50	50	34	25,000	5 µm	1.1	1.2	●
	BT30-DHE8S-180	8	180	18.8	50	115	34	25,000	8 µm	1.4	1.6	●
	BT30-DHE10S-120	10	120	20.8	50	55	38	25,000	5 µm	1.4	1.5	●
	BT30-DHE10S-180	10	180	20.8	50	115	38	25,000	8 µm	1.9	2	●
	BT30-DHE12S-130	12	130	22.8	50	65	46	25,000	5 µm	1.2	1.3	●
	BT30-DHE12S-180	12	180	22.8	50	115	46	25,000	8 µm	1.6	1.7	●
<b>BT40</b>	BT40-DHE4S-120	4	120	16.8	50	50	22	20,000	5 µm	1.7	1.8	●
	BT40-DHE5S-120	5	120	16.8	50	50	24	20,000	5 µm	1.7	1.8	●
	BT40-DHE6S-120	6	120	16.8	50	50	26	20,000	5 µm	1.7	1.8	●
	BT40-DHE6S-185	6	185	16.8	50	115	26	20,000	8 µm	2	2.2	●
	BT40-DHE8S-120	8	120	18.8	50	50	34	20,000	5 µm	2	2.1	●
	BT40-DHE8S-185	8	185	18.8	50	115	34	20,000	8 µm	2	2.2	●
	BT40-DHE10S-125	10	125	20.8	50	55	38	20,000	5 µm	1.6	1.7	●
	BT40-DHE10S-185	10	185	20.8	50	115	38	20,000	8 µm	2	2.2	●
	BT40-DHE12S-135	12	135	22.8	50	65	46	20,000	5 µm	1.8	1.9	●
	BT40-DHE12S-185	12	185	22.8	50	115	46	20,000	8 µm	2.2	2.3	●
<b>BT50</b>	BT40-DHE16S-190	16	190	26.8	50	115	50	20,000	8 µm	2.3	2.4	●
	BT40-DHE20S-190	20	190	30.8	50	115	53	20,000	8 µm	2.4	2.5	●
	BT50-DHE6S-200	6	200	16.8	50	115	26	15,000	8 µm	4.6	4.9	●
	BT50-DHE8S-200	8	200	18.8	50	115	34	15,000	8 µm	4.6	4.9	●
	BT50-DHE10S-200	10	200	20.8	50	115	38	15,000	8 µm	4.8	5.0	●
	BT50-DHE12S-200	12	200	22.8	50	115	46	15,000	8 µm	4.9	5.1	●
	BT50-DHE16S-200	16	200	26.8	50	115	50	15,000	8 µm	5.0	5.2	●
	BT50-DHE20S-200	20	200	30.8	50	115	53	15,000	8 µm	5.0	5.3	●

(Unit : mm)



# DHE/G

Hydraulic Expansion Chuck for Tool Grinding

G6.3  
G value

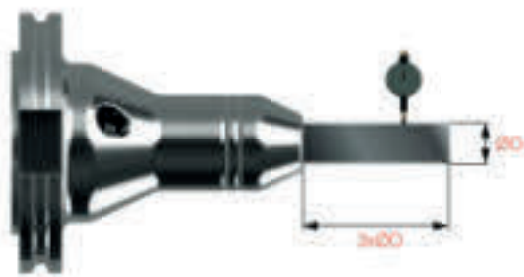
3 $\mu$ m  
Run-out

## Features

- Minimized wheel interference thanks to the application of 25 degrees to the entrance unit
- Stable run-out within 3 $\mu$ m in 3x $\varnothing$ D
- Stable clamping force with 2-point clamping

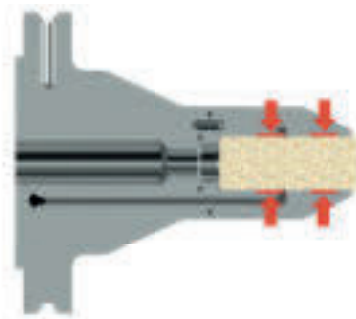
## High Precision

- Run-out within 3 $\mu$ m in 3x $\varnothing$ D achieved by the application of high-precision.



## Stable Clamping

- Achieve high-precision due to the stable clamping of 2 points on the upper side and the lower side.



## Minimized Wheel Interference

- The front-end unit employs 25° of angle and minimizes wheel interference during machining.

## Hydraulic Chuck for Grinding Tools

- Used as a jig for fixing an end tool when grinding the tools.

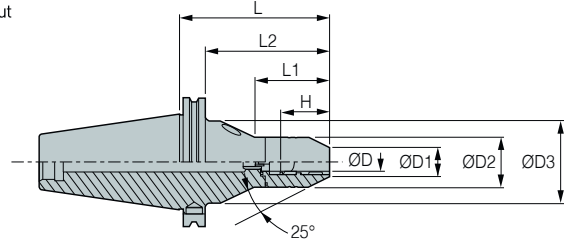
# SK-DHE/G

Hydraulic Expansion Chuck for Tool Grinding

DIN69871  
-1A/B  
Shank

G6.3  
G value

3<sub>μm</sub>  
Run-out



- H : Depth of tool insertion (Min.)
- ● : Stock


- For more information on product features, see **010P**
- For more information on the related part, see **011P**


Designation	ØD	L	ØD1	ØD2	ØD3	H	L1	L2	ADJ	kg	Package Weight (kg)	Stock
SK50-DHE6G-110	6	110	15	32	60	25	55	90.9	M5	3.2	3.5	
SK50-DHE8G-110	8	110	17	33.5	60	25	55	90.9	M5	3.4	3.7	
SK50-DHE10G-110	10	110	19	35	60	30	55	90.9	M5	3.4	3.7	
SK50-DHE12G-110	12	110	21.5	36.5	60	36	55	90.9	M10	3.6	3.9	●
SK50-DHE14G-110	14	110	23.5	38	60	38	60	90.9	M10	3.6	3.9	
SK50-DHE16G-110	16	110	25.5	39.5	60	41	60	90.9	M10	3.7	4	
SK50-DHE18G-110	18	110	27.5	41	60	44	60	90.9	M10	3.8	4.1	
SK50-DHE20G-110	20	110	28	42	70	44	47	90.9	M10	3.8	4.1	●
SK50-DHE25G-110	25	110	33	47	70	53	49	90.9	M16	4	4.3	
SK50-DHE32G-110	32	110	40	54	70	53	62.5	90.9	M16	4.2	4.5	●

(Unit : mm)

## DHE/G SPARE PART

Hydraulic Chuck for Grinder Related Parts

SPARE PART	Type	Main Components
	Images	Clamp Bolt
		
Designation		
DHE6,8,10,12,14,16,18,20		BTF1010
DHE25,32		BTF1212-1.5

Spare Part	Type	Accessories
	Images	Wrench
		
Designation		
DHE6,8,10,12,14,16,18,20		DHETW-5
DHE25,32		DHETW-6



# DHE - Swiss Turn

Hydraulic Expansion Chuck for Swiss Turn



## Features

- Achieves repeatability within 1µm when changing tools
- Reduces tool change time as tools can be clamped with a single wrench
- Allows tool replacement without extracting the holder from the machine
- Designed with a rear nozzle connection for coolant functionality (For automatic lathes: M8 or Rc 1/8)

## Types

### Front Type

- Shape : 90-degree front hydraulic clamp
- Lathe block clamping method : Side lock method for lathe blocks

### Rear-post Type

- Shape : Clamping method using the tool post
- Lathe block clamping method : Follows the post clamping method

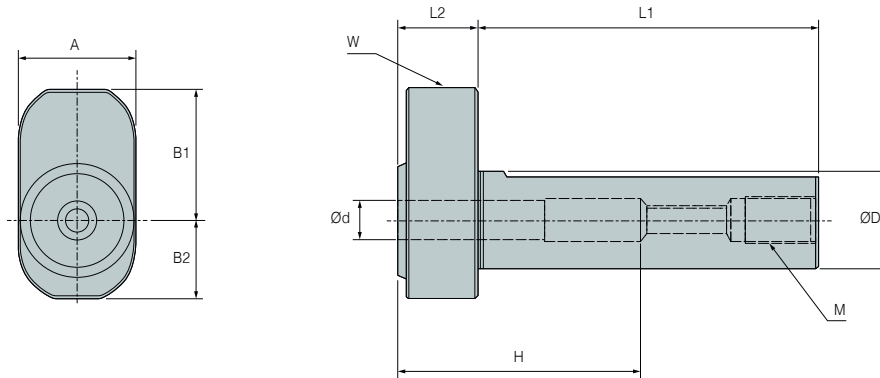
### Back Type

- Shape : 90-degree rear hydraulic clamp
- Lathe block clamping method : Side lock method for lathe blocks



# DHE - Swiss Turn (Front Type)

Hydraulic Expansion Chuck for Swiss Turn



• H : Depth of tool insertion (Min.~Max.)

**C** Internal coolant system is basic

※ The adjust screw cannot be applied to products with a diameter under Ø5.

• For more information on product features, see **12P**

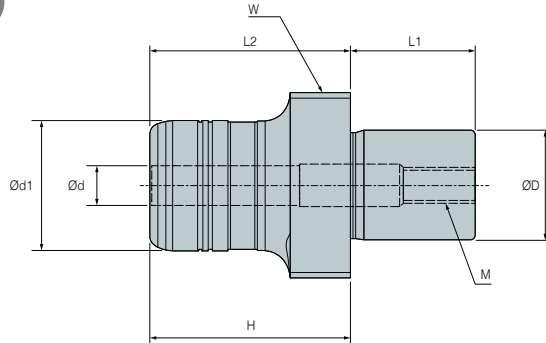
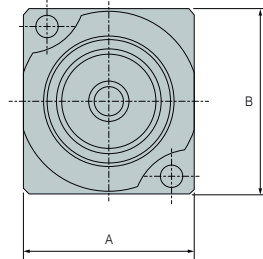
• For more information on the related parts, see **15P**

	Designation	Ød	ØD	L1	L2	H	A	B1	B2	W	M	Stock
ST19.05	ST19.05-DHE4F-60	4	19.05	42	19	16.5-60	24.5	25	16	M4	Rc1/8"	
	ST19.05-DHE6F-60	6	19.05	47	23	16.5-60	24.5	26	16	M4	Rc1/8"	
	ST19.05-DHE8F-60	8	19.05	50	30	16.5-60	24.5	27	16	M4	Rc1/8"	
	ST19.05-DHE10F-60	10	19.05	52	32	16.5-60	24.5	28	16	M4	Rc1/8"	
ST20	ST20-DHE4F-70	4	20	42	19	16.5-70	24.5	25	16	M4	Rc1/8"	
	ST20-DHE6F-70	6	20	47	23	16.5-70	24.5	26	16	M4	Rc1/8"	
	ST20-DHE8F-70	8	20	50	30	16.5-70	24.5	27	16	M4	Rc1/8"	
	ST20-DHE10F-70	10	20	52	32	16.5-70	24.5	28	16	M4	Rc1/8"	
ST22	ST22-DHE4F-70	4	22	42	19	16.5-70	24.5	25	16	M4	Rc1/8"	
	ST22-DHE6F-70	6	22	47	23	16.5-70	24.5	26	16	M4	Rc1/8"	
	ST22-DHE8F-70	8	22	50	30	16.5-70	24.5	27	16	M4	Rc1/8"	
	ST22-DHE10F-70	10	22	52	32	16.5-70	24.5	28	16	M4	Rc1/8"	
ST25	ST25-DHE4F-70	4	25	42	19	16.5-70	28	25	18	M4	Rc1/8"	
	ST25-DHE6F-70	6	25	47	23	16.5-70	28	26	18	M4	Rc1/8"	
	ST25-DHE8F-70	8	25	50	30	16.5-70	28	27	18	M4	Rc1/8"	
	ST25-DHE10F-70	10	25	52	32	16.5-70	28	28	18	M4	Rc1/8"	
	ST25-DHE12F-70	12	25	55	34	16.5-70	28	29	18	M4	Rc1/8"	
ST25.4	ST25.4-DHE4F-70	4	25.4	42	19	16.5-70	28	25	18	M4	Rc1/8"	
	ST25.4-DHE6F-70	6	25.4	47	23	16.5-70	28	26	18	M4	Rc1/8"	
	ST25.4-DHE8F-70	8	25.4	50	30	16.5-70	28	27	18	M4	Rc1/8"	
	ST25.4-DHE10F-70	10	25.4	52	32	16.5-70	28	28	18	M4	Rc1/8"	
	ST25.4-DHE12F-70	12	25.4	55	34	16.5-70	28	29	18	M4	Rc1/8"	

(Unit : mm)

# DHE-Swiss Turn (Rear-post Type)

Hydraulic Expansion Chuck for Swiss Turn



• H : Depth of tool insertion (Min.~Max.)

**C** Internal coolant system is basic

• For more information on product features, see **012P**

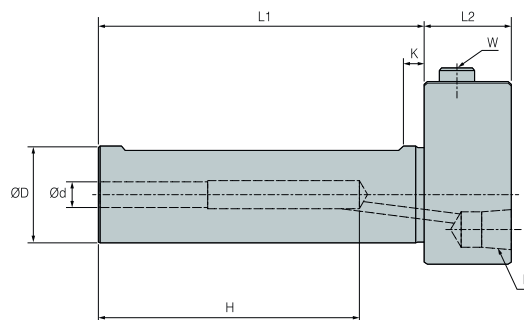
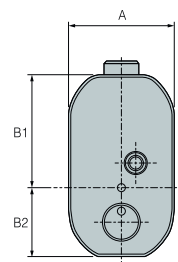
• For more information on the related part, see **015P**

	Designation	Ød	Ød1	ØD	L1	L2	H	A	B	W	M	Stock
ST22	ST22-DHE4R-40	4	22	22	25	40	19~42	34	37	M4	M6×1	
	ST22-DHE6R-40	6	24	22	25	40	23~47	34	37	M4	M6×1	
	ST22-DHE8R-40	8	26	22	25	40	30~50	34	37	M4	M6×1	
	ST22-DHE10R-40	10	28	22	25	40	32~52	34	37	M4	M6×1	
	ST22-DHE12R-40	12	30	22	25	40	34~55	34	37	M4	M6×1	

(Unit : mm)

# DHE-Swiss Turn (Back Type)

Hydraulic Expansion Chuck for Swiss Turn



• H : Depth of tool insertion (Min.~Max.)

