

Various boring heads **A38**

BBT/BT SHANK **A73**

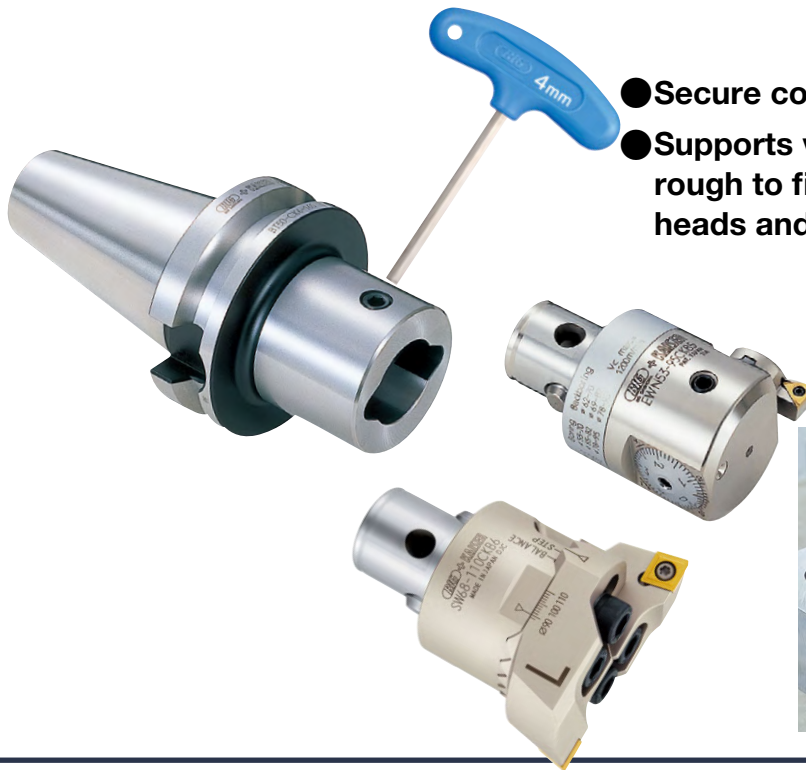
IV/DV SHANK **B13**

HSK SHANK **C25**

ST SHANK **D9**

BIG CAPTO SHANK **E45**

Cutting Conditions **A101**



- Secure contact using a single wrench.
- Supports various applications from rough to finish boring with abundant heads and accessories.

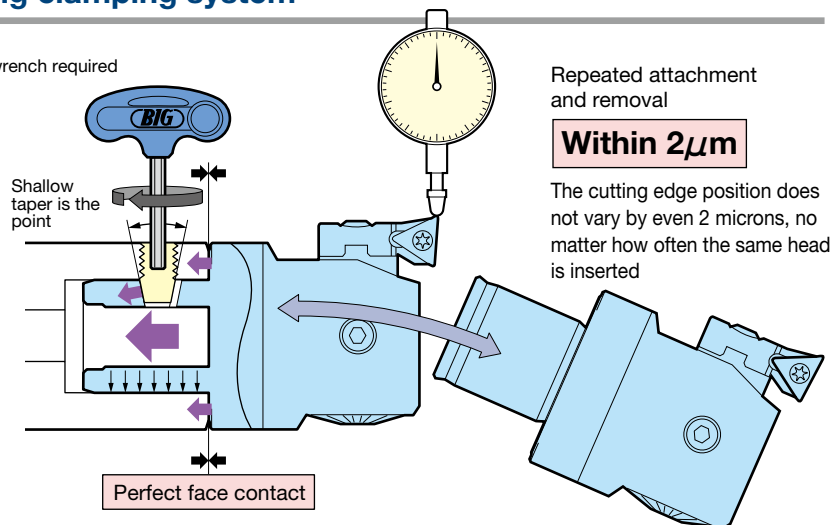


Secure contact using a single wrench! The simplest modular boring clamping system

The CK is a simple method for securely and powerfully clamping flange faces with a single wrench.

Moreover, even if the same boring head is repeatedly attached and removed, the cutting edge position does not vary by 2 microns. This accurate clamping allows boring diameter setup to be done with a boring head only, increasing the machine utilization and drastically reducing labor.

Only hex wrench required



Repeated attachment and removal

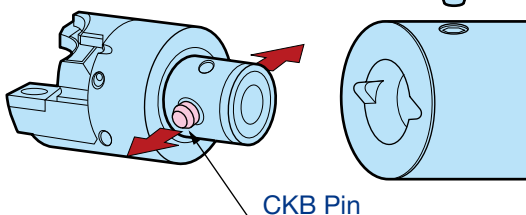
Within 2 μ m

The cutting edge position does not vary by even 2 microns, no matter how often the same head is inserted

Safe structure at high torque

Adopts a proprietary CKB pin for rough boring at high cutting torque. **The CKB pin is of floating type which gives it good horizontal balance, dampening cutting torque and making it possible to withstand heavy duty torque.**

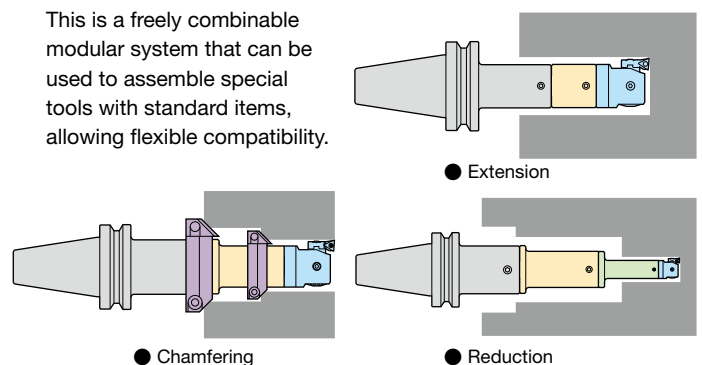
CK Set Screw



CKB Pin

Rapid adaptation to special tools

This is a freely combinable modular system that can be used to assemble special tools with standard items, allowing flexible compatibility.



● Extension

● Chamfering

● Reduction



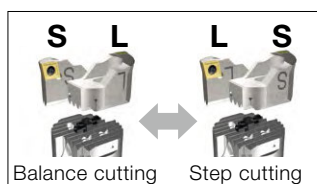
Micron order adjustment is possible while installed in a machine. This decreases machine down time drastically especially in large item small scale production. The modular system allows for flexible tool layout in boring depth and diameter appropriate for each workpiece.

CK BORING SYSTEM

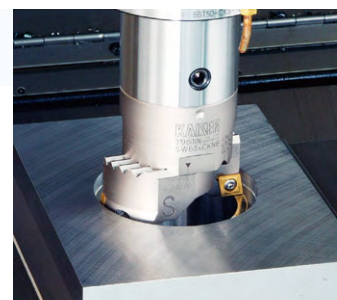
ROUGH BORING HEAD Pursuit of rigidity



High rigidity
SW BORING HEAD PAT. **A39**
● $\phi 20 - 203$
● Serrated for high connection rigidity



Adapted for both balance and step cutting by simply changing positions of standard Cartridges. (for blind holes)



Roughing Head with Built-In Damper
SMART DAMPER SW BORING HEAD PAT. **A41**

- Smart Damper with SW head
- Closely adjacent vibrating point and damper achieve a high damping effect.



100% completely balanced cutting

RW BORING HEAD **A45**

- $\phi 25 - 150$
- Abundant Cartridges
- Fine axial adjustment



Boring tool for small-diameter 2-flute roughing

MW BORING HEAD PAT. **A44**

- $\phi 16 - \phi 21$
- Versatile $\phi 20$ shank
- Spiral groove for improved chip evacuation

FINISH BORING HEAD **Insert Holder Type** Quick micron-level adjustment



Prebalanced design/Multifunction head
EWN BORING HEAD

A49

- $\phi 20 - 203$
- Prebalanced design supports high-speed boring
- Abundance of insert holders

Back boring available as standard

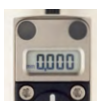
Supports back boring by simply reversing the insert holder.



Digital boring head
EWE BORING HEAD

A51

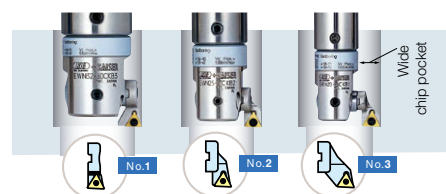
- $\phi 41 - 203$
- Digital display allows the adjustment amount to be read at a glance
- Fully waterproof and dustproof structure (IP69K equivalent)



Display Resolution
1 μ m/°

Emphasis on chip evacuation properties

Replacing the insert holder makes it possible to secure sufficient clearance for chips.



High speed
EWB BORING HEAD

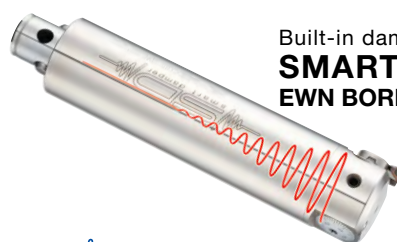
A53

- $\phi 32 - 105 / \phi 100 - 203$ (Aluminum)
- 0.01mm/° scale
- Built-in automatic precision balancing unit



Lightweight special aluminum head
600/800g

Vc Max.
2,000m/min



Built-in damper
SMART DAMPER EWN BORING HEAD **A50**

- Integrated EWN BORING HEAD and SMART DAMPER.
- Closely adjacent vibrating point and damper achieve a high damping effect.



FINISH BORING HEAD Cylindrical Tool Type

Abundant toolholder series



High precision EWN BORING HEAD

A59

- $\phi 1 - 54$
- 0.01mm/ ϕ scale plus 1 micron vernier
- Combine with carbide shank for stable deep-hole boring



World's smallest precision boring head EWN04-7/04-15

A57

- $\phi 1 - 7/\phi 1 - 15$ (EWN04-7)
- O.D. $\phi 18.5$ ultra-compact design
- Max. 30,000min⁻¹



Digital boring head EWE BORING HEAD

A60

- $\phi 1 - 54$
- Digital display means the adjustment amount can be read at a glance
- Waterproof and dustproof structure (IP69K equivalent)

Display Resolution
1 μ m/ ϕ



Max.
16,000min⁻¹

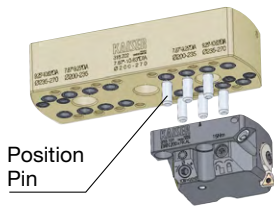
High speed EWB BORING HEAD

A61

- $\phi 1 - 50$
- 5 μ m/ ϕ precision diameter adjustment
- Built-in manual precision balancing function

CK7 LARGE DIAMETER BORING SERIES

New, safer mechanism



Position
Pin

Using the position pin fastens the head or clamp base to the slide. Prevents the head from flying off due to high-speed rotation caused by programming errors.

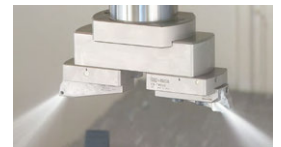
Aluminum high speed type Lighter weight for greater speed

Vc Max.
2,000m/min

Uses hardened aluminum components, tough yet lightweight. (Slide/Clamp Base)

Center through supported

Reliable coolant supply to finishing and roughing cutting tool peripheries.



(For Roughing) TW200 BORING HEAD PAT.

- $\phi 200 - 830$

A47



(For Finishing) EWN200 BORING HEAD

- $\phi 200 - 880$

Precision head with outstanding operability. Back boring available.

A55

PIN TURNING HEAD

- $\phi 0.5 - 686$
- Realizes finishing accuracy not possible with contouring.



A71



ACCESSORIES

Various shanks/ accessories **A73**



Combine with a CK Shank for a wide range of applications not limited to boring.

Built-In Damper SMART DAMPER PAT.

A76-C26

- Unique dynamic damper eliminates chatter.



CK Extension



CK SHANK

BORING SYSTEM

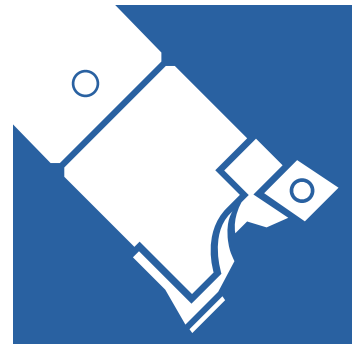
New Model Information

New model numbers have been introduced to some CK Boring System products for global unification.

Note that products with old and new model numbers may be temporarily mixed.

This General Catalog uses the new model numbers.

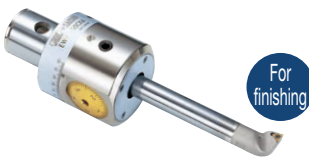
Refer to the separate "Information about change of model numbers" for details.



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CK BORING SYSTEM

BIG + KAISER CK BORING SYSTEM

SW BORING HEAD SMART DAMPER SW BORING HEAD A39  For roughing	RW BORING HEAD A45  For roughing	MW BORING HEAD A44  For roughing	EWN BORING HEAD SMART DAMPER EWN BORING HEAD A49  For finishing
EWB BORING HEAD A53  For finishing	TW/EWN Boring Head for High-Speed Large-Diameter Boring A47  For roughing For finishing	EWE DIGITAL BORING HEAD A51-A60 A60  For finishing	EWN BORING HEAD (Cylindrical Tool Type) A57-A59  For finishing
EWB BORING HEAD (Cylindrical Tool Type) A61  For finishing	EW MICRO HEAD A67  For finishing	CK Carbide Cylindrical Shank A69  For finishing	PIN TURNING A71 
BBT SHANK DV/IV SHANK HSK SHANK ST SHANK BIG CAPTO SHANK A73 B13 C25-C64 A74 E45 	SMART DAMPER A76 	Extension Reduction A77 	Other accessories A78 
CK Presetter A85 	INSERT A87 		

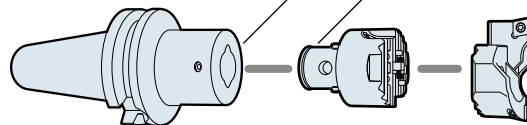
SW BORING HEAD (High Rigidity type for Roughing) PAT.

Center through



Set up example

Select the same CK No.



CK SHANK

(BBT BT IV DV ST HSK BIG CAPTO)

SW HEAD

SW CARTRIDGE

BBT40-CKB3-44

SW32-51 CKB3

SW3242A

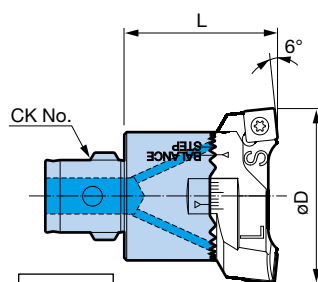
● Head Model Description

SW 20-31 CKB1

CK No.

Diameter range

ROUGH BORING HEAD



Balance cutting

Balance cutting only.

A Type for Through-Holes

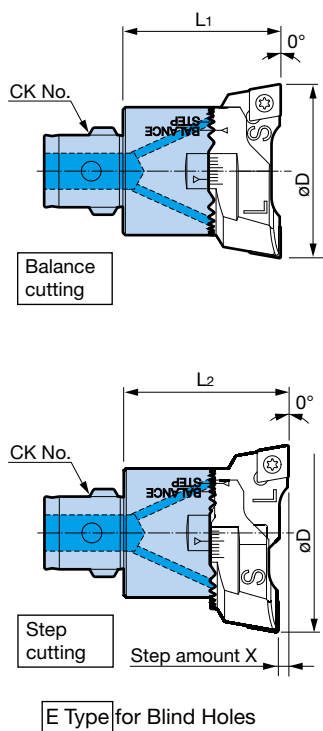
● A Type for Through-Holes (4 corners of the insert can be used)

Diameter øD	Head Model	CK No.	Cartridge	L	Clamp Bolt Set (spare)	Belleville Spring Set (spare)	Weight (kg)
20 - 26	SW 20- 31CKB1	CK1	SW2026A	32.5	SW20SS	SW20BS	0.1
25 - 31			SW2531A				0.1
25 - 33	SW 25- 40CKB2	CK2	SW2533A	35.5	SW25SS	SW25BS	0.2
32 - 40			SW3240A				0.2
32 - 42	SW 32- 51CKB3	CK3	SW3242A	40	SW32SS	SW32BS	0.3
41 - 51			SW4151A				0.3
41 - 54	SW 41- 66CKB4	CK4	SW4154A	47	SW41SS	SW41BS	0.5
53 - 66			SW5366A				0.5
53 - 70	SW 53- 86CKB5	CK5	SW5370A	57	SW53SS	SW53BS	0.8
69 - 86			SW6986A				0.9
68 - 90	SW 68-110CKB6	CK6	SW6890A	71	SW68SS		1.6
88 - 110			SW88110A				1.8
98 - 126	SW 98-153CKB6	CK6	SW98126A	71	SW98SS	SW98BS	2.8
125 - 153			SW125153A				3.0
98 - 126	SW 98-153CKB7	CK7	SW98126A	87			3.8
125 - 153			SW125153A				4.1
148 - 176	SW148-203CKB6	CK6	SW148176A	71			3.6
175 - 203			SW175203A				3.8
148 - 176	SW148-203CKB7	CK7	SW148176A	117			6.4
175 - 203			SW175203A				6.6

Center through

A

CK BORING SYSTEM



● E Type for Blind Holes (To shape flat surfaces)

Diameter øD	Head Model	CK No.	Cartridge	L ₁	L ₂	X	Clamp Bolt Set (spare)	Belleville Spring Set (spare)	Weight (kg)
20 - 26	SW 20- 31CKB1	CK1	SW2026E	32.5	32.6	0.2	SW20SS	SW20BS	0.1
25 - 31			SW2531E						0.1
25 - 33	SW 25- 40CKB2	CK2	SW2533E	35.5	35.6		SW25SS	SW25BS	0.2
32 - 40			SW3240E						0.2
32 - 42	SW 32- 51CKB3	CK3	SW3242E	40	40.1		SW32SS	SW32BS	0.3
41 - 51			SW4151E						0.3
41 - 54	SW 41- 66CKB4	CK4	SW4154E	47	47.2	0.4	SW41SS	SW41BS	0.5
53 - 66			SW5366E						0.5
53 - 70	SW 53- 86CKB5	CK5	SW5370E	57	57.2		SW53SS	SW53BS	0.8
69 - 86			SW6986E						0.9
68 - 90	SW 68-110CKB6	CK6	SW6890E※	71	71.2		SW68SS		1.6
88 - 110			SW88110E※						1.8
98 - 126	SW 98-153CKB6	CK6	SW98126E※	71	71.2	0.4	SW98SS	SW98BS	2.8
125 - 153			SW125153E※						3.0
98 - 126	SW 98-153CKB7	CK7	SW98126E※	87	87.2				3.8
125 - 153			SW125153E※						4.1
148 - 176	SW148-203CKB6	CK6	SW148176E※	71	71.2				3.6
175 - 203			SW175203E※						3.8
148 - 176	SW148-203CKB7	CK7	SW148176E※	117	117.2				6.4
175 - 203			SW175203E※						6.6

1. Clamping screws and belleville springs are included.
2. Compatible set items in the table are not included but must be ordered separately if required.
3. Cartridges and inserts must be ordered separately.
4. Coolant through is standard for all the SW heads.
5. The diameter range is the value when nose radius 0.4 is used for insert SC/CC06, and nose radius 0.8 for insert SC/CC09 and SC/CC12.
6. For screws and bolts, see **A97**.

Cartridge models with ※ are also available for longer cutting edge inserts.

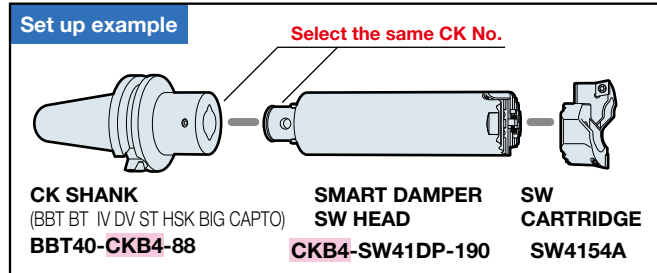
Change the end of the model number from E to EL when ordering. **A43**For SW Cartridges, **A42**For holders, **A73**

Built-In Damper

SMART DAMPER SW BORING HEAD (For Roughing) PAT.

Center through

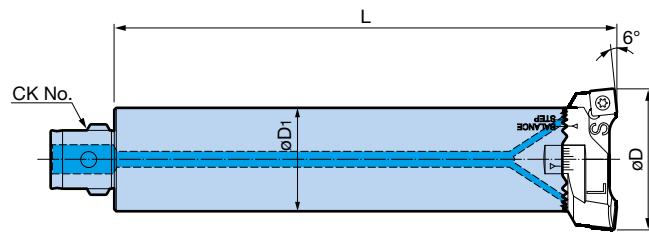
SW rough boring head integrated with the Smart Damper.



● Head Model Description

CKB4 - SW 41 DP - 190

- L dimension
- Built-in damper type
- Min. diameter
- ROUGH BORING HEAD
- CK No.



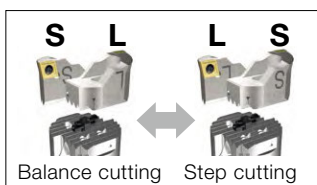
A Type for Through-Holes

Balance cutting
Balance cutting only.

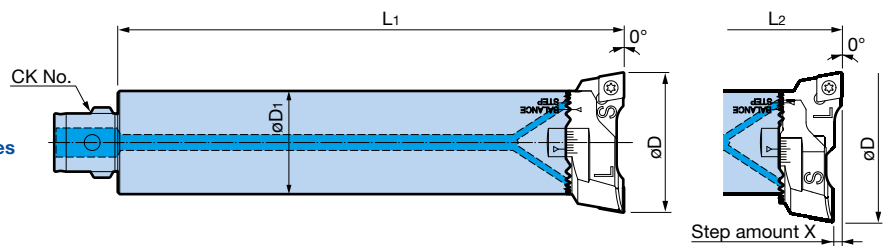
● A Type for Through-Holes (4 corners of the insert can be used)

Diameter ϕD	Head Model	CK No.	Cartridge Model	Insert Model	ϕD_1	L	Clamp Screw Set (spare)	Belleville Spring Set (spare)	Weight (kg)
41 - 54	CKB4-SW41DP-190	CK4	SW4154A	SC09	39	190	SW41SS	SW41BS	2.4
53 - 66			SW5366A						
53 - 70	CKB5-SW53DP-220	CK5	SW5370A	SC12	50	220	SW53SS	SW53BS	4.5
69 - 86			SW6986A						
68 - 90	CKB6-SW68DP-245	CK6	SW6890A	SC12	64	245	SW68SS	SW53BS	8.3
88 - 110			SW88110A						

Refer to the remarks in the table below.



Adapted for both
balance and step
cutting by simple
replacement of
standard cartridges
(for blind holes).



E Type for Blind Holes

Balance cutting

Step cutting

● E Type for Blind Holes (To shape flat surfaces)

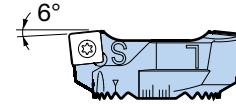
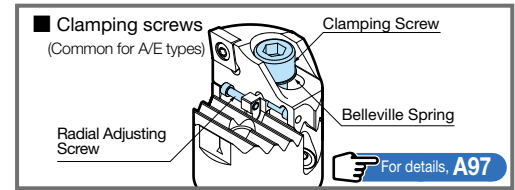
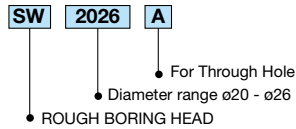
Diameter ϕD	Head Model	CK No.	Cartridge Model	Insert Model	ϕD_1	L ₁	L ₂	Step Amount X	Clamp Screw Set (spare)	Belleville Spring Set (spare)	Weight (kg)
41 - 54	CKB4-SW41DP-190	CK4	SW4154E	CC09	39	190	190.2	0.4	SW41SS	SW41BS	2.4
53 - 66			SW5366E								
53 - 70	CKB5-SW53DP-220	CK5	SW5370E	CC12	50	220	220.2	0.4	SW53SS	SW53BS	4.5
69 - 86			SW6986E								
68 - 90	CKB6-SW68DP-245	CK6	SW6890E	CC12	64	245	245.2	0.4	SW68SS	SW53BS	8.3
88 - 110			SW88110E								

1. Clamp screws and belleville springs are included.
2. Compatible set items in the table are not included but must be ordered separately if required.
3. Cartridges and inserts must be ordered separately.
4. Coolant through is standard for all the SW heads.
5. The diameter range is the value when inserts with nose radius 0.8 are used.
6. For screws and bolts, A97

For SW cartridges, **A42**For holders, **A73**

Diameter: $\varnothing 20$ - $\varnothing 203$ **CK BORING SYSTEM****SW CARTRIDGE** PAT.

● Cartridge Model Description



● A Type for Through-Holes (4 corners of the insert can be used)

Diameter øD	Cartridge Model	Head Model	Insert	Insert Clamping Screw Set
20 - 26	SW2026A	SW 20- 31CKB1	SC06	S2.5S-7IP
25 - 31	SW2531A			
25 - 33	SW2533A	SW 25- 40CKB2		
32 - 40	SW3240A			
32 - 42	SW3242A	SW 32- 51CKB3	SC09	S4S-15IP
41 - 51	SW4151A			
41 - 54	SW4154A	SW 41- 66CKB4		
53 - 66	SW5366A			
53 - 70	SW5370A	SW 53- 86CKB5	SC12	S5S-20IP
69 - 86	SW6986A			
68 - 90	SW6890A	SW 68-110CKB6		
88 - 110	SW88110A			
98 - 126	SW98126A	SW 98-153CKB6 SW 98-153CKB7		
125 - 153	SW125153A			
148 - 176	SW148176A	SW148-203CKB6 SW148-203CKB7		
175 - 203	SW175203A			

Each Cartridge model consists of a pair of cartridges and an insert clamping wrench.

1. Inserts must be ordered separately.
2. Step cutting is not available.
3. The diameter range is the value when nose radius 0.4 is used for insert SC06, and nose radius 0.8 for insert SC09 and SC12.
4. The insert clamping screw set (optional) contains 10 screws and 1 wrench.



A90



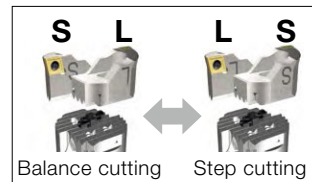
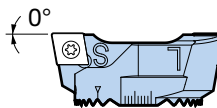
A95

SW CARTRIDGE PAT.



● Cartridge Model Description

- SW** Cartridge Model Description
- 2026** Diameter range $\phi 20 - \phi 26$
- E** For Blind Holes
- ROUGH BORING HEAD



Adapted for both balance and step cutting by simple replacement of standard Cartridges. (for blind holes)

● E Type for Blind Holes (To shape flat surfaces)

Diameter øD	Cartridge Model	Head Model	Insert	Insert Clamping Screw Set	
20 - 26	SW2026E	SW 20- 31CKB1	CC06	S2.5S-7IP	
25 - 31	SW2531E				
25 - 33	SW2533E	SW 25- 40CKB2			
32 - 40	SW3240E				
32 - 42	SW3242E	SW 32- 51CKB3	CC09	S4S-15IP	
41 - 51	SW4151E				
41 - 54	SW4154E	SW 41- 66CKB4			
53 - 66	SW5366E				
53 - 70	SW5370E	SW 53- 86CKB5	CC12	S5S-20IP	
69 - 86	SW6986E				
68 - 90	SW6890E	SW 68-110CKB6			CC16
	SW6890EL				
88 - 110	SW88110E		CC12		
	SW88110EL				CC16
98 - 126	SW98126E	SW 98-153CKB6 SW 98-153CKB7	CC12		
	SW98126EL		CC16		
125 - 153	SW125153E		CC12		
	SW125153EL		CC16		
148 - 176	SW148176E	SW148-203CKB6 SW148-203CKB7	CC12		
	SW148176EL		CC16		
175 - 203	SW175203E		CC12		
	SW175203EL		CC16		

Each Cartridge model consists of a pair of cartridges and an insert clamping wrench.

1. Inserts must be ordered separately.
2. The diameter range is the value when nose radius 0.4 is used for insert CC06, and nose radius 0.8 for insert CC09 and CC12.
3. The insert clamping screw set (optional) contains 10 screws and 1 wrench.
4. EL type Cartridge with long cutting edge cannot be used with the #30 shank holder.



A91-A92



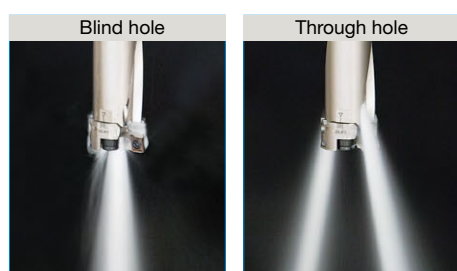
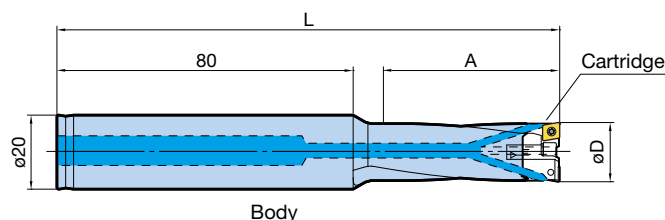
A95

MW BORING HEAD PAT. (for roughing)

Achieves high efficiency small diameter rough boring with 2 inserts.

- Designed with versatile $\phi 20$ cylindrical shank.

Center through

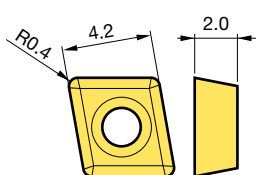


Diameter ϕD	Model	Cartridge Model	L	Effective boring depth A	Weight (kg)
16 - 19	ST20-MW1619-45	MW1619E	136	45	0.24
	-60		151	60	0.26
18 - 21	-MW1821-50	MW1821E	141	50	0.26
	-65		156	65	0.28

Threads for plug screws are prepared in the coolant holes to change the coolant directions.

- Insert clamp screw and wrench are included.
- Cartridges are not included with the body and must be ordered separately.
Cartridge models are a 2-piece set.
- The weight is that of the body and cartridge combined.
- Inserts must be ordered separately.

● Insert (optional)



Workpiece material	Insert Model	Materials
Steel/Stainless steel	MW0404F Z30P	P30 equivalent carbide substrate TiAlN + AlCrN coating
Cast iron/ Ductile	MW0404S Z30K	K20 equivalent carbide substrate TiAlN + AlCrN coating
Non-ferrous metal/ Aluminum	MW0404E D15N	K15 equivalent carbide substrate DLC coating

1. Inserts sold in packets of 10 pcs.

Example: MW0404F Z30P... 10 pcs

● Insert Clamping Screw Set (optional)



Set Model	Thread size	Wrench
S1.6S-T6	M1.6 x 4.2	FA-T6

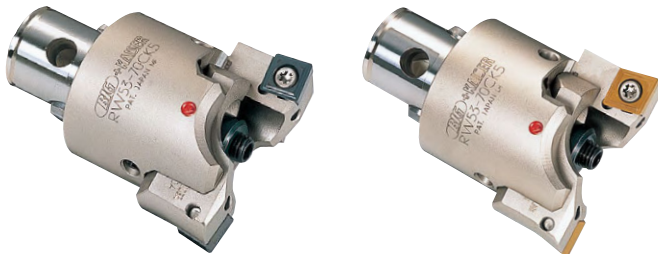
- The set contains ten screws and a wrench.
- ※ Wrenches are also sold individually.