**C** Internal coolant system is basic

• For more information on product features, see **012P**



• For more information on the related part, see **015P**

	Designation	Ød	ØD	L1	L2	H	A	B1	B2	W	M	Stock
ST20	ST20-DHE4B-75	4	20	75	20	19~50	24.5	26	16	M4	Rc1/8"	
	ST20-DHE6B-75	6	20	75	20	23~60	24.5	26	16	M4	Rc1/8"	
	ST20-DHE8B-75	8	20	75	20	30~60	24.5	26	16	M4	Rc1/8"	
ST22	ST22-DHE4B-75	4	22	75	20	19~50	24.5	26	16	M4	Rc1/8"	
	ST22-DHE6B-75	6	22	75	20	23~60	24.5	26	16	M4	Rc1/8"	
	ST22-DHE8B-75	8	22	75	20	30~60	24.5	26	16	M4	Rc1/8"	
	ST22-DHE10B-75	10	22	75	20	32~60	24.5	26	16	M4	Rc1/8"	
ST25	ST25-DHE4B-75	4	25	75	20	19~50	28	28	18	M4	Rc1/8"	
	ST25-DHE6B-75	6	25	75	20	23~60	28	28	18	M4	Rc1/8"	
	ST25-DHE8B-75	8	25	75	20	30~60	28	28	18	M4	Rc1/8"	
	ST25-DHE10B-75	10	25	75	20	32~60	28	28	18	M4	Rc1/8"	
	ST25-DHE12B-75	12	25	75	20	34~60	28	28	18	M4	Rc1/8"	


(Unit : mm)

# DHE-Swiss Turn Spare Part

Hydraulic Expansion Chuck for Swiss Turn Related Parts



SPARE PART	Type	Main Components	
		Clamp Bolt	Adjust Screw
	Images		
	Designation		
	DHE/F	BTF0806	DHE-M5(ADJ)
	DHE/R	BTF0806	-
	DHE/B	BTF0806	-


※ The adjust screw cannot be applied to products with a diameter under Ø5.

SPARE PART	Type	Accessories
		Wrench
	Images	
	Designation	
	DHE/F	DHETW-4
	DHE/R	DHETW-4
	DHE/B	DHETW-4

# DHE/S Spare Part

Slim Hydraulic Expansion Chuck Related Parts

SPARE PART	Type	Main Components	
		Clamp Bolt	Adjust Screw
	Images		
	Designation		
	Ø4, Ø5	BTF1010	-
	Ø6, Ø8, Ø10, Ø12	BTF1010	DHE-M5(ADJ)
	Ø16, Ø20	BTF1010	DHE-M10 (ADJ)

SPARE PART	Type	Accessories
		Wrench
	Images	
	Designation	
	Ø4, Ø5, Ø6, Ø8, Ø12, Ø16, Ø20	DHETW-5

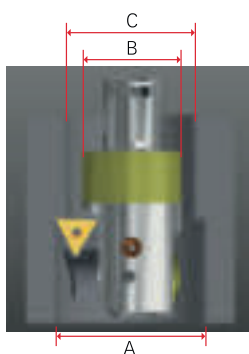


# FBH/B

FBH Back Boring & Balanced Type

G6.3 G value    C Coolant System    Boring

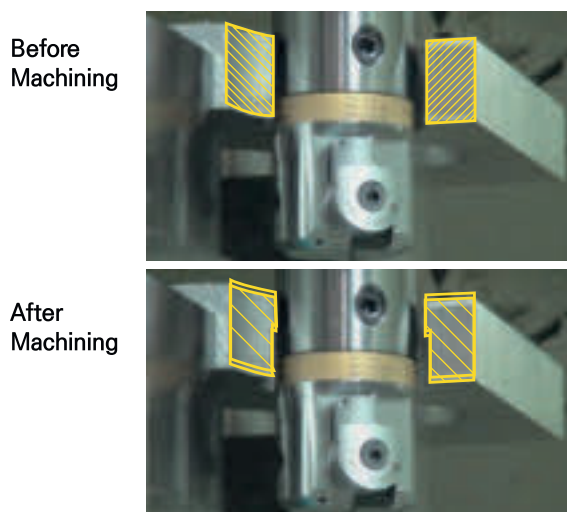
## Back Boring Range Calculation



Designation	Min. Diameter for Pass (Ø) 'C'
FBH1920B	Ø24 or above
FBH2526B	Ø30.5 or above
FBH3233B	Ø35 or above
FBH4042B	Ø44 or above
FBH5053B	Ø54 or above
FBH6368B	Ø71.5 or above
FBH6398B	Ø100 or above
FBH8098B	Ø100 or above

A	Max. Range of Back Boring (Ø)	A Max. Value = (2xC)-B
B	Max. FBH Body Size (Ø)	B Max. Value = (2xC)-A
C	Min. Diameter for Pass (Ø)	C Min. Value = (A+B)/2

## Back Boring Machining



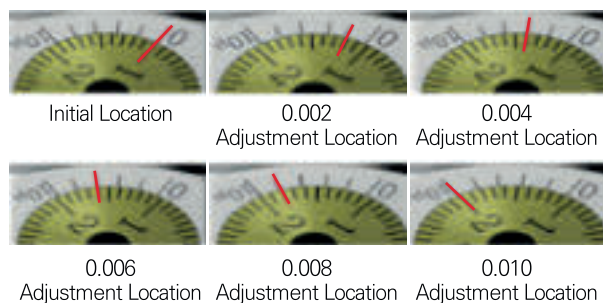
## Features

- Improved machining stability relative to conventional goods through the balanced design
- Back boring is available just by changing the location of the bite
- Fine dimension adjustment available through the vernier scale

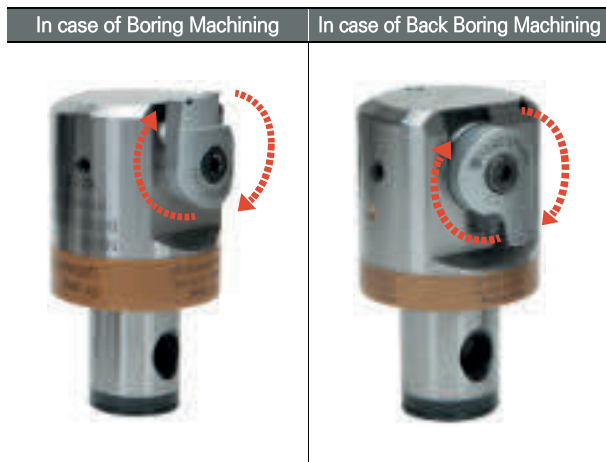
## Vernier Scale Adjustment Method

### Fine Adjustment : 2µm Boring Range

Can be adjusted at a rate of 2µm by using the main scale and vernier scale



## Convertible for Machining Direction



※ Boring direction can be easily shifted simply by changing the bite direction

# BT-FBH/B

FBH Back Boring & Balanced Type



Fig.1

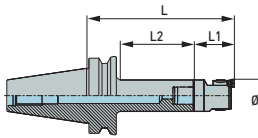


Fig.2

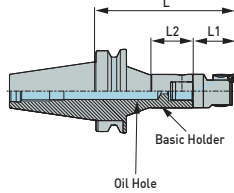
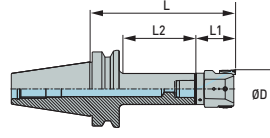
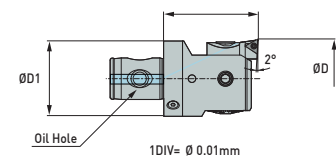


Fig.3



Head



● : Stock

C Internal coolant system is basic

※ Red : Main Component Blue : For Separate Purchase

• For more information on product features, see **016P**

• For more information on the related part, see **019P**

	Head Designation	Stock	Bite Designation	Stock	Arbor Designation	Stock	Boring Range(ØD)		L	L1	L2	ØD1	Head Weight (kg)	Head Package Weight(kg)	Fig
							Min.	Max.							
BT30	FBH1920B	●	FBB20N-□-□□	●	BT30-MD19F-70	●	20(24)	26(30)	105	35	45	19	0.2	0.2	1
	FBH2526B	●	FBB26N-□-□□	●	BT30-MD25F-90	●	26(32)	34(40)	131	41	63	25	0.2	0.2	1
	FBH3233B	●	FBB33N-□-□□	●	BT30-MD32F-80	●	33(40)	43(50)	121	41	55	32	0.3	0.3	1
	FBH4042B	●	FBB42N-□-□□	●	BT30-MD40F-45	●	42(50)	54(62)	95	50	22	40	0.5	0.5	1
	FBH4042B	●	FBB42N-□-□□	●	BT30-MD40F-60	●	42(50)	54(62)	110	50	36	40	0.5	0.5	1
	FBH4042B	●	FBB42N-□-□□	●	BT30-MD40F-80	●	42(50)	54(62)	130	50	56	40	0.5	0.5	1
	FBH5053B	●	FBB53N-□-□□	●	BT30-MD50F-70	●	53(65)	70(82)	128	58	47	50	0.8	0.9	1
BT40	FBH1920B	●	FBB20N-□-□□	●	BT40-MD19F-70	●	20(24)	26(30)	105	35	40	19	0.2	0.2	1
	FBH2526B	●	FBB26N-□-□□	●	BT40-MD25F-95	●	26(32)	34(40)	136	41	63	25	0.2	0.2	1
	FBH2526B	●	FBB26N-□-□□	●	BT40-MD25F-105R	●	26(32)	34(40)	146	41	40	25	0.2	0.2	2
	FBH3233B	●	FBB33N-□-□□	●	BT40-MD32F-100	●	33(40)	43(50)	141	41	70	32	0.3	0.3	1
	FBH3233B	●	FBB33N-□-□□	●	BT40-MD32F-115R	●	33(40)	43(50)	156	41	45	32	0.3	0.3	2
	FBH4042B	●	FBB42N-□-□□	●	BT40-MD40F-60	●	42(50)	54(62)	110	50	31	40	0.5	0.5	1
	FBH4042B	●	FBB42N-□-□□	●	BT40-MD40F-110R	●	42(50)	54(62)	160	50	60	40	0.5	0.5	2
	FBH4042B	●	FBB42N-□-□□	●	BT40-MD40F-115	●	42(50)	54(62)	165	50	83	40	0.5	0.5	1
	FBH5053B	●	FBB53N-□-□□	●	BT40-MD50F-105	●	53(65)	70(82)	163	58	73	50	0.8	0.9	1
	FBH6368B	●	FBB68N-□-□□	●	BT40-MD63F-64	●	68(90)	100(122)	145	81	37	63	2.1	2.3	3
	FBH6368B	●	FBB68N-□-□□	●	BT40-MD63F-110	●	68(90)	100(122)	191	81	83	63	2.1	2.3	3
	FBH6368B	●	FBB68N-□-□□	●	BT40-MD63F-135	●	68(90)	100(122)	216	81	108	63	2.1	2.3	3
	FBH6398B	●	FBB68N-□-□□	●	BT40-MD63F-64	●	98(120)	150(172)	165	101	37	63	3.6	3.8	3
	FBH6398B	●	FBB68N-□-□□	●	BT40-MD63F-110	●	98(120)	150(172)	211	101	83	63	3.6	3.8	3
	FBH6398B	●	FBB68N-□-□□	●	BT40-MD63F-135	●	98(120)	150(172)	236	101	108	63	3.6	3.8	3
	FBH8098B	●	FBB68N-□-□□	●	BT40-MD80F-100	●	98(120)	150(172)	201	101	73	80	4.8	5.1	3

• In the above table, the Arbor designation is an example designation and able to adjust the depth of boring with a combination of MD arbors and extension bars. Please Contact us.


(Unit : mm)

• FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09, FBB□□N-□-T11 depending on the insert.