Center through

RW BORING HEAD (for roughing)

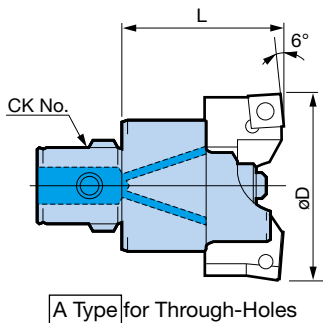
Balance cutting allows powerful boring.

- Axial adjustment mechanism achieves “perfect balance cutting”.
- The “step cutting method” can reduce the number of passes in the applications with large stock allowance.



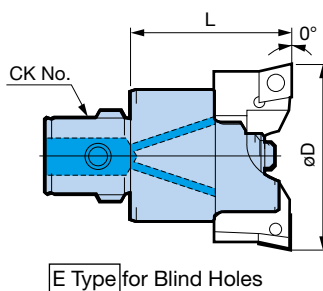
● Head Model Description

RW **25-33** **CKB2**
● CK No.
● Diameter range
● ROUGH BORING HEAD



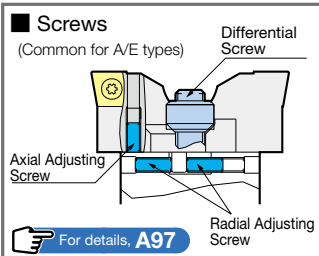
● A Type for Through-Holes (4 corners of the insert can be used)

Diameter ϕD	Head Model	CK No.	Cartridge	L	Differential Screw (spare)	Weight (kg)
25 - 33	RW 25- 33CKB2	CK2	RW2533A	35.5	DS25	0.1
32 - 42	RW 32- 42CKB3	CK3	RW3242A	40	DS32	0.2
41 - 54	RW 41- 54CKB4	CK4	RW4154A	47	DS41	0.4
53 - 70	RW 53- 70CKB5	CK5	RW5370A	57	DS53	0.8
68 - 88	RW 68-100CKB6	CK6	RW6888A	71	DS68	1.6
86 - 106			RW86106A			
100 - 125			RW100125A			2.3
125 - 150	RW100-150CKB6		RW125150A			



● E Type for Blind Holes (To shape flat surfaces)

Diameter øD	Head Model	CK No.	Cartridge	L	Differential Screw (spare)	Weight (kg)	
25 - 33	RW 25- 33CKB2	CK2	RW2533E	35.5	DS25	0.1	
30 - 37			RW3037E				
32 - 42	RW 32- 42CKB3	CK3	RW3242E	40	DS32	0.2	
40 - 48			RW4048E				
41 - 54	RW 41- 54CKB4	CK4	RW4154E	47	DS41	0.4	
51 - 62			RW5162E				
53 - 70	RW 53- 70CKB5	CK5	RW5370E	57	DS53	0.8	
66 - 81			RW6681E				
68 - 88	RW 68-100CKB6	CK6	RW6888E	71	DS68	1.6	
			RW6888EL				
			RW86106E				
			RW86106EL				
86 - 106	RW100-150CKB6		RW100125E			2.3	
			RW100125EL				
			RW125150E				
			RW125150EL				



1. Differential screws are included.
2. Cartridges must be ordered separately.
3. Inserts must be ordered separately.
4. Coolant through is standard for all the RW heads.

For holders, **A73**

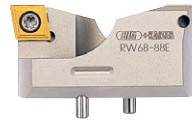
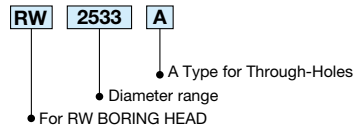
Caution
Ensure the Axial Adjusting Screws do not protrude from the Cartridges when assembled.

RW CARTRIDGE



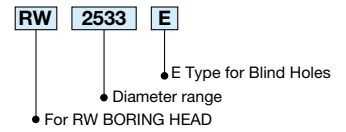
A Type for Through-Holes

● Cartridge Model Description



E Type for Blind Holes

● Cartridge Model Description



● A Type for Through-Holes (4 corners of the square insert can be used)

Cartridge Model	Figure	CK Boring Head Model	Insert	Insert Clamping Screw Set
RW2533A		RW 25- 33CKB2	SC07	S3S
RW3242A		RW 32- 42CKB3	SC09	S4S
RW4154A		RW 41- 54CKB4		
RW5370A		RW 53- 70CKB5	SC12	S5S
RW6888A		RW 68-100CKB6		
RW86106A				
RW100125A		RW100-150CKB6		
RW125150A				

● E Type for Blind Holes (2 corners of the 80° CC insert can be used)

Cartridge Model	Figure	CK Boring Head Model	Insert	Insert Clamping Screw Set
RW2533E		RW 25- 33CKB2	CC07	S3S
RW3037E		RW 32- 42CKB3	CC09	S4S
RW3242E				
RW4048E		RW 41- 54CKB4	CC12	S5S
RW4154E		RW 53- 70CKB5		
RW5162E		RW 68-100CKB6	CC12	
RW5370E			CC12	
RW6681E			CC16	
RW6888E			CC12	
RW6888EL		RW100-150CKB6	CC16	
RW86106E			CC12	
RW86106EL			CC16	
RW100125E			CC12	
RW100125EL			CC16	
RW125150E			CC12	
RW125150EL			CC16	

Each Cartridge model consists of a pair of cartridges and an insert clamping wrench.

1. Inserts must be ordered separately.
2. The insert clamping screw set (optional) contains 10 screws and 1 wrench.
3. EL type cartridge with long cutting edge cannot be used with the #30 shank holder.

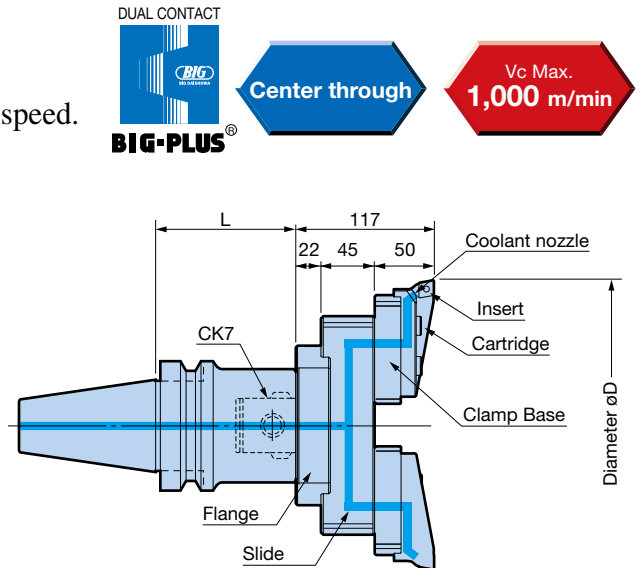


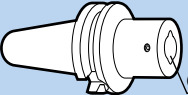
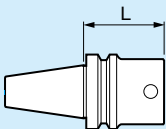
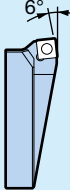
TW BORING HEAD (for roughing/large diameter)

CK7 large-diameter boring series compatible with high-speed.

- Each component is securely fastened for safety.
- Coolant nozzles for secure coolant supply to the cutting edge.

[Standard type]

BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

CK SHANK (BBT BT DV HSK BIGCAPTO)				Flange		Slide		Clamp Base (2-piece set)		Cartridge (2-piece set)		Insert								
			Diameter øD																	
Model	Weight (kg)			Model	Weight (kg)	Model	Weight (kg)	Model	Weight (kg)	Model	Weight (kg)									
BBT50-CKB7- 93 -183 -243  <table border="1" data-bbox="124 1444 304 1534"><tr><td></td><td>L</td></tr><tr><td>CKB7- 93</td><td>93</td></tr><tr><td>-183</td><td>183</td></tr><tr><td>-243</td><td>243</td></tr></table>		L	CKB7- 93	93	-183	183	-243	243	5.6 9.9 12.7	A Type for Through-Holes	200 - 270	FLN135 (FLN135/90)	2.76	SLN200-270	3.8	CB-TW200	1.80	 6°	0.72	SC12
		L																		
	CKB7- 93	93																		
	-183	183																		
	-243	243																		
	270 - 340	SLN270-340	5.5																	
	340 - 410	SLN340-410	7.2																	
	410 - 480	SLN410-480	8.9																	
	480 - 550	SLN480-550	10.6																	
	550 - 620	FLN220 (FLN220/90)	4.00	SLN550-620※	12.3															
	620 - 690			SLN620-690※	14.0															
	690 - 760			SLN690-760※	15.7															
	760 - 830			SLN760-830※	17.4															
	200 - 270			FLN135 (FLN135/90)	2.76	SLN200-270	3.8													
	270 - 340	SLN270-340	5.5																	
	340 - 410	SLN340-410	7.2																	
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550 - 620	<																			

1. Clamp Bases and Cartridges are sold as a two-piece set. The weight in the table is that of 2 pieces.

2. Inserts must be ordered separately.

3. Center through coolant supply is available, except for ※ marked models.

4. Cutting edge and drive keys are aligned in the same direction.
(It becomes 90° offset when the FLN135/90 or FLN220/90 flange is used.)

A90-A92



A95

For holders, **A73**Screws for each part **A100**

SQUARE TOOLHOLDER

□25 square tool for
lathe is clamped.

Model	Diameter ϕ	Slide model	Square size	Weight (kg)
BFN95	250 - 830	SLN200-270(AL) or longer	□25	2.5

1. Square tools are not included.

2. The diameter varies according to the tool and slide used.

3. Use an SLN type slide. Cannot be mounted on the conventional SL type.

4. Slide models with AL at the end are made of aluminum for lighter weight.

[High speed type]

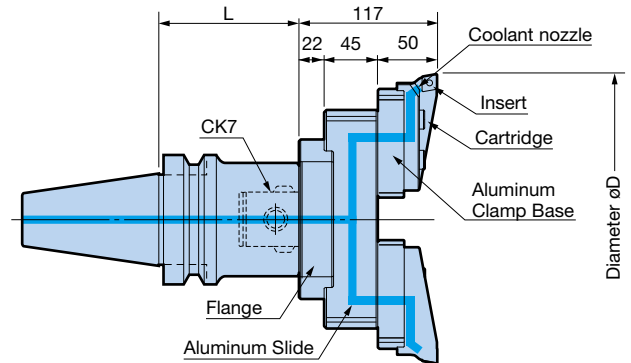
Lightweight

- Tool weight is reduced by combining an Aluminum Slide and Clamp Base.

DUAL CONTACT
BIG-PLUS

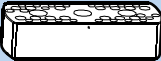
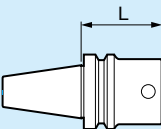
Center through

Vc Max.
2,000 m/min



Models with AL at the end are made of aluminum.

BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

CK SHANK (BBT BT DV HSK BIGCAPTO)			Diameter øD	Flange 	Aluminum Slide 		Aluminum Clamp Base (2-piece set) 		Cartridge (2-piece set) 		Insert									
Model	Weight (kg)			Model	Weight (kg)	Model	Weight (kg)	Model	Weight (kg)											
BBT50-CKB7- 93 -183 -243  <table border="1" data-bbox="127 1444 303 1534"><tr><td></td><td>L</td></tr><tr><td>CKB7- 93</td><td>93</td></tr><tr><td>-183</td><td>183</td></tr><tr><td>-243</td><td>243</td></tr></table>		L	CKB7- 93	93	-183	183	-243	243	5.6 9.9 12.7	A Type for Through-Holes	200 - 270	FLN135 (FLN135/90)	2.76	SLN200-270AL	1.44	CB-TW200-AL	0.80	 TW200A 6°	0.72	SC12
		L																		
	CKB7- 93	93																		
	-183	183																		
	-243	243																		
	270 - 340	SLN270-340AL	2.04																	
	340 - 410	SLN340-410AL	2.64																	
	410 - 480	SLN410-480AL	3.24																	
	480 - 550	SLN480-550AL	3.84																	
	550 - 620	FLN220 (FLN220/90)	4.00	SLN550-620AL ※	4.44															
	620 - 690			SLN620-690AL ※	5.04															
	690 - 760			SLN690-760AL ※	5.64															
	760 - 830			SLN760-830AL ※	6.24															
	200 - 270	FLN135 (FLN135/90)	2.76	SLN200-270AL	1.44	CB-TW200-AL	0.80	 TW200E 0°	0.72	CC12										
	270 - 340			SLN270-340AL	2.04															
	340 - 410			SLN340-410AL	2.64															
	410 - 480			SLN410-480AL	3.24															
	480 - 550			SLN480-550AL	3.84															
	550 - 620	FLN220 (FLN220/90)	4.00	SLN550-620AL ※	4.44															
	620 - 690			SLN620-690AL ※	5.04															
	690 - 760			SLN690-760AL ※	5.64															
	760 - 830			SLN760-830AL ※	6.24															
200 - 270	FLN135 (FLN135/90)	2.76	SLN200-270AL	1.44	CB-TW200-AL						0.80	 TW200EL 0°	0.72	CC16						
270 - 340			SLN270-340AL	2.04																
340 - 410			SLN340-410AL	2.64																
410 - 480			SLN410-480AL	3.24																
480 - 550			SLN480-550AL	3.84																
550 - 620	FLN220 (FLN220/90)	4.00	SLN550-620AL ※	4.44																
620 - 690			SLN620-690AL ※	5.04																
690 - 760			SLN690-760AL ※	5.64																
760 - 830			SLN760-830AL ※	6.24																

1. Clamp Bases and Cartridges are sold as a two-piece set. The weight in the table is that of 2 pieces.
2. Inserts must be ordered separately.
3. Center through coolant supply is available, except for ※ marked models.
4. Cutting edge and drive keys are aligned in the same direction.
(It becomes 90° offset when the FLN135/90 or FLN220/90 flange is used.)

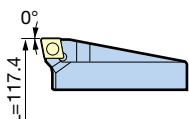
A90-A92

A95

For holders, **A73**

Screws for each part **A100**

E Type Cartridge for Step Cutting



0.4mm higher cartridge enables larger depth of cut.

Model
TW200E -SC
TW200EL-SC

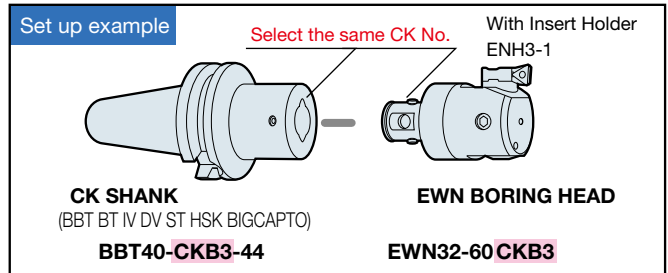
Offered by 1 pce.

EWN BORING HEAD (for finishing)

Center through

Vc Max.
1,200 m/min1 μ m vernier is added to the easy-to-read scale of 0.01mm/ø increments.

- The pre-balance design achieves stable machining accuracy.
- Back boring available as standard, expanding versatility.



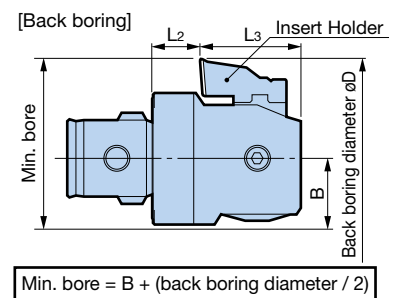
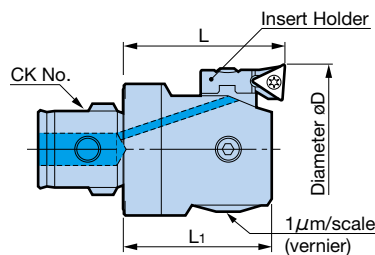
● Model Description

EWN 20-36 CKB1

• Diameter

• Finish Head

• CK No.



Model	CK No.	Insert Holder	Boring			Back Boring				Weight (kg)	Insert
			Diameter øD	L	L ₁	Diameter øD	L ₂	L ₃	B		
EWN 20- 36CKB1	CK1	ENH1-1	20 - 26	32.5	29.5	-	10.5	19	10	0.07	TP08
		ENH1-2	25 - 31			30 - 31					
		ENH1-3	30 - 36			30 - 36					
EWN 25- 47CKB2	CK2	ENH2-1	25 - 33	35.5	32.5	-	11.5	21	12.5	0.12	TP08
		ENH2-2	32 - 40			36 - 40					
		ENH2-3	39 - 47			39 - 47					
EWN 32- 60CKB3	CK3	ENH3-1	32 - 42	40	35	-	10	25	16	0.21	TP08
		ENH3-2	41 - 51			46 - 51					
		ENH3-3	50 - 60			50 - 60					
EWN 41- 74CKB4	CK4	ENH4-1	41 - 54	47	43	-	14	29	20	0.40	TP08
		ENH4-2	50 - 63			53 - 63					
		ENH4-3	61 - 74			61 - 74					
EWN 53- 95CKB5	CK5	ENH5-1	53 - 70	57	53	62 - 70	19	34	25.5	1.10	TP08
		ENH5-2	65 - 82			65 - 82					
		ENH5-3	78 - 95			78 - 95					
EWN 68-150CKB6	CK6	ENH6-1	68 - 100	71	67.2	80 - 100	22	45.2	32.5	1.74	TP08
		ENH6-2	94 - 126			94 - 126					
		ENH6-3	118 - 150			118 - 150					
EWN100-203CKB6	CK6	ENH6-1	100 - 153	71	67.2	112 - 153	22	45.2	45.5	2.46	TP08
		ENH6-2	126 - 179			126 - 179					
		ENH6-3	150 - 203			150 - 203					
EWN100-203CKB7	CK7	ENH6-1	100 - 153	87	83.2	112 - 153	38	45.2	45.5	3.98	TP08
		ENH6-2	126 - 179			126 - 179					
		ENH6-3	150 - 203			150 - 203					

1. Max. and min. diameters are the values when nose radius 0.2 is used for insert TP08, and nose radius 0.4 for insert TC11.

2. ENH○-1 insert holder is included. ENH○-2 and 3 must be ordered separately if required.

3. During back boring, the rotation direction will be reversed.

4. Inserts must be ordered separately.



A88-A89



A95

For holders, **A73**For insert holders, **A52**For boring head screws, **A98**

⚠ Caution

Although the maximum allowable cutting speed Vc of the EWN BORING HEAD is 1,200 m/min, conditions differ according to the projection length of the holder and the rigidity of the machine. Set the spindle speed low and gradually increase until the optimum conditions are reached.

Diameter: $\phi 32 - \phi 203$ **CK BORING SYSTEM**

Built-In Damper

SMART DAMPER EWN BORING HEAD (for finishing)

Center through

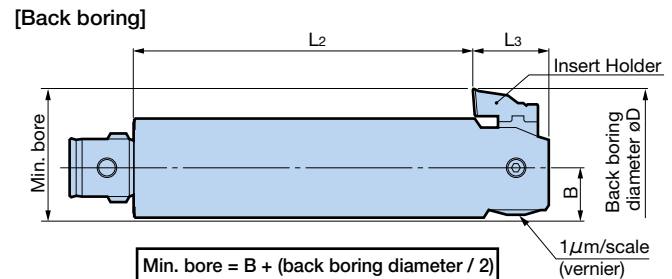
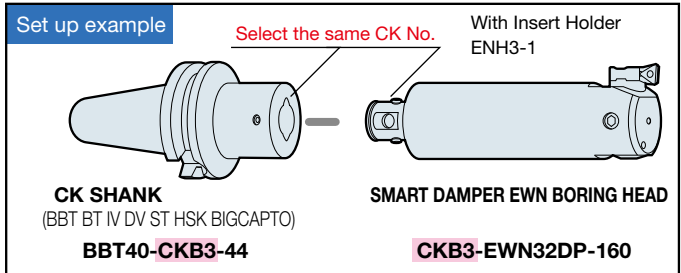
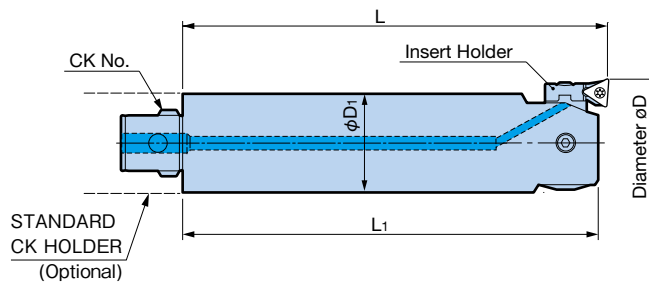
Combination of the popular EWN boring head with the Smart Damper.



● Model Description

CKB3 - EWN 32 DP - 160

- CK No.
- Finish Head
- Min. diameter
- Built-In Damper type
- L dimension



Model	CK No.	Insert Holder	Boring			Back Boring				øD ₁	Weight (kg)	Insert
			Diameter øD	L	L ₁	Diameter øD	L ₂	L ₃	B			
CKB3-EWN 32DP-160 	CK3	ENH3-1	32 - 42	160	155	-	130	25	16	31	1.2	TP08
		ENH3-2	41 - 51			-						
		ENH3-3	50 - 60			57 - 60						
CKB4-EWN 41DP-185	CK4	ENH4-1	41 - 54	185	181	-	152	29	20	39	2.3	TC11
		ENH4-2	50 - 63			61 - 63						
		ENH4-3	61 - 74			67 - 74						
CKB5-EWN 53DP-210	CK5	ENH5-1	53 - 70	210	206	-	172	34	25.5	50	4.4	
		ENH5-2	65 - 82			74 - 82						
		ENH5-3	78 - 95			78 - 95						
CKB6-EWN 68DP-240	CK6	ENH6-1	68 - 100	240	236.2	90 - 100	191	45.2	32.5	64	8.3	
		ENH6-2	94 - 126			94 - 126						
		ENH6-3	118 - 150			118 - 150						
CKB6-EWN100DP-240 	CK6	ENH6-1	100 - 153	240	236.2	107 - 153	191	45.2	45.5	64	8.8	
		ENH6-2	126 - 179			126 - 179						
		ENH6-3	150 - 203			150 - 203						
CKB7-EWN100DP-240 	CK7	ENH6-1	100 - 153	240	236.2	116 - 153	191	45.2	45.5	90	16.4	
		ENH6-2	126 - 179			126 - 179						
		ENH6-3	150 - 203			150 - 203						

- Max. and min. diameters are the values when nose radius 0.2 is used for insert TP08, and radius 0.4 for insert TC11.
- ENH○-1 insert holder is included. ENH○-2 and 3 must be ordered separately if required.
- During back boring, the rotation direction will be reversed.
- Inserts are not included.

● Wide variety of Insert Holders offers versatility.

Example: CKB3-EWN32DP-160

Standard Accessory	Optional Accessory	
ENH3-1  $\phi 32 - \phi 42$	ENH3-2  $\phi 41 - \phi 51$	ENH3-3  $\phi 50 - \phi 60$

In addition to the above, various insert holders for EWN BORING HEAD such as the "Insert Holder to Undercut Corners" can be used.  **A52**

 For holders, **A73** For insert holders, **A52** For boring head screws, **A98**

EWE DIGITAL BORING HEAD (for finishing) Diameter: $\phi 41 - \phi 203$

The advanced digital boring head born from ultra-precision technology.

- Digital display allows the adjustment amount to be read instantaneously.
- Fully waterproof and dustproof structure (IP69K equivalent).

Center through

Vc Max.
1,200 m/min

Employs a system that directly measures the stroke of the adjustment quill. Accurately displays the actual movement amount.

Simple operation that allows ON and zero reset with a single button.

Display Resolution
0.001 mm/ ϕ

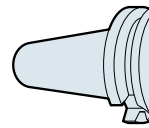
● Model Description

EWE **41-74** **CKB4**
 ● Diameter
 ● CK No.

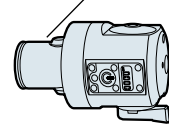
● DIGITAL FINISH BORING HEAD

Set up example

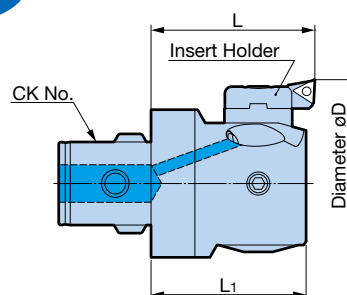
Select the same CK No.

With Insert Holder
ENH4-1

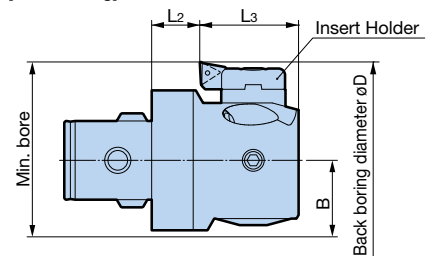
CK SHANK
(BBT BT IV DV ST HSK BIGCAPTO)
BBT40-CKB4-43



EWE DIGITAL HEAD
EWE41-74 CKB4



[Back boring]



$$\text{Min. bore} = B + (\text{back boring diameter} / 2)$$

Model	CK No.	Insert Holder	Boring			Back Boring				Weight (kg)	Insert
			Diameter øD	L	L ₁	Diameter øD	L ₂	L ₃	B		
EWE 41- 74CKB4	CK4	ENH4-1	41 - 54	47	43	-	14	29	20	0.4	TC11
		ENH4-2	50 - 63			53 - 63					
		ENH4-3	61 - 74			61 - 74					
EWE 53- 95CKB5	CK5	ENH5-1	53 - 70	57	53	62 - 70	19	34	25.5	0.7	
		ENH5-2	65 - 82			65 - 82					
		ENH5-3	78 - 95			78 - 95					
EWE 68-150CKB6	CK6	ENH6-1	68 - 100	71	67.2	80 - 100	22	45.2	32.5	1.7	
		ENH6-2	94 - 126			94 - 126					
		ENH6-3	118 - 150			118 - 150					
EWE100-203CKB6	CK6	ENH6-1	100 - 153	71	67.2	112 - 153	22	45.2	45.5	2.5	
		ENH6-2	126 - 179			126 - 179					
		ENH6-3	150 - 203			150 - 203					
EWE100-203CKB7	CK7	ENH6-1	100 - 153	87	83.2	112 - 153	38	45.2	45.5	4.0	
		ENH6-2	126 - 179			126 - 179					
		ENH6-3	150 - 203			150 - 203					

Battery: CR1025 1 pc (Standard accessory)

1. Max. and min. diameters are the values when an insert with nose radius 0.4 is used.
2. ENH0-1 insert holder is included. ENH0-2 and 3 must be ordered separately if required.
3. Inserts must be ordered separately.
4. Center through coolant pressure should not exceed 4MPa.

**Caution**

Although the maximum allowable cutting speed Vc of the EWE BORING HEAD is 1,200 m/min, conditions differ according to the projection length of the holder and the rigidity of the machine. Set the spindle speed low and gradually increase until the optimum conditions are reached.

● Wide variety of Insert Holders offers versatility.

Example: For EWE41-74CKB4

Standard Accessory	Optional Accessory	
ENH4-1  $\phi 41 - \phi 54$	ENH4-2  $\phi 50 - \phi 63$	ENH4-3  $\phi 61 - \phi 74$

In addition to the above, various insert holders for EWN BORING HEAD such as the "Insert Holder to Undercut Corners" can be used.  **A52**

**A89****A95**For holders, **A73**

Insert Holder (optional accessory)



Model	Figure	Head	Model	Figure	Head	Model	Figure	Head
ENH1-1		EWN20-36CKB1	ENH4-1		EWN41-74CKB4 EWE41-74CKB4	ENH4-1E		EWN41-74CKB4 EWE41-74CKB4
ENH1-2			ENH4-2			ENH4-2E		
ENH1-3			ENH4-3			ENH4-3E		
ENH2-1		EWN25-47CKB2	ENH5-1		EWN53-95CKB5 EWE53-95CKB5	ENH5-1E		EWN53-95CKB5 EWE53-95CKB5
ENH2-2			ENH5-2			ENH5-2E		
ENH2-3			ENH5-3			ENH5-3E		
ENH3-1	Insert TP08	EWN32-60CKB3	ENH6-1	Insert TC11	EWN 68-150CKB6 EWN100-203CKB6(7) EWE 68-150CKB6 EWE100-203CKB6(7)	ENH6-1E	Insert TC11	EWN 68-150CKB6 EWN100-203CKB6(7) EWE 68-150CKB6 EWE100-203CKB6(7)
ENH3-2			ENH6-2			ENH6-2E		
ENH3-3			ENH6-3			ENH6-3E		

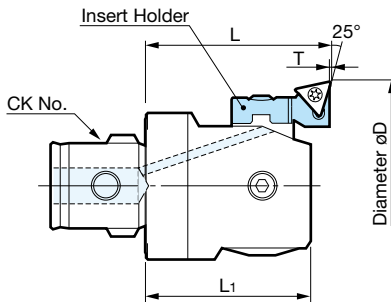
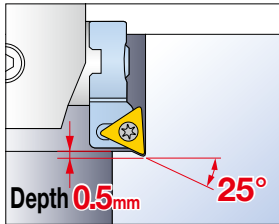
1. Inserts must be ordered separately.

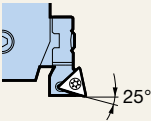


Insert Holder to undercut corners (optional accessory)



● Insert Holder capable of boring and grooving (recessing)



Diameter øD	Model	Figure	Head	CK No.	L	L ₁	Max. depth T. Max.	Insert		
32 - 42	ENH3-1J		EWN 32- 60CKB3	3	40	35	0.6	TP08		
41 - 51	ENH3-2J		EWN(E)41- 74CKB4	4	47	43				
50 - 60	ENH3-3J		EWN(E)53- 95CKB5	5	57	53				
41 - 54	ENH4-1J		EWN(E)68-150CKB6	6	71	67.2				
53 - 70	ENH5-1J		EWN(E)100-203CKB6							
65 - 82	ENH5-2J		EWN(E)100-203CKB7	7	87	83.2	0.6	TC11		
78 - 95	ENH5-3J		EWN(E) 68-150CKB6	6	71	67.2				
68 - 100	ENH6-1J		EWN(E)100-203CKB6							
100 - 153	ENH6-2J		EWN(E)100-203CKB7	7	87	83.2				
94 - 126	ENH6-3J		EWN(E) 68-150CKB6	6	71	67.2				
126 - 179	ENH6-2J		EWN(E)100-203CKB6							
118 - 150	ENH6-3J		EWN(E)100-203CKB7	7	87	83.2				
150 - 203	ENH6-3J		EWN(E)100-203CKB7	7	87	83.2				

1. T.Max. and L are the values when nose radius 0.2 is used for insert TP08, and nose radius 0.4 for insert TC11.
 2. Inserts must be ordered separately.