Bite	Applicable Insert
FBB□□N, FBB□□N-1	TPGT,TPGW0802□□L
FBB□□N-□-C	CCMT, CCGT0602□□L
FBB□□N-□-C09	CCMT, CCGT09T3□□L
FBB□□N-□-T11	TPGT1103□□L

# BT-FBH/B

FBH Back Boring & Balanced Type

MAS 403-BT G6.3 C 20 172 

Shank      G value      Coolant System      Min Range      Max Range      Boring



Fig.1

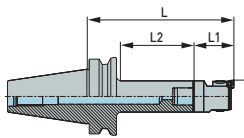


Fig.2

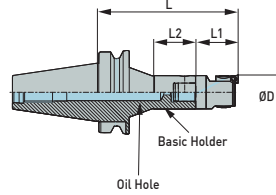
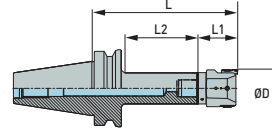
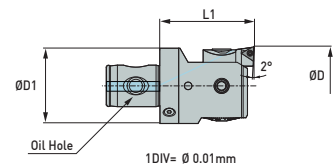


Fig.3



Head



● : Stock

C Internal coolant system is basic

※ Red : Main Component    Blue : For Separate Purchase

• For more information on product features, see 016P

• For more information on the related part, see 019P

	Head Designation	Stock	Bite Designation	Stock	Arbor Designation	Stock	Boring Range(ØD)		L	L1	L2	ØD1	Head Weight(kg)	Head Package Weight(kg)	Fig
							Min.	Max.							
BT50	FBH1920B	●	FBB20N-□-□□	●	BT50-MD19F-85	●	20(24)	26(30)	120	35	44	19	0.2	0.2	1
	FBH2526B	●	FBB26N-□-□□	●	BT50-MD25F-105	●	26(32)	34(40)	146	41	62	25	0.2	0.2	1
	FBH2526B	●	FBB26N-□-□□	●	BT50-MD25F-120R	●	26(32)	34(40)	161	41	40	25	0.2	0.2	2
	FBH3233B	●	FBB33N-□-□□	●	BT50-MD32F-110	●	33(40)	43(50)	151	41	67	32	0.3	0.3	1
	FBH3233B	●	FBB33N-□-□□	●	BT50-MD32F-115R	●	33(40)	43(50)	156	41	45	32	0.3	0.3	2
	FBH3233B	●	FBB33N-□-□□	●	BT50-MD32F-235R	●	33(40)	43(50)	276	41	115	32	0.3	0.3	2
	FBH4042B	●	FBB42N-□-□□	●	BT50-MD40F-60	●	42(50)	54(62)	110	50	22	40	0.5	0.5	1
	FBH4042B	●	FBB42N-□-□□	●	BT50-MD40F-195	●	42(50)	54(62)	245	50	152	40	0.5	0.5	1
	FBH4042B	●	FBB42N-□-□□	●	BT50-MD40F-230R	●	42(50)	54(62)	280	50	180	40	0.5	0.5	2
	FBH5053B	●	FBB53N-□-□□	●	BT50-MD50F-125	●	53(65)	70(82)	183	58	82	50	0.8	0.9	1
	FBH5053B	●	FBB53N-□-□□	●	BT50-MD50F-225	●	53(65)	70(82)	283	58	182	50	0.8	0.9	1
	FBH5053B	●	FBB53N-□-□□	●	BT50-MD50F-250R	●	53(65)	70(82)	308	58	81	50	0.8	0.9	2
	FBH6368B	●	FBB68N-□-□□	●	BT50-MD63F-75	●	68(90)	100(122)	156	81	37	63	2.1	2.3	1
	FBH6368B	●	FBB68N-□-□□	●	BT50-MD63F-130	●	68(90)	100(122)	211	81	87	63	2.1	2.3	1
	FBH6368B	●	FBB68N-□-□□	●	BT50-MD63F-195	●	68(90)	100(122)	276	81	152	63	2.1	2.3	1
	FBH6368B	●	FBB68N-□-□□	●	BT50-MD63F-230	●	68(90)	100(122)	311	81	187	63	2.1	2.3	1
	FBH6398B	●	FBB68N-□-□□	●	BT50-MD63F-75	●	98(120)	150(172)	176	101	37	63	3.6	3.8	3
	FBH6398B	●	FBB68N-□-□□	●	BT50-MD63F-130	●	98(120)	150(172)	231	101	87	63	3.6	3.8	3
	FBH6398B	●	FBB68N-□-□□	●	BT50-MD63F-195	●	98(120)	150(172)	296	101	152	63	3.6	3.8	3
	FBH6398B	●	FBB68N-□-□□	●	BT50-MD63F-230	●	98(120)	150(172)	331	101	187	63	3.6	3.8	3
FBH8098B	●	FBB68N-□-□□	●	BT50-MD80F-75	●	98(120)	150(172)	176	101	36	80	4.8	5.1	3	
FBH8098B	●	FBB68N-□-□□	●	BT50-MD80F-110	●	98(120)	150(172)	211	101	69	80	4.8	5.1	3	
FBH8098B	●	FBB68N-□-□□	●	BT50-MD80F-175	●	98(120)	150(172)	276	101	134	80	4.8	5.1	3	

• In the above table, the Arbor designation is an example designation and able to adjust the depth of boring with a combination of MD arbors and extension bars. Please Contact us. (Unit : mm)

• FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09, FBB□□N-□-T11 depending on the insert.

Bite	Applicable Insert
FBB□□N, FBB□□N-1	TPGT,TPGW0802□□L
FBB□□N-□-C	CCMT, CCGT0602□□L
FBB□□N-□-C09	CCMT, CCGT09T3□□L
FBB□□N-□-T11	TPGT1103□□L

# FBH/B Spare Part

FBH Back Boring & Balanced Type






SPARE PART	Main Components		
	Type(FBH/B)	Lock Screw	Wrench
			
	FBH1920B	BTF0404	LW-2
	FBH2526B	BTF0505	LW-2.5
	FBH3233B	BTF0606	LW-3
	FBH4042B	BTF0808	LW-4
	FBH5053B	BTF0812	LW-4
	FBH6368B	BTF1016	LW-5
	FBH6398B	BTF1010	LW-5
	FBH8098B	BTF1016	LW-5

# FBH Spare Part

Micro Boring Related Parts



SPARE PART	Main Components					
	Type(FBH)	Lock Screw	FBB	Clamp Screw	Insert Screw	Wrench
						
	FBH15	BT0303	FBB15-C	BFTX02505N	BFTX01604N	LW-1.5 / TRX6
	FBH18	BT0304	FBB15-C	BFTX02505N	BFTX01604N	LW-1.5 / TRX6



# FBH/D

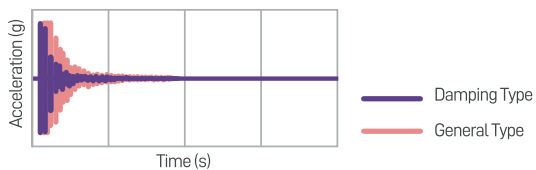
## Micro Boring Bar(Damping Type)

G6.3 C Waveform Icon  
 G value    Coolant System    Damping    Boring

### Features

- Stable use on the deep holes is possible through the damping system (Max. 6D)
- Minimum diameter (Ø26)-based 6D processing (Max. insertion depth L=160mm)
- Tool life and the ability to bore difficult materials can be increased by reducing impact due to the damping effect
- Both internal and external coolants are available

### Vibration Waveform Comparison



- A damping mechanism is built into the product to minimize vibration.

### Precautions

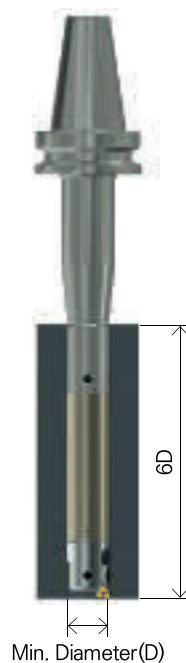
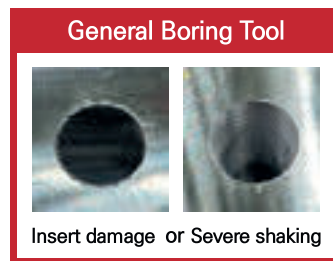
- Performance may vary depending on conditions, so it is required to perform the work under the recommended conditions as much as possible.
- Inner oil supply Max. 60 bar
- Performance may decrease by arbitrary disassembly or impact.
- ※ The head and holder are integrated, so they cannot be disassembled.

### Anti-vibration boring head specifications



Designation	ØD	
	Min.	Max.
FBH1920D	20(24)	26(30)
FBH2526D	26(32)	34(40)
FBH3233D	33(40)	43(50)
FBH4042D	42(50)	54(62)
FBH5053D	53(65)	70(82)
FBH6368D	68(90)	100(122)
FBH6398D	98(120)	150(172)
FBH8098D	98(120)	150(172)

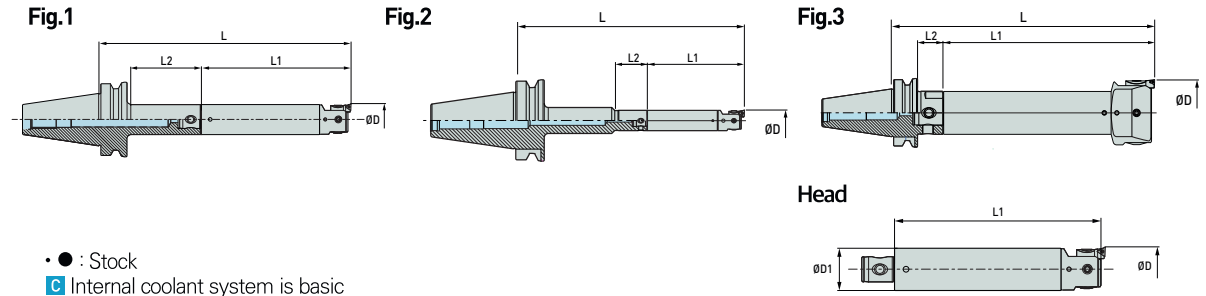
※ The values noted in ( ) indicates the boring range of the extension type FBB bite.



# BT-FBH/D

Micro Boring Bar(Damping Type)

MAS 403-BT G6.3 C 20 172 Damping Boring  
 Shank G value Coolant System Min Range Max Range Damping Boring



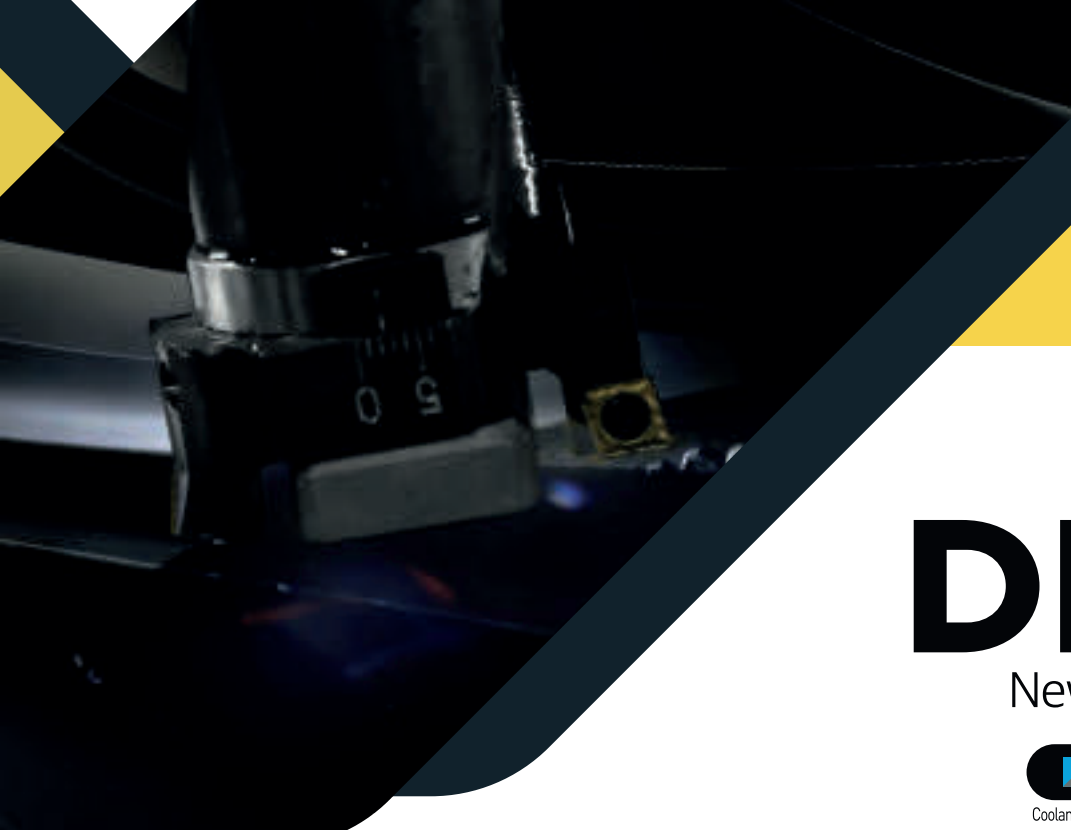
- : Stock
- Internal coolant system is basic
- ※ Red : Main Component Blue : For Separate Purchase

	Head Designation	Stock	Bite Designation	Stock	Arbor Designation	Stock	Boring Range(ØD)		L	L1	L2	ØD1	kg	Package Weight(kg)	Fig.
							Min.	Max.							
BT40	FBH1920D	●	FBB20N-□-□□	●	BT40-MD19F-70	●	20(24)	26(30)	160	90	40	19	0.2	0.2	1
	FBH1920D	●	FBB20N-□-□□	●	BT40-MD19F-165R		20(24)	26(30)	255	90	34	19	0.2	0.2	2
	FBH2526D	●	FBB26N-□-□□	●	BT40-MD25F-95	●	26(32)	34(40)	215	120	63	25	0.5	0.5	1
	FBH2526D	●	FBB26N-□-□□	●	BT40-MD25F-155R		26(32)	34(40)	275	120	40	25	0.5	0.5	2
	FBH3233D	●	FBB33N-□-□□	●	BT40-MD32F-100	●	33(40)	43(50)	255	155	32	70	1.1	1.2	1
	FBH3233D	●	FBB33N-□-□□	●	BT40-MD32F-170R		33(40)	43(50)	325	155	49	32	1.1	1.2	2
	FBH4042D	●	FBB42N-□-□□	●	BT40-MD40F-60	●	42(50)	54(62)	260	200	31	40	2.3	2.5	1
	FBH4042D	●	FBB42N-□-□□	●	BT40-MD40F-200R		42(50)	54(62)	400	200	60	40	2.3	2.5	2
	FBH5053D	●	FBB53N-□-□□	●	BT40-MD50F-105	●	53(65)	70(82)	355	250	73	50	4.5	4.8	1
BT50	FBH1920D	●	FBB20N-□-□□	●	BT50-MD19F-85	●	20(24)	26(30)	175	90	44	19	0.2	0.2	1
	FBH1920D	●	FBB20N-□-□□	●	BT50-MD19F-175R		20(24)	26(30)	265	90	34	19	0.2	0.2	2
	FBH2526D	●	FBB26N-□-□□	●	BT50-MD25F-105	●	26(32)	34(40)	225	120	62	25	0.5	0.5	1
	FBH2526D	●	FBB26N-□-□□	●	BT50-MD25F-165R		26(32)	34(40)	285	120	40	25	0.5	0.5	2
	FBH3233D	●	FBB33N-□-□□	●	BT50-MD32F-110	●	33(40)	43(50)	265	155	67	32	1.1	1.2	1
	FBH3233D	●	FBB33N-□-□□	●	BT50-MD32F-180R		33(40)	43(50)	335	155	49	32	1.1	1.2	2
	FBH4042D	●	FBB42N-□-□□	●	BT50-MD40F-60	●	42(50)	54(62)	260	200	21	40	2.3	2.5	1
	FBH4042D	●	FBB42N-□-□□	●	BT50-MD40F-210R		42(50)	54(62)	410	200	60	40	2.3	2.5	2
	FBH5053D	●	FBB53N-□-□□	●	BT50-MD50F-125	●	53(65)	70(82)	375	250	82	50	4.5	4.8	1
	FBH6368D	●	FBB68N-□-□□	●	BT50-MD63F-75	●	68(90)	100(122)	385	310	34	63	9.4	9.9	1
	FBH6398D	●	FBB68N-□-□□	●	BT50-MD63F-75	●	98(120)	150(172)	385	310	34	63	10	10.5	3
	FBH8098D		FBB68N-□-□□	●	BT50-MD80F-75	●	98(120)	150(172)	465	390	36	80	20	20.7	3

(Unit : mm)

## FBH/D Spare Part

SPARE PART	Main Components		
	Type(FBH/D)	Lock Screw	Wrench
	FBH1920D	BTF0404	LW-2
	FBH2526D	BTF0505	LW-2.5
	FBH3233D	BTF0606	LW-3
	FBH4042D	BTF0808	LW-4
	FBH5053D	BTF0812	LW-4
	FBH6368D	BTF1016	LW-5
	FBH6398D	BTF1010	LW-5
	FBH8098D	BTF1016	LW-5



# DBCA

New Balance Cut Tool

Coolant System	Min Range	Max Range	Boring

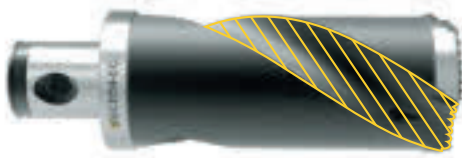
## Features

- Bidirectional simultaneous diameter adjustment is available due to the twin control structure
- Machining rigidity is reinforced due to the cartridge assist design
- Broader machining area than the existing products
- Boring range :  $\varnothing 28$ – $\varnothing 130$ (mm)

## Main Features

### Helical Type

- Improved capacity to discharge chips from clogged and deep holes
- Minimized damage to tools and insert due to chip clogging



Extended Head Length	Deep hole machining implemented
Helical Type	Improved capacity to discharge chips from holes

### Boring Area Optimization

- Max. diameter expanded owing to reinforced rigidity
- Boring range expanded per designation versus conventional boring range of DINE

Coolant Injection Hole

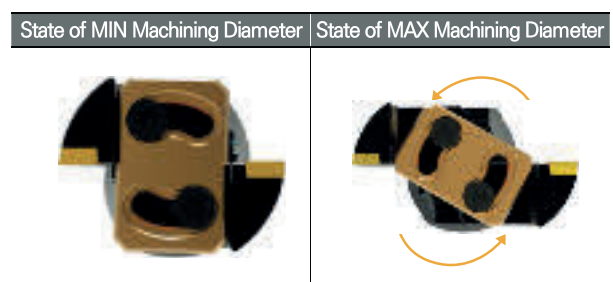
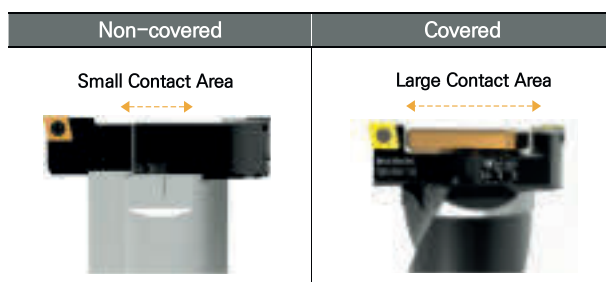


Coolant Hole (Direct Injection to Cutting Edge)

- Improved capacity to discharge chips
- Improved capacity of machining

## Effect of Improved Rigidity for Cartridge by Cover

Clamps the top of the cartridge stably, minimizing the vibration of tools and improving the roughness of the working surface



# BT-DBCA-H (Helical Type)

New Balance Cut Tool(Helical Type)



MAS  
403-BT   
 C   
 28   
 130

Shank   Coolant System   Min Range   Max Range   Boring

Fig.1

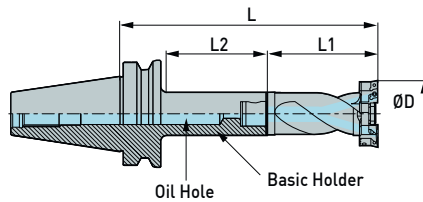


Fig.2

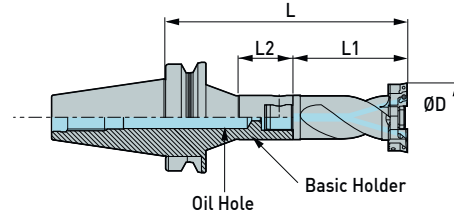
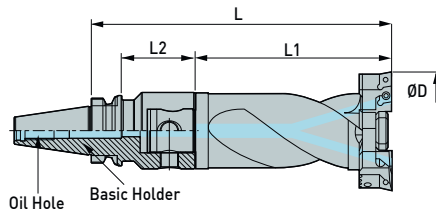
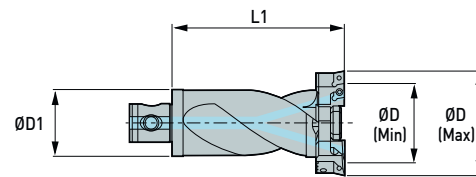


Fig.3



Head



1DIV= Ø 0.01mm

● : Stock

C Internal coolant system is basic

※ Red : Main Component   Blue : For Separate Purchase

• For more information on product features, see [022P](#)

• For MD Arbor, please contact us.

	Head Designation	Stock	Arbor Designation	Stock	Boring Range(ØD)		L	L1	L2	ØD1	Fig.	Head Weight (kg)	Head Package Weight(kg)
					Min.	Max.							
<b>BT30</b>	<span style="color: red;">DBCA2528S-H</span>	●	<span style="color: blue;">BT30-MD25F-90</span>	●	28	38	193	103	63	25	1	0.3	0.3
	<span style="color: red;">DBCA3238S-H</span>	●	<span style="color: blue;">BT30-MD32F-80</span>	●	38	54	190	110	55	32	1	0.5	0.6
	<span style="color: red;">DBCA5054S-H</span>	●	<span style="color: blue;">BT30-MD50F-70</span>	●	54	74	215	145	48	50	3	1.8	1.9
<b>BT40</b>	<span style="color: red;">DBCA2528S-H</span>	●	<span style="color: blue;">BT40-MD25F-95</span>	●	28	38	198	103	63	25	1	0.3	0.3
	<span style="color: red;">DBCA2528S-H</span>	●	<span style="color: blue;">BT40-MD25F-105R</span>	●	28	38	208	103	41	25	2	0.3	0.3
	<span style="color: red;">DBCA3238S-H</span>	●	<span style="color: blue;">BT40-MD32F-100</span>	●	38	54	210	110	70	32	1	0.5	0.6
	<span style="color: red;">DBCA3238S-H</span>	●	<span style="color: blue;">BT40-MD32F-115R</span>	●	38	54	225	110	46	32	2	0.5	0.6
	<span style="color: red;">DBCA5054S-H</span>	●	<span style="color: blue;">BT40-MD50F-105</span>	●	54	74	250	145	73	50	1	1.8	1.9
	<span style="color: red;">DBCA6374S-H</span>	●	<span style="color: blue;">BT40-MD63F-64</span>	●	74	100	244	180	37	63	1	3.3	3.5
	<span style="color: red;">DBCA6374S-H</span>	●	<span style="color: blue;">BT40-MD63F-110</span>	●	74	100	290	180	83	63	1	3.3	3.5
	<span style="color: red;">DBCA6374S-H</span>	●	<span style="color: blue;">BT40-MD63F-135</span>	●	74	100	315	180	108	63	1	3.3	3.5
	<span style="color: red;">DBCA80100S-H</span>	●	<span style="color: blue;">BT40-MD80F-100</span>	●	100	130	315	215	73	80	3	7.3	7.6

• In the above table, the Arbor designation is an example designation and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, Please Contact us.

(Unit : mm)

- DBCA2528S-H : CCMT0602□□
- DBCA3238S-H : CCMT0602□□
- DBCA5054S-H : CCMT09T3□□
- DBCA6374S-H : CCMT1204□□
- DBCA80100S-H : CCMT1204□□

# BT-DBCA-H (Helical Type)

New Balance Cut Tool(Helical Type)



Fig.1

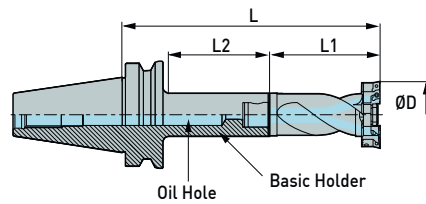
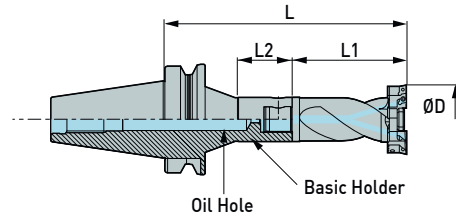
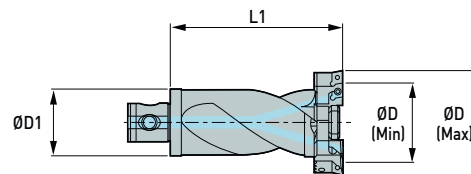


Fig.2



## Head



1DIV= Ø 0.01mm

● : Stock

■ Internal coolant system is basic

※ Red : Main Component Blue : For Separate Purchase

• For more information on product features, see **022P**

• For MDArbor, please contact us.

	Head Designation	Stock	Arbor Designation	Stock	Boring Range(ØD)		L	L1	L2	ØD1	Fig.	Head Weight(kg)	Head Package Weight(kg)
					Min.	Max.							
BT50	DBCA2528S-H	●	BT50-MD25F-105	●	28	38	208	103	62	25	1	0.3	0.3
	DBCA2528S-H	●	BT50-MD25F-120R	●	28	38	223	103	41	25	2	0.3	0.3
	DBCA3238S-H	●	BT50-MD32F-110	●	38	54	220	110	67	32	1	0.5	0.6
	DBCA3238S-H	●	BT50-MD32F-115R	●	38	54	225	110	46	32	2	0.5	0.6
	DBCA3238S-H	●	BT50-MD32F-235R	●	38	54	345	110	115	32	2	0.5	0.6
	DBCA5054S-H	●	BT50-MD50F-125	●	54	74	270	145	82	50	1	1.8	1.9
	DBCA5054S-H	●	BT50-MD50F-225	●	54	74	370	145	182	50	1	1.8	1.9
	DBCA5054S-H	●	BT50-MD50F-250R	●	54	74	395	145	81	50	2	1.8	1.9
	DBCA6374S-H	●	BT50-MD63F-75	●	74	100	255	180	35	63	1	3.3	3.5
	DBCA6374S-H	●	BT50-MD63F-130	●	74	100	310	180	87	63	1	3.3	3.5
	DBCA6374S-H	●	BT50-MD63F-195	●	74	100	375	180	152	63	1	3.3	3.5
	DBCA6374S-H	●	BT50-MD63F-230	●	74	100	410	180	187	63	1	3.3	3.5
	DBCA80100S-H	●	BT50-MD80F-75	●	100	130	290	215	36	80	1	7.3	7.6
	DBCA80100S-H	●	BT50-MD80F-110	●	100	130	325	215	69	80	1	7.3	7.6
	DBCA80100S-H	●	BT50-MD80F-175	●	100	130	390	215	134	80	1	7.3	7.6

• In the above table, the Arbor designation is an example designation and able to adjust the depth of boring with a combination of MD arbors and extension bars. Please Contact us.