Insert Holder for CC Insert

Model	Figure	Head	Insert
ENH4-1F		EWN 41- 74CKB4 EWE 41- 74CKB4	CC06
ENH4-2F			
ENH4-3F			
ENH5-1F		EWN 53- 95CKB5 EWE 53- 95CKB5	CC07
ENH5-2F			
ENH5-3F			
ENH6-1F		EWN 68-150CKB6 EWN100-203CKB6 (7) EWE 68-150CKB6 EWE100-203CKB6 (7)	CC07
ENH6-2F			
ENH6-3F			

1. Inserts must be ordered separately.



Insert Holder for Square Insert

Model	Figure	Head	Insert
ENH4-1S		EWN 41- 74CKB4 EWE 41- 74CKB4	SC06
ENH4-2S			
ENH4-3S			
ENH5-1S		EWN 53- 95CKB5 EWE 53- 95CKB5	SC07
ENH5-2S			
ENH5-3S			
ENH6-1S		EWN 68-150CKB6 EWN100-203CKB6 (7) EWE 68-150CKB6 EWE100-203CKB6 (7)	SC07
ENH6-2S			
ENH6-3S			

1. Inserts must be ordered separately.



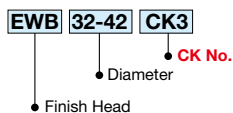
EWB BORING HEAD (For high-speed finishing/
Built-in automatic precision balancing) Diameter: $\phi 32 - \phi 105$

Automatic precision balancing. High speed machining supported.

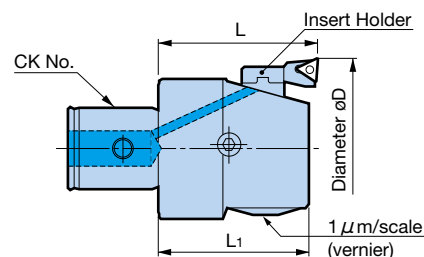
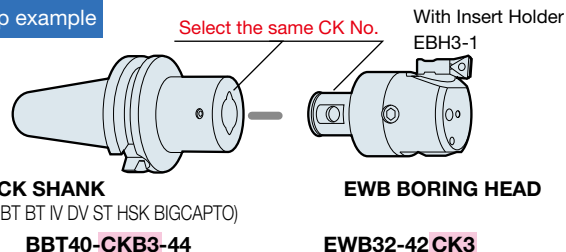
- Excellent dynamic balance performance, achieves high-speed machining and stable accuracy.
- Ultra-precision boring head with $\phi 0.01$ mm increment scale.



● Model Description



Set up example



Diameter øD	Model	CK No.	L	L _i	Weight (kg)	Insert Holder (Optional accessory)	Insert
32 - 42	EWB32- 42CK3	CK3	40	37	0.20	EBH3-1	TP08
41 - 54	EWB41- 54CK4	CK4	47	43	0.38	EBH4-1	TC11
53 - 70	EWB53- 70CK5	CK5	57	53	0.78	EBH5-1	
68 - 88	EWB68- 88CK6	CK6	71	67	1.65	EBH6-1	
85 - 105	EWB85-105CK6				1.69		

1. Max. and min. diameters are the values when nose radius 0.2 is used for insert TP08, and nose radius 0.4 for insert TC11.

2. Insert Holder is included, insert is not included.



A88-A89



A95



Caution

Although the maximum allowable cutting speed Vc of the EWB BORING HEAD is 2,000 m/min, conditions differ according to the projection length of the holder and the rigidity of the machine. Set the spindle speed low and gradually increase until the optimum conditions are reached.

For holders, **A73**For boring head screws, **A99**

Insert Holder (Optional accessory)



Model	Head	Insert	Insert Clamping Screw Set
EBH3-1	EWB 32- 42CK3	TP08	S2S-T6
EBH4-1	EWB 41- 54CK4	TC11	S2.5S-T7
EBH5-1	EWB 53- 70CK5		
EBH6-1	EWB 68- 88CK6		
	EWB 85-105CK6		
	EWB100-153CK□AL EWB150-203CK□AL		

· EWB Boring Heads are provided with an Insert Holder.
For replacement, order using the above model numbers.

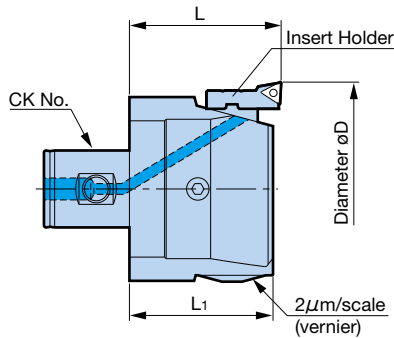
EWB ALUMINUM BORING HEAD (for finishing) Diameter: $\phi 100 - \phi 203$

Automatic precision balancing. High-speed capability is ideal for aluminum machining.

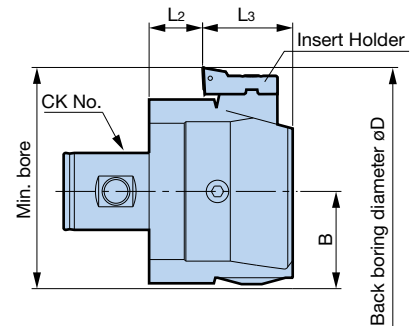
- Lightweight aluminum head made of high-tension aluminum with hard coating.
- Ideal for small machining centers with ATC weight limit.



Weight
600g -



<Boring>



<Back boring>

$$\text{Min. bore} = B + (\text{back boring diameter} / 2)$$

● Model Description

EWB	100-153	CK6	AL
	Diameter	CK No.	ALUMINUM BORING HEAD
	Finish Head		

Model	CK No.	L	L ₁	Boring	L ₂	L ₃	Back Boring		Weight (kg)	Insert Holder (spare)	Insert
				Diameter øD			Diameter øD	B			
EWB100-153CK6AL	CK6	71	67	100 - 153	25	43	112 - 153	45.5	0.6	EBH6-1	TC11
EWB150-203CK6AL				150 - 203			150 - 203	63.5	0.8		
EWB100-153CK7AL	CK7	87	83	100 - 153	41	42	112 - 153	45.5	0.9		
EWB150-203CK7AL				150 - 203			150 - 203	63.5	1.2		

1. Max. and min. diameters are the values when an insert with nose radius 0.4 is used.
2. Insert Holder is included, insert is not included.
3. During back boring, the rotation direction will be reversed.



For holders, **A73**



Caution

Although the maximum allowable cutting speed V_c of the EWB BORING HEAD is 2,000 m/min, conditions differ according to the projection length of the holder and the rigidity of the machine. Set the spindle speed low and gradually increase until the optimum conditions are reached.

(Diameters up to $\phi 880$ can be used when using Insert Holder **ENH7-3**.)

EWN200 BORING HEAD (for finishing and large diameters)

- Each component is securely fastened for safety.
- Coolant nozzles for secure coolant supply to the cutting edge.

DUAL CONTACT

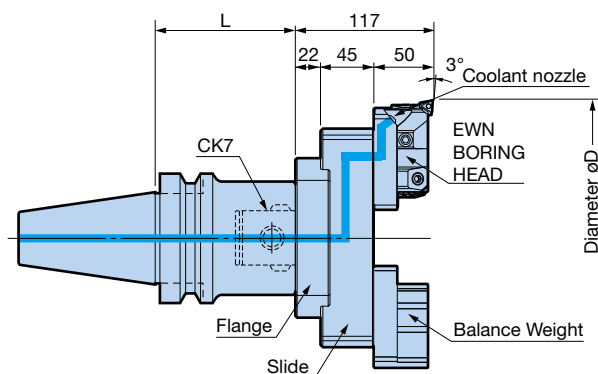


BIG-PLUS®

Center through

Vc Max.
1,000m/min

[Standard type]

BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

CK SHANK (BBT BT DV HSK BIG CAPTO)			Diameter ϕD	Flange		Slide		EWN BORING HEAD		Balance Weight		Insert
Model	L	Weight (kg)		Model	Weight (kg)	Model	Weight (kg)	Model	Weight (kg)	Model	Weight (kg)	
BBT50-CKB7- 93 -183 -243	93	5.6	200 - 270	FLN135 (FLN135/90)	2.76	SLN200-270	3.8	EWN200 With ENH7-1 Insert Holder	1.44	BWN200FB	1.44	TC11
	183	9.9	270 - 340			SLN270-340	5.5					
	243	12.7	340 - 410			SLN340-410	7.2					
			410 - 480			SLN410-480	8.9					
			480 - 550	FLN220 (FLN220/90)	4.00	SLN480-550	10.6					
			550 - 620			SLN550-620 ※	12.3					
			620 - 690			SLN620-690 ※	14.0					
			690 - 760			SLN690-760 ※	15.7					
			760 - 830			SLN760-830 ※	17.4					

- ENH7-1 Insert Holder is included.
- Inserts must be ordered separately.
- Center through coolant line available, except for ※ marked models.
- Cutting edge and drive keys are aligned in the same direction.
(It becomes 90° offset when the FLN135/90 or FLN220/90 flange is used.)



A89



A95

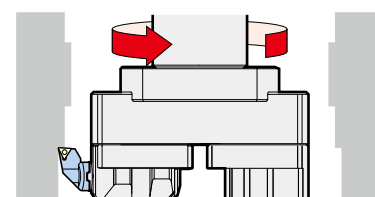
For holders, **A73**Screws for each part **A100**

Insert Holder

Standard Accessory		Optional Accessories			
ENH7-1	ENH7-2	ENH7-3	ENH7-1J (for recessing)	ENH7-1F (for diamond inserts)	ENH7-1S (for square inserts)
	+25/ø	+50/ø	Max. depth Max.0.6	0°	45°
	Insert TC11			Insert CC07	Insert SC07

Back boring available

Reverse



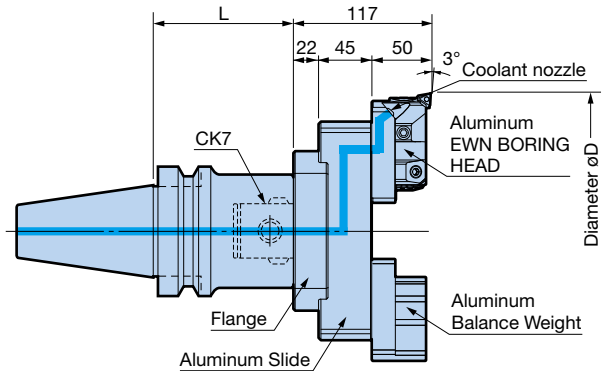
※ ENH7-2, 7-3 only can be used.



[High speed type]

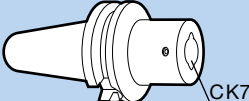
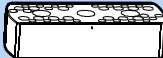
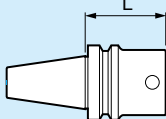
Lightweight

● Tool weight is reduced by combining an aluminum slide, EWN BORING HEAD, and balance weight.



Models with AL at the end are made of aluminum.

BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

CK SHANK (BBT BT DV HSK BIGCAPTO)			Diameter øD		Flange		Aluminum Slide		Aluminum EWN BORING HEAD		Aluminum Balance Weight		Insert
													
					Weights can be adjusted according to the diameter.								
Model	L	Weight (kg)		Model	Weight (kg)	Model	Weight (kg)	Model	Weight (kg)	Model	Weight (kg)		
BBT50-CKB7- 93 -183 -243	93	5.6	200 - 270	FLN135 (FLN135/90)	2.76	SLN200-270AL	1.44	EWN200AL With ENH7-1 Insert Holder	0.8	BWN200FB-AL	0.8	TC11	
	183	9.9	270 - 340			SLN270-340AL	2.04						
	243	12.7	340 - 410			SLN340-410AL	2.64						
			410 - 480			SLN410-480AL	3.24						
			480 - 550			SLN480-550AL	3.84						
			550 - 620	SLN550-620AL ※	4.44								
			620 - 690	SLN620-690AL ※	5.04								
			690 - 760	SLN690-760AL ※	5.64								
			760 - 830	SLN760-830AL ※	6.24								
													

1. ENH7-1 Insert Holder is included
2. Inserts must be ordered separately.
3. Center through coolant supply is available, except for ※ marked models.
4. Cutting edge and drive keys are aligned in the same direction.
 (It becomes 90° offset when the FLN135/90 or FLN220/90 flange is used.)

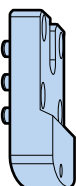


For holders, **A73**

Screws for each part **A100**

Simple Balance Weight

Low-cost balance weights are also available.
 Use under $V=800\text{m/min}$.



Model	Weight (kg)	Head
BWN200PB	1.44	EWN200 (Standard type)
BWN200PB-AL	0.80	EWN200AL (High speed type)

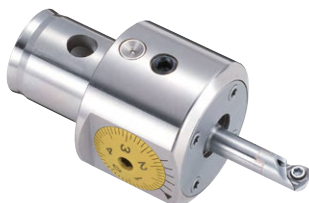
Weights cannot be adjusted.

EWN04-7CK1/EWN04-15CK3 BORING HEAD

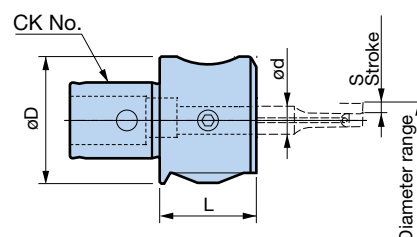
- Micro-boring head with outer diameter of $\phi 18.5\text{mm}$ (EWN04-7CK1).
- 0.01mm/scale/ $\phi 2\mu\text{m}$ ultra-precision vernier.

World's smallest outer
diameter of $\phi 18.5$ 

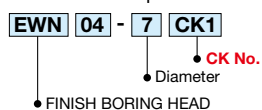
EWN04-7CK1



EWN04-15CK3



● Model Description

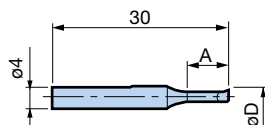


Model	Diameter	CK No.	øD	ød	L	S	Max. speed	Weight (kg)
EWN04- 7CK1	1.0 - 7	CK1	18.5	4	14	-0.1 - +1.05	30,000	0.03
EWN04-15CK3	1.0 - 15	CK3	30	7	22	-0.2 - +2.0	20,000	0.12

1. Cylindrical tool must be ordered separately.

 For holders, **A73**

EWN04-7 Cylindrical Tool



Diameter øD	Model	Engraved number	A	Insert
1.0 - 1.5	ST4W-EB 1 - 3	615.542	3	Integrated Carbide Shank
1.4 - 2.0	-EB 1.5- 5	615.543	5	
1.9 - 3.0	-EB 2 - 6	615.544	6	
2.9 - 4.0	-EB 3 -10	615.545	10	
3.9 - 5.0	-EB 4 -13	615.546	13	
4.9 - 7.0	-EB 5 -16	615.547	16	

EWN04-15 Cylindrical Tool

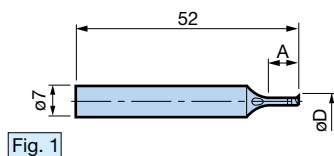


Fig. 1

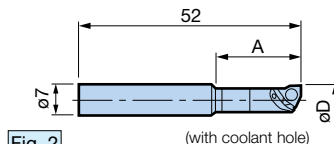


Fig. 2

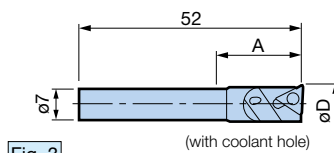
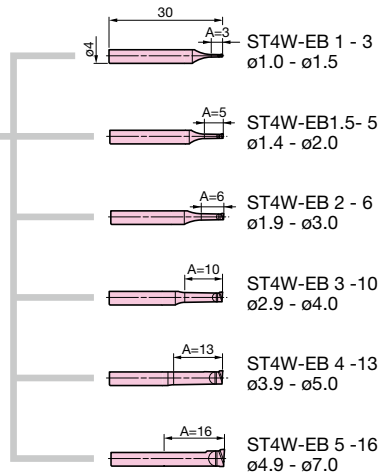
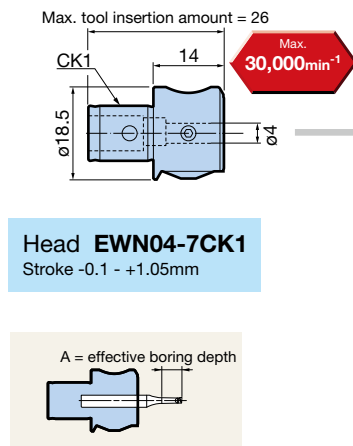


Fig. 3

Diameter øD	Fig.	Model	Engraved number	A	Insert
1.0 - 1.5	1	ST7W-EB 1 - 3	615.524	3	Integrated Carbide Shank
1.4 - 2.0		-EB 1.5- 5	615.525	5	
1.9 - 3.0		-EB 2 - 7	615.501	6	
2.9 - 4.0		-EB 3 - 10	615.502	10	
3.9 - 5.0		-EB 4 - 13	615.503	13	
4.9 - 6.0		-EB 5 - 16	615.504	16	
5.8 - 7.0	2	-EB 6 - 20	615.505	20	WC02
6.8 - 8.0		-EB 7 - 20	615.506		
7.8 - 9.0	3	-EB 8 - 20	615.507	30	TP07
8.8 - 10.0		-EB 9 - 20	615.508		
9.8 - 12.0		-EB10 - 20	615.509		
11.8 - 15.0		-EB12 - 30	615.511		

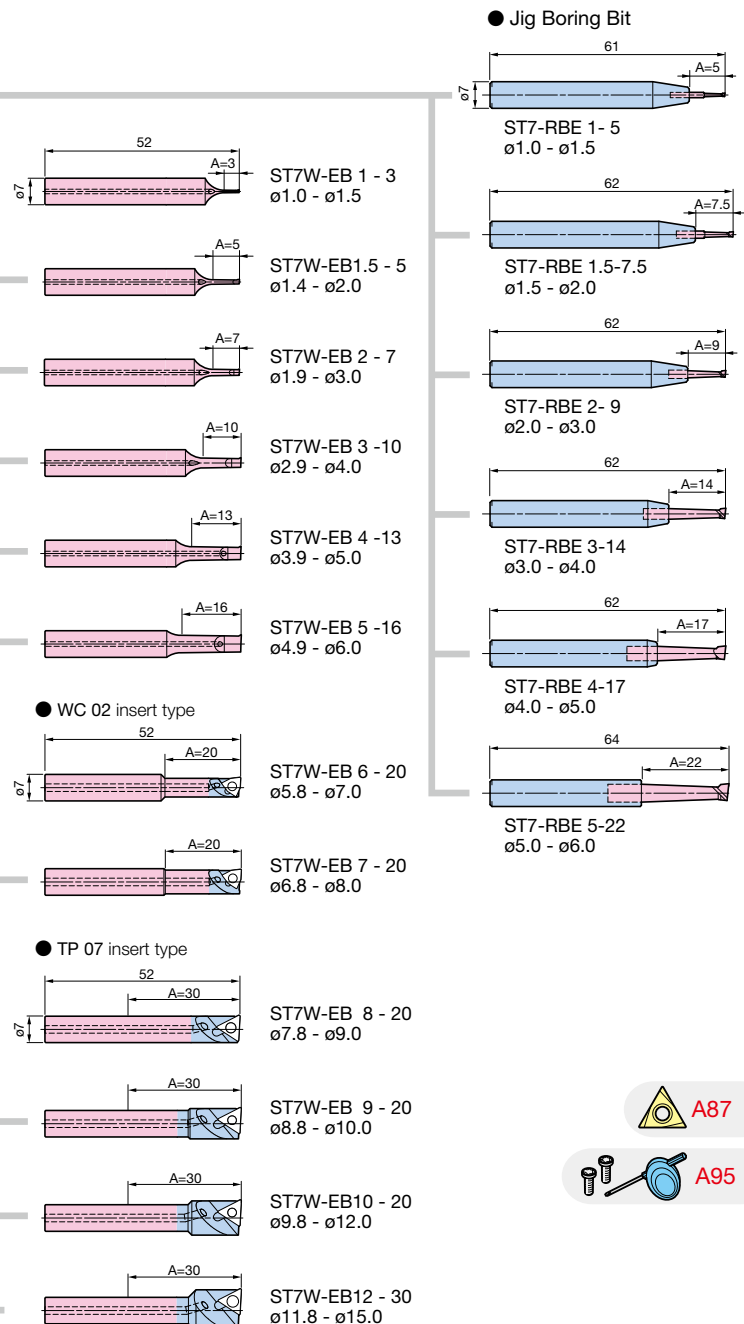
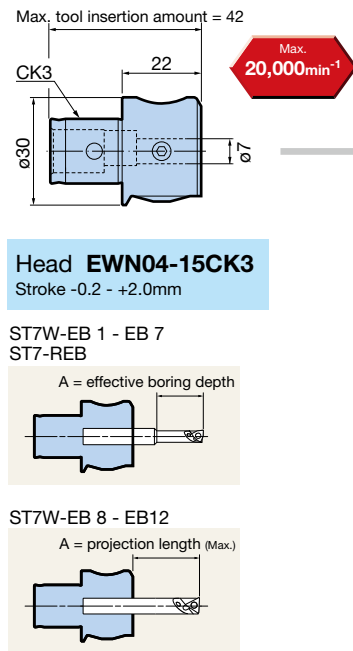
1. Inserts must be ordered separately.



Diameter: $\phi 1 - \phi 15$ **CK BORING SYSTEM****EWN04-7CK1** (cylindrical tool series for finishing)**Center through**

Ideal for small machines

※ Cylindrical Tools are made of carbide.

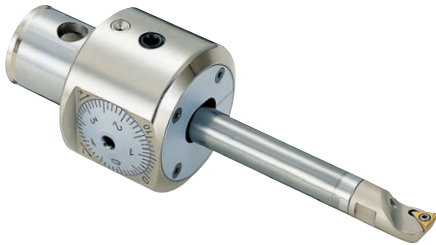
For holders, **A73****EWN04-15CK3** (cylindrical tool series for finishing)**A87****A95****BIG** **A58**

EWN BORING HEAD (cylindrical tool type for finishing)

Center through

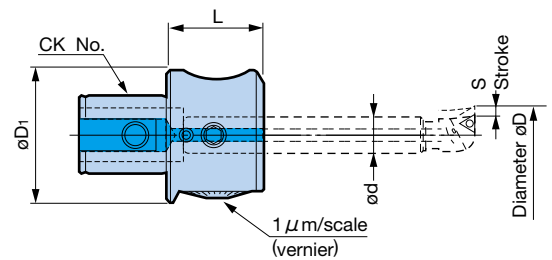
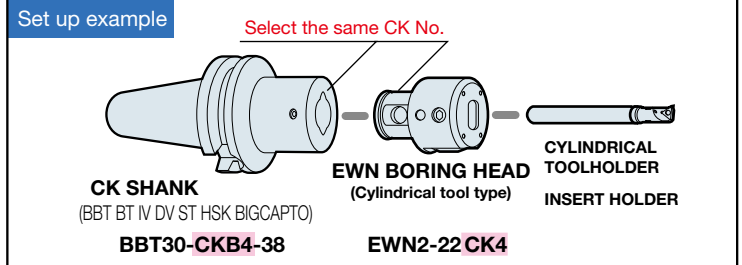
3 models available for the optimal selection to meet applications.

- Ultra precision head with micron adjustment enables small diameter boring tough to achieve.
- The enhanced carbide tool series immediately supports small-diameter deep-hole drilling.



Model Description

EWN | **2** - **22** | **CK4**
 ● CK No.
 ● FINISH BORING HEAD



Refer to the following page for the tool system of each head.

EWN2-22CK4...A63
EWN2-32CK5...A64
EWN2-50CK6...A65

Diameter ϕD	Model	CK No.	ϕd	ϕD_1	L	S	Weight (kg)
1 - 22	EWN2-22CK4	CK4	10	39	28.5	2.0	0.25
1 - 32	EWN2-32CK5	CK5	12	50	36	3.5	0.5
1 - 54	EWN2-50CK6	CK6	16	63.5	45	4.5	1.1

1. EWN BORING HEAD does not come with cylindrical tool.
2. Center through coolant supply is available.
3. Inserts must be ordered separately.

For tool systems, **A63**

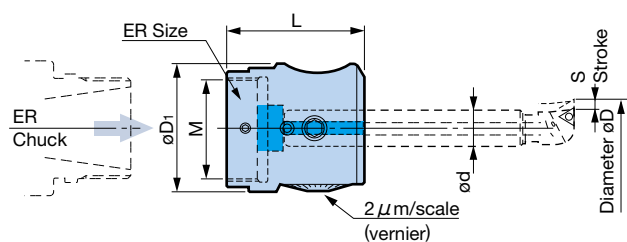
For holders, **A73**

For boring head screws, **A98**

For turning center

[ER Chuck Type] Diameter: $\phi 1 - \phi 32$

To be mounted on the ER collet chuck live tooling for lathe in place of the clamping nut.



Center through

Model Description

EWN | **2** - **22** | **ER25**
 ● ER No.
 ● Max. diameter
 ● FINISH BORING HEAD

Diameter ϕD	Model	ER size	ϕd	ϕD_1	L	S	M	Weight (kg)
1 - 22	EWN2-22ER25	ER25	10	39	40.5	2.0	M32 x 1.5	0.25
1 - 32	EWN2-32ER32	ER32	12	50	51	3.5	M40 x 1.5	0.5

1. EWN BORING HEAD does not come with cylindrical tool.
2. Center through coolant supply is available.
3. Inserts must be ordered separately.

For tool systems, **A63**

Diameter: $\phi 1$ - $\phi 54$

EWE DIGITAL BORING HEAD (cylindrical tool type for finishing)

Advanced digital boring head created by ultra-precision technology.

- Digital display allows the adjustment amount to be read at a glance.
- Fully waterproof and dustproof structure (IP69K equivalent).

Center through

Max.
16,000 min⁻¹
(EWE2-32)

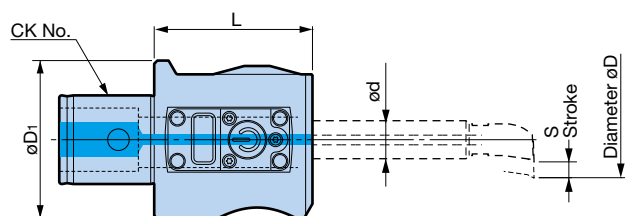
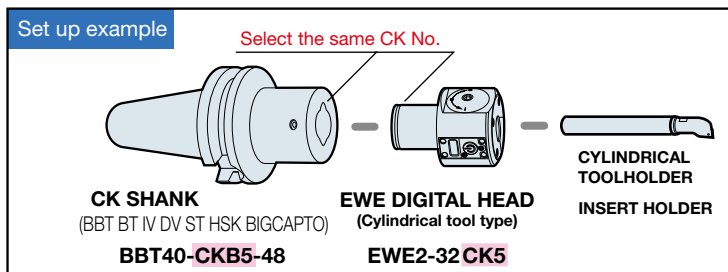
※ Center through coolant pressure should not exceed 4MPa.



Display Resolution
0.001mm/°

● Model Description

EWE **2-32** **CK5**
DIGITAL BORING HEAD



Refer to the following page for the tool system of each head.

EWE2-32CK5...A64
EWE2-54CK6...A65

Diameter ϕD	Model	CK No.	ϕd	ϕD_1	L	S	Weight (kg)
1 - 32	EWE2-32CK5	CK5	12	50	50	-0.5 - 2.0	0.65
1 - 54	EWE2-54CK6	CK6	16	63.5	45	-0.5 - 2.5	1.35

Battery: CR1025 1 pc (Standard accessory)

1. Cylindrical toolholder must be ordered separately.
2. Center through coolant supply is available.
3. Inserts must be ordered separately.

For tool systems, **A64**

For holders, **A73**

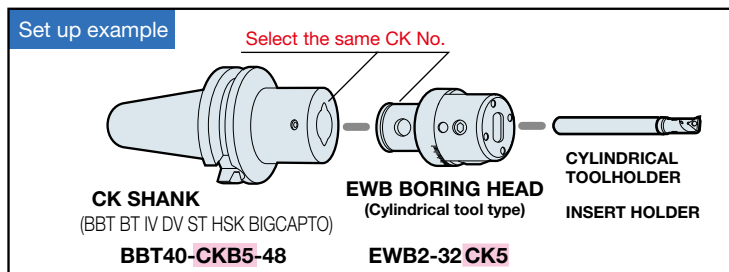
EWB BORING Head Cylindrical Toolholder Type (For high speed finishing/ Built-in manual balance adjustment function)

Manual balance adjustment mechanism.

- $5 \mu\text{m}/\phi$ scale precision diameter adjustment mechanism. (EWB2-50 only)
- Turning the balance ring allows manual adjustment of internal weights.

Center through

Max.
16,000 min⁻¹
(EWB2-32)



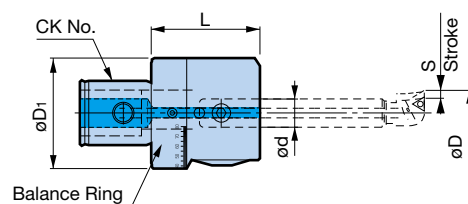
Model Description

EWB **2** - **32** **CK5**

• FINISH BORING HEAD

• Max. diameter

• CK No.



Diameter ϕD	Model	CK No.	ϕd	ϕD_1	L	S	Weight (kg)
1 - 32	EWB2-32CK5	CK5	12	50	49	3.5	0.65
1 - 50	EWB2-50CK6	CK6	16	63.5	62	4.5	1.32

1. Cylindrical toolholder must be ordered separately.

※ The setting value for the balance ring is listed in the operation manual.

As incorrect settings may lead to serious imbalances, be sure to read the operation manual thoroughly before use.

2. Center through coolant supply is available.

For tool systems, **A64**

For holders, **A73**

For boring head screws, **A99**

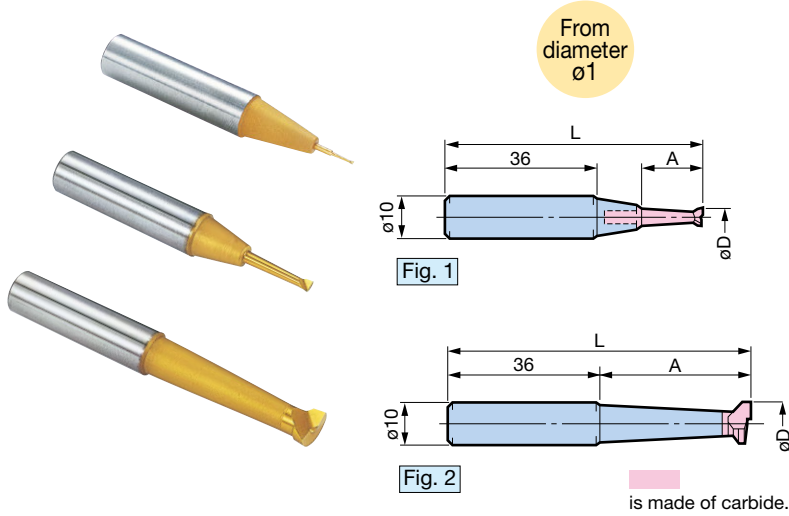


Caution

- The max. spindle speed of the EWB BORING HEAD depends on the projection length of the tool and the rigidity of the machine. Set the spindle speed low and gradually increase until the optimum conditions are reached, upon reference to the operation manual.
- Use a head stroke within 1mm in order to achieve the best possible balance performance.
- This boring head should be used only with **BIG** + **KAISER** original cylindrical tool series.

Jig Boring Bit Diameter: $\phi 1$ - $\phi 9$

- The sharp cutting edge is ideal for ultra-small diameter boring.
- New $\phi 1$ and $\phi 1.5$ diameter models available for even smaller diameter boring.