(Unit : mm)

- DBCA2528S-H : CCMT0602□□
- DBCA3238S-H : CCMT0602□□
- DBCA5054S-H : CCMT09T3□□
- DBCA6374S-H : CCMT1204□□
- DBCA80100S-H : CCMT1204□□

# ATU

## Angle Adjustment Air Spindle\_(Universal Type)

<b>50,000</b>	<b>5<math>\mu</math>m</b>	<b>C</b>	<b>1mm ~6mm</b>	<b>3Bar</b>	<b>0.47</b>	<b>HC</b>
Max RPM	Run-out (Based on spindle)	Coolant System	Collet Size	Air Pressure (of regulator)	Power(HP)	HC Collet

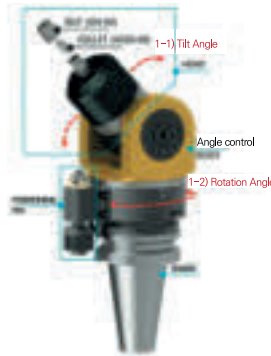
### Features

- Air spindle applicable to multi-axis machining by adjusting the angle
- Air injection method can be selected (positioning pin or equipment main axis)
- ATC device available

### Product Structure and Characteristics

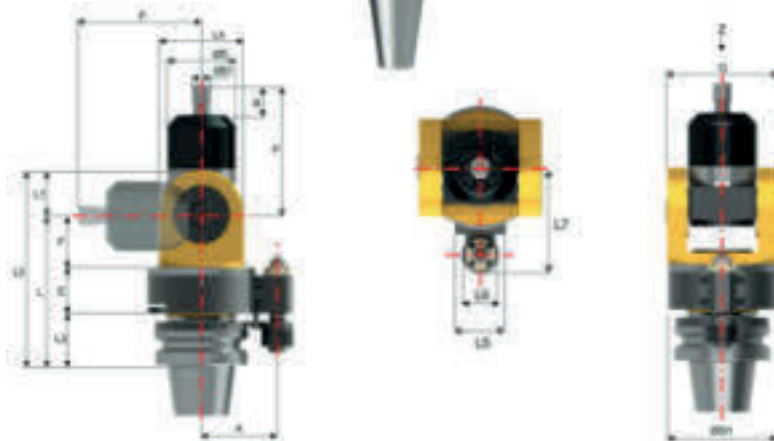
#### 1) Angle Control

- 1-1) Tilt Angle:  $-90^{\circ} \sim +90^{\circ}$
- 1-2) Rotation Angle:  $0^{\circ} \sim 360^{\circ}$



#### 2) Air Injection Method

- 2-1) External air method
- 2-2) Equipment main axis method



BT50	Designation		L	L1	L2	L3	L4	L5	L6	L7
		BT50-ATU6-155		155	45	200	55	90	48	35

E	F	P	A	B	G	$\varnothing B1$	$\varnothing G1$	$\varnothing D$	Max. RPM	Proper Air Pressure
46.5	53.5	131.5	80	30.5	116	19.5	114	90	50,000	Around 3 bar



# ATM

## Air Turbine Machine

50,000	5μm	C	1mm ~6mm	General-2Bar ATC-2.5Bar	0.47	HC
Max RPM	Run-out (Based on spindle)	Coolant System	Collet Size	Air Pressure (of regulator)	Power(HP)	HC Collet

### Features

- High-speed turbine rotation structure using compressed air (max. 50,000rpm)
- The conventional MCT can be compatible just by supplying high-pressure compressed air
- High-speed/precision machining is available regardless of the machine's age
- Continuous machining is possible for a long time due to rapid heat discharge

### General Type

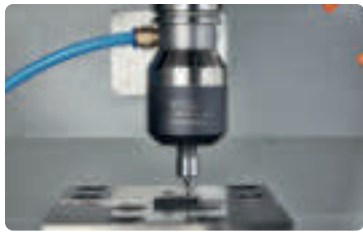


#### How to Use

- Use in an equipment able to spray air on the main axis
- Able to perform ATC as there is no external air hose to be connected

#### Precautions

- When spraying the air on the main axis, be careful about introduction of foreign



#### How to Use

- Connect an external air hose
- Connect it directly to the regulator and minimize the introduction of foreign substances

#### Precautions

- Must separate the hose from the product in case of ATC
- Be careful when the main axis rotates

### Auto Tool Change Type



#### How to Use

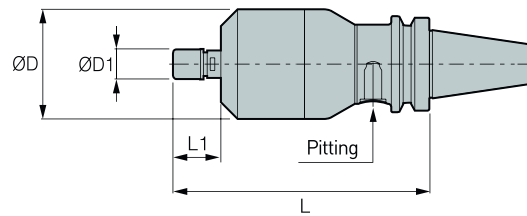
- It is able to perform ATC and equipment rotation even on equipment with no air main
- The air is supplied on the Positioning Block, so ATC and equipment spindle rotation is possible
- The main axis can rotate at a low-speed, and the tool length can be corrected

# BT-ATM

Air Turbine Machine

<b>50,000</b> Max RPM	<b>5μm</b> Run-out (Based on spindle)	<b>C</b> Coolant System	<b>1mm ~6mm</b> Collet Size	<b>General-2Bar ATC-2.5Bar</b> Air Pressure (of regulator)	<b>0.47</b> Power(HP)	<b>HC</b> HC Collet
--------------------------	---	----------------------------	------------------------------------	--	--------------------------	------------------------

## General Type (Air Spindle)



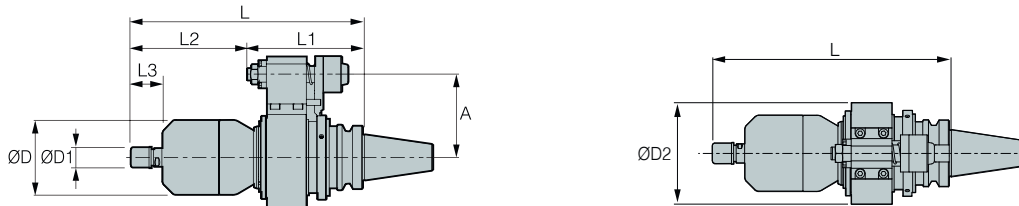
**C** This product does not support the internal coolant system

• For more information on product features, see **026P**

	Designation	ØD	ØD1	L	L1	RPM (Based on 2 Bar of Regulator)	Pitting	collet	Stock
<b>BT30</b>	BT30-ATM6-176	72	19.5	176	31.5	MAX 50,000	PC12-02	HC	
<b>BT40</b>	BT40-ATM6-171	72	19.5	171	31.5	MAX 50,000	PC12-02	HC	
<b>BT50</b>	BT50-ATM6-182	72	19.5	182	31.5	MAX 50,000	PC12-02	HC	

(Unit : mm)

## ATC Type



**C** This product does not support the internal coolant system

• For more information on product features, see **026P**

	Designation	ØD	ØD1	ØD2	L	L1	L2	L3	A	RPM (Based on 2 Bar of Regulator)	collet	Stock
<b>BT40</b>	BT40-ATM6-227(ATC)	72	19.5	96	227	114	113	32	80	MAX.50,000	HC	
<b>BT50</b>	BT50-ATM6-228(ATC)	72	19.5	96	228	115	113	32	80	MAX.50,000	HC	

(Unit : mm)



# CTS

## Coolant Turbine Spindle

- Min 37,000  
Max 60,000  
RPM
- 1 $\mu$ m  
Run-out
- C  
Coolant System
- 1mm  
~6mm  
Collet Size
- Min 30bar  
Max 70bar  
Coolant Pressure
- 0.81  
Power(HP)
- GERC(HP)  
Collet

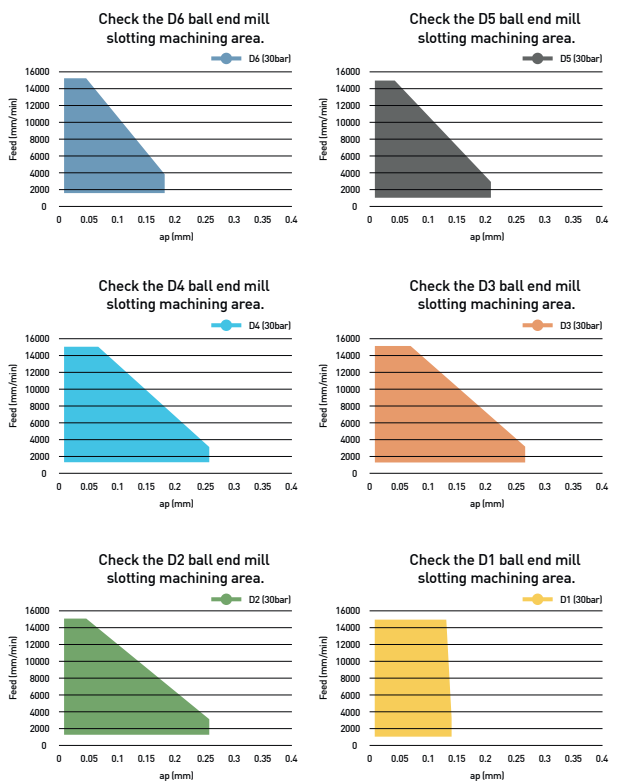
### Features

- Enables high-speed rotation (approximately 37,000 rpm) using high-pressure coolant (30 Bar standard).
- Spindle blade positioned at the top to distribute rotational and machining load locations.
- Enhanced bearing cooling performance using cutting fluid.

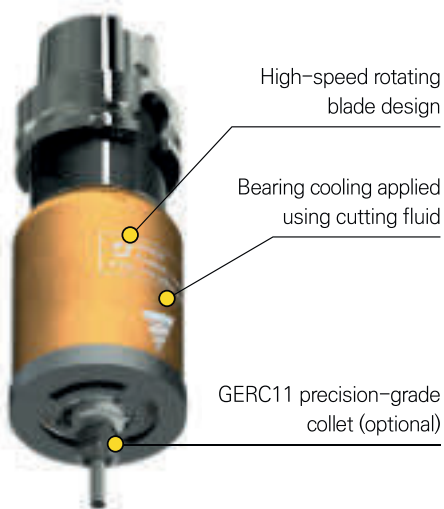
### What is a Coolant Spindle?

A coolant spindle allows high-speed rotation (approximately 37,000 rpm) using high-pressure (30 Bar or more) coolant, providing high-speed and precision machining for high-quality processing.

### Recommended Machining Area



### Structural Features



# BT-CTS

Coolant Turbine Spindle

Min 37,000  
Max 60,000  
RPM
1 $\mu$ m  
Run-out
C  
Coolant System
1mm  
~6mm  
Collet Size
Min 30bar  
Max 70bar  
Coolant Pressure
0.81  
Power(HP)
GERC(HP)  
Collet



**C** Internal coolant system is basic

• For more information on product features, see **028P**

	Designation	ØD	ØD1	L	L1	Collet	Stock
BT30	BT30-CTS6-156	68	16	156	21	GERC	
BT40	BT40-CTS6-161	68	16	161	21	GERC	
BT50	BT50-CTS6-172	68	16	172	21	GERC	

(Unit : mm)

# HSK-CTS

Coolant Turbine Spindle

Min 37,000  
Max 60,000  
RPM
1 $\mu$ m  
Run-out
C  
Coolant System
1mm  
~6mm  
Collet Size
Min 30bar  
Max 70bar  
Coolant Pressure
0.81  
Power(HP)
GERC(HP)  
Collet



**C** Internal coolant system is basic

• For more information on product features, see **028P**

	Designation	ØD	ØD1	L	L1	Collet	Stock
HSK63A	HSK63A-CTS6-160	68	16	160	21	GERC	

(Unit : mm)



# BT-KAH

## 90° Angle Type

- 

MAS  
403-BT  
Shank
- 

Coolant System
- 

5,000  
Max RPM
- 

ER Collet
- 

Milling
- 

Drilling
- 

Inner Side Machining

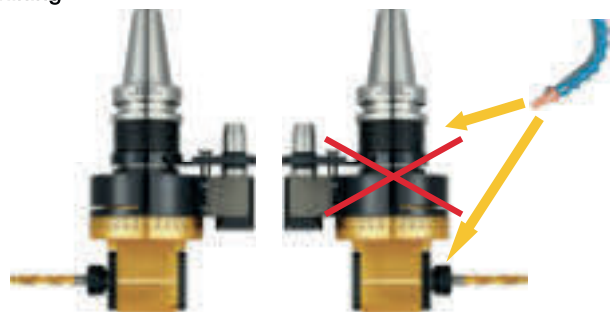
### Features

#### Adjustable angle-type angular head that enables flexible machining

- Adjusting angle up to 360°
- HSK and SK types are customizable
- ATC (automatic tool change) available
- Tool rotates in the opposite direction to that of spindle

#### BT30 KAH Features

- A small angular head for small equipment (BT30)
- Light weight of 2.6kg for easy installation
- Available multi-surface processing
- Its processing angle can be freely adjusted by 360° on both sides
- ER11 size collet applied



※ Do not inject cutting oil direct to the Angular Head body.

### BT-KAH Structure

- Uses spiral bevel gear (with axial angle of 90°)
- Reduced vibration and noise
- Small backlash
- Thanks to the use of a 1:1 gear ratio, can use without complex calculations
- Reverse-rotation direction compared to spindle (CW:CCW)



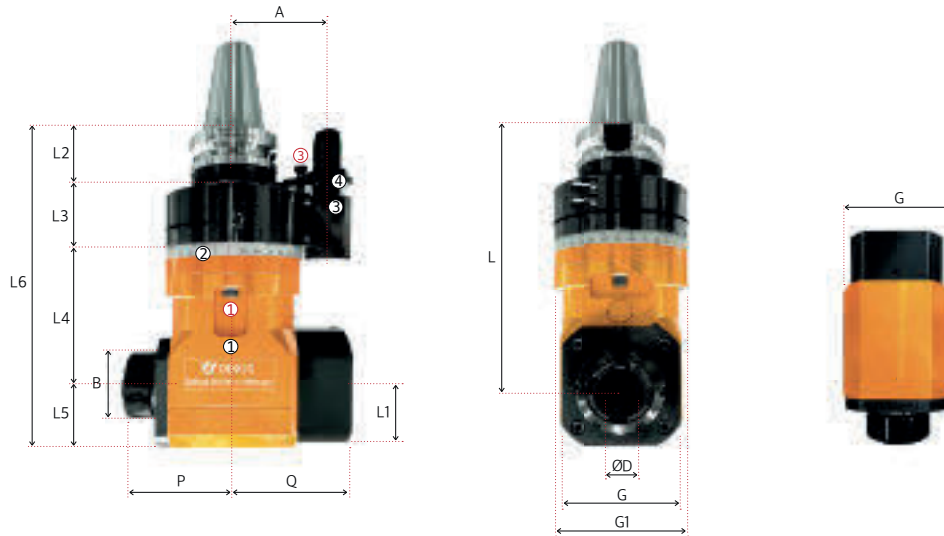
### Internal Coolant : KAH/C

- Direct injection of coolant to the end tool through the machine spindle is possible. (Caution: Do not use in non-lubricated environments.)
- Compatible with high-pressure coolant (Max 40 Bar / Min 3 Bar).
- Equipped with a mechanical seal to prevent internal component damage due to leakage.
- Must use an oil-hole type Pull Stud Bolt.
- Must use a waterproof collet.