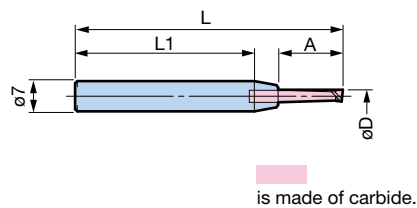


● $\phi 10$ cylindrical shank type

Model	Fig.	ϕD	A	L
RBE 1	1	1	5	61
1.5		1.5	7.5	62
2		2	9	
3		3	14	
4		4	17	
5	2	5	22	64
7		7	28	65
9		9	37	75

1. No oil holes. 2. Cutting edge is TiN coated carbide.

● $\phi 7$ cylindrical shank type



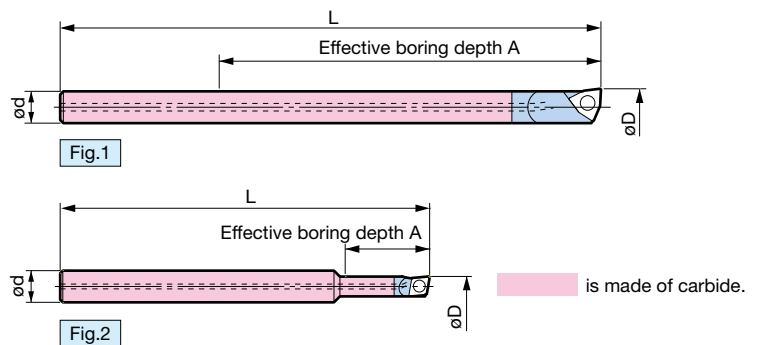
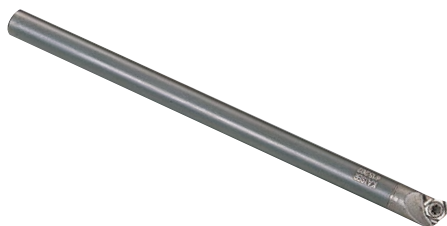
Model	øD	A	L	L1
ST7-RBE 1 - 5	1	5	61	42
-RBE 1.5- 7.5	1.5	7.5	62	
-RBE 2 - 9	2	9		
-RBE 3 -14	3	14		41
-RBE 4 -17	4	17		
-RBE 5 -22	5	22	64	

1. No oil holes. 2. Cutting edge is TiN coated carbide.

Carbide Cylindrical Insert Holder Diameter: $\phi 4$ - $\phi 9$

Stable $\phi 4$ ultra small boring is achieved with an insert type of solid carbide bar.

- Exclusive insert with a large rake angle to prevent chatter.



<Carbide Cylindrical Insert Holder>

Model	Fig.	ϕd	ϕD	A	L	Insert	Insert Clamping Screw Set
ST05W-EB6 -60	1	5	6.0 - 7.5	60	85	WC02	S2S-A
ST06W-EB4 -16	2	6	4.0 - 5.0	16	70	EC03	S1.6S-T3-S
-EB5 -20			5.0 - 6.0	20	75		S1.6S-T3
-EB7.5-65	1		7.5 - 9.0	65	95	WC02	S2S-A

1. Inserts are not included.
 2. An exclusive straight collet is required when used with a boring head. **A63**

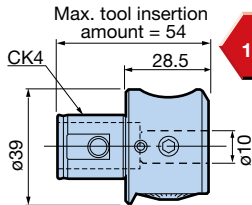


EWN2-22 (cylindrical tool series for finishing)

Compact head reduces interference.

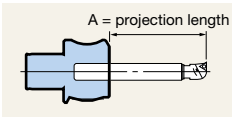
Ideal for
small machines

Center through



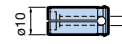
Head EWN2-22CK4
Stroke 0 - 2mm

※ EWN BORING HEAD for turning centers (ER type) is also available.
See **A59** for details.

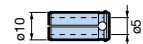


Always observe the projection length range and tool insertion limit. Use out of these ranges may result in damage to the boring head or slip of the bar shank.

STRAIGHT COLLET



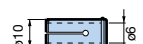
EC1004



EC1005

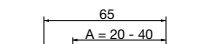


EC1006

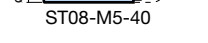


EC1008

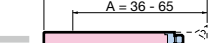
CYLINDRICAL TOOLHOLDER



ST08-M5-40



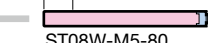
ST08W-M5-65



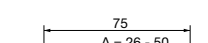
ST08W-M5-80



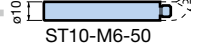
ST10-M6-50



ST10W-M6-75



ST10W-M6-95



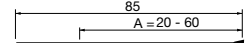
ST10-M10-58

(A62) JIG BORING BIT, 8 models

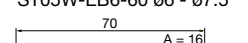


$\phi 1 - \phi 9$

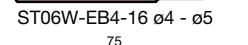
CARBIDE CYLINDRICAL INSERT HOLDER (A62)



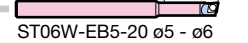
ST05W-EB6-60 $\phi 6 - \phi 7.5$



ST06W-EB4-16 $\phi 4 - \phi 5$



ST06W-EB5-20 $\phi 5 - \phi 6$



ST06W-EB7.5-65 $\phi 7.5 - \phi 9$



WC02



EC03



WC02

INSERT HOLDER TP08



EB09N
 $\phi 9 - \phi 10.5$



EB10.5N
 $\phi 10.5 - \phi 12$



EB12N
 $\phi 12 - \phi 14$



EB14N
 $\phi 14 - \phi 16$



EB16N
 $\phi 16 - \phi 18$



EB18N
 $\phi 18 - \phi 20$



EB20N
 $\phi 20 - \phi 22$

※ Carbide Cylindrical Insert Holders and Cylindrical Toolholders with "W" in the model numbers are made of carbide.
A is the projection length.



A87-A88



A95

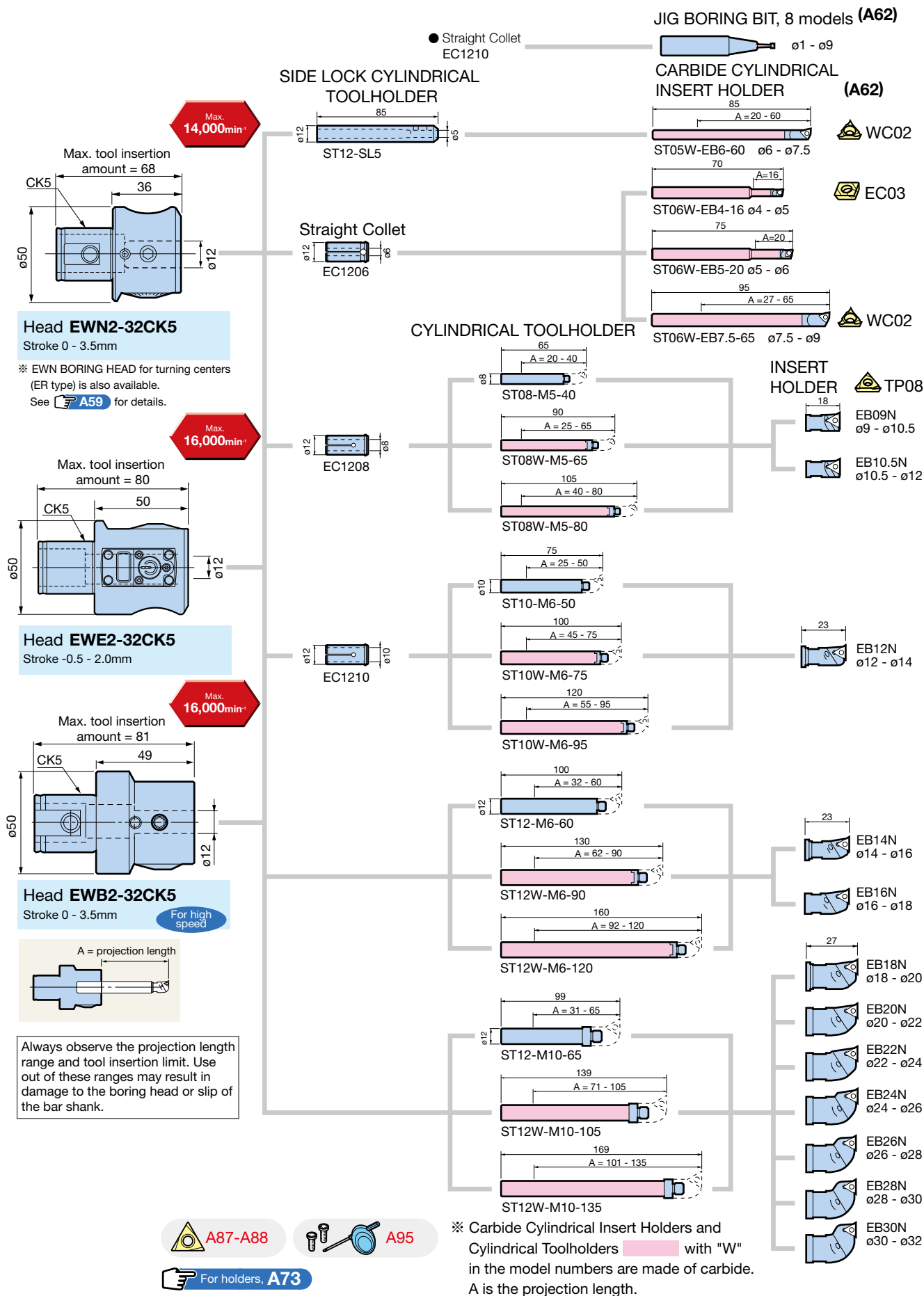
For holders, **A73**

EWN2-32/EWE2-32/EWB2-32 (cylindrical tool series for finishing)

Center through

Flexible tool layout with versatile CK5 type.

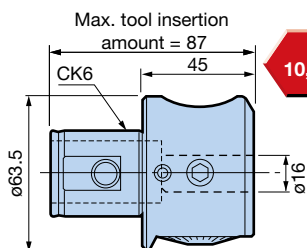
CK BORING SYSTEM



EWN2-50/EWE2-54/EWB2-50 (cylindrical tool series for finishing)

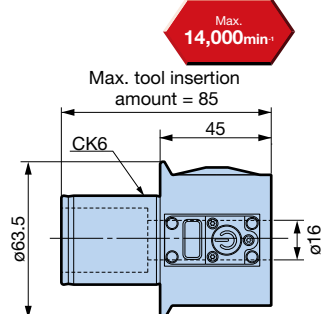
Features abundant range of tools capable of small-diameter deep boring.

Center through



Head **EWN2-50CK6**

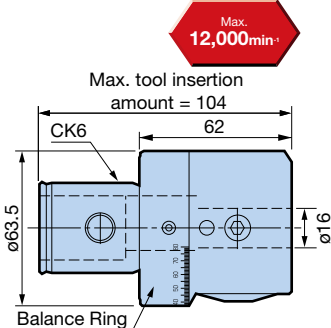
Stroke 0 - 4.5mm



Head **EWE2-54CK6**

Stroke -0.5 - 2.5mm

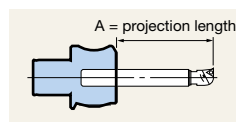
※ Center through coolant pressure should not exceed 4MPa.



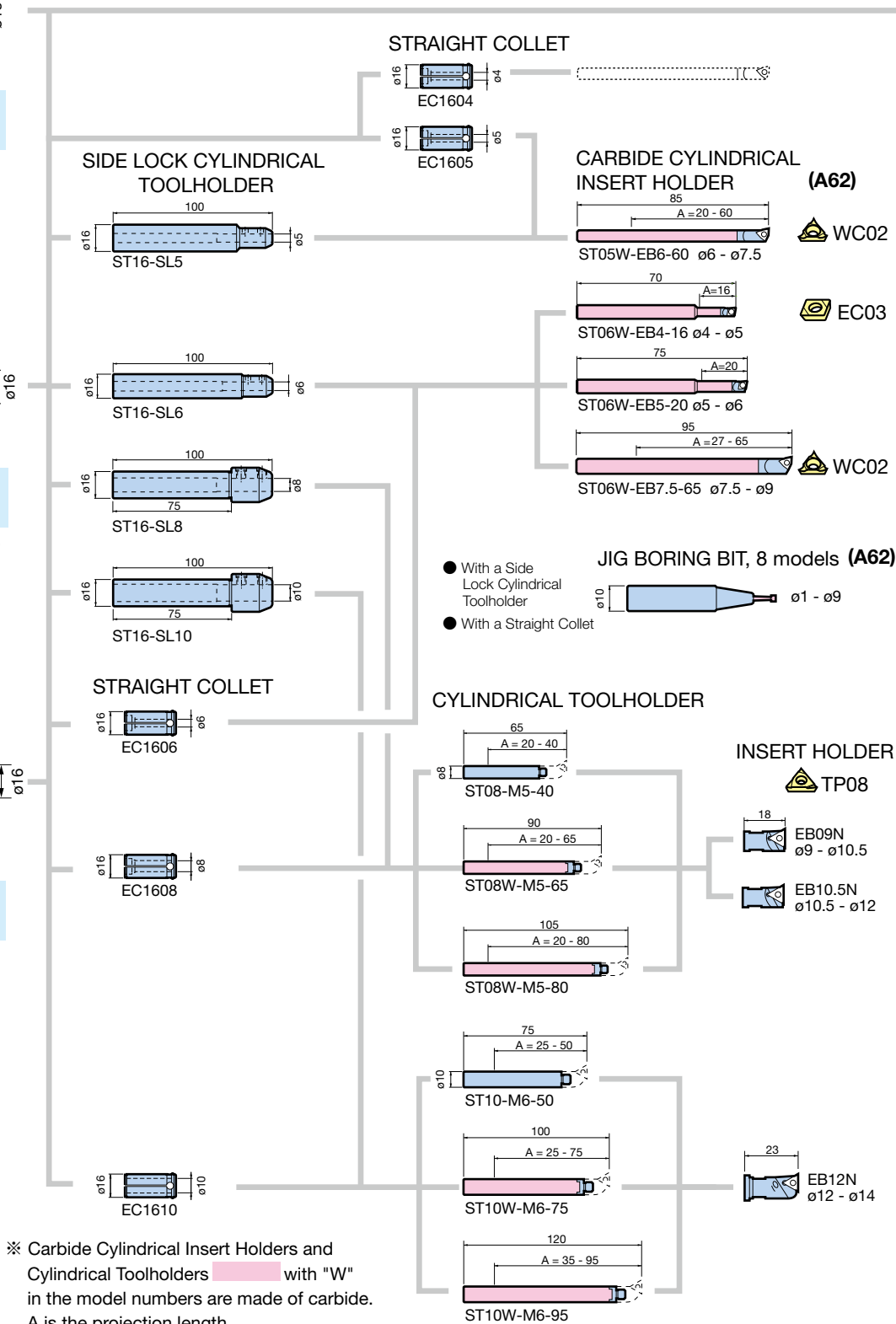
Head **EWB2-50CK6**

Stroke 0 - 4.5mm

For high speed



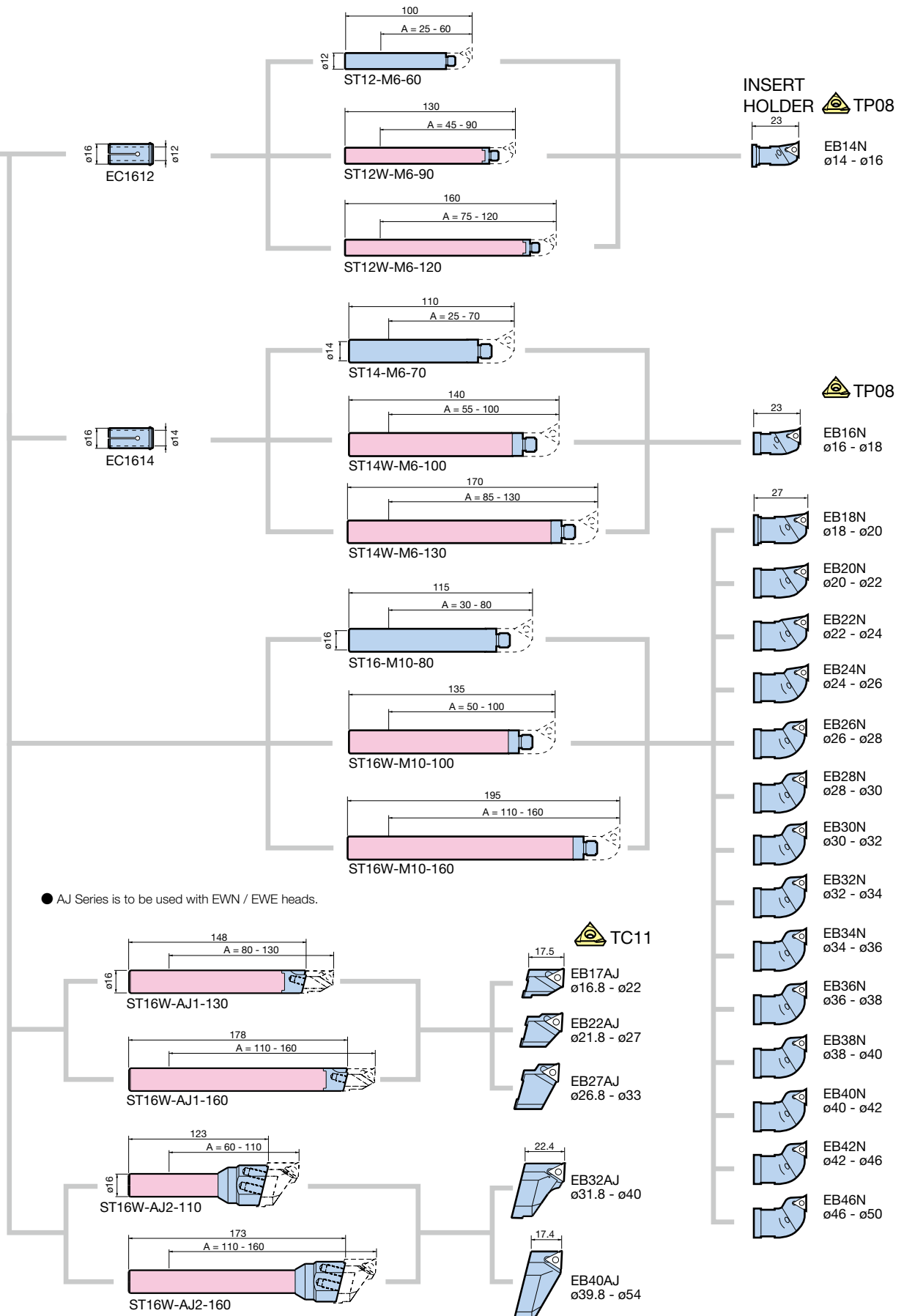
Always observe the projection length range and tool insertion limit. Use out of these ranges may result in damage to the boring head or slip of the bar shank.



※ Carbide Cylindrical Insert Holders and Cylindrical Toolholders with "W" in the model numbers are made of carbide. A is the projection length.



For holders, **A73**



※ Carbide Cylindrical Insert Holders and Cylindrical Toolholders with "W" in the model numbers are made of carbide.



A88-A89



A95

For holders, **A73**

BIG A66

EW MICRO HEAD

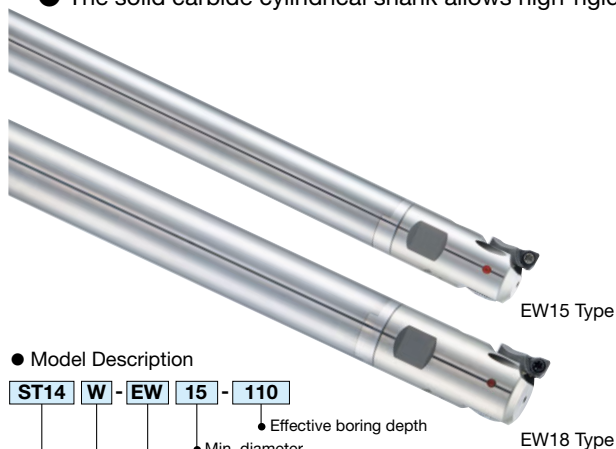
With Carbide Shank

Smaller head while maintaining popular $\phi 0.01\text{mm/div.}$ adjusting mechanism.

- Adjustment with only micro-quill eccentricity preserves high speed capability.
- The solid carbide cylindrical shank allows high-rigidity boring.

Carbide

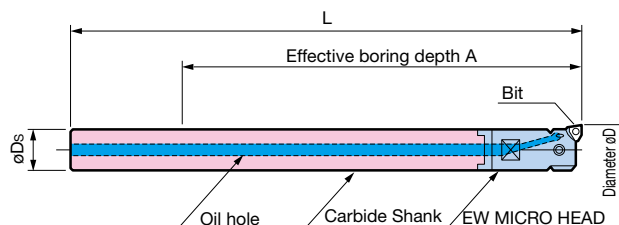
Center through



Model Description

ST14 **W** - **EW** **15** - **110**

- Effective boring depth
- Min. diameter
- FINISH HEAD
- Carbide
- Cylindrical shank diameter



is made of carbide.

Model	ϕD_s	Diameter ϕD	L	A	Bit Model	Insert	Insert Clamping Screw Set	Weight (kg)
ST14W-EW15-110	14	15 - 18	151	110	EN15	WC02	S2S-B	0.10
-140			181	140				0.29
ST16W-EW18-100	16	18 - 22	144	100				0.28
-160			204	160				0.43

- The carbide shank and micro head are integrated and cannot be sold separately.
- Inserts must be ordered separately.



A87



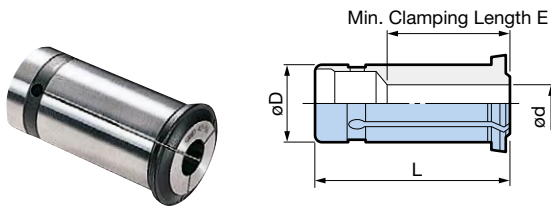
A95



Caution

The maximum boring depth differs depending on the workpiece material.

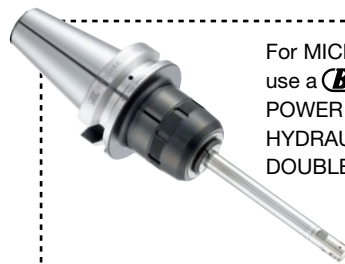
For NEW Hi- POWER MILLING CHUCKS
Straight Collet



Model	ød	øD	L	E	Body Model
C20-14	14	20	60	40	HMC20
-16	16			46	
C25-14	14	25	68.5	45	HMC25
-16	16			46	
C32-14	14	32	74	40	HMC32
-16	16			46	
-19	19			50	
-22	22			52	
-24	24			55	
C42-16	16	42	89	46	HMC42
-31	31			62	

1. Use Straight Collet with BIG NEW Hi- POWER MILLING CHUCK.

The Oil Hole Straight Collet (OCA) below is required for use with center through coolant.

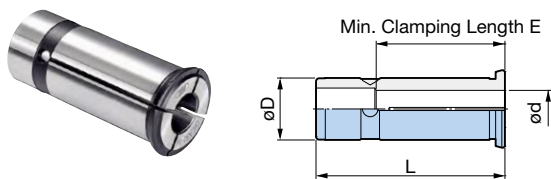


For MICRO HEAD chucking,
 use a **BIG** NEW HI-
 POWER MILLING CHUCK,
 HYDRAULIC CHUCK or MEGA
 DOUBLE POWER CHUCK.

Oil Hole
Straight Collet

Center through

● For center through coolant.



Model	ød	øD	L	E	Body Model
OCA20-14	14	20	61	42	HMC20
-16	16			52	
OCA25-14	14	25	71.5	44	HMC25
-16	16			52	
OCA32-14	14	32	79.5	48	HMC32
-16	16		78.5	52	
-19	19				
-22	22				
-24	24				
-28	28				
OCA42-16	16	42	79.5	52	HMC42
-19	19		78.5	55	
-24	24				
-31	31				

CK Carbide

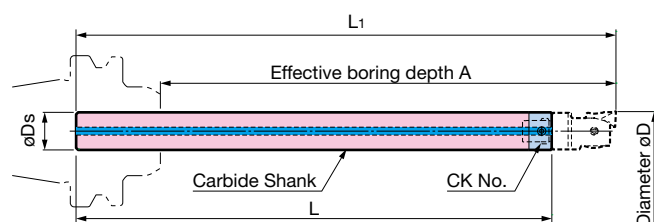
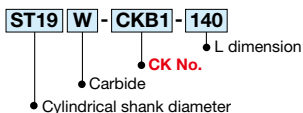
Cylindrical Shank

- The solid carbide bar realizes efficient deep hole boring which was conventionally impossible.

Carbide

Center through

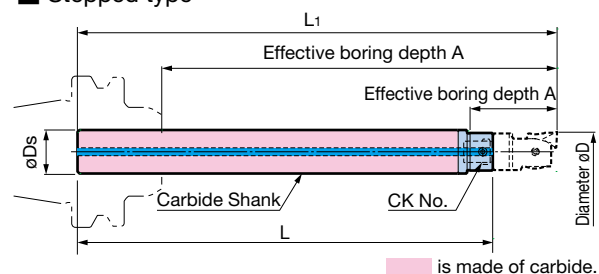
Model Description



Model	CK No.	ϕD_s	Diameter ϕD	L	L_1	A	Weight (kg)
ST19W-CKB1-140	CK1	19	20 - 36	140	172.5	130	0.5
-190				190	222.5	180	0.7
-240				240	272.5	230	0.9
ST24W-CKB2-160	CK2	24	25 - 47	160	195.5	150	0.9
-220				220	255.5	210	1.3
-290				290	325.5	280	1.7
ST31W-CKB3-200	CK3	31	32 - 60	200	240	184	1.8
-280				280	320	264	2.6
-350				350	390	334	3.3

- The A dimension in the table is the reference value when EWN BORING HEAD is attached and used with Hydraulic Chuck.
- Head and inserts are not included.

Stepped type



Model	CK No.	ϕD_s	Diameter ϕD	L	L_1	A	Weight (kg)
ST22W-CKB1-210	CK1	22	20 - 22	210	242.5	45	1.1
			22 - 36			200	
ST28W-CKB2-245	CK2	28	25 - 28	245	280.5	55	1.9
			28 - 47			235	

- The A dimension in the table is the reference value when EWN BORING HEAD is attached and used with Hydraulic Chuck.
- Head and inserts are not included.



For boring heads, refer to the Roughing and Finishing pages.

**Caution**

The maximum boring depth differs depending on the workpiece material.

For Carbide Cylindrical Shanks HYDRAULIC CHUCK

- Designed for short projection length and large insertion depth. Hydraulics increase the damping effect.



[BBT Type]



Model Description

- BBT40** - **HDC** **19** - **75**
- L dimension
 - Clamping diameter
 - HYDRAULIC CHUCK
 - BIG-PLUS BT No.

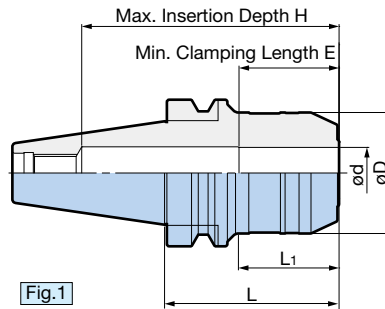


Fig.1

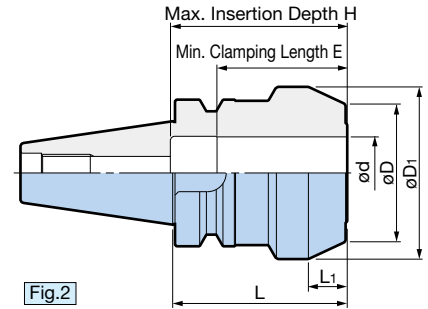


Fig.2

BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

Model	Fig.	ød	øD	ød ₁	L	L ₁	Max. Insertion Depth H	Min. Clamping Length E	Weight (kg)
BBT40-HDC19-75	1	19	49.5	-	75	43	111	43	1.4
-HDC22-75		22	52			44.5	110		1.5
-HDC24-75		24	63			47	104		1.6
-HDC28-75	2	28	56	71		16	93	45	1.8
-HDC31-75		31	59	74		16	76		1.8
BBT50-HDC19L-90	1	19	49.5	-	90	45	149	43	4.2
-HDC22L-90		22	52			45	149		4.2
-HDC24L-90		24	63			41	149		4.5
-HDC28L-90		28	69			44	148	45	4.5
-HDC31L-90		31	72			45	147		4.5

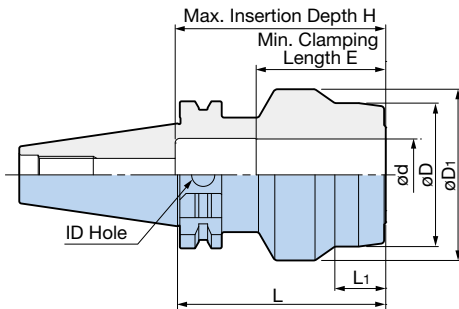
1. Adjusting Screw cannot be used.



Caution

- Do not clamp without a tool.
- Always insert the cutting tool into the holder beyond min. clamping length E.

[BDV Type]



BIG-PLUS (BDV Shank) tools can be used on both BIG-PLUS spindles and conventional **DV** spindles.

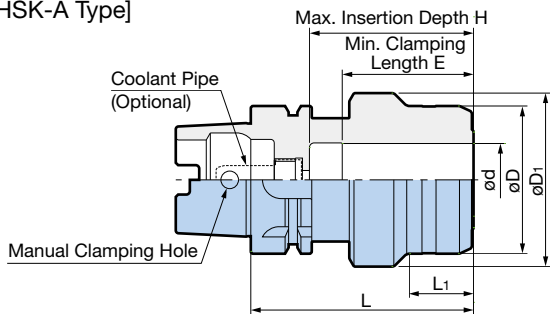
Model	ød	øD	ød ₁	L	L ₁	Max. Insertion Depth H	Min. Clamping Length E	Weight (kg)
BDV40-HDC31-90	31	62	74	90	22	91	56	1.9



Caution

- Do not clamp without a tool.
- Always insert the cutting tool into the holder beyond min. clamping length E.

[HSK-A Type]



Model	ød	øD	ød ₁	L	L ₁	Max. Insertion Depth H	Min. Clamping Length E	Weight (kg)
HSK-A63-HDC31-95	31	63	74	95	27	70	56	1.7

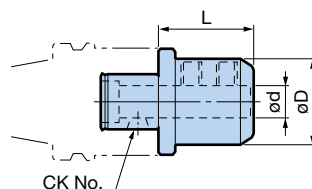


Caution

- Do not clamp without a tool.
- Always insert the cutting tool into the holder beyond min. clamping length E.

CK Side Lock Adapter

- Mount on a CK Basic Holder for use.



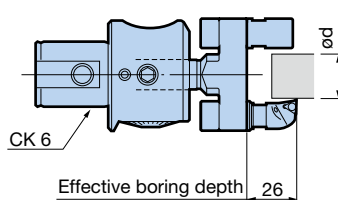
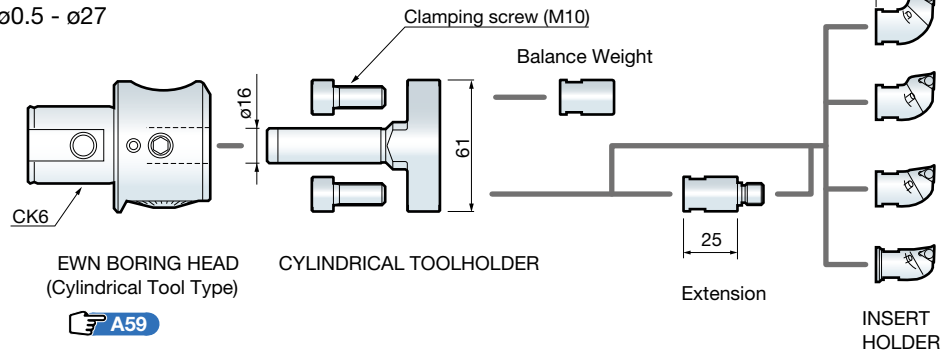
Model	ød	L	øD	CK No.
CK6-SL24-40	24	40	50	CK6

PIN TURNING SERIES

Solves all the issues in contouring operations, such as roundness, surface roughness and dimensional accuracy.



● S Type Diameter: $\phi 0.5 - \phi 27$



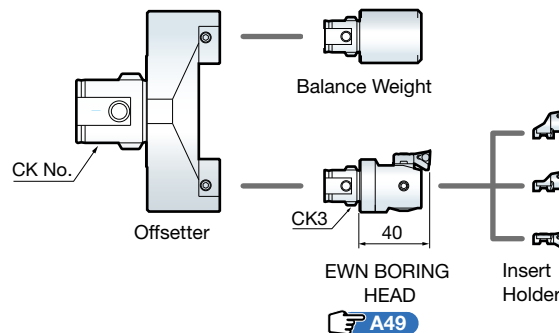
[CK6]

Diameter ϕd	EWN BORING HEAD	CYLINDRICAL TOOLHOLDER	Balance Weight	Extension	INSERT HOLDER	Insert
0.5 - 9	EWN2-50CK6 (1.1kg)	ST16-SL27-55 (0.2kg)	BW-M10 (0.02kg)	M1010-25 (0.02kg)	EB36N	TP08
9 - 17					EB28N	
17 - 23					EB22N	
23 - 27					EB18N	

1. Max. and min. diameters are the values when an insert with nose radius 0.2 is used.
2. Inserts must be ordered separately.
3. **Rotation should be reverse.**
4. The min. access bore may differ depending on the offset amount.
5. Contact us regarding chamfering.

For holders, **A73**

● M Type Diameter: $\phi 25 - \phi 152$



Center through

[CK6/CK7]

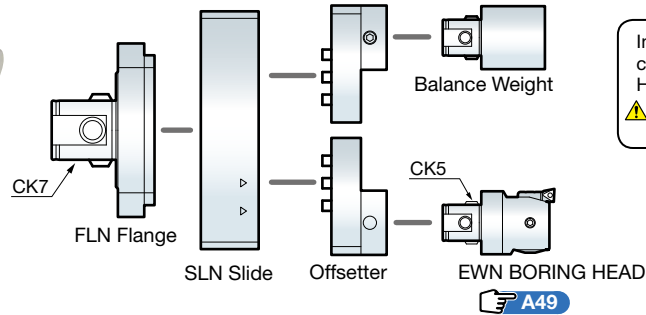
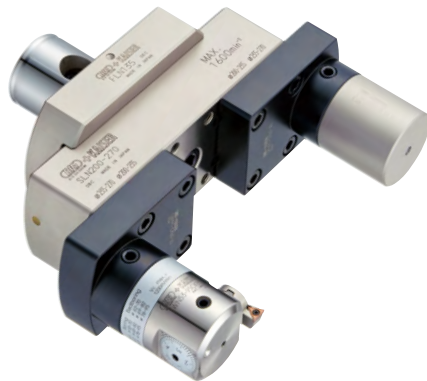
Diameter ød	Offsetter	CK No.	EWN BORING HEAD	Balance Weight	Insert Holder	Insert	L
25 - 34	CKB63-SL 2552-42 (1.4kg) Min. access bore ø117	CK6	EWN32-60CKB3 (0.21kg)	BW-CKB3-EWN (0.2kg)	ENH3-3	TP08	82
34 - 43					ENH3-2		
43 - 52					ENH3-1		
50 - 59					ENH3-3		
59 - 68	ENH3-2						
68 - 77	ENH3-1						
75 - 84	ENH3-3						
84 - 93	ENH3-2						
93 - 102	ENH3-1						
100 - 109	CKB73-SL100127-47 (3.8kg) Min. access bore ø192	CK7			ENH3-3	TP08	87
109 - 118					ENH3-2		
118 - 127					ENH3-1		
125 - 134					ENH3-3		
134 - 143					ENH3-2		
143 - 152	ENH3-1						

1. Max. and min. diameters are the values when an insert with nose radius 0.2 is used.
2. Inserts must be ordered separately.
3. Insert Holder (**ENH3-1**) is included with the EWN Boring Head.
4. **Rotation should be reverse.**
5. Contact us regarding chamfering.

For holders, **A73**

Internal boring is enabled by changing the EWN BORING HEAD mounting direction.
(Diameter: $\phi 117 - \phi 244$)
※ Use **in forward** for internal boring.
Pay attention to the rotation direction.

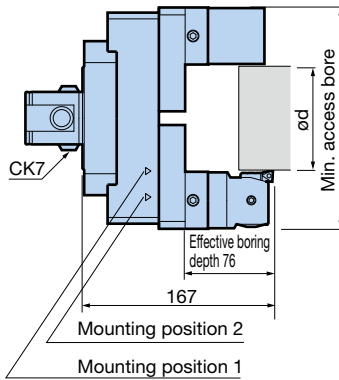
● **L Type** Diameter: $\phi 49$ - $\phi 686$



Internal boring is enabled by changing the EWN BORING HEAD mounting direction.
 ⚠ 1. Use in **forward** for internal boring. Pay attention to the rotation direction.

➡ **A49**

[CK7]



Diameter ϕ	FLN Flange ※	SLN Slide		Min. access bore		Offsetter (2 pcs./set)	EWN BORING HEAD	Balance Weight
		Model	Weight (kg)	Mounting position 1	Mounting position 2			
49 - 126	FLN135/ FLN135/90 (2.76kg)	SLN200-270	3.8	196	231	CBN91- CKB5-20 (1.2kg/1 pc)	EWN53- 95CKB5 (1.1kg) Insert TC11	BW-CKB5- EWN (0.9kg)
119 - 196		SLN270-340	5.5	266	301			
189 - 266		SLN340-410	7.2	336	371			
259 - 336		SLN410-480	8.9	406	441			
329 - 406	FLN220/ FLN220/90 (4.0kg)	SLN480-550	10.6	476	511			
399 - 476		SLN550-620	12.3	546	581			
469 - 546		SLN620-690	14.0	616	651			
539 - 616		SLN690-760	15.7	686	721			
609 - 686		SLN760-830	17.4	756	791			

1. Inserts must be ordered separately.
2. Insert Holder (ENH5-1) is included with EWN Boring Head. ENH5-2 or ENH5-3 may be required depending on the diameter. Order separately if required.
3. ※ Cutting edge and drive keys are aligned in the same direction. It becomes 90° offset when the FLN135/90 or FLN220/90 flange is used.
4. **Rotation should be reverse.**
5. Lightweight aluminum slides are also available as standard.
6. Center through coolant supply. (SLN550-620 and larger models are not supported.)



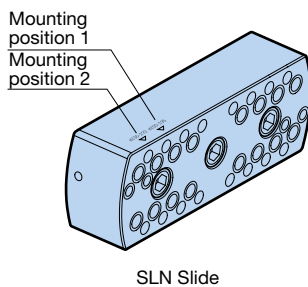
A89



A95

➡ For holders, **A73**

■ Boring range



Diameter ϕ	Slide Model	Mounting position	Insert Holder		
			ENH5-3	ENH5-2	ENH5-1
49 - 126	SLN200-270	1	49 - 66	62 - 79	74 - 91
		2	84 - 101	97 - 114	109 - 126
119 - 196	SLN270-340	1	119 - 136	132 - 149	144 - 161
		2	154 - 171	167 - 184	179 - 196
189 - 266	SLN340-410	1	189 - 206	202 - 219	214 - 231
		2	224 - 241	237 - 254	249 - 266
259 - 336	SLN410-480	1	259 - 276	272 - 289	284 - 301
		2	294 - 311	307 - 324	319 - 336
329 - 406	SLN480-550	1	329 - 346	342 - 359	354 - 371
		2	364 - 381	377 - 394	389 - 406
399 - 476	SLN550-620	1	399 - 416	412 - 429	424 - 441
		2	434 - 451	447 - 464	459 - 476
469 - 546	SLN620-690	1	469 - 486	482 - 499	494 - 511
		2	504 - 521	517 - 534	529 - 546
539 - 616	SLN690-760	1	539 - 556	552 - 569	564 - 581
		2	574 - 591	587 - 604	599 - 616
609 - 686	SLN760-830	1	609 - 626	622 - 639	634 - 651
		2	644 - 661	657 - 674	669 - 686

CK SHANK

DUAL CONTACT



BIG-PLUS®

Center through



● Model Description

BBT30 - CKB1 - 72

- CK No.
- L dimension
- BIG-PLUS BT No.

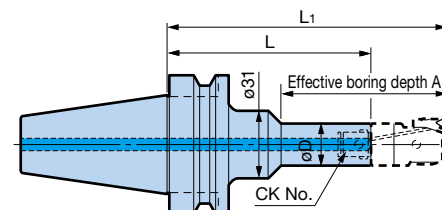


Fig. 1

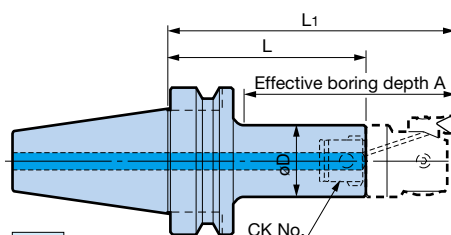


Fig. 2

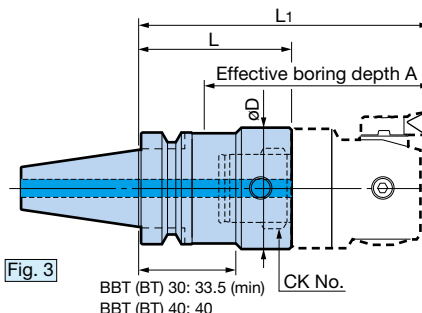


Fig. 3

BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional BT spindles.

BIG-PLUS BBT SHANK Model	BT SHANK Model	Fig.	CK No.	øD	L	L ₁	A	Weight (kg)
BBT30-CKB1- 72	BT30-CKB1-72	1	CK1	19	72	104.5	73	0.51
-CKB2- 38	-CKB2-38	2	CK2	24	37.5	73	48	0.44
- 83	-83				82.5	118	93	0.57
-CKB3- 39	-CKB3-39		CK3	31	39	79	53	0.45
- 79	-79				79	119	93	0.67
-CKB4- 38	-CKB4-38		CK4	39	38	85	58	0.46
- 73	-73				73	120	93	0.78
-CKB5- 63	-CKB5-63	3	CK5	50	63	120	93	0.80
-CKB6- 64	-CKB6-64		CK6	64	64	135	108	0.93
BBT40-CKB1- 72	BT40-CKB1-72	2	CK1	19	72	104.5	73	1.1
-CKB2- 43	-CKB2-43		CK2	24	42.5	78	48	1.0
- 83	-83				82.5	118	88	1.2
-CKB3- 44	-CKB3-44		CK3	31	44	84	53	1.1
- 94	-94				94	134	103	1.3
-124	-				124	164	133	1.5
-CKB4- 43	-CKB4-43		CK4	39	43	90	58	1.2
- 88	-88				88	135	103	1.5
-118	-				118	165	133	1.8
-148	-				148	195	163	2.1
-CKB5- 48	-CKB5-48		CK5	50	48	105	73	1.2
- 78	-78				78	135	103	1.6
-108	-				108	165	133	2.1
-138	-				138	195	163	2.5
-CKB6- 64	-CKB6-64	3	CK6	64	64	135	103	1.6
- 64/90 ※	-				94	165	133	2.3
- 94	-				124	195	163	3.1
-124	-							

The “-” in the shank model indicates it is unavailable as standard and a BBT shank should be used.

- The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.
- Cutting edges and drive keys are aligned with boring heads mounted.
- Head and inserts must be ordered separately.
- ※ marked models have cutting edge and drive key offset by 90°.

For heads, A39

BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

BIG-PLUS BBT SHANK Model	BT SHANK Model	Fig.	CK No.	øD	L	L ₁	A	Weight (kg)
BBT50-CKB1-102	BT50-CKB1-102	1	CK1	19	102	134.5	73	4.0
-CKB2- 53	-CKB2- 53	2	CK2	24	52.5	88	47	3.8
-113	-113				112.5	148	107	4.0
-CKB3- 54	-CKB3- 54		CK3	31	54	94	52	3.9
-124	-124				124	164	122	4.3
-CKB4- 58	-CKB4- 58		CK4	39	58	105	62	4.3
-118	-118				118	165	122	4.5
-178	-178				178	225	182	4.9
-208	-				208	255	212	5.1
-CKB5- 63	-CKB5- 63		CK5	50	63	120	77	4.0
-108	-108				108	165	122	4.7
-183	-183				183	240	197	5.9
-228	-228				228	285	242	6.5
-263	-				263	320	277	7.0
-CKB6- 94	-CKB6- 94		CK6	64	94	165	122	4.8
-169	-169				169	240	197	6.7
-229	-229				229	300	257	8.2
-289	-				289	360	317	9.7
-CKB7- 93	-CKB7- 93		CK7	90	93	210 ※	172 ※	5.6
-183	-183				183	300 ※	262 ※	9.9
-243	-243				243	360 ※	322 ※	12.7

The “-” in the shank model indicates it is unavailable as standard and a BBT shank should be used.

1. The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.

(※ indicates the dimension when EWN200 (large diameter) is mounted; A dimension is from the cutting edge to the flange face.)

2. Cutting edges and drive keys are aligned with boring heads mounted.

3. Head and inserts must be ordered separately.

For heads, **A39**

CK Cylindrical Shank



Model Description

ST32 - CKB1 - 77

• L dimension
• CK No.
• Cylindrical shank No.

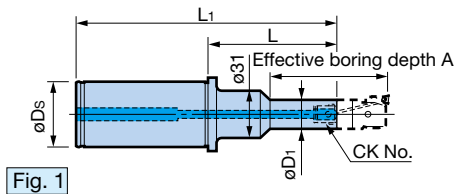


Fig. 1

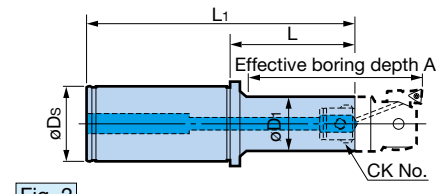


Fig. 2

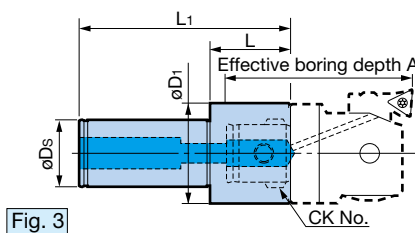


Fig. 3

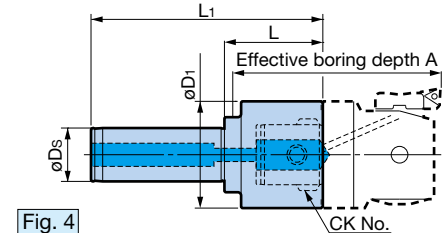


Fig. 4

Model	Fig.	CK No.	øD ₁	øD _s	L	L ₁	A	Weight (kg)
ST32-CKB1-77	1	CK1	19	32	77	157	73	0.7
-CKB2-73	2	CK2	24		72.5	152.5	100	0.7
-CKB3-69		CK3	31		69	149		0.8
-CKB4-58	3	CK4	39		58	138		0.9
-CKB5-48	4	CK5	50		48	128	125	0.9
-CKB6-59		CK6	64		59	139		1.5
ST42-CKB1-77	1	CK1	19	42	77	157	73	1.0
-CKB2-73	2	CK2	24		72.5	152.5	100	1.0
-CKB3-69		CK3	31		69	149		1.1
-CKB4-63	3	CK4	39		63	143		1.2
-CKB5-48	3	CK5	50		48	128	125	1.3
-CKB6-59		CK6	64		59	139		1.8

1. The A dimension in the table is the reference value when EWN BORING HEAD is attached.

2. Head and insert must be ordered separately.

For heads, **A39**



For chucking

When using a cylindrical shank tool, we recommend

BIG
BIG DAISHOWA

**NEW Hi- POWER
MILLING CHUCK**
for its high accuracy and rigidity.

For details, **A29**

CK Long Shank (rigid type)

- Long shank type for deeper boring.
A highly rigid type with larger shank diameter to avoid deflection.



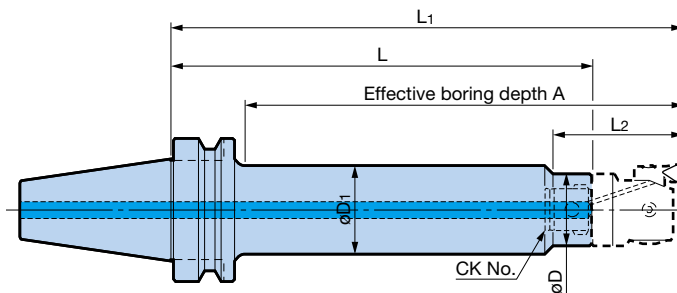
Center through



● Model Description

BBT50 - **CKB4** - **48** - **193**

- BIG-PLUS BT No.
- CK No.
- ϕD_1 dimension
- L dimension



BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

BIG-PLUS BBT SHANK Model	CK No.	Diameter	ϕD	ϕD_1	L	L ₁	L ₂	A	Weight (kg)
BBT50-CKB4-48-193	CK4	50 - 74	39	48	193	240	65	197	5.5
-238					238	285		242	6.1
-CKB5-62-243	CK5	65 - 95	50	62	243	300	80	257	8.1
-303					303	360		317	9.5
-CKB6-72-259	CK6	75 - 203	64	72	259	330	100	287	10.3
-314				72	314	385		342	12.0
-CKB6-80-289		85 - 203	64	80	289	360		317	12.9
-349				80	349	420		377	15.2

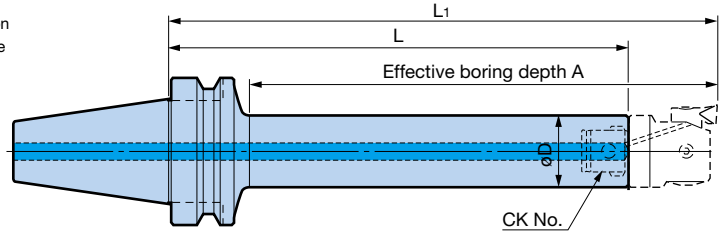
- The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.
- Note that due to interference with ϕD_1 , the diameter range differs from the EWN range.
- Cutting edges and drive keys are aligned with boring heads mounted.
- Head and inserts must be ordered separately.

For heads, **A39**

Built-in Damper SMART DAMPER PAT.

- Built-in damper eliminates chatter in deep hole boring.

[BBT Shank Type]



BIG-PLUS (BBT Shank) tools can be used on both BIG-PLUS spindles and conventional **BT** spindles.

BIG-PLUS BBT SHANK Model	CK No.	øD	L	L ₁	A	Weight (kg)
BBT50-CKB4DP-252	CK4	39	252	299	246	5.7
-CKB5DP-314	CK5	50	314	371	318	7.8
-CKB6DP-380	CK6	64	380	451	408	12.3

1. The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.
2. Cutting edges and drive keys are aligned with boring heads mounted.
3. Head and inserts must be ordered separately.
4. Extension should not be used due to possible chatter.

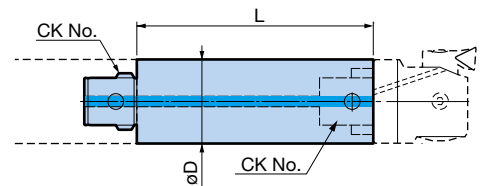
For heads, **A49**



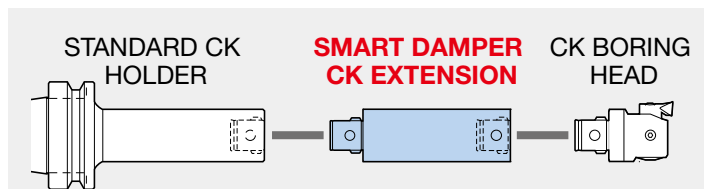
[Extension Type]



- Model Description
CKB44 DP - 120
 Extension length L
 Built-in damper type
 Connection of **CK4** and **CK4**



Standard CK holders can be used.



Model	CK No.	øD	L	Weight (kg)
CKB44DP-120	CK4	39	120	1.3
CKB55DP-150	CK5	50	150	2.6
CKB66DP-180	CK6	64	180	5.3

1. Center through coolant supply is available.
2. Should not be used with a conventional extension due to possible chatter.

For heads, **A49**



SMART DAMPER
 integrated with boring head is also available.

EWN BORING HEAD **A50**

SW BORING HEAD PAT. **A41**

Extension

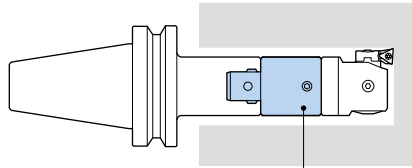
- Extends projection length by insertion between the head and shank.

● Model Description

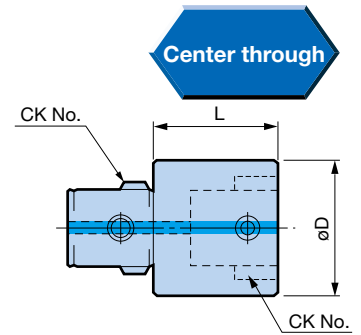
CKB11 - 20

● Extension length

● Connection of CK1 and CK1



Extension



Model	CK No.	øD	L	Weight (kg)
CKB11- 20	CK1	19	20	0.05
- 30			30	0.07
CKB22- 30	CK2	24	30	0.10
- 45			45	0.15
CKB33- 30	CK3	31	30	0.17
- 45			45	0.25
CKB44- 45	CK4	39	45	0.40
- 60			60	0.53
CKB55- 60	CK5	50	60	0.87
- 90			90	1.29
CKB66- 60	CK6	64	60	1.38
-100			100	2.31
CKB77-105	CK7	90	105	5.26

1. Center through coolant supply is available.

2. Note that using an extension to increase the length may cause chatter, depending on the L/D ratio.

Reduction

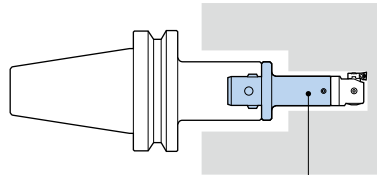
- Reduces CK connection sizes to use smaller boring heads.

● Model Description

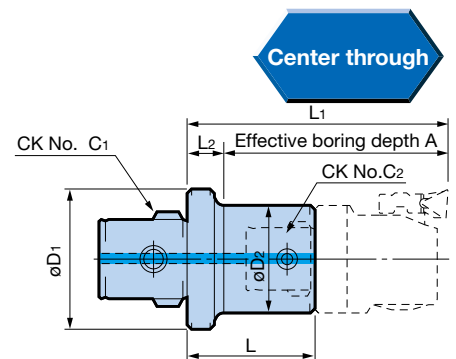
CKB21 - 36

● L dimension

● Reduced from CK2 to CK1



Reduction



Model	CK No. C ₁	CK No. C ₂	øD ₁	øD ₂	L	L ₁	L ₂	A	Weight (kg)
CKB21- 36	CK2	CK1	24	19	36	68.5	13.5	55	0.10
CKB31- 41	CK3		31		40.5	73	13	60	0.14
CKB32- 35		CK2			24	34.5	70		10
CKB41- 58	CK4	CK1	39	19	57.5	90	15	75	0.25
CKB42- 52		CK2		24	51.5	87	12		0.28
CKB43- 47		CK3		31	47	87			0.32
CKB51- 58	CK5	CK1	50	19	57.5	90	20	70	0.38
CKB52- 52		CK2		24	51.5	87	17		0.40
- 82					81.5	117		100	0.51
CKB53- 47		CK3		31	47	87		70	0.54
- 77					77	117		100	0.64
CKB54- 40		CK4		39	40	87		70	0.47
- 70					70	117	100	0.82	
CKB61- 67	CK6	CK1	64	19	66.5	99	34	65	0.84
CKB62- 61		CK2		24	60.5	96	16	80	0.69
- 96					95.5	131		115	0.98
CKB63- 56		CK3		31	56	96		80	0.75
- 91					91	131		115	1.12
CKB64- 49		CK4		39	49	96		80	0.80
- 84					84	131		115	1.28
CKB65- 39		CK5		50	39	96		80	0.92
- 74					74	131		115	1.33
CKB76-106	CK7	CK6	90	64	106	177	17	160	3.10

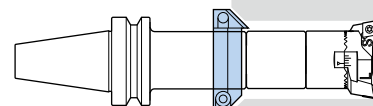
1. The L₁ and A dimensions in the table are the reference values when the EWN BORING HEAD is attached.

2. Center through coolant supply is available.

ACCESSORIES

CK Chamfering Tool

- Mount to the CK Shank body for easy composite chamfering and boring.



Model Description

- **CR** 1 - 35
- Max. chamfering diameter
- **CK No.**
- Chamfering ring

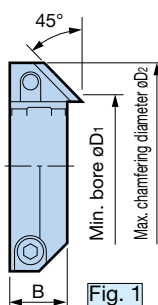


Fig. 1

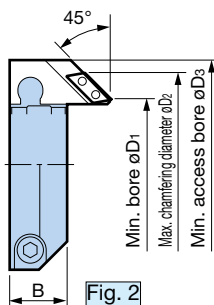


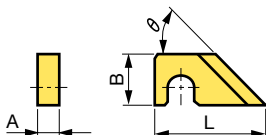
Fig. 2

Model	CK No.	Blade Model	Fig.	øD ₁	øD ₂	øD ₃	B	Weight (kg)
CR1- 35	CK1	CB1-45	1	20	35	-	13	0.06
CR2- 42	CK2			25	42		15	0.08
CR3- 49	CK3			32	49			0.10
CR4- 57	CK4			41	57			0.12
CR5- 90	CK5	CB2-45	1	53	90	-	25	0.55
		CB2-45CW12A	2	55	75	88		
		CB2-45CW12B		70	90	97		
CR6-104	CK6	CB2-45	1	68	104	-		0.67
		CB2-45CW12A	2	69	89	100		
		CB2-45CW12B		84	104	111		
		CB2-45	1	98	138	-		1.80
-138	CK6	CB2-45CW12A	2	103	123	135		
		CB2-45CW12B		118	138	145		
-160	CK6	CB2-45	1	120	160	-	25	2.50
		CB2-45CW12A	2	125	145	157		
		CB2-45CW12B		140	160	167		

1. A 45° blade (carbide integrated type) is included with the CK Chamfering Tool.
2. Specify the blade model number when spare blades are required.

Blade

[Carbide Integrated Type]



Model	L	A	B	θ	Tool
CB1-45	23.5	4	9	45°	CR1 - 4
CB2-45	43	8	20		CR5 - 6
CB1-30	27.5	4	9	30°	CR1 - 4
CB2-30	52	8	20		CR5 - 6

Tip material is M-class carbide.

[Insert Type] (optional accessory)

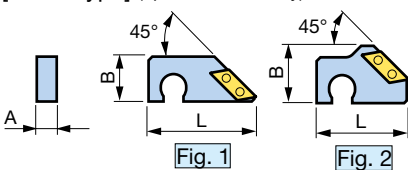


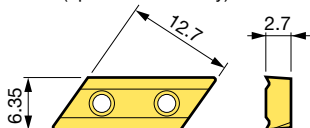
Fig. 1

Fig. 2

Model	Fig.	L	A	B	Insert Model	Tool
CB2-45CW12A	1	43	8	18	CW1206A	CR5 - 6
CB2-45CW12B	2	36		22.5		

1. A wrench and screws are included. Inserts must be ordered separately.

· Insert (optional accessory)



Model		
Non-Coating	ZX Coating	DLC Coating
CW1206A	CW1206A(ZX)	CW1206A(DLC)

1. Insert is available from 1 pc.

※ For details about 10-piece insert sets and coating, see A79.

Center through

C-Cutter

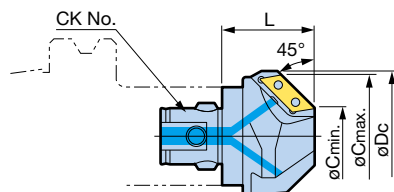
- Covers a wide range of chamfering diameters and reduces the number of tools and ATC required.



Model Description

CKB2 - **C** **05** **25** **C**

- Center through
- Max. chamfering diameter
- Min. bore
- Chamfering
- CK No.



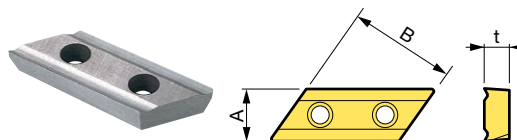
Model	CK No.	Min. bore øCmin.	Max. chamfer diameter øCmax.	Outer Diameter øDc	L	Number of inserts	Insert	Clamping Screw Set	Weight (kg)
CKB2-C0525C	CK2	5	25	28.5	25	1	CW1206A	S2S-B	0.08
CKB4-C1040C	CK4	10	40	45	35	2	CW1909A	S3S	0.27
CKB5-C3060C	CK5	30	60	65	40	3			0.70
CKB6-C50100C	CK6	50	100	106	65			CW3115A	S5S

1. Inserts must be ordered separately.
2. Insert wrench and screws are included.
3. The screw set (optional) contains 10 insert clamp screws and 1 wrench.

For holders, **A73**

For C-Cutter

Insert (optional accessory)



1 pcs

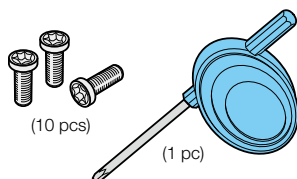
Model			A	B	t
Non-Coating	ZX Coating	DLC Coating			
CW1206A	CW1206A(ZX)	CW1206A(DLC)	6.35	12.7	2.7
CW1909A	CW1909A(ZX)	CW1909A(DLC)	9.525	19.05	4.5
CW3115A	CW3115A(ZX)	CW3115A(DLC)	15.875	31.75	7.0

10 pcs

Model		A	B	t
Non-Coating	ZX Coating			
CW1206A-10P	CW1206A(ZX)-10P	6.35	12.7	2.7
CW1909A-10P	CW1909A(ZX)-10P	9.525	19.05	4.5
CW3115A-10P	CW3115A(ZX)-10P	15.875	31.75	7.0

Non-Coating	Adopts P30-equivalent carbide material with emphasis on toughness for versatile use with materials from steel to aluminum.
ZX Coating	TiN and AlN multilayer coating increases speeds and extends insert life in chamfering of steel or cast iron.
DLC Coating	The exclusive substrate is treated with a thin DLC coating to prevent welding during aluminum machining. It retains sharpness and achieves a clean surface finish.