# BT-KAH/C

90° Angle Type (Internal Coolant Type)



### Positioning Pin



NO	Name
①	Head
②	Rotation Angle Split-gradation (Freely Adjustable for 360°)
③	Position Fix Pin Block
④	Jaw Key
⑤	Height Adjusting Wrench Hole

NO	Name	Designation	Shank
①	Head Angle Fix Bolt	BX0618	BT40, BT50
②	Set Screw	BTF0404	BT40, BT50
③	Position Pin Height Fix Bolt	SBX0630	BT40, BT50

Shank	M(mm)	M1(mm)	A1(deg.)	ØD(mm)
BT40	Max.: 32 / Min.: 26	10	20	19.6
BT50	Max.: 35 / Min.: 29	15	20	28

● : Stock

C Internal coolant system is basic

	Designation	ØD	L	L1	L2	L3	L4	L5	L6	B	A	P	Q	G	G1	Gear Ratio	Max. RPM	Collet	kg	Stock
BT40	BT40-KAH13C-165	6.0-12.0	165	28	44	71	50	28	193	35	65	60	70	60	96	1 : 1	5,000	GERC20	6.4	
	BT40-KAH20C-180	8.0-20.0	180	38	44	71	65	38	218	50	65	76	76	76	96	1 : 1	3,500	GERC32	8.2	
BT50	BT50-KAH13C-260	6.0-12.0	260	28	57	54	149	28	288	35	80	60	70	60	96	1 : 1	3,500	GERC20	12.4	
	BT50-KAH20C-200	8.0-20.0	200	38	57	54	89	38	238	50	80	76	76	76	96	1 : 1	3,500	GERC32	12.3	
	BT50-KAH20C-240	8.0-20.0	240	38	57	54	129	38	278	50	80	76	76	76	96	1 : 1	3,500	GERC32	14.2	

※ Before purchasing, please check whether the internal coolant type is compatible with your equipment.

(Unit : mm)

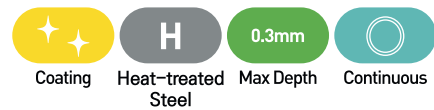
※ If your machine does not have an internal coolant function or requires a nozzle type, custom orders are available.

※ A waterproof collet must be used.

※ An oil-hole type Pull Stud Bolt must be used.

# DNC100

## Coated cBN



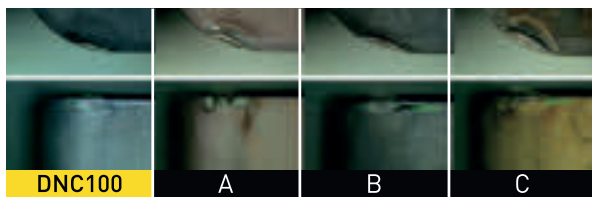
### Features

- Primary recommended grade for high-speed, continuous machining
- Excellent heat resistance due to high oxidation temperature
- Coating with high-hardness, oxidation and chipping resistance applied

Grade	Texture	Binder	cBN Content (%)	Grain Size (μm)	Hardness HV(Gpa)
DNC100		TiN	50 - 55	2	31 - 34

### Performance Comparison Test

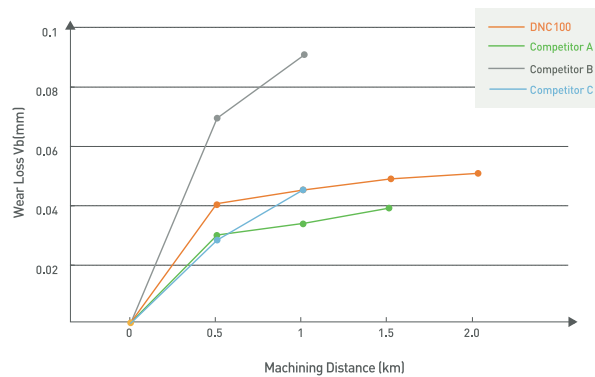
#### Wear Resistance Comparison Test in High-speed Machining



#### Cutting Conditions

Insert Designation	2NU-CNGA120408
Test Holder	DCLNL2525-M12
Workpiece	SCM415 [58~62HrC]
Cutting Speed (m/min)	300
Feed (mm/rev)	0.1
Depth of Cut (mm)	0.1
Dry/Wet Cutting	Dry Cutting

#### Wear Loss



#### Applicable Area

Cutting Speed (m/min)	300	<b>DNC100</b>			
	180				
Intermittent Cutting Intensity	Continuous	Light Interrupted	Medium interrupted	Heavy Interrupted	
Intermittent Accuracy					

#### Recommended Cutting Conditions

- Improved oxidation and wear resistance through the application of high-hardness coating
- Significantly improved resistance to chipping, fracture, and wear

Cutting Speed (m/min)	180	300
Feed (mm/rev)	0.03	0.3
Depth of cut (mm)	0.03	0.3

# DNC250

Coated cBN








Coating    Heat-treated Steel    Max Depth    Continuous    Light Interrupted

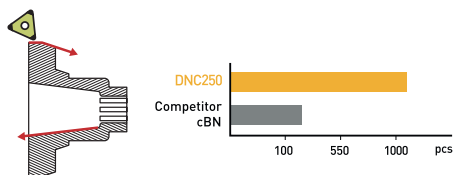
## Features

- Grade first recommended for continuous machining
- General-purpose cBN that enables machining ranging from continuous machining to Light interrupted cutting by PVD coating application
- Wear resistance improved

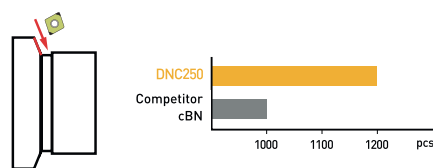
Grade	Texture	Binder	cBN Content(%)	Grain Size(μm)	Hardness HV(Gpa)
DNC250		TiC	65 - 70	6	32 - 34

## Machining Example

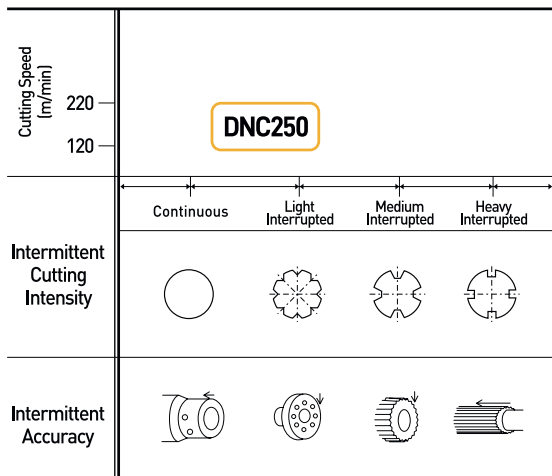
Grade	DNC250	Competitor cBN
Insert	3NU-TNGA160408	
Workpiece	Shaft UD Brake(SCR420HB)	
Cutting Speed (m/min)	160	
Feed (mm/rev)	0.08	
Depth of Cut (mm)	0.425	
Dry/Wet Cutting	Wet Cutting	



Grade	DNC250	Competitor cBN
Insert	2NU-CNGA120408	
Workpiece	Hardness : Hrc40~50(SCM92 0HVS I)	
Cutting Speed (m/min)	280	
Feed (mm/rev)	0.08-0.15	
Depth of Cut (mm)	0.2	
Dry/Wet Cutting	Wet Cutting	

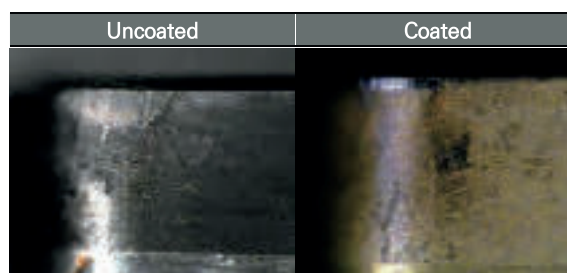


## Applicable Area



## Recommended Cutting Conditions

Cutting Speed (m/min)	120	220
Feed (mm/rev)	0.05	0.3
Depth of Cut (mm)	0.05	0.3



※The details may vary according to machining environments.



# DNC300

Coated cBN

- Coating
- Heat-treated Steel
- Max Depth
- Light Interrupted
- Medium Interrupted

## Features

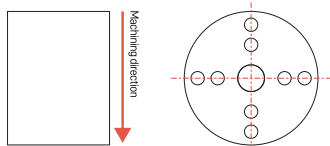
- Grade first recommended for machining ranging from Light interrupted to Medium interrupted
- Improved resistance to chipping and wear versus rival products
- Minimized coating peeling due to its stable coating

Grade	Texture	Binder	cBN Content(%)	Grain Size(μm)	Hardness HV(Gpa)
DNC300		TiN	65 - 70	4	29 - 31

## Performance Comparison

[Interruption] V90 F0.1 D0.1 / SCR420H(HrC58-62) / DRY (4PATH = 0.21KM)

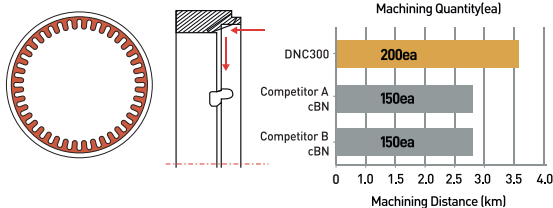
[Outer Diameter Interruption] V120 F0.1 D0.1 / 9PATH



DNC300	Conventional cBN
Stable	Coated Thin Film

DNC300		Competitor A cBN	
KT	VB	KT	VB
Superior performance due to less VB wear loss of DNC 300			

## Machining Example



Grade	DNC300	Competitor A cBN	Competitor B cBN
Insert	CNGA120408		
Workpiece	Heat-treated steel(HrC57.8)		
Cutting Speed (m/min)	160		
Feed (mm/rev)	0.08		
Depth of Cut (mm)	0.2~0.3		
Dry/Wet Cutting	Wet Cutting		

## Applicable Area

Cutting Speed (m/min)	DNC300			
	Continuous	Light Interrupted	Medium Interrupted	Heavy Interrupted
200				
90				
Intermittent Cutting Intensity				
Intermittent Accuracy				

## Recommended Cutting Conditions

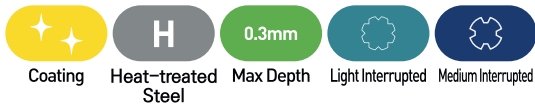
- Wear resistance and oxidation resistance are improved with high-hardness thin film adopted
- Significantly improved resistance to chipping, fracture, and wear

Cutting Speed (m/min)	90	200
Feed (mm/rev)	0.05	0.3
Depth of Cut (mm)	0.05	0.25

※The details may vary according to machining environments.

# DNC350

Coated cBN



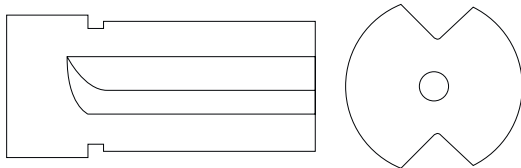
## Features

- Grade first recommended for interrupted machining
- Maintains functionality and precision for a long time due to its advanced coating technology
- Economical due to its longer service life

Grade	Texture	Binder	cBN Content(%)	Grain Size(μm)	Hardness HV(Gpa)
DNC350		TiN	60 - 65	1	33 - 35

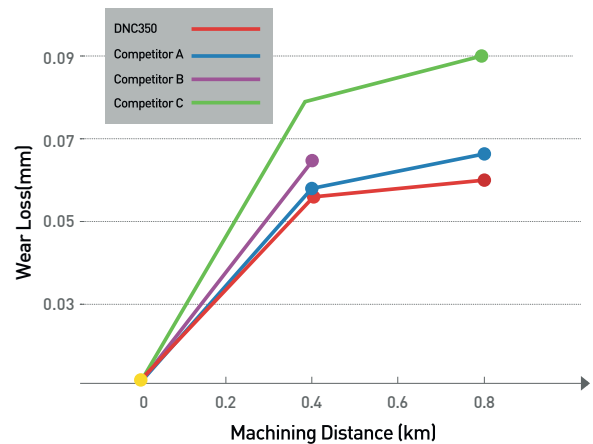
## Machining Example

Grade	DNC350	Competitor cBN
Insert	2NU-CNGA120408	
Workpiece	SCM415(HrC58~60)	
Cutting Speed (m/min)	120	
Feed (mm/rev)	0.1	
Depth of Cut (mm)	0.1	
Dry/Wet Cutting	Dry Cutting	



\*Workpiece shape

## Wear Loss



## Applicable Area

Cutting Speed (m/min)	150	<b>DNC350</b>			
	90				
Intermittent Cutting Intensity	Continuous	Light Interrupted	Medium Interrupted	Heavy Interrupted	
Intermittent Accuracy					

## Recommended Cutting Conditions

Cutting Speed (m/min)	90  150
Feed (mm/rev)	0.05  0.3
Depth of Cut (mm)	0.05  0.25

\*The details may vary according to machining environments.

# cBN Spec

cBN Multi-corner Type (Negative/Positive)

※T-2NU-□□□□△△△△△△ designation package unit is 10EA.