<Insert Clamping Screw Set>



Insert	Set Model	Wrench
CW1206A	S2S-B	FLR-13S
CW1909A	S3S	FLR-20S
CW3115A	S5S	FLR-28S

1. The set contains 10 screws and 1 wrench.
- ※ Wrenches are also available separately.

ACCESSORIES

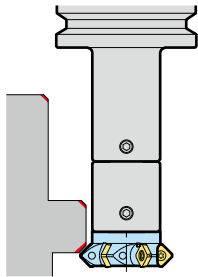
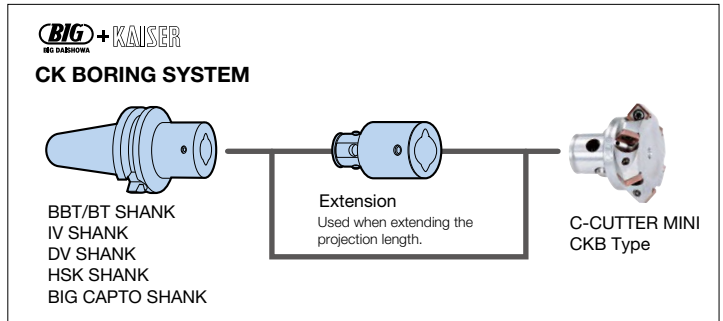
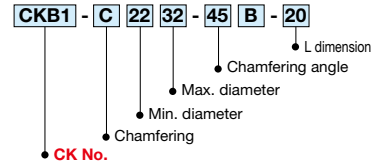
Ultra High Feed Chamfer Mill

C-CUTTER MINI (Front and back chamfering)

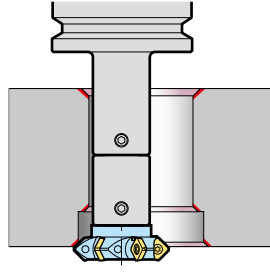
- Modular system allows front and back chamfering of deep holes.



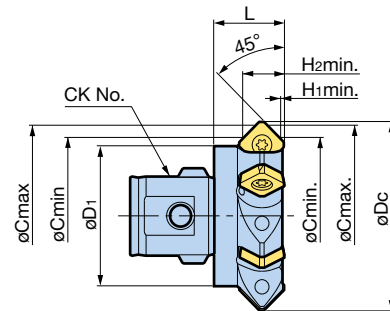
Model Description



Front and back chamfering of grooves and steps located at a distance.



Front and back chamfering of deep holes



Front and back chamfering

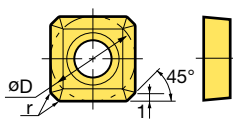
Model	CK No.	Face Mill Cutter	øDc	øD ₁	L	Chamfering diameter		H1min.	H2min.	Insert Model	Number of inserts	Weight (kg)
						øCmin.	øCmax.					
CKB1-C2232-45B-20	CK1	○	32.7	19	20	22	32	0.3	12.4	CM10...	4	0.05
CKB3-C3242-45B-20	CK3		42.7	31		32	42					0.14
-C5262-45B-20			62.7	31		52	62				6	0.24
CKB4-C4252-45B-20	CK4		52.7	39		42	52					0.24
CKB5-C5262-45B-20	CK5		62.7	51		52	62					0.40

- A wrench and screws are included. Inserts must be ordered separately.
- In case of chatter in plunge cutting, it is recommended to reduce the number of insert to 1 or 2 pcs.

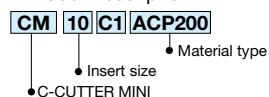
For holders, **A73**

For C-CUTTER MINI

Insert (optional accessory)



Model Description



Suffix **SE** model designates a sharp cutting edge insert.

Model	Inscribed circle øD	r	Insert grade			Insert Clamping Screw Set Model
			ACP200	ACM250F NEW	DS20	
CM10C1	10	0.2	○	○	○	S4S-T15
CM10C1SE			○	-	-	

- Inserts are in packets of 10 pcs. Please specify the insert model number and grade when ordering.
Example: **CM10C1 ACP200.....10 Pcs**
- The insert clamping screw set contains 10 screws and 1 wrench.
- Insert Clamp Screws and tightening wrench are consumables. Order periodically for replacement or spares.

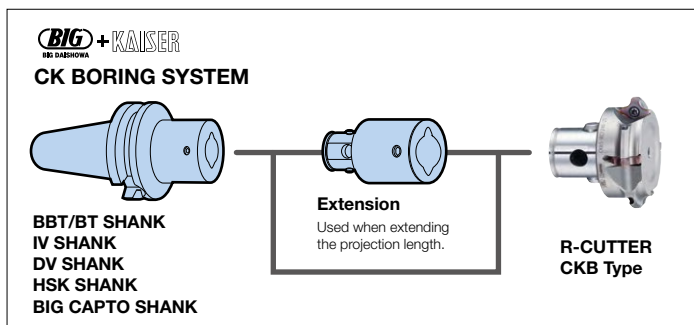
Insert Grade Description

ACP200	ACM250F	DS20
for Steel/Cast Iron	for Stainless Steel	for Aluminum/Non-Ferrous Metal
PVD-coated carbide with superior wear resistance due to its nanometer-level thickness ultra-multilayered TiAlN and AlCrN film.	PVD-coated carbide with excellent smoothness and resistance to welding and chipping, due to the ultra-multilayered thin film structure made of AlTiN and TiAlCrN.	DLC-coated carbide exclusive for aluminum and non-ferrous metals, ultra-smooth with a low wear coefficient and superior welding resistance.

R-CUTTER

R-CUTTER PAT. (Front & Back Chamfering)

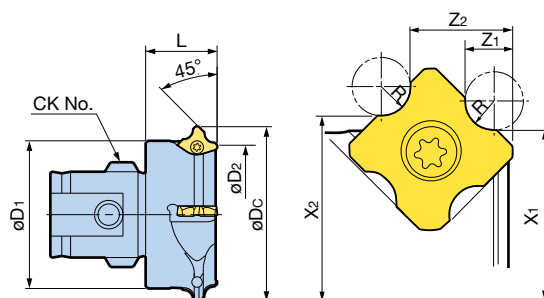
- Automated rounded chamfering.



● Model Description

CKB3 - RC 06 4 B - 15

- Projection length (L)
- Double chamfering
- Number of flutes
- Compatible insert size
- R-CUTTER
- CK No.



Model	CK No.	øDc	øD1	øD2	L	Number of flutes	R	X ₁	Z ₁	X ₂	Z ₂	Insert Model	Weight (kg)
CKB3-RC064B-15	CK3	37	31	29.2	15	4	0.5	15.86	1.93	16.56	5.78	RC06...	0.12
							1	15.61	2.18	16.31	5.53		
							1.5	15.36	2.43	16.06	5.28		
							2	15.11	2.68	15.81	5.03		
CKB5-RC124B-25	CK5	62	50	46.3	25	4	1	25.81	3.79	27.22	11.63	RC12...	0.50
							2	25.31	4.29	26.72	11.13		
							3	24.80	4.79	26.21	10.63		
							4	24.30	5.29	25.71	10.13		

1. Inserts must be ordered separately.
2. Insert clamping screws and wrench are included.
3. Values in the table are reference only. Measure accurate values with a presetter.

For holders, **A73**

For R-CUTTER

Insert (Optional Accessory)



Uses 4 corners

● Model Description

RC 06 050 (ACP300)

- R Size
- Insert size
- Grade
- R-CUTTER

Type	Insert Model	R Size	Insert Clamping Screw Set Model
RC06	RC06050 (ACP300)	R0.5	S2TS-T6
	RC06100 (ACP300)	R1.0	
	RC06150 (ACP300)	R1.5	
	RC06200 (ACP300)	R2.0	
RC12	RC12100 (ACP300)	R1.0	S4S-T15
	RC12200 (ACP300)	R2.0	
	RC12300 (ACP300)	R3.0	
	RC12400 (ACP300)	R4.0	

1. Inserts are available in packets of 10 pcs.
2. Insert is coated carbide.
3. The insert clamping screw set contains 10 screws and 1 wrench.
4. Insert clamp screws and tightening wrench are consumables. Order periodically for replacement or spares.

Insert set in a packet of 2 pcs. is also available.
Please add **-2P** before each model number
when ordering.

Example: **RC06050-2P(ACP300)**

CK NEW Hi- POWER MILLING CHUCK



Model	CK No.	Clamping diameter	L	Nut outer diameter	Wrench	Weight (kg)
CKB5-HMC20S	CK5	ø20	57	50	FK45-50L	0.8
CKB6-HMC20	CK6	ø20	56	60	FK58-62	1.3
CKB7-HMC32	CK7	ø32	102	80	FK80-90	4.1

1. Wrench included.
2. The usable straight collet model is C□□ only.

CK Boring Adapter



· BSA Type



· BSB Type

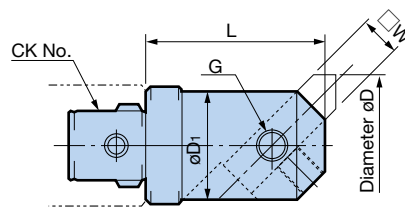


Fig. 1 BSA Type

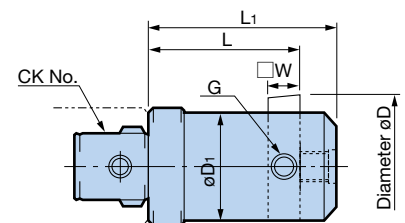


Fig. 2 BSB Type

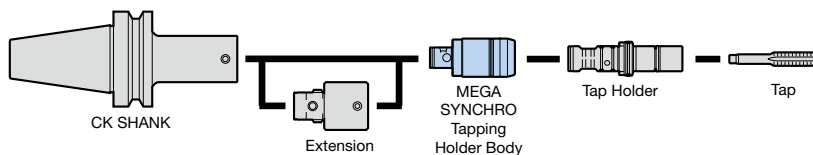
øD	Fig.	Model	CK No.	L	L ₁	øD ₁	G	□ W
25 - 38	1	CKB1-BSA 25- 33	CK1	32	-	19	M 6	8
30 - 42		CKB2-BSA 30- 37.5	CK2	35.9		24		
38 - 52		CKB3-BSA 38- 56	CK3	53.4		30	M 8	10
50 - 65		CKB4-BSA 50- 62	CK4	59		39		
62 - 90		CKB5-BSA 62- 72	CK5	70		50	M10	16
90 - 125		CKB6-BSA 90-101	CK6	97		75		
105 - 160		CKB7-BSA105-132	CK7	129		90	M12	25
20 - 40	2	CKB1-BSB 20- 33	CK1	33	43	17	M 6	6
25 - 52		CKB2-BSB 25- 37.5	CK2	37.5	52.5	20		
38 - 70		CKB3-BSB 38- 41	CK3	41	56	30	M 8	10
50 - 90		CKB4-BSB 50- 47	CK4	47	62	39		
62 - 115		CKB5-BSB 62- 57	CK5	57	72	50	M10	16
90 - 150		CKB6-BSB 90- 71	CK6	71	86	75		
105 - 190		CKB7-BSB105-117	CK7	117	132	90	M12	25

1. Boring bit is not included. Please use commercial products.

MEGA SYNCHRO TAPPING HOLDER PAT. Tapping range: M2 - M20

Center through

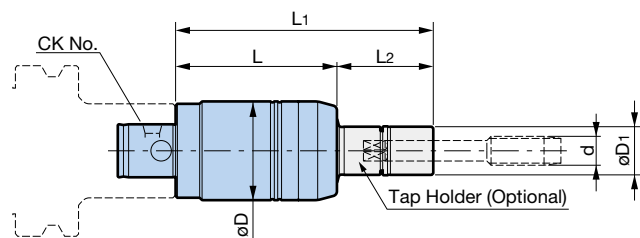
- Improves thread quality and tap life by reducing thrust loads caused by synchronization errors up to 90%.



Model Description (Body)

CKB4 - **MGT6** - **62**

- CK No.
- MEGA SYNCHRO No.
- L dimension



Model	CK No.	Tap Holder Model	Tapping range d	øD	øD ₁	L	L ₁	L ₂	Body weight (kg)
CKB4-MGT 6-62	CK4	MGT 6-d- 30	M2 - M6 No.3 - U1/4	36	16	62	92	30	0.5
		- 70					132	70	
		-100					162	100	
		-150					212	150	
		-200					262	200	
CKB4-MGT12-67	CK4	MGT12-d- 30	M6 - M12 U1/4 - U7/16 P1/8	41	20	67	97	30	0.6
		- 70					137	70	
		-100					167	100	
		-150					217	150	
		-200					267	200	
CKB5-MGT20-87	CK5	MGT20-d- 35	M12 - M20 U1/2 - U3/4 P1/4 - P3/8	54	30	87	122	35	1.2
		- 85					172	85	
		-115					202	115	
		-150					237	150	

1. MGT Set Screw is included.

2. Tap holder must be ordered separately.

Cannot be used with machining center without synchronized tapping function.

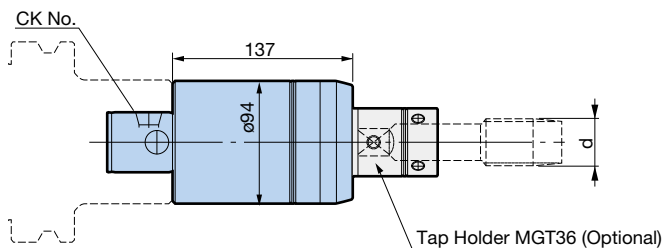
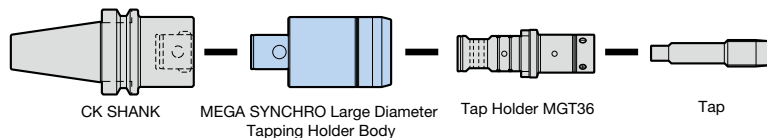
For tap holders, **A126**

For holders, **A73**

[Large Diameter Tap MGT36] Tapping range: M20 - M36

Center through

- Functions smoothly under high cutting torque of large diameter tapping.



Model	CK No.	Tapping range d	Body weight (kg)
CKB7-MGT36-137	CK7	M20 - M36 P1/2 - P1	6.8

1. MGT Set Screw is included.

2. Tap holder is not included. Please order separately.

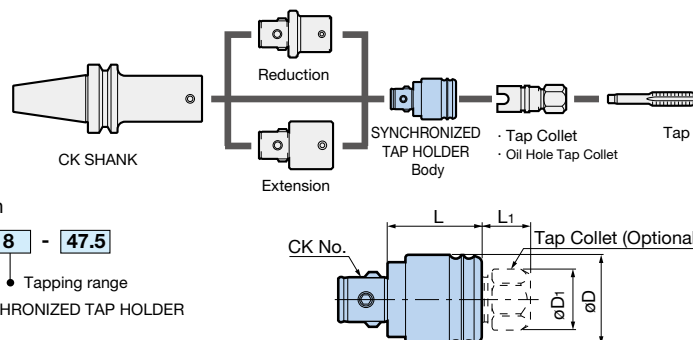
Cannot be used with machining center without synchronized tapping function.

For large-diameter tap holders, **A131**

For holders, **A73**

SYNCHRONIZED TAP HOLDER (STC Type) M2 - M30

- Tap Collet type enables quick tap change.
Flexible tool layout in combination with the CK Shanks.



● Model Description

CKB2 - **STC** **8** - **47.5**

- **CK No.**
- Tapping range
- SYNCHRONIZED TAP HOLDER

Model	Tapping range	CK No.	øD	øD ₁	L	L ₁	Body weight (kg)	Tap Collet
CKB2-STC 8-47.5	M 2 - M 4	CK2	25.5	15.8	30.5	17	0.10	TC 8-d
	M 5 - M 8			19				
CKB3-STC12-66	M 3 - M12	CK3	32	22	36	30	0.18	TC12-d
CKB4-STC20-72	M 7 - M12	CK4	44	22	47	25	0.42	TC20-d
	M14 - M20			31				
CKB5-STC30-92	M20 - M30	CK5	55	41	54	38	0.72	TC30-d

1. Tap collet must be ordered separately.
2. Cannot be used with machining center without synchronized tapping function.
3. The L₁ dimension is 5mm longer with oil hole tap collets.

For holders, **A73**

Tap Collet TC Type (optional product)

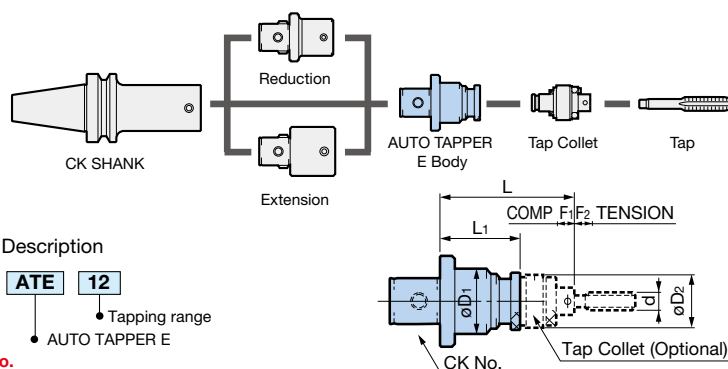


For Tap Collets, **A139**

For Oil Hole Tap Collets, **A140**

CK AUTO TAPPER E TYPE M3 - M24

- Combination with a long type CK Shank is convenient when long taper is required.



● Model Description

CK6 - **ATE** **12**

- **CK No.**
- Tapping range
- AUTO TAPPER E

Model	Tapping range	CK No.	øD ₁	øD ₂	L	L ₁	F ₁	F ₂	Weight (kg)	Tap Collet
CK6-ATE12	M3 - M12	CK6	47	38.5	90	50	5	10	0.9	TCE12-d
CK6-ATE24	M9 - M24		64	58.5	135	80	7	15	1.8	TCE24-d

1. Torque limiter is built into the tap collet.
2. The extension can be used to allow tapping inside deep holes.
3. Tap collet must be ordered separately.

For holders, **A73**

Tap Collet TCE Type (optional accessory)



For Tap Collets, **A142**

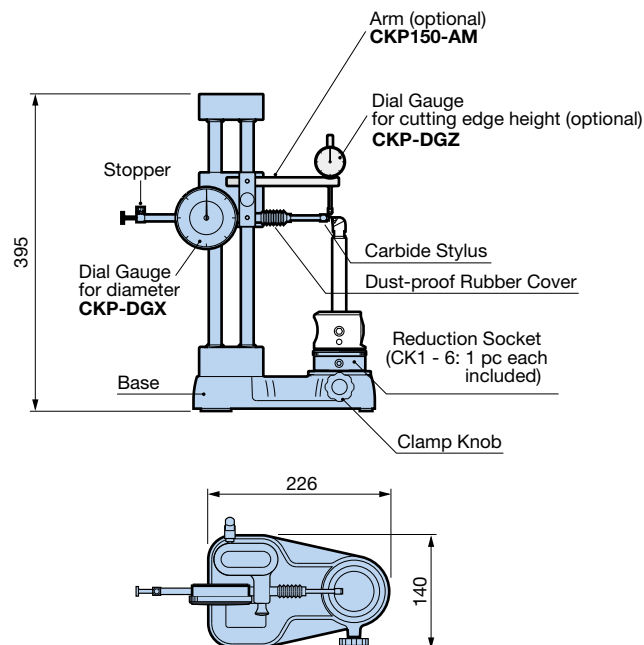
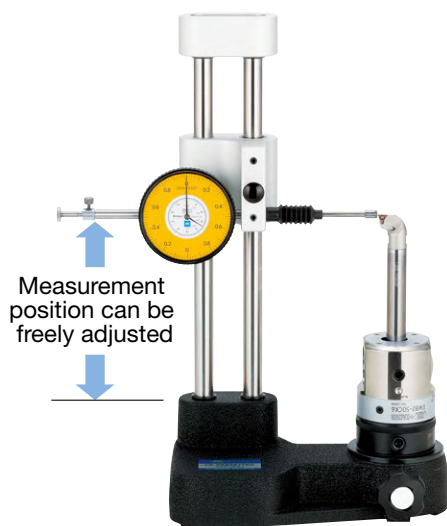
CK Presetter

Fully utilizes the merits of a modular system.

- Low-cost, exclusive presetter allows easy presetting of the boring head alone.
- Compact design enables operations in the limited space beside the machine.

[CKP150ZA] (for CK1-6)

One unit allows easy presetting of various lengths of insert holders as well as roughing and finishing heads.

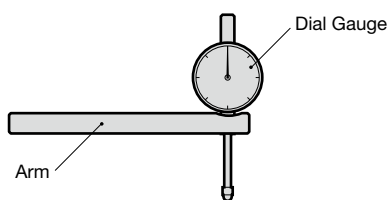


The optional "Dial Gauge for Edge Height" enables balance and step cutting setup for RW Boring Head.

Model	CKP150ZA
Measuring capacity	Radial direction: 0 - ϕ 150mm (CK1 - CK6)
Min. scale	Radial direction: 0.02mm/ ϕ
CK No.	CK1 - CK6 (Reduction socket compatible)
Max. tool height	Max. 227mm (When using CK6 reduction socket)
MASTER GAUGE	ϕ 50 $\pm$ 0.005
Reading method	Diameter direct reading method
Weight	6.5kg

1. Use within 0.02mm/ ϕ measuring accuracy range.
2. Note that the maximum measuring diameter is 150mm.
3. Tool lengths cannot be measured.
4. For finishing with EWN Boring Head, first set to a smaller diameter than the target. After trial cutting, adjust the diameter by reading the scale on the head against the measured value on the machine.

Edge Height Measuring Dial Gauge Set (optional accessory)



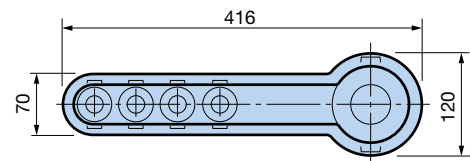
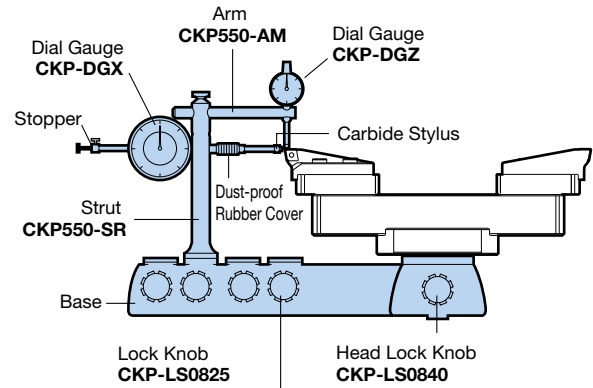
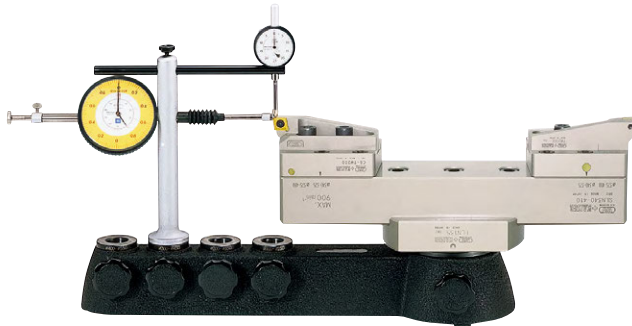
Min. scale: 0.01mm

Set Model	Set contents	
	Dial Gauge	Arm
CKP-DGZS	CKP-DGZ	CKP150-AM

Dial gauge and arm are also available individually.

ACCESSORIES

[CKP550] (For CK7)



Model	CKP550
Measuring capacity	ø100 - 550 (CK7)
CK No.	For CK7 only
Min. scale	Radial direction: 0.02mm/ø Axial direction: 0.01mm
MASTER GAUGE	ø120±0.005
Reading method	Diameter addition reading method
Weight	9.0kg

1. EWN100-203CKB7, SW98-153CKB7, EWB100-153CK7AL and EWB150-203CK7AL cannot be used due to position of the stylus.

Tool Presetters to measure the assembled boring head with a shank are also available. See [I9](#) for details.

TOOL PRESETTER TPS

High accuracy 2D edge sensor enables measurement in two directions.

#40, #50, HSK-A40, A50, A63, A100 and BIG CAPTO C5, C6, C8 are supported.

Simple, compact and economical TPS-30E/40E models for BT(BBT)30 and 40 taper tools are also available.

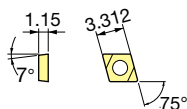


TPS-30E/40E

● **BIG** designs optimal inserts exclusive for boring. Select the suitable insert to the application.

A
INSERT

<EC03>

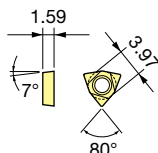


Cylindrical Tool

● **Carbide Cylindrical Insert Holder**/EB04, EB05

No.	Insert Model	Nose Radius	Corner	Workpiece	Grade	Material
1	ECGM03X102ELA	0.2	2	General Steels	T1500A	Cermet
2				Aluminum/Cast Iron	H1	Carbide (K10 Equivalent)

<WC02>



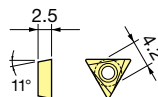
Head
Cylindrical Tool

● **EW MICRO HEAD**/EW15, 18 ● **Carbide Cylindrical Insert Holder**/EB06, EB7.5

● **Cylindrical Tool for EWN04-15**/ST7W-EB6 - EB7

No.	Insert Model	Nose Radius	Corner	Workpiece	Grade	Material
1	WCGT020102ELA	0.2	3	General Steels	T1200A	Cermet
2	WCGT020102ELA			Aluminum/Cast Iron	H1	Carbide (K10 Equivalent)
3	WCGT020102FN		1	Aluminum	DA2200	Diamond
4	WCGT020102FN			Hardened Steel	BNX20	CBN
5	WCGT020102FN			Ductile	BN7000	

<TP07>



Head
Cylindrical Tool

● **Cylindrical Tool for EWN04-15**/ST7W-EB8 - EB12

No.	Insert Model	Nose Radius	Corner	Workpiece	Grade	Material
1	TPGP070202EL	0.2	3	General Steels	T1500A	Cermet
2	TPGD070202FN			Cast Iron	H1	Carbide (K10 Equivalent)
3	TPGD070202FN		1	Hardened Steel	BN2000	CBN
4	TPGP070202FLA		3	Aluminum	H1	Carbide (K10 Equivalent)
5	TPGD070202FN		1	Aluminum	DA2200	Diamond

[Remarks (All Inserts)]

1. Inserts are available in a packet of 10 pcs except diamond and CBN inserts.

2. Diamond and CBN inserts are available from 1 pc.

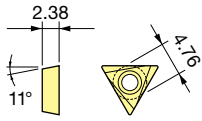
3. Please specify the insert model number and grade when ordering.

Example: **ECGM03X102ELA (T1500A)**... 10 pcs

Insert Model Grade

● **BIG** designs optimal inserts exclusive for boring. Select the suitable insert to the application.

<TP08>



Head
Insert Holder

● For EWB/EBH3-1 ● For EWN/EWE/ENH1 - 3, ENH3-1J - ENH5-3J

● Insert Holder/EB09N - EB46N

No.	Insert Model	Nose Radius	Corner	Workpiece	Grade	Material
1	TPMT080202EFM	0.2	3	General Steels 3D Breaker	T1500A	Cermet (M-class)
2	TPMT080204EFM	0.4	3		T2000Z	Coated Cermet
3	TPMT080202EFM	0.2	3		T2500A	Cermet (G-class)
4	TPMT080204EFM	0.4	3		T2500F	Coated Cermet
5	TPGP080202ELM NEW	0.2	3		T1500A	Cermet (G-class)
6	TPGP080202ELM NEW	0.2	3		T2000Z	Coated Cermet
7	TPGP080202EL	0.2	3	General Steels	T1500A	Cermet (G-class)
8	TPGP080204EL	0.4	3		T2000Z	Coated Cermet
9	TPGP080202EL	0.2	3	General Steels Interrupted Cutting	T130A	Cermet (G-class)
10	TPGP080204EL	0.4	3		T130ZX	Coated Cermet
11	TPGP080202EL	0.2	3		T130ZX	Coated Cermet
12	TPGP080204EL	0.4	3		T130ZX	Coated Cermet
13	TPGD080202FN	0.2	1	Hardened Steel	BN2000	CBN
14	TPGD080204FN	0.4	1		BNC200	Coated CBN
15	TPGD080202FN	0.2	1		BNC200	Coated CBN
16	TPGD080204FN	0.4	1	Inconel Titanium	AC520U	Coated Carbide
17	TPGP080202L	0.2	3		AC520U	Coated Carbide
18	TPGP080204L	0.4	3	Cast Iron	H1	Carbide (K10 Equivalent)
19	TPGD080202FN	0.2	3		H1	Carbide (K10 Equivalent)
20	TPGD080204FN	0.4	3	Cast Iron/Ductile	H1ZX	Coated Carbide
21	TPGD080202FN	0.2	3		H1ZX	Coated Carbide
22	TPGD080204FN	0.4	3	Cast Iron	BN700	CBN
23	TPGD080202FN	0.2	1		BN7000	
24	TPGD080204FN	0.4	1	Ductile	BN500	CBN
25	TPGD080202FN	0.2	1		BN500	
26	TPGD080204FN	0.4	1		BNC500	Coated CBN
27	TPGD080202FN	0.2	1		BNC500	Coated CBN
28	TPGD080204FN NEW	0.4	1	Aluminum	H1	Carbide (K10 Equivalent)
29	TPGP080202FLA NEW	0.2	3		H1	Carbide (K10 Equivalent)
30	TPGP080204FLA NEW	0.4	3	Aluminum	DA2200	Diamond
31	TPGD080202FN	0.2	1		DA2200	
32	TPGD080204FN	0.4	1	Aluminum 3D Breaker	DA1000	Diamond
33	TPGD080202FLM NEW	0.2	1		DA1000	
34	TPGD080204FLM NEW	0.4	1	Aluminum 3D Breaker	DA1000	Diamond
35	TPGD080202FLM NEW	0.2	1		DA1000	
36	TPGP080201FLA	0.1	3	Chatter Resistant	A1	Micro-Grained Carbide

[Remarks (All Inserts)]

1. Inserts are available in a packet of 10 pcs except diamond and CBN inserts.
2. Diamond and CBN inserts are available from 1 pc.
3. ※ marked models are 3-corner inserts.

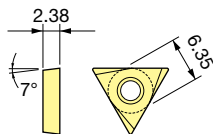
4. Please specify the insert model number and grade when ordering.

Example: **TPMT080202EFM (T1500A)**... 10 pcs

Insert Model Grade

- **BIG** designs optimal inserts exclusive for boring. Select the suitable insert to the application.

<TC11>



Head
Insert Holder

- **Insert Holder**/EB17AJ - 40AJ
 ● **For EWN/EWE/ENH4 - 7, ENH6-1J - ENH6-3J, ENH7-1J**
 ● **For EWB/EBH4 - 6**

No.	Insert Model	Nose Radius	Corner	Workpiece	Grade	Material			
1	TCMT110204EFM	0.4	3	General Steels 3D Breaker	T1500A	Cermet (M-class)			
2	TCMT110208EFM	0.8	3		T2000Z	Coated Cermet			
3	TCMT110204EFM	0.4	3			T2500A	Cermet (G-class)		
4	TCMT110208EFM	0.8	3				T2500F	Coated Cermet	
5	TCGT110202ELM 	0.2	3			General Steels		T1500A	Cermet (G-class)
6	TCGT110202ELM 	0.2	3		T2000Z		Coated Cermet		
7	TCGT110202EL	0.2	3	BN2000			CBN		
8	TCGT110204EL	0.4	3				BNC200	Coated CBN	
9	TCGT110208EL	0.8	3					AC520U	Coated Carbide
10	TCGT110202EL	0.2	3						H1
11	TCGT110204EL	0.4	3	Cast Iron	H1ZX	Coated Carbide			
12	TCGT110208EL	0.8	3				BN7000	CBN	
13	TCGT110202FN	0.2	1	BN500	Coated CBN				
14	TCGT110204FN	0.4	1			Ductile	BNC500	Coated CBN	
15	TCGT110202FN	0.2	1	Aluminum	H1				Carbide (K10 Equivalent)
16	TCGT110204FN	0.4	1			DA2200	Diamond		
17	TCGT110208FN 	0.8	1	Aluminum 3D Breaker	DA1000			Diamond	
18	TCGT110202FN	0.2	3			DA1000	Diamond		
19	TCGT110204FN	0.4	3	DA1000	Diamond				
20	TCGT110208FN 	0.8	3			Aluminum 3D Breaker	DA1000	Diamond	
21	TCGT110202FLA	0.2	3	DA1000	Diamond				
22	TCGT110204FLA	0.4	3			DA1000	Diamond		
23	TCGT110208FLA	0.8	3	DA1000	Diamond				
24	TCGT110202FN	0.2	1			DA1000	Diamond		
25	TCGT110204FN	0.4	1	DA1000	Diamond				
26	TCGT110208FN	0.8	1			DA1000	Diamond		
27	TCGT110202FLM 	0.2	1	DA1000	Diamond				
28	TCGT110204FLM 	0.4	1			DA1000	Diamond		
29	TCGT110208FLM 	0.8	1	DA1000	Diamond				
30	TCGT110202FLM	0.2	1			DA1000	Diamond		
31	TCGT110204FLM	0.4	1	DA1000	Diamond				
32	TCGT110208FLM	0.8	1			DA1000	Diamond		
33	TCGT110202FLM	0.2	1	DA1000	Diamond				
34	TCGT110204FLM	0.4	1			DA1000	Diamond		
35	TCGT110208FLM	0.8	1	DA1000	Diamond				
36	TCGT110202FLM	0.2	1			DA1000	Diamond		
37	TCGT110204FLM	0.4	1	DA1000	Diamond				
38	TCGT110208FLM	0.8	1			DA1000	Diamond		
39	TCGT110202FLM	0.2	1	DA1000	Diamond				
40	TCGT110204FLM	0.4	1			DA1000	Diamond		
41	TCGT110208FLM	0.8	1	DA1000	Diamond				
42	TCGT110202FLM	0.2	1			DA1000	Diamond		

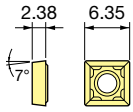
[Remarks (All Inserts)]

- Inserts are available in a packet of 10 pcs except diamond and CBN inserts.
- Diamond and CBN inserts are available from 1 pc.
- ※ marked models are 3-corner inserts.
- Please specify the insert model number and grade when ordering.
Example: **TCMT110204EFM (T1500A)**... 10 pcs

Insert Model
Grade

- **BIG** designs optimal inserts exclusive for boring. Select the suitable insert to the application.

<SC06>

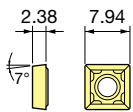


Insert Holder
Cartridge

- For EWN/EWE/ENH4-1S - ENH5-3S
● For SW/SW2026A, SW2531A, SW2533A, SW3240A

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	SCMP060204EFM	0.4	General Steels	T1500A	Cermet (P10)
2	SCMP060204EFM			AC820P	Coated Carbide (P20)
3	SCMP060204EFM			AC830P	Coated Carbide (P30)
4	SCMP060204ESM		SS/SUS	AC630M	Coated Carbide (M30)
5	SCMP060204EFM		Cast Iron	AC410K	Coated Carbide (K10)
6	SCMP060204EFM			AC700G	Coated Carbide (K20)
7	SCGA060204FN			H1	Carbide (K10 Equivalent)
8	SCGP060204FLA		Aluminum	H1	Carbide + Breakers for Aluminum

<SC07>

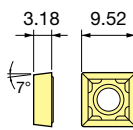


Insert Holder
Cartridge

- For EWN/EWE/ENH6-1S - ENH6-3S, ENH7-1S
● For RW/RW2533A

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	SCGP070204EFM	0.4	General Steels	T1500A	Cermet (P10)
2	SCMP070204EFM			AC820P	Coated Carbide (P20)
3	SCMP070204EFM			AC830P	Coated Carbide (P30)
4	SCMP070204ESM		SS/SUS	AC630M	Coated Carbide (M30)
5	SCMP070204EFM		Cast Iron	AC410K	Coated Carbide (K10)
6	SCMP070204EFM			AC700G	Coated Carbide (K20)
7	SCGA070204FN			H1	Carbide (K10 Equivalent)
8	SCGP070204FLA		Aluminum	H1	Carbide + Breakers for Aluminum

<SC09>

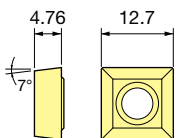


Cartridge

- For SW/SW3242A, SW4151A, SW4154A, SW5366A
● For RW/RW3242A, RW4154A

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	SCGM090304EFM	0.4	General Steels	T1500A	Cermet (P10)
2	SCGM090308EFM	0.8			
3	SCMM090304EFM	0.4			
4	SCMM090308EFM	0.8			
5	SCMM090308EFM	0.8	SS/SUS	AC630M	Coated Carbide (M30)
6	SCMM090308ESM	0.8			
7	SCMM090308EFM	0.8			
8	SCMM090308EFM	0.8			
9	SCGA090304FN	0.4	Cast Iron	AC700G	Coated Carbide (K20)
10	SCGM090308FLA	0.8			
			Aluminum	H1	Carbide + Breakers for Aluminum

<SC12>



Cartridge

- For SW/SW5370A, SW6986A, SW6890A, SW88110A, SW98126A, SW125153A, SW148176A, SW175203A
● For TW/TW200A
● For RW/RW5370A, RW6888A, RW86106A, RW100125A, RW125150A

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	SCGM120404EFM	0.4	General Steels	T1500A	Cermet (P10)
2	SCGM120408EFM	0.8			
3	SCMM120404EFM	0.4			
4	SCMM120408EFM	0.8			
5	SCMM120408EFM	0.8	SS/SUS	AC630M	Coated Carbide (M30)
6	SCMM120408ESM	0.8			
7	SCMM120408EFM	0.8			
8	SCMM120408EFM	0.8			
9	SCGA120404FN	0.4	Cast Iron	AC700G	Coated Carbide (K20)
10	SCGM120408FLA	0.8			
			Aluminum	H1	Carbide + Breakers for Aluminum

[Remarks]

1. Inserts are available in packets of 10 pcs.

2. Please specify the insert model number and grade when ordering.

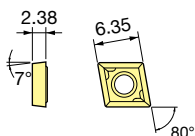
Example: **SCMP060204EFM (T1500A)**... 10 pcs

Insert Model Grade

● **BIG** designs optimal inserts exclusive for boring. Select the suitable insert to the application.

A
INSERT

<CC06>

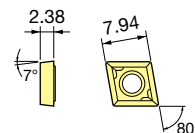


Insert Holder
Cartridge

- For EWN/EWE/ENH4-1F - ENH5-3F
- For SW/SW2026E, SW2531E, SW2533E, SW3240E

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	CCMP060204EFM	0.4	General Steels	T1500A	Cermet (P10)
2	CCMP060204EFM			AC820P	Coated Carbide (P20)
3	CCMP060204EFM			AC830P	Coated Carbide (P30)
4	CCMP060204ESM		SS/SUS	AC630M	Coated Carbide (M30)
5	CCMP060204EFM		Cast Iron	AC410K	Coated Carbide (K10)
6	CCMP060204EFM			AC700G	Coated Carbide (K20)
7	CCGA060204FN			H1	Carbide (K10 Equivalent)
8	CCGP060204FLA		Aluminum	H1	Carbide + Breakers for Aluminum

<CC07>

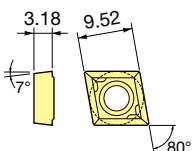


Insert Holder
Cartridge

- For EWN/EWE/ENH6-1F - ENH6-3F, ENH7-1F
- For RW/RW2533E, RW3037E

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	CCGP070204EFM	0.4	General Steels	T1500A	Cermet (P10)
2	CCMP070204EFM			AC820P	Coated Carbide (P20)
3	CCMP070204EFM			AC830P	Coated Carbide (P30)
4	CCMP070204ESM		SS/SUS	AC630M	Coated Carbide (M30)
5	CCMM070204ESS		SS	AC830P	(Breakers for SS)
6	CCMP070204EFM		Cast Iron	AC410K	Coated Carbide (K10)
7	CCMP070204EFM			AC700G	Coated Carbide (K20)
8	CCGA070204FN			H1	Carbide (K10 Equivalent)
9	CCGP070204FLA		Aluminum	H1	Carbide + Breakers for Aluminum

<CC09>



Cartridge

- For SW/SW3242E, SW4151E, SW4154E, SW5366E
- For RW/RW3242E, RW4048E, RW4154E, RW5162E

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	CCGM090304EFM	0.4	General Steels	T1500A	Cermet (P10)
2	CCGM090308EFM	0.8			
3	CCMM090304EFM	0.4			
4	CCMM090308EFM	0.8			
5	CCMM090308EFM	0.8	SS/SUS	AC630M	Coated Carbide (M30)
6	CCMM090308ESM	0.8			
7	CCMM090308ESS	0.8	SS	AC830P	(Breakers for SS)
8	CCMM090308EFM	0.8	Cast Iron	AC410K	Coated Carbide (K10)
9	CCMM090308EFM	0.8		AC700G	Coated Carbide (K20)
10	CCGA090304FN	0.4		H1	Carbide (K10 Equivalent)
11	CCGM090308FLA	0.8	Aluminum	H1	Carbide + Breakers for Aluminum

[Remarks]

1. Inserts are available in packets of 10 pcs.

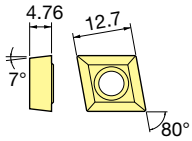
2. Please specify the insert model number and grade when ordering.

Example: **CCMP060204EFM (T1500A)**... 10 pcs

Insert Model Grade

● **BIG** designs optimal inserts exclusive for boring. Select the suitable insert to the application.

<CC12>



Cartridge

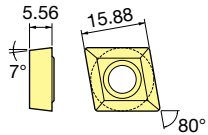
● **For SW**/SW5370E, SW6986E, SW6890E, SW88110E, SW98126E,
SW125153E, SW148176E, SW175203E

● **For TW**/TW200E

● **For RW**/RW5370E, RW6681E, RW6888E, RW86106E,
RW100125E, RW125150E

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	CCGM120404EFM	0.4	General Steels	T1500A	Cermet (P10)
2	CCGM120408EFM	0.8		AC820P	Coated Carbide (P20)
3	CCMM120404EFM	0.4			Coated Carbide (P30)
4	CCMM120408EFM	0.8			Coated Carbide (P30)
5	CCMM120408EFM	0.8		AC830P	Coated Carbide (P30)
6	CCMM120408ESM	0.8	SS/SUS	AC630M	Coated Carbide (M30)
7	CCMM120408ESS	0.8	SS	AC830P	(Breakers for SS)
8	CCMM120408EFM	0.8	Cast Iron	AC410K	Coated Carbide (K10)
9	CCMM120408EFM	0.8		AC700G	Coated Carbide (K20)
10	CCGA120404FN	0.4		H1	Carbide (K10 Equivalent)
11	CCGM120408FLA	0.8	Aluminum	H1	Carbide + Breakers for Aluminum

<CC16>



Cartridge

● **For SW**/SW6890EL, SW88110EL, SW98126EL, SW125153EL,
SW148176EL, SW175203EL

● **For TW**/TW200EL

● **For RW**/RW6888EL, RW86106EL, RW100125EL, RW125150EL

No.	Insert Model	Nose Radius	Workpiece	Grade	Material
1	CCMM160508EFM	0.8	General Steels	AC820P	Coated Carbide (P20)
2	CCMM160508EFM			AC830P	Coated Carbide (P30)
3	CCMM160508ESS		SS	AC830P	(Breakers for SS)
4	CCMM160508EFM		Cast Iron	AC700G	Coated Carbide (K20)

[Remarks]

1. Inserts are available in packets of 10 pcs.

2. Please specify the insert model number and grade when ordering.

Example: **CCGM120404EFM (T1500A)**... 10 pcs

Insert Model Grade

Insert Grade Introduction

● T1500A

General purpose cermet from finishing to roughing. Special technology improves the material's resistance to thermal shock, allowing safe use even for wet machining.

Grade	Cermet P10 Grade
T R S	2.1 (GPa)
Hardness	92.0 (HRA)

● T2000Z

Cermet is coated with newly developed PVD film for smooth surface and good adhesion. The material easily doubles tool life compared to non-coated cermet, and enables a high-quality finished surface.

Grade	Cermet P10-20 Grade
Coating film	TiN/AlN
T R S	2.1 (GPa)
Hardness	92.0 (HRA)

● T2500A

Cermet with fine and uniform grain structure, achieving improved toughness and high hardness. Excellent thermal shock resistance helps enable stable finishing.

Grade	Cermet P30 Grade
T R S	2.4 (GPa)
Hardness	91.8 (HRA)

● T2500F

Cermet insert is coated with smooth PVD film. This material has superior welding and chipping resistance compared to non-coated inserts.

Grade	Cermet P30 Grade
Coating film	AlTiCrN base
T R S	2.4 (GPa)
Hardness	91.8 (HRA)

● T130A

The unique production process of this tough cermet achieves a fine and uniform structure that has excellent chipping resistance. Achieves longer tool life than T1500A when used for interrupted cutting finishing.

Grade	Cermet P10 Grade
T R S	2.1 (GPa)
Hardness	91.8 (HRA)

● T130ZX

The cermet is treated further with a layer of ceramic kept uniform with the new PVD method. This doubles the tool life while maintaining the toughness of the material.

Grade	Cermet Tough Grade
Coating film	TiN/AlN
T R S	2.0 (GPa)
Hardness	91.9 (HRA)

● AC520U

The tough substrate is coated with multiple layers of nanometer-level thickness to create a material suitable for cutting difficult materials such as titanium with excellent wear resistance and notch wear resistance.

Grade	Carbide S20 Grade
Coating film	TiAlN/AlCrN
T R S	2.5 (GPa)
Hardness	91.7 (HRA)

● H1

With slightly higher wear resistance than K10 material, this material is a best selling type of carbide that can be used across a wide range from roughing to finishing.

Grade	Fine Carbide K10 Grade
T R S	2.1 (GPa)
Hardness	92.9 (HRA)

● H1ZX

For stable machining of ductile cast iron we recommend this material, made by coating carbide H1 with alumina for increased wear resistance.

Grade	Carbide K10 Grade
Coating film	TiN/Al ₂ O ₃ /TiCN
T R S	2.1 (GPa)
Hardness	92.9 (HRA)

● A1

Even among ultra-fine particle alloy steels, this material is notably tough; it also boasts excellent welding resistance at low to medium speeds, has a sharp cutting edge, and handles chatter suitably for fine diameter machining.

Grade	Ultra-Fine Particles Z20 Grade
T R S	3.3 (GPa)
Hardness	91.5 (HRA)

● AC820P

The main grade for steel. The newly developed CVD method allows for a dense yet smooth coating that achieves outstanding versatility and consistency.

Grade	Carbide P20 Grade
Coating film	TiN/Al ₂ O ₃ /TiCN
T R S	2.2 (GPa)
Hardness	90.1 (HRA)

● AC830P

The tough substrate and the peel-resistant, dense and smooth coating deliver high reliability for heavy interrupted cutting of steel.

Grade	Carbide P30 Grade
Coating film	TiN/Al ₂ O ₃ /TiCN
T R S	2.6 (GPa)
Hardness	89.4 (HRA)

● AC410K

The hardest material for cast iron. Use if not satisfied with the wear resistance of AC700G. Note that this type is not suitable for heavy duty interrupted cutting.

Grade	Carbide K10 Grade
Coating film	TiAlN/AlCrN
T R S	2.4 (GPa)
Hardness	92.0 (HRA)

● AC630M

The extremely smooth thin film coating gives this material great sharpness. Ideal for stainless steel or other materials that are easily work hardened.

Grade	Carbide M30 Grade
Coating film	TiAlN/AlCrN
T R S	2.7 (GPa)
Hardness	89.5 (HRA)

● AC700G

Heat resistant carbide alloy is coated with multiple layers of mainly tough alumina, with additional surface smoothing treatment, to produce a highly reliable material for machining cast iron.

Grade	Carbide K20 Grade
Coating film	TiN/Al ₂ O ₃ /TiCN
T R S	2.2 (GPa)
Hardness	91.0 (HRA)

● BNX20

Crater resistant CBN grade. Cutting edge is arranged to suit small diameter boring of hardened materials.

● BNC200

A combination of exclusive CBN substrate, selected for its strength, and special wear resistant TiAlN coating achieves a long and stable tool life across a wide range from low to high speed cutting, interrupted cutting, and high-efficiency cutting of hardened steel.

● BNC500

By combining a ceramic coating with excellent heat resistance and a substrate with excellent wear resistance, stable long life can be achieved even when finishing difficult-to-cut cast iron materials.

● BN2000

A CBN material with an excellent balance of wear resistant and chipping resistant properties. Reliable performance is achieved in a wide range of cutting conditions in continuous and medium-heavy interrupted cutting.

● BN500/BN700/BN7000

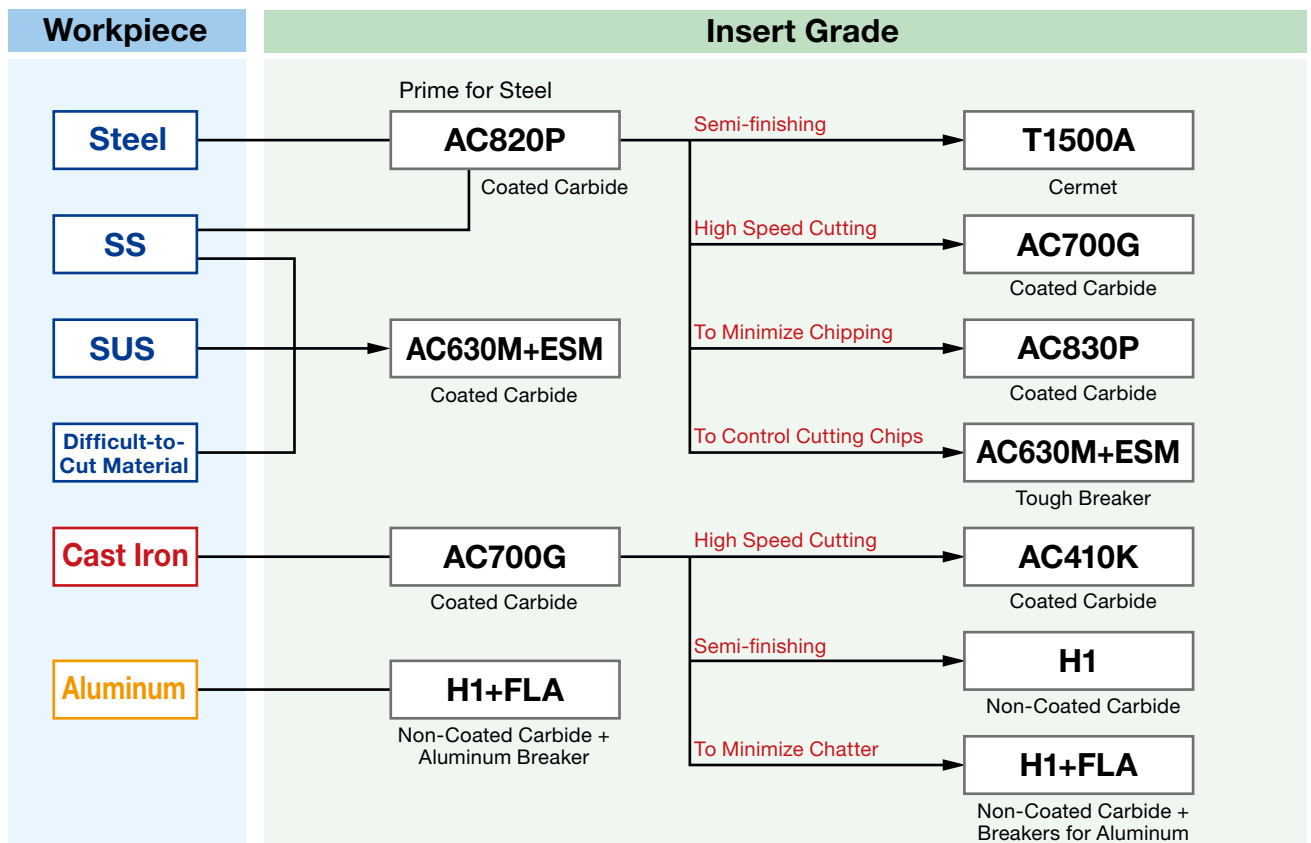
A CBN material with Co binder developed for cast iron. BN700/BN7000 is a material with excellent wear resistant and chipping resistant properties. BN700/BN7000 is recommended for high speed cutting of cast iron. If not satisfied with the wear resistance, use BN500.

● DA2200/DA1000

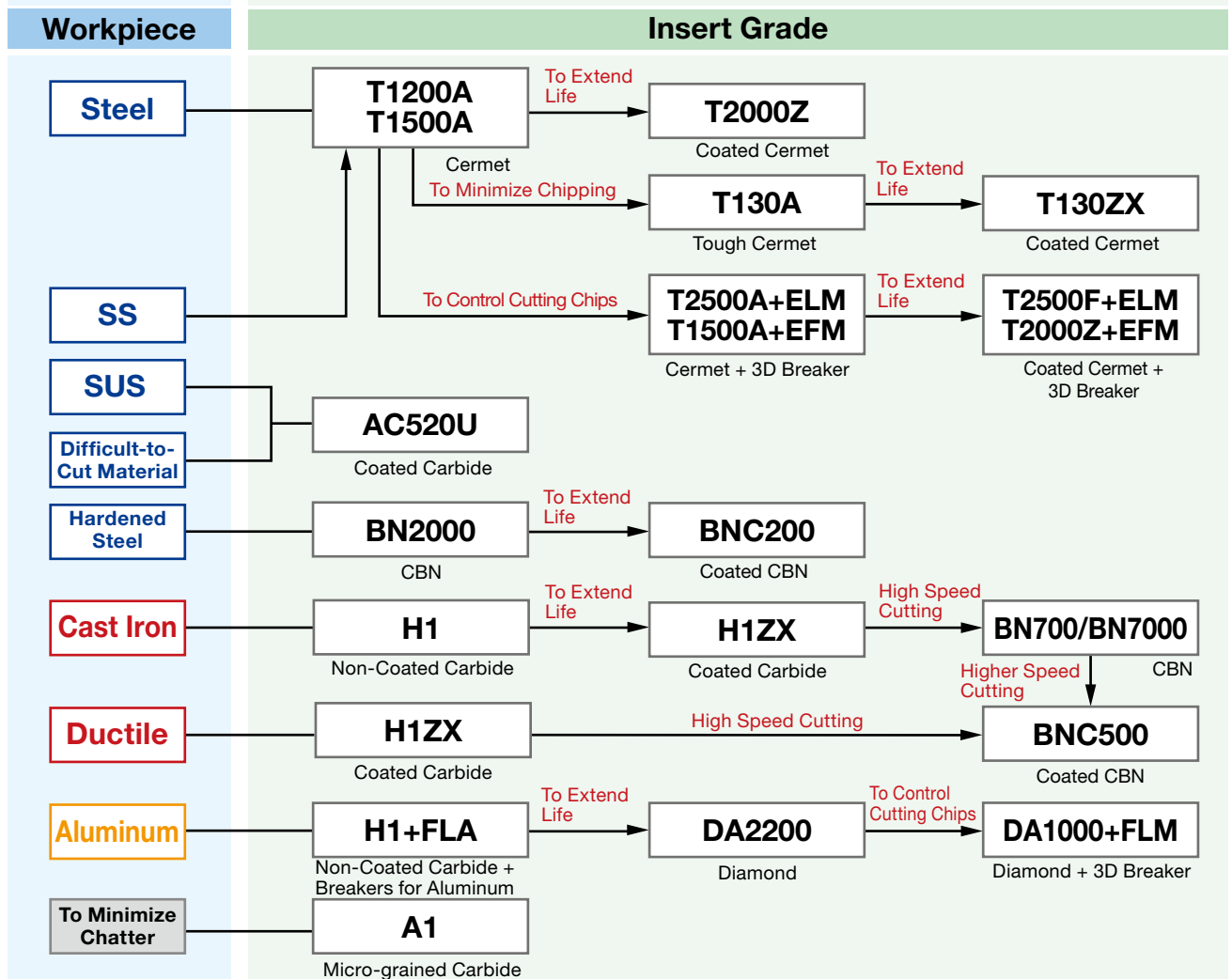
Ultra-precise sintering of ultra-fine diamond particles drastically improves the material's chipping resistance. With strength comparable to that of carbide (K10 type), it achieves a stable long tool life in interrupted cutting of aluminum alloys. Furthermore, the material boasts great cutting edge efficiency and achieves a good finish surface.

CK BORING SYSTEM Insert Selection Chart

For Roughing

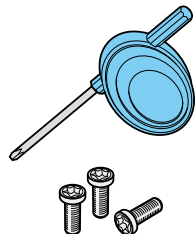


For Finishing



Screw/Wrench Set

● Insert Clamping Screw Set (Contains 10 screws and 1 wrench)

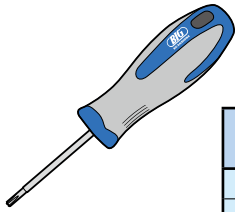


Set Model	Insert size	Shank/Insert Holder/Cartridge	Insert Clamp Screw	
			Thread	Wrench Model
S1.6S-T3-S	EC03	EB04	M1.6F×2	DA-T3
S1.6S-T3		EB05	M1.6F×2.5	
S2S-A	WC02	ST05W-EB6-60 ST06W-EB7.5-65	M2×3	FA-T6
S2S-B		EN15	M2S×4	FLR-13S
694.101-2P※	WC02	ST7W-EB6/EB7	M2×3.5	FW-6IP
694.102-2P※	TP07	ST7W-EB8/EB9	M2×4.1	
694.103-2P※		ST7W-EB10/12	M2×4.8	
S2S-S	TP08	EB09N EB10.5N EB12N	M2×4	FLR-13S
S2S		EB14N - EB46N	M2×5.5	
S2S-T6		ENH1 - ENH3 ENH3J - ENH5J EBH3	M2×5.5	FA-T6
694.122-2P※	TC11	EB17AJ - EB40AJ	M2.5×6.5	FW-7IP
S2.5S-7IP	SC06 CC06	SW2026 SW2531 SW2533 SW3240 STUCR	M2.5×6.5	FS-7IP
S2.5S-T7	TC11 SC06 CC06	ENH4 - ENH7 ENH4E - ENH6E ENH6J - ENH7J ENH4F - ENH5F ENH4S - ENH5S EBH4 - EBH6	M2.5×6.5	FA-T7
S3S	SC07 CC07	ENH6F - ENH7F ENH6S - ENH7S RW2533 RW3037	M3×7	FLR-20S
S4S-15IP	SC09 CC09	SW3242 SW4151 SW4154 SW5366	M4×8	FS-15IP
S4S	SC09 CC09	RW3242 RW4154 RW4048 RW5162	M4×8	FLR-20S
S5S-20IP	SC12 CC12 CC16	SW5370 SW6986 SW6890 SW88110 SW98126 SW125153 SW148176 SW175203	M5×12	FS-20IP
S5S-T20	SC12 CC12 CC16	TW200	M5×12	FA-T20
S5S	SC12 CC12 CC16	RW5370 RW6681 RW6888 RW86106 RW100125 RW125150	M5×12	FLR-28S
S1.6S-T6	MW04	MW1619 - MW1821	M1.6×4.2	FA-T6

· Wrenches are also sold individually. Please order the wrench model.
· ※ marked models consist of 2 screws. Wrench is not included.

Screw/Wrench Set

● Driver-Type Wrench



A Torx wrench using tough material and a grip that fits the hand well. Use for secure insert tightening.

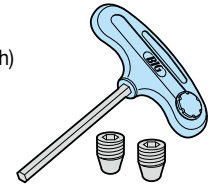
Wrench Model	Torx size
DA-T3	Torx-T 3
DA-T5	Torx-T 5
DA-T6	Torx-T 6
DA-T7	Torx-T 7
DA-T8	Torx-T 8
DA-T10	Torx-T 10
DA-T15	Torx-T 15
DA-T20	Torx-T 20

※ Insert Clamp Screw Wrench Models with a T indicate Torx size.

● CK Set Screw

(Contains 2 screws and 1 exclusive T-wrench)

Key element of the CK Connection. Periodical replacement is recommended in order to maintain accurate clamping.



Set Model	CK No.	Thread size	T Wrench Model
CK1S	CK1	M4xP0.5	CK-T2
CK2S	CK2	M5xP0.5	CK-T2.5
CK3S	CK3	M6xP0.75	CK-T3
CK4S	CK4	M8xP0.75	CK-T4
CK5S	CK5	M10xP1.0	CK-T5
CK6S	CK6	M12xP1.0	CK-T6
CK7S	CK7	M20xP1.5	-

※ Wrenches are also sold individually. Please order the wrench model.

("T" in the wrench model indicates T-shape of the wrench. This has nothing to do with Torx.)

※ An L wrench is included with CK7S.

● Grease Gun

Essential for maintenance!

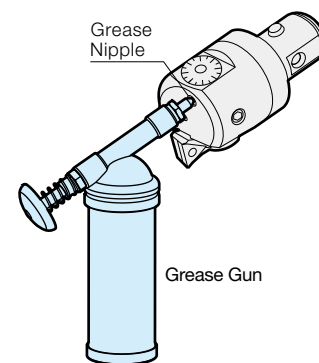
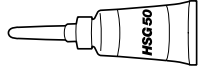
Model **GRG-02**

Can be used with all types of finishing heads.
(Grease not included.)

- The grease is effective for removing coolant and particles.
We recommend injecting grease into the grease nipple as required.

Grease (50g)

Model **HSG50**



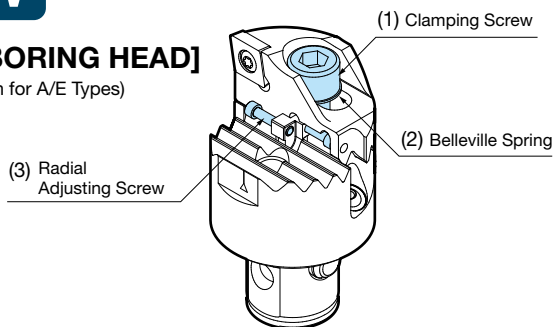
Screws for Boring Head

Specify both the head model and screw model when ordering.