● : Stock

Drawing	Designation	Grade										W (Weight)	mm					
		DNC100	DNC250	DNC300	DNC350	DNC400	DB1000	DB2000	DBN250	DBN350	DBN700A		DBNX20	S (Cutting Edge Length)	IC (Inscribed Circle)	T (Thickness)	r (Nose)	∅D (Hole Diameter)
	2NU-CNGA120404	●	●	●	●	-	●	-	-	-	●	-	9.9	2.7	12.7	4.76	0.4	5.16
	2NU-CNGA120404F	-	●	-	-	-	-	-	-	-	-	-	9.9	2.7	12.7	4.76	0.4	5.16
	2NU-CNGA120404T	-	●	-	●	-	●	-	-	-	-	-	9.9	2.7	12.7	4.76	0.4	5.16
	2NU-CNGA120404W	-	●	-	-	-	-	-	-	-	-	-	9.9	2.7	12.7	4.76	0.4	5.16
	2NU-CNGA120404WF	-	●	-	-	-	-	-	-	-	-	-	9.9	2.7	12.7	4.76	0.4	5.16
	2NU-CNGA120408	●	●	●	●	-	●	●	-	-	●	-	9.9	2.6	12.7	4.76	0.8	5.16
	2NU-CNGA120408F	-	●	-	●	-	-	-	-	-	-	-	9.9	2.6	12.7	4.76	0.8	5.16
	2NU-CNGA120408T	-	●	-	●	-	●	-	-	-	-	-	9.9	2.6	12.7	4.76	0.8	5.16
	2NU-CNGA120408W	-	●	-	●	-	-	●	-	-	-	-	9.9	2.6	12.7	4.76	0.8	5.16
	2NU-CNGA120408WF	-	●	-	●	-	-	●	-	-	-	-	9.9	2.6	12.7	4.76	0.8	5.16
	2NU-CNGA120412	●	●	●	●	-	-	-	-	-	-	-	9.9	2.6	12.7	4.76	1.2	5.16
	2NU-CNGA120412F	-	●	-	●	-	-	-	-	-	-	-	9.9	2.6	12.7	4.76	1.2	5.16
	2NU-CNGA120412T	-	●	-	●	-	-	-	-	-	-	-	9.9	2.6	12.7	4.76	1.2	5.16
	2NU-CNGA120412W	-	●	-	-	-	-	-	-	-	●	-	9.9	2.6	12.7	4.76	1.2	5.16
	2NU-CNGA120412WT	-	-	-	-	-	●	-	-	-	-	-	9.9	2.6	12.7	4.76	1.2	5.16
	T-2NU-CNGA120404	-	●	-	-	-	-	-	-	-	-	-	9.9	2.7	12.7	4.76	0.4	5.16
T-2NU-CNGA120408	-	●	-	●	-	-	-	-	-	-	-	9.9	2.6	12.7	4.76	0.8	5.16	
	4NU-CNGA120404	-	●	-	-	-	-	-	-	-	-	9.9	2.7	12.7	4.76	0.4	5.16	
	4NU-CNGA120408	-	●	-	●	-	-	-	-	-	-	9.9	2.6	12.7	4.76	0.8	5.16	
	4NU-CNGA120412	-	●	-	-	-	-	-	-	-	-	9.9	2.6	12.7	4.76	1.2	5.16	
	2NU-DNGA150404	-	●	●	●	-	-	●	●	-	-	12.3	2.6	12.7	4.76	0.4	5.16	
	2NU-DNGA150404F	-	●	-	●	-	-	-	-	-	-	12.3	2.6	12.7	4.76	0.4	5.16	
	2NU-DNGA150404T	-	●	-	●	-	-	-	-	-	-	12.3	2.6	12.7	4.76	0.4	5.16	
	2NU-DNGA150408	-	●	●	●	-	●	●	-	-	-	12.3	2.2	12.7	4.76	0.8	5.16	
	2NU-DNGA150408F	-	●	-	●	-	-	-	-	-	-	12.3	2.2	12.7	4.76	0.8	5.16	
	2NU-DNGA150408T	-	●	-	●	-	-	-	-	-	-	12.3	2.2	12.7	4.76	0.8	5.16	
	2NU-DNGA150412	-	●	-	●	-	●	●	-	-	-	12.3	2.5	12.7	4.76	1.2	5.16	
	2NU-DNGA150412F	-	●	-	●	-	-	-	-	-	-	12.3	2.5	12.7	4.76	1.2	5.16	
	2NU-DNGA150412T	-	●	-	●	-	-	-	-	-	-	12.3	2.5	12.7	4.76	1.2	5.16	
	2NU-DNGA150604	●	●	-	●	-	-	-	-	-	-	15.4	2.5	12.7	6.35	0.4	5.16	
2NU-DNGA150608	●	●	-	●	-	-	-	-	-	-	15.4	2.5	12.7	6.35	0.8	5.16		
	4NU-DNGA150404	-	●	-	●	-	-	-	-	-	-	12.3	1.8	12.7	4.76	0.4	5.16	
	4NU-DNGA150408	-	●	-	●	-	-	-	-	-	-	12.3	2.9	12.7	4.76	0.8	5.16	
	4NU-DNGA150412	-	●	-	●	-	-	-	-	-	-	12.3	3	12.7	4.76	1.2	5.16	
	4NU-DNGA150608	-	●	-	-	-	-	-	-	-	-	15.4	2.9	12.7	6.35	0.8	5.16	
	4NU-SNGA120404	-	●	-	-	-	-	-	-	-	-	9.9	3.1	12.7	4.76	0.4	5.16	
	4NU-SNGA120408	-	●	-	-	-	-	-	-	●	-	9.9	3.1	12.7	4.76	0.8	5.16	
	3NU-TNGA160404	-	●	-	●	-	●	●	-	●	-	7.2	2.5	9.53	4.76	0.4	3.81	
	3NU-TNGA160404T	-	●	-	-	-	-	-	-	-	-	7.2	2.5	9.53	4.76	0.4	3.81	
	3NU-TNGA160408	-	●	-	●	-	-	-	-	-	●	7.2	2.3	9.53	4.76	0.8	3.81	
	3NU-TNGA160408F	-	●	-	-	-	-	-	-	-	-	7.2	2.3	9.53	4.76	0.8	3.81	
	3NU-TNGA160408T	-	●	-	-	-	-	-	-	-	-	7.2	2.3	9.53	4.76	0.8	3.81	
	3NU-TNGA160412	-	-	-	●	-	-	-	-	-	-	7.2	2.0	9.53	4.76	1.2	3.81	

# cBN Spec

cBN Multi-corner Type (Negative/Positive)

※ T-2NU-□□□□△△△△△△ designation packaging unit is 10EA.

●● : Stock

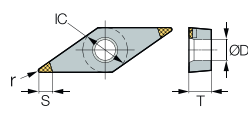
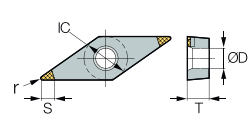
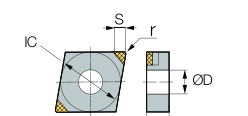
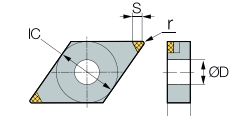
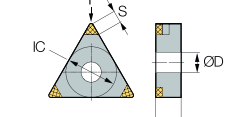
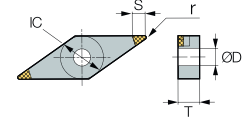
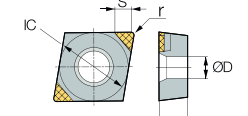
Drawing	Designation	Grade										W (Weight)	mm				
		DNC100	DNC250	DNC300	DNC350	DNC400	DB1000	DB2000	DBN250	DBN350	DBN700A		DBNX20	S (Cutting Edge Length)	IC (Inscribed Circle)	T (Thickness)	r (Nose)
	2NU-VNGA160404	-	-	-	-	-	-	-	-	-	-	10.2	3.5	9.53	4.76	0.4	3.81
	2NU-VNGA160404F	-	-	-	-	-	-	-	-	-	-	10.2	3.5	9.53	4.76	0.4	3.81
	2NU-VNGA160404T	-	-	-	-	-	-	-	-	-	-	10.2	3.5	9.53	4.76	0.4	3.81
	2NU-VNGA160408	-	-	-	-	-	-	-	-	-	-	10.2	2.6	9.53	4.76	0.8	3.81
	2NU-VNGA160408F	-	-	-	-	-	-	-	-	-	-	10.2	2.6	9.53	4.76	0.8	3.81
	2NU-VNGA160408T	-	-	-	-	-	-	-	-	-	-	10.2	2.6	9.53	4.76	0.8	3.81
	T-2NU-VNGA160408	-	-	-	-	-	-	-	-	-	-	10.2	2.6	9.53	4.76	0.8	3.81
	2NU-CCGW060202	-	-	-	-	-	-	-	-	-	0.9	2.8	6.35	2.38	0.2	2.8	
	2NU-CCGW060202T	-	-	-	-	-	-	-	-	-	0.9	2.8	6.35	2.38	0.2	2.8	
	2NU-CCGW060204	-	-	-	-	-	-	-	-	-	0.9	2.7	6.35	2.38	0.4	2.8	
	2NU-CCGW060204F	-	-	-	-	-	-	-	-	-	0.9	2.7	6.35	2.38	0.4	2.8	
	2NU-CCGW060204T	-	-	-	-	-	-	-	-	-	0.9	2.7	6.35	2.38	0.4	2.8	
	2NU-CCGW060208	-	-	-	-	-	-	-	-	-	0.9	2.6	6.35	2.38	0.8	2.8	
	2NU-CCGW09T302	-	-	-	-	-	-	-	-	-	4.6	2.7	6.35	2.38	0.2	4.4	
	2NU-CCGW09T304	-	-	-	-	-	-	-	-	-	4.6	2.7	9.53	3.97	0.4	4.4	
	2NU-CCGW09T304T	-	-	-	-	-	-	-	-	-	4.6	2.7	9.53	3.97	0.4	4.4	
	2NU-CCGW09T308	-	-	-	-	-	-	-	-	-	4.6	2.6	9.53	3.97	0.8	4.4	
	2NU-CCGW09T308T	-	-	-	-	-	-	-	-	-	4.6	2.6	9.53	3.97	0.8	4.4	
	2NU-CCGW09T308W	-	-	-	-	-	-	-	-	-	4.6	2.6	9.53	3.97	0.8	4.4	
	2NU-DCGW070204	-	-	-	-	-	-	-	-	-	1.3	2.6	6.35	2.38	0.4	2.8	
	2NU-DCGW070208	-	-	-	-	-	-	-	-	-	1.3	2.2	6.35	2.38	0.8	2.8	
	2NU-DCGW070208T	-	-	-	-	-	-	-	-	-	1.3	2.2	6.35	2.38	0.8	2.8	
	2NU-DCGW11T302	-	-	-	-	-	-	-	-	-	4.8	2.6	9.53	3.97	0.2	4.4	
	2NU-DCGW11T304	-	-	-	-	-	-	-	-	-	4.8	2.6	9.53	3.97	0.4	4.4	
	2NU-DCGW11T304F	-	-	-	-	-	-	-	-	-	4.8	2.6	9.53	3.97	0.8	4.4	
	2NU-DCGW11T304T	-	-	-	-	-	-	-	-	-	4.8	2.6	9.53	3.97	0.4	4.4	
	2NU-DCGW11T308	-	-	-	-	-	-	-	-	-	4.8	2.2	9.53	3.97	0.8	4.4	
	2NU-DCGW11T308T	-	-	-	-	-	-	-	-	-	4.8	2.2	9.53	3.97	0.8	4.4	
	T-2NU-DCGW11T304	-	-	-	-	-	-	-	-	-	4.8	2.6	9.53	3.97	0.4	4.4	
	T-2NU-DCGW11T308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3NU-TCGW090204	-	-	-	-	-	-	-	-	-	0.9	2.5	5.56	2.38	0.4	2.5	
	3NU-TCGW090204F	-	-	-	-	-	-	-	-	-	0.9	2.5	5.56	2.38	0.4	2.5	
	3NU-TCGW090204T	-	-	-	-	-	-	-	-	-	0.9	2.5	5.56	2.38	0.4	2.5	
	3NU-TPGW110304	-	-	-	-	-	-	-	-	-	2.3	2.5	6.35	3.18	0.4	3.4	
	3NU-TPGW110304F	-	-	-	-	-	-	-	-	-	2.3	2.5	6.35	3.18	0.4	3.4	
	3NU-TPGW110304T	-	-	-	-	-	-	-	-	-	2.3	2.5	6.35	3.18	0.4	3.4	
	3NU-TPGW110308	-	-	-	-	-	-	-	-	-	2.3	2.5	6.35	3.18	0.4	3.4	
	3NU-TPGW110308F	-	-	-	-	-	-	-	-	-	2.3	2.5	6.35	3.18	0.4	3.4	
	3NU-TPGW110308T	-	-	-	-	-	-	-	-	-	2.3	2.5	6.35	3.18	0.4	3.4	
	3NU-TPGN110308	-	-	-	-	-	-	-	-	-	2.3	2.3	6.35	3.18	0.8	-	
	3NU-TPGN160304	-	-	-	-	-	-	-	-	-	4.8	2.5	9.53	3.18	0.4	-	
	3NU-TPGN160308	-	-	-	-	-	-	-	-	-	4.8	2.3	9.53	3.18	0.8	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# cBN Spec

cBN Multi-corner Type (Negative/Positive)

※ T-2NU-□□□□△△△△△△ designation packaging unit is 10 EA.

● : Stock

Drawing	Designation	Grade										W (Weight)	mm				
		DNC100	DNC250	DNC300	DNC350	DNC400	DB1000	DB2000	DBN250	DBN350	DBN700A		DBNX20	S (Cutting Edge Length)	IC (Inscribed Circle)	T (Thickness)	r (Nose)
	2NU-VBGW160402	-	●	-	-	-	-	-	-	-	-	8.6	3.5	9.53	4.76	0.2	4.4
	2NU-VBGW160404	●	●	-	●	-	●	-	●	-	●	8.6	3.5	9.53	4.76	0.4	4.4
	2NU-VBGW160404F	-	●	-	-	-	-	-	-	-	-	8.6	3.5	9.53	4.76	0.4	4.4
	2NU-VBGW160404T	-	●	-	-	-	-	-	-	-	-	8.6	3.5	9.53	4.76	0.4	4.4
	2NU-VBGW160408	●	●	-	●	-	-	●	●	-	-	8.6	2.6	9.53	4.76	0.8	4.4
	2NU-VBGW160408F	-	●	-	-	-	-	-	-	-	-	8.6	2.6	9.53	4.76	0.8	4.4
	2NU-VBGW160408T	-	●	-	-	-	-	-	-	-	-	8.6	2.6	9.53	4.76	0.8	4.4
	T-2NU-VBGW160408	-	-	-	-	-	-	-	-	-	-	8.6	2.6	9.53	4.76	0.8	4.4
		2NU-VCGW160404	-	●	-	●	-	-	-	-	-	8.6	3.5	9.53	4.76	0.4	4.4
2NU-VCGW160404F		-	●	-	-	-	-	-	-	-	-	8.6	3.5	9.53	4.76	0.4	4.4
2NU-VCGW160404T		-	●	-	-	-	-	-	-	-	-	8.6	3.5	9.53	4.76	0.4	4.4
2NU-VCGW160408		-	●	-	-	-	-	-	-	-	-	8.6	2.6	9.53	4.76	0.8	4.4
2NU-VCGW160408F		-	●	-	-	-	-	-	-	-	-	8.6	2.6	9.53	4.76	0.8	4.4
2NU-VCGW160408T		-	●	-	-	-	-	●	-	-	-	8.6	2.6	9.53	4.76	0.8	4.4
T-2NU-VCGW160404		-	●	-	-	-	-	-	-	-	-	8.6	3.5	9.53	4.76	0.4	4.4
T-2NU-VCGW160408		-	●	-	-	-	-	-	-	-	-	8.6	2.6	9.53	4.76	0.8	4.4
	CNMA120404	-	-	-	-	-	-	●	-	-	9.89	4.5	12.7	4.76	0.4	5.16	
	CNMA120408	-	-	-	-	-	-	●	-	●	9.89	4.5	12.7	4.76	0.8	5.16	
	T-CNMA120408	-	-	-	-	-	-	●	-	-	9.89	4.5	12.7	4.76	0.8	5.16	
	DNMA150404	-	-	-	-	-	-	●	-	-	12.2	3.7	12.7	4.76	0.4	5.16	
	DNMA150408	-	-	-	-	-	-	●	-	-	12.2	3.4	12.7	4.76	0.8	5.16	
	TNMA160404	-	-	-	-	-	-	●	-	-	7.2	3.7	9.53	4.76	0.4	3.81	
	TNMA160408	-	-	-	-	-	-	●	-	-	7.2	3.5	9.53	4.76	0.8	3.81	
	T-VNMA160404	-	-	-	-	-	-	●	-	-	10.2	4.9	9.53	4.76	0.4	3.81	
	VNMA160404	-	-	-	-	-	-	●	-	-	10.2	5.8	9.53	4.76	0.4	3.81	
	VNMA160408	-	-	-	-	-	-	●	-	-	10.2	5.8	9.53	4.76	0.8	3.81	
	CCMW09T304	-	-	-	-	-	-	●	-	-	4.5	4.3	9.53	3.97	0.4	4.4	

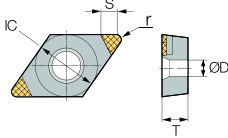
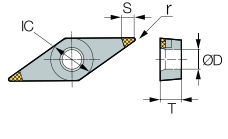
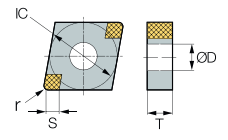
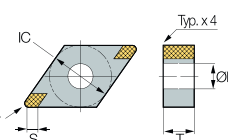
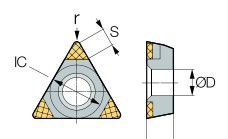
# cBN Spec

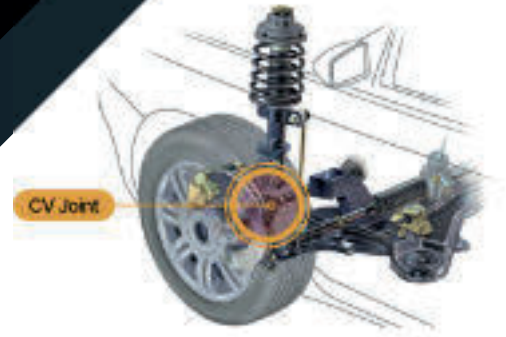
cBN Multi-corner Type (Negative/Positive)

● : Stock

※T-2NU-□□□□△△△△△△△△ designation package unit is 10 EA.

○ : To be discontinued after inventory depletion

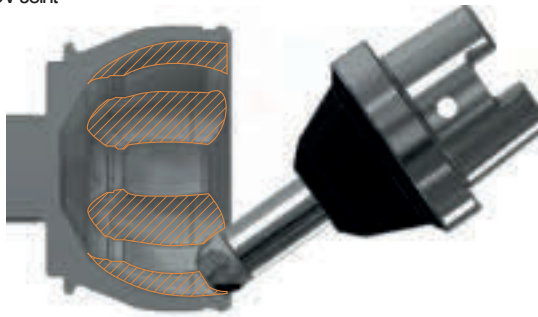
Drawing	Designation	Grade										W (Weight)	mm					
		DNC100	DNC250	DNC300	DNC350	DNC400	DB1000	DB2000	DBN250	DBN350	DBN700A		DBNX20	S (Cutting Edge Length)	IC (Inscribed Circle)	T (Thickness)	r (Nose)	∅D (Hole Diameter)
	DCGW11T308	-	-	-	-	-	-	-	●	-	-	-	4.8	3.2	9.53	3.97	0.8	4.4
	T-DCGW11T308	-	-	-	-	-	-	-	●	-	-	-	4.8	3.2	9.53	3.97	0.8	4.4
	VBMW160404	-	-	-	-	-	-	-	●	-	-	-	8.6	3.5	9.53	4.76	0.4	4.4
	VBMW160408	-	-	-	-	-	-	-	●	-	-	-	8.6	3.5	9.53	4.76	0.8	4.4
	4NS-CNGA120408	-	-	-	-	-	-	-	-	-	-	9.7	3	12.7	4.76	0.8	5.16	
	4NS-CNGA120412	-	-	-	-	-	-	-	-	-	-	9.7	2.9	12.7	4.76	1.2	5.16	
	4NS-DNGA150412	-	-	-	-	○	-	-	-	-	-	15.1	2.46	12.7	4.76	1.2	5.16	
	T-TPGW110304	-	-	-	-	-	-	-	-	-	-	2.0	3.7	6.35	3.18	0.4	3.4	
	TPGW110304	-	-	-	-	-	-	-	●	-	-	-	2.0	3.7	6.35	3.18	0.4	3.4
	TPGW110308	-	-	-	-	-	-	-	●	-	-	-	2.0	3.5	6.35	3.18	0.8	3.4



# CV Joint machining

## Ball Track Milling

A tool that mills the track along which the ball moves inside the CV Joint



## High-efficiency Machining



Surface Roughness	Machining Quantity(pcs)
Ra0.8 or below	1,500

- Excellent in Maintaining Surface Roughness
- Excellent Rigidity of High-productivity

## Application Map

### Soft



Carbide

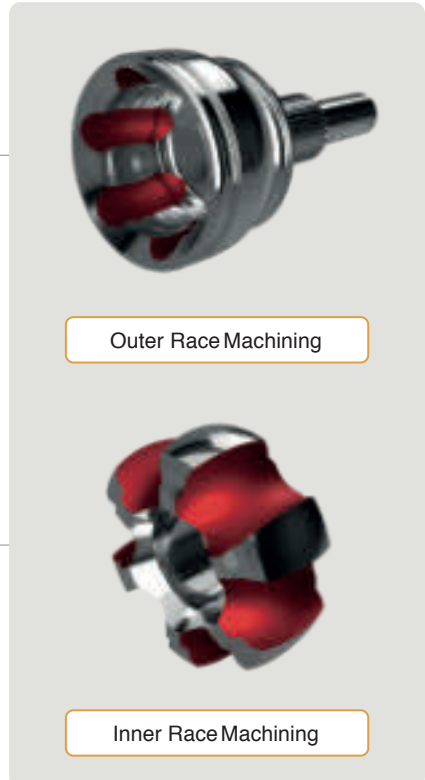
- For Roughing and Semi-finishing
- Carbide Head
- High Wear Resistance
- High-speed Machining

### Hard



cBN

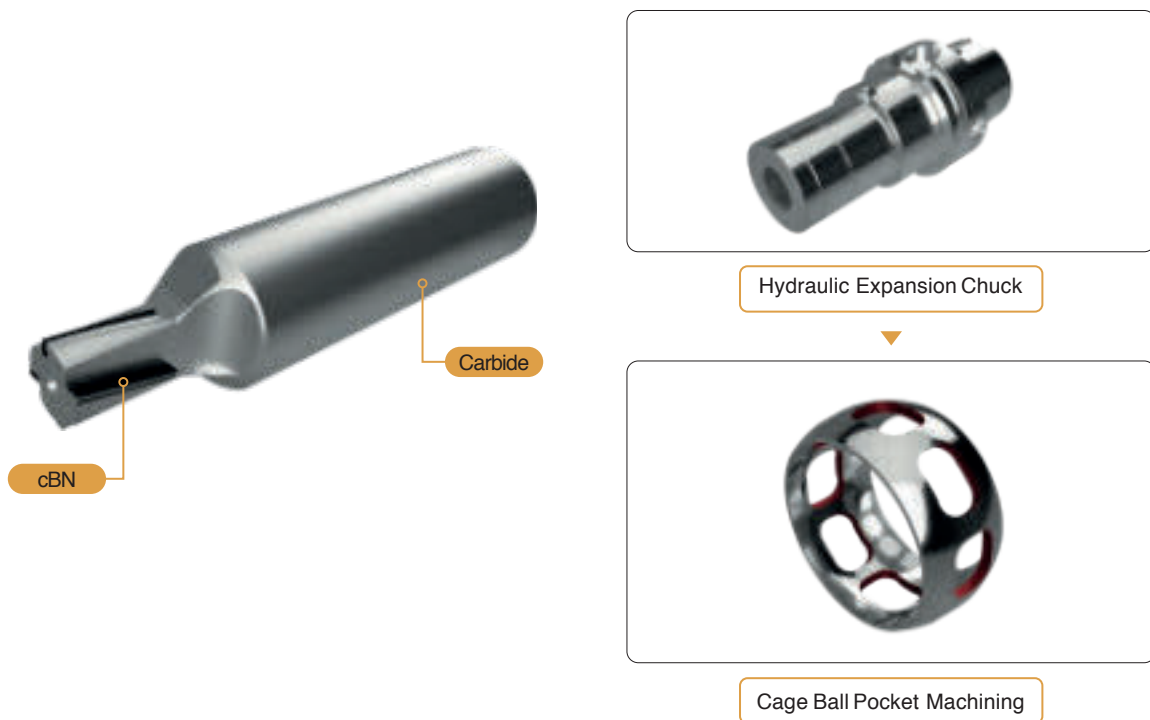
- For Finishing
- High cBN Contorted Cutting Edge
- High-precision Machining When Finishing High-hardness Workpieces
- Mechanical Post-processing Not Needed



## Application Map



## cBN End Mill





**Head Office** [15118] 24, MTV 26-ro, Siheung-si, Gyeonggi-do, Republic of Korea (Jeongwang-dong) | T. +82-31-488-6200

Branch Office in China T. +86-532-8588-5907 | E. dine@dinoox.com.cn

4th/5th Floor, 88 Building, Beijing Capital Airport International Center, No.6th Changchengnan Road, Chengyang District, Qingdao, Shandong Province, China(post code : 266108)

Branch Office in Vietnam T. +84-24-7300-6991 | E. sales@dine.com.vn

4th Floor, Tower B, Golden Palace Building, Me Tri ward, Nam Tu Liem district, Hanoi, Vietnam

Branch Office in Thailand T. +66-02-108-8911~3 | E. dine.thai@dine.co.kr

1/38 Bangna Thani Building 19B th Floor, Bangna-Trad 34 Alley, Bangna Tai Sub-district, Bangna District, Bangkok [10260]

Branch Office in Spain T. +34-911-09-59-35 | E. dms@dine.co.kr

Avda. de los Montes de Oca, 19, Nave 3, 28703, San Sebastian de los Reyes, Madrid

**www.dine.co.kr E-mail: dine@dine.co.kr**



**Head Office** (15118) 24, MTV 26-ro, Siheung-si, Gyeonggi-do, Republic of Korea (Jeongwang-dong) | T. +82-31-488-6200

Branch Office in China T. +86-532-8588-5907 | E. dine@dinoox.com.cn  
4th/5th Floor, 88 Building, Beijing Capital Airport International Center, No.6th Changchengnan Road, Chengyang District, Qingdao, Shandong Province, China (post code : 266108)

Branch Office in Vietnam T. +84-24-7300-6991 | E. sales@dine.com.vn  
4th Floor, Tower B, Golden Palace Building, Me Tri ward, Nam Tu Liem district, Hanoi, Vietnam

Branch Office in Thailand T. +66-02-108-8911~3 | E. dine.thai@dine.co.kr  
1/38 Bangna Thani Building 19B th Floor, Bangna-Trad 34 Alley, Bangna Tai Sub-district, Bangna District, Bangkok [10260]

Branch Office in Spain T. +34-911-09-59-35 | E. dms@dine.co.kr  
Avda. de los Montes de Oca, 19, Nave 3, 28703, San Sebastian de los Reyes, Madrid

[www.dine.co.kr](http://www.dine.co.kr) E-mail: [dine@dine.co.kr](mailto:dine@dine.co.kr)