SW

[SW BORING HEAD]

(Common for A/E Types)

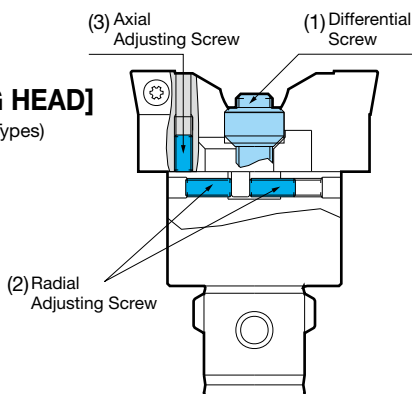


Head Model	(1) Clamping Screw x 2, Belleville Spring x 2	(2) 4 pcs	(3) 2 pcs
SW 20- 31CKB1	SW20SS	SW20BS	SW20RS
SW 25- 40CKB2	SW25SS	SW25BS	SW25RS
SW 32- 51CKB3	SW32SS	SW32BS	SW32RS
SW 41- 66CKB4	SW41SS	SW41BS	SW41RS
CKB4-SW41DP-190			
SW 53- 86CKB5	SW53SS	SW53BS	SW53RS
CKB5-SW53DP-220			
SW 68-110CKB6	SW68SS		SW68RS
CKB6-SW68DP-245			
SW 98-153CKB□	SW98SS	SW98BS	SW98RS
SW148-203CKB□			

RW

[RW BORING HEAD]

(Common for A/E Types)



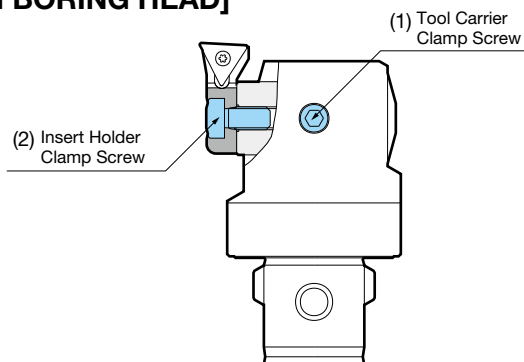
Head Model	(1) 1 pc	(2) 5 pcs	(3) 5 pcs
RW 25- 33CKB2	DS25	H0306/R	H0206
RW 32- 42CKB3	DS32	H0308/R	H0308
RW 41- 54CKB4	DS41	H0410/R	H0410
RW 53- 70CKB5	DS53	H0515/R	H0512
RW 68-100CKB6	DS68	H0515/R	
RW100-150CKB6		H0520/R	

Screws for Boring Head

Specify both the head model and screw model when ordering.

EWN

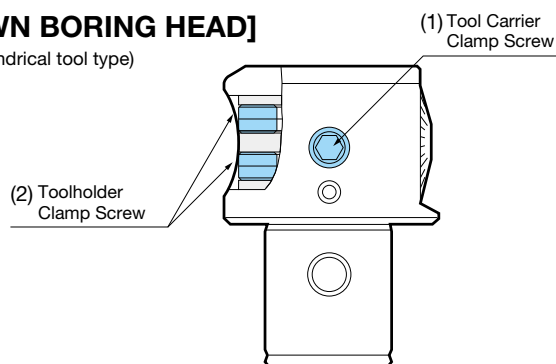
[EWN BORING HEAD]



Head Model	(1) 1 pc	(2) 1 pc
EWN 20- 36CKB1	K0405	B0304-1
EWN 25- 47CKB2	K0406	B0306-1
EWN 32- 60CKB3	K0509	B0408-2
CKB3-EWN32DP-160		
EWN 41- 74CKB4	K0610	B0510-3
CKB4-EWN41DP-185		
EWN 53- 95CKB5	K0814	B0510-4
CKB5-EWN53DP-210		
EWN 68-150CKB6	K1016	B0816-5
CKB6-EWN68DP-240		
EWN100-203CKB6		
CKB6-EWN100DP-240		
EWN100-203CKB7		
CKB7-EWN100DP-240		
EW15	H0303 (2 pcs)	M2552T6 (2 pcs)
EW18	H0304 (2 pcs)	

[EWN BORING HEAD]

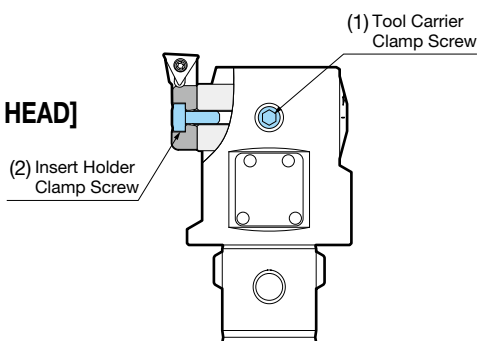
(Cylindrical tool type)



Head Model	(1) 1 pc	(2) 5 pcs
EWN2-22CK4	K0606	H0605
EWN2-32CK5	K0809	H0806
EWN2-50CK6	K1011	H1008

EWE

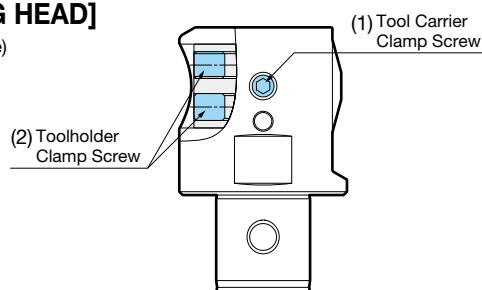
[EWE BORING HEAD]



Head Model	(1) 1 pc	(2) 1 pc
EWE 41- 74CKB4	K0608	B0510-3
EWE 53- 93CKB5	K0809	B0510-4
EWE 68-105CKB6	K1013	B0816-5
EWE100-203CKB□	K1016	

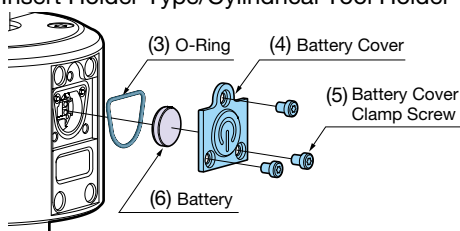
[EWE BORING HEAD]

(Cylindrical tool type)



Head Model	(1) 1 pc	(2) 5 pcs
EWE2-32CK5	K0809	H0806
EWE2-54CK6	K1011	H1008

EWE Insert Holder Type/Cylindrical Tool Holder Type Common Parts

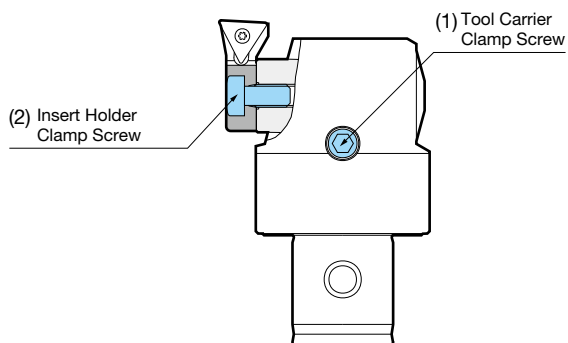


Part Name	Part Model
(3) O-Ring	EWE-OR (1 pc)
(4) Battery Cover	EWE-BC (1 pc)
(5) Battery Cover Clamp Screw	EWE-S2.5FS-8IP (3 pcs, Wrench) (x 1 pc included)
(6) Battery	CR1025 (1 pc)

Specify both the head model and screw model when ordering.

EWB

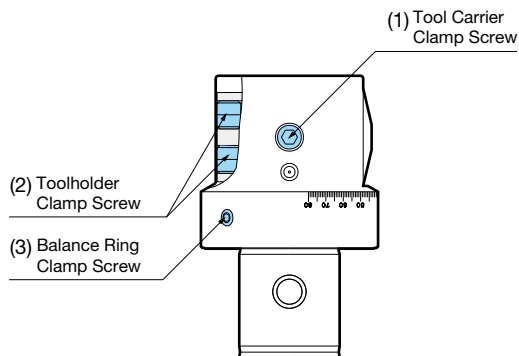
[EWB BORING HEAD]



Head Model	(1) 1 pc	(2) 1 pc
EWB 32- 42CK3	S0705	B0408-2
EWB 41- 54CK4	S0706	B0510-3
EWB 53- 70CK5	S0808	B0510-4
EWB 68- 88CK6	S1012	B0612-5
EWB 85-105CK6		
EWB100-153CK6AL		
EWB100-153CK7AL		
EWB150-203CK6AL		
EWB150-203CK7AL		

[EWB BORING HEAD]

(Cylindrical tool type)



Head Model	(1) 1 pc	(2) 5 pcs	(3) 1 pc
EWB2-32CK5	K0809	H0806	BR232
EWB2-50CK6	K1011	H1008	BR250

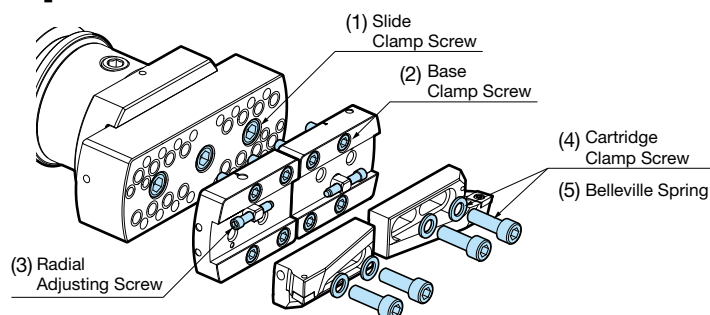
Screws for Boring Head

Specify both the head model and screw model when ordering.

TW

For large diameters

[TW BORING HEAD]

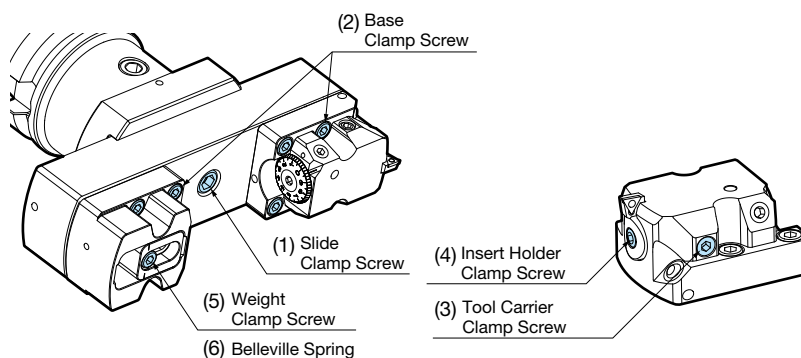


Clamp Base Model	(1) 1 pc	(2) 1 pc	(3) 1 pc	(4) 1 pc	(5) 4 pcs
CB-TW200	C1250	C0825	TW200RS	C1030	TW53BS
CB-TW200AL					

EWN200

For large diameters

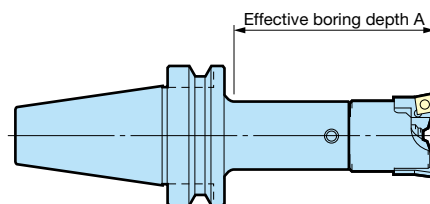
[EWN BORING HEAD]



Head/Balance Weight Model	(1) 1 pc	(2) 1 pc	(3) 1 pc	(4) 1 pc	(5) 1 pc	(6) 4 pcs
EWN200(AL)			K1016	B0612-5	-	-
BWN200FB(AL)	C1250	C0825	-	-	C0830	TW41BS
BWN200PB(AL)			-	-	-	-

<SW/TW/RW BORING HEAD>

1. This table is a guideline for selecting cutting parameters. Adjust them as needed according to the machine and workpiece conditions.
2. For blind holes, adjust the parameters by observing the chip evacuation.
3. Cermet T1500A is recommended for good surface finish for light roughing of steel.
4. AC830P is recommended for interrupted cutting of steel.
5. AC820P is recommended for interrupted cutting of ductile cast iron.
6. For step cutting, it is recommended to increase the depth of cut by 1.6 times and reduce the feed rate by 60%.

**[BBT40]**

Head Model	Workpiece Material	A	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)		Feed f (mm/rev)	
			Nose Radius	Grade		Recommended	Max.	Recommended	Max.
SW20	Carbon Steel	73	0.4	AC820P	150	2.0	2.5	0.20	0.25
	Alloy Steel			AC820P	130	1.5	2.0	0.20	0.25
	Stainless Steel			AC630M	80	1.5	2.0	0.20	0.25
	Cast Iron			AC700G	130	2.5	3.0	0.25	0.30
	Ductile			AC410K	80	2.0	2.5	0.20	0.25
	Aluminum			H1	200	2.5	3.0	0.25	0.30
SW25 RW25	Carbon Steel	88	0.4	AC820P	160	2.5	3.0	0.25	0.30
	Alloy Steel			AC820P	140	2.0	3.0	0.20	0.25
	Stainless Steel			AC630M	90	2.0	3.0	0.20	0.25
	Cast Iron			AC700G	140	3.0	4.0	0.25	0.30
	Ductile			AC410K	90	2.5	3.0	0.20	0.25
	Aluminum			H1	200	3.0	4.0	0.30	0.35
SW32 RW32	Carbon Steel	103	0.8	AC820P	200	3.5	4.5	0.30	0.40
	Alloy Steel			AC820P	180	3.0	4.0	0.25	0.35
	Stainless Steel			AC630M	100	3.0	4.0	0.25	0.35
	Cast Iron			AC700G	180	4.0	5.5	0.30	0.40
	Ductile			AC410K	100	3.5	4.5	0.25	0.35
	Aluminum			H1	220	4.0	5.0	0.30	0.40
SW41 RW41	Carbon Steel	103	0.8	AC820P	200	4.5	5.5	0.35	0.45
	Alloy Steel			AC820P	180	4.0	5.0	0.30	0.40
	Stainless Steel			AC630M	100	4.0	5.0	0.30	0.40
	Cast Iron			AC700G	180	5.0	7.0	0.35	0.45
	Ductile			AC410K	100	4.0	6.0	0.30	0.40
	Aluminum			H1	220	5.0	7.0	0.35	0.45
SW53 RW53	Carbon Steel	103	0.8	AC820P	220	6.0	8.0	0.40	0.50
	Alloy Steel			AC820P	200	5.0	6.0	0.35	0.45
	Stainless Steel			AC630M	120	5.0	6.0	0.35	0.45
	Cast Iron			AC700G	200	8.0	10.0	0.40	0.50
	Ductile			AC410K	100	6.0	8.0	0.35	0.45
	Aluminum			H1	250	8.0	10.0	0.45	0.55
SW68 SW98 RW68 RW100	Carbon Steel	103	0.8	AC820P	220	8.0	10.0	0.40	0.50
	Alloy Steel			AC820P	200	7.0	9.0	0.35	0.45
	Stainless Steel			AC630M	120	7.0	9.0	0.35	0.45
	Cast Iron			AC700G	200	9.0	12.0	0.40	0.50
	Ductile			AC410K	100	8.0	10.0	0.35	0.45
	Aluminum			H1	250	9.0	12.0	0.45	0.55

Spindle Speed Calculation

$$N = \frac{V_c}{\pi D} \times 1,000$$

N : Spindle speed [min⁻¹]

Vc: Cutting speed [m/min]

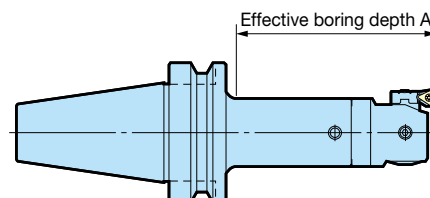
D : Diameter [mm]

[BBT50]

Head Model		Workpiece Material	A	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)		Feed f (mm/rev)	
				Nose Radius	Grade		Recommended	Max.	Recommended	Max.
SW20		Carbon Steel	73	0.4	AC820P	150	2.0	2.5	0.20	0.25
		Alloy Steel			AC820P	130	1.5	2.0	0.20	0.25
		Stainless Steel			AC630M	80	1.5	2.0	0.20	0.25
		Cast Iron			AC700G	130	2.5	3.0	0.25	0.30
		Ductile			AC410K	80	2.0	2.5	0.20	0.25
		Aluminum			H1	200	2.5	3.0	0.25	0.30
SW25 RW25		Carbon Steel	107	0.4	AC820P	150	2.5	3.5	0.25	0.30
		Alloy Steel			AC820P	130	2.0	3.0	0.20	0.25
		Stainless Steel			AC630M	80	2.0	3.0	0.20	0.25
		Cast Iron			AC700G	130	3.0	4.0	0.25	0.30
		Ductile			AC410K	80	2.5	3.0	0.20	0.25
		Aluminum			H1	200	3.0	4.0	0.30	0.35
SW32 RW32		Carbon Steel	122	0.8	AC820P	180	3.5	4.5	0.30	0.40
		Alloy Steel			AC820P	160	3.0	4.0	0.25	0.35
		Stainless Steel			AC630M	100	3.0	4.0	0.25	0.35
		Cast Iron			AC700G	160	4.0	5.5	0.30	0.40
		Ductile			AC410K	100	3.5	4.5	0.25	0.35
		Aluminum			H1	200	4.0	5.0	0.30	0.40
SW41 RW41		Carbon Steel	122	0.8	AC820P	200	4.5	5.5	0.35	0.45
		Alloy Steel			AC820P	180	4.0	5.0	0.30	0.40
		Stainless Steel			AC630M	100	4.0	5.0	0.30	0.40
		Cast Iron			AC700G	180	5.0	7.0	0.35	0.45
		Ductile			AC410K	100	4.0	6.0	0.30	0.40
		Aluminum			H1	220	5.0	7.0	0.35	0.45
SW53 RW53		Carbon Steel	122	0.8	AC820P	220	7.0	9.0	0.40	0.55
		Alloy Steel			AC820P	200	6.0	8.0	0.35	0.50
		Stainless Steel			AC630M	120	6.0	8.0	0.35	0.50
		Cast Iron			AC700G	200	9.0	12.0	0.45	0.55
		Ductile			AC410K	120	7.0	10.0	0.35	0.50
		Aluminum			H1	250	9.0	12.0	0.45	0.55
SW68 RW68		Carbon Steel	122	0.8	AC820P	220	10.0	12.0	0.40	0.60
		Alloy Steel			AC820P	200	8.0	12.0	0.35	0.55
		Stainless Steel			AC630M	120	8.0	10.0	0.35	0.55
		Cast Iron			AC700G	200	10.0	14.0	0.45	0.60
		Ductile			AC410K	120	9.0	12.0	0.35	0.55
		Aluminum			H1	250	10.0	12.0	0.45	0.60
SW98 RW100		Carbon Steel	122	0.8	AC820P	220	10.0	12.0	0.40	0.60
		Alloy Steel			AC820P	200	8.0	12.0	0.35	0.55
		Stainless Steel			AC630M	120	8.0	10.0	0.35	0.55
		Cast Iron			AC700G	200	10.0	14.0	0.45	0.60
		Ductile			AC410K	120	9.0	12.0	0.35	0.55
		Aluminum			H1	250	10.0	12.0	0.45	0.60
TW200 (CK7)	≤ ø340	Carbon Steel	172	0.8	AC820P	220	10.0	12.0	0.40	0.60
		Alloy Steel			AC820P	200	8.0	12.0	0.35	0.55
		Stainless Steel			AC630M	120	8.0	10.0	0.35	0.55
		Cast Iron			AC700G	200	10.0	14.0	0.45	0.60
		Ductile			AC700G	120	9.0	12.0	0.35	0.55
		Aluminum			H1	250	10.0	12.0	0.45	0.60
	> ø340	Carbon Steel			AC820P	220	7.0	9.0	0.40	0.60
		Alloy Steel			AC820P	200	6.0	8.0	0.35	0.55
		Stainless Steel			AC630M	120	6.0	8.0	0.35	0.55
		Cast Iron			AC700G	200	7.0	10.0	0.45	0.60
		Ductile			AC700G	120	6.0	8.0	0.35	0.55
		Aluminum			H1	250	7.0	9.0	0.45	0.60

<EWN/EWE/EWB BORING HEAD>

1. This table is a guideline for selecting cutting parameters.
Adjust them as needed according to the machine and workpiece conditions.
2. Internal high pressure coolant may cause deflection of the holder.
Lower the pressure when close tolerance is required.
3. Coated cermet T2000Z or T2500F is recommended to reduce wear when machining steel.
4. Dry cutting is recommended for CBN BN2000, BNC200, BNC500 and BN700/BN7000 inserts.

**[BBT40]**

Head Model	Workpiece Material	A	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)	Feed f (mm/rev)	
			Nose Radius	Grade			Recommended	Max.
EWN20	Carbon Steel/Alloy Steel	73	0.2	T1500A	160	0.15	0.06	0.12
	Stainless Steel		0.2	AC520U	120	0.15	0.06	0.10
	Hardened Steel		0.2	BN2000	70	0.10	0.06	0.10
	Cast Iron		0.2	H1	120	0.20	0.06	0.12
	Ductile		0.2	H1ZX	100	0.15	0.06	0.10
	Ductile		0.2	BNC500	120	0.15	0.06	0.10
	Aluminum		0.2	H1	200	0.20	0.06	0.12
	Aluminum		0.2	DA2200	300	0.20	0.06	0.12
EWN25	Carbon Steel/Alloy Steel	88	0.2	T1500A	180	0.15	0.06	0.12
	Stainless Steel		0.2	AC520U	140	0.15	0.06	0.12
	Hardened Steel		0.2	BN2000	80	0.10	0.06	0.10
	Cast Iron		0.2	H1	140	0.20	0.06	0.12
	Ductile		0.2	H1ZX	120	0.15	0.06	0.12
	Ductile		0.2	BNC500	180	0.15	0.06	0.10
	Aluminum		0.2	H1	200	0.20	0.06	0.12
	Aluminum		0.2	DA2200	400	0.20	0.06	0.12
EWN32 EWB32	Carbon Steel/Alloy Steel	103	0.2	T1500A	200	0.20	0.06	0.12
	Stainless Steel		0.2	AC520U	160	0.20	0.06	0.12
	Hardened Steel		0.2	BN2000	100	0.10	0.06	0.10
	Cast Iron		0.2	H1	160	0.20	0.06	0.12
	Ductile		0.2	H1ZX	120	0.15	0.06	0.12
	Ductile		0.2	BNC500	200	0.15	0.06	0.10
	Aluminum		0.4	H1	300	0.20	0.10	0.20
	Aluminum		0.4	DA2200	800	0.20	0.10	0.20
EWN41 EWE41 EWB41	Carbon Steel/Alloy Steel	103	0.2	T1500A	200	0.20	0.06	0.12
	Stainless Steel		0.2	AC520U	160	0.20	0.06	0.12
	Hardened Steel		0.4	BN2000	100	0.10	0.08	0.12
	Cast Iron		0.4	H1	160	0.20	0.10	0.20
	Ductile		0.4	H1ZX	120	0.15	0.10	0.15
	Ductile		0.4	BNC500	200	0.15	0.10	0.15
	Aluminum		0.4	H1	300	0.20	0.12	0.20
	Aluminum		0.4	DA2200	800	0.20	0.12	0.20
EWN53 EWN68 EWN100 EWE53 EWE68 EWE100 EWB53 EWB68 EWB85	Carbon Steel/Alloy Steel	103	0.4	T1500A	250	0.25	0.10	0.20
	Stainless Steel		0.4	AC520U	180	0.25	0.10	0.20
	Hardened Steel		0.4	BN2000	100	0.10	0.08	0.12
	Cast Iron		0.4	H1	180	0.25	0.10	0.20
	Ductile		0.4	H1ZX	120	0.20	0.10	0.20
	Ductile		0.4	BNC500	200	0.20	0.10	0.20
	Aluminum		0.8	H1	300	0.25	0.16	0.30
	Aluminum		0.4	DA2200	800	0.25	0.12	0.20

Cutting Conditions**BBT/BT**
SHANK**A**

CK BORING SYSTEM

[BBT50]

Head Model	Workpiece Material	A	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/φ)	Feed f (mm/rev)	
			Nose Radius	Grade			Recommended	Max.
EWN20	Carbon Steel/Alloy Steel	73	0.2	T1500A	160	0.15	0.06	0.12
	Stainless Steel		0.2	AC520U	120	0.15	0.06	0.10
	Hardened Steel		0.2	BN2000	70	0.10	0.06	0.10
	Cast Iron		0.2	H1	120	0.20	0.06	0.12
	Ductile		0.2	H1ZX	100	0.15	0.06	0.10
	Ductile		0.2	BNC500	120	0.15	0.06	0.10
	Aluminum		0.2	H1	200	0.20	0.06	0.12
	Aluminum		0.2	DA2200	300	0.20	0.06	0.12
EWN25	Carbon Steel/Alloy Steel	107	0.2	T1500A	180	0.15	0.06	0.12
	Stainless Steel		0.2	AC520U	140	0.15	0.06	0.12
	Hardened Steel		0.2	BN2000	80	0.10	0.06	0.10
	Cast Iron		0.2	H1	140	0.20	0.06	0.12
	Ductile		0.2	H1ZX	120	0.15	0.06	0.12
	Ductile		0.2	BNC500	180	0.15	0.06	0.10
	Aluminum		0.2	H1	200	0.20	0.06	0.12
	Aluminum		0.2	DA2200	400	0.20	0.06	0.12
EWN32 EWB32	Carbon Steel/Alloy Steel	122	0.2	T1500A	200	0.20	0.06	0.12
	Stainless Steel		0.2	AC520U	160	0.20	0.06	0.12
	Hardened Steel		0.2	BN2000	100	0.10	0.06	0.10
	Cast Iron		0.2	H1	160	0.20	0.06	0.12
	Ductile		0.2	H1ZX	120	0.15	0.06	0.12
	Ductile		0.2	BNC500	200	0.15	0.06	0.10
	Aluminum		0.4	H1	300	0.20	0.10	0.20
	Aluminum		0.4	DA2200	800	0.20	0.10	0.20
EWN41 EWE41 EWB41	Carbon Steel/Alloy Steel	122	0.2	T1500A	200	0.20	0.06	0.12
	Stainless Steel		0.2	AC520U	160	0.20	0.06	0.12
	Hardened Steel		0.4	BN2000	100	0.10	0.08	0.12
	Cast Iron		0.4	H1	160	0.20	0.10	0.20
	Ductile		0.4	H1ZX	120	0.15	0.10	0.15
	Ductile		0.4	BNC500	200	0.15	0.10	0.15
	Aluminum		0.4	H1	300	0.20	0.12	0.20
	Aluminum		0.4	DA2200	800	0.20	0.12	0.20
EWN53 EWE53 EWB53	Carbon Steel/Alloy Steel	122	0.4	T1500A	250	0.25	0.10	0.20
	Stainless Steel		0.4	AC520U	180	0.25	0.10	0.20
	Hardened Steel		0.4	BN2000	100	0.10	0.08	0.12
	Cast Iron		0.4	H1	180	0.25	0.10	0.20
	Ductile		0.4	H1ZX	120	0.20	0.10	0.20
	Ductile		0.4	BNC500	200	0.20	0.10	0.20
	Aluminum		0.8	H1	300	0.25	0.16	0.30
	Aluminum		0.4	DA2200	800	0.25	0.12	0.20
EWN68 EWN100 EWE68 EWE100 EWB68 EWB85	Carbon Steel/Alloy Steel	122	0.4	T1500A	250	0.25	0.10	0.20
	Stainless Steel		0.4	AC520U	180	0.25	0.10	0.20
	Hardened Steel		0.4	BN2000	100	0.10	0.08	0.12
	Cast Iron		0.4	H1	180	0.25	0.10	0.20
	Ductile		0.4	H1ZX	120	0.20	0.10	0.20
	Ductile		0.4	BNC500	200	0.20	0.10	0.20
	Aluminum		0.8	H1	300	0.25	0.16	0.30
	Aluminum		0.8	DA2200	800	0.25	0.16	0.30
EWN200 (CK7)	Carbon Steel/Alloy Steel	172	0.4	T1500A	250	0.25	0.10	0.20
	Stainless Steel		0.4	AC520U	180	0.25	0.10	0.20
	Hardened Steel		0.4	BN2000	100	0.10	0.08	0.12
	Cast Iron		0.4	H1	180	0.25	0.10	0.20
	Ductile		0.4	H1ZX	120	0.20	0.10	0.20
	Ductile		0.4	BNC500	200	0.20	0.10	0.20
	Aluminum		0.8	H1	300	0.25	0.16	0.30
	Aluminum		0.8	DA2200	800	0.25	0.16	0.30

<Cylindrical Tool Type>

Max. Spindle Speed for Cylindrical Tool Type

Head Model	Max. Spindle Speed n
EWN04- 7CK1	30,000min ⁻¹
EWN04-15CK3	20,000min ⁻¹
EWN 2-22CK4	18,000min ⁻¹
EWB 2-32CK5	16,000min ⁻¹
EWE 2-32CK5	16,000min ⁻¹
EWN 2-32CK5	14,000min ⁻¹
EWB 2-50CK6	12,000min ⁻¹
EWE 2-54CK6	14,000min ⁻¹
EWN 2-50CK6	10,000min ⁻¹

The max. spindle speeds listed in this table are the speeds allowable for safe use of the boring head only.
Note that these values differ depending on the cylindrical tools used, machine rigidity, etc.

Feed Rate Selection

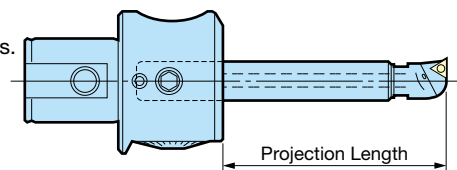
Suitable feed rate varies depending on the desired accuracy.
Refer to the following formula and determine the best parameters.

$$\text{Theoretical surface roughness Ry} [\mu\text{m}] = \frac{(\text{Feed per radius})^2}{8 \times \text{Nose radius}} \times 1,000$$

- In general, nose radius 0.2 should be used with f = 0.06 and radius 0.4 with f = 0.10
These values are reference only.

Recommended Cutting Conditions

1. This table is a guideline for selecting cutting parameters.
Adjust them as needed according to the machine and workpiece conditions.
2. If chatter occurs, either lower the cutting speed or use an insert with a smaller nose radius.
3. Internal high pressure coolant may cause deflection of the cylindrical tool holder.
Lower the pressure when close tolerance is required.
4. Coated cermet T2000Z or T2500F is recommended to reduce wear when machining steel.
5. Dry cutting is recommended for CBN BN2000, BNC200, BNC500 and BN700/BN7000 inserts.



● Cylindrical Tool Type/ST05, ST06 (Diameter ø6 - 9)

Workpiece	Projection Length	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)
		Nose Radius	Grade		
Carbon Steel Alloy Steel	20	0.2	T1200A	100	0.2
	40			70	0.2
	50			50	0.2
	60			30	0.1
Stainless Steel	20	0.2	T1200A	90	0.2
	40			60	0.2
	50			40	0.2
	60			30	0.1
Cast Iron	20	0.2	H1	100	0.2
	40			70	0.2
	50			50	0.2
	60			30	0.1
Aluminum	20	0.2	H1	120	0.2
	40			100	0.2
	50			80	0.2
	60			60	0.2

Red figures are achievable with cylindrical tools made of carbide.

● Cylindrical Tool Type/ST08 (Diameter ø9 - 12)

Workpiece	Projection Length	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)
		Nose Radius	Grade		
Carbon Steel Alloy Steel	20	0.2	T1500A	100	0.20
	30			120	0.20
	40			90	0.20
	50	0.1	A1	75	0.15
	60			50	0.10
Stainless Steel	20	0.2	AC520U	100	0.20
	30			120	0.20
	40			90	0.20
	50	0.1	A1	75	0.15
	60			50	0.10
Hardened Steel	20	0.2	BN2000	70	0.10
	30			50	0.10
	40			20	0.10
Cast Iron	20	0.2	H1 (FN)	100	0.20
	30			120	0.20
	40			90	0.20
	50	0.1	A1	75	0.15
	60			40	0.10
Aluminum	20	0.2	H1 (FLA)	150	0.20
	30			165	0.25
	40			150	0.20
	50	0.1	A1	125	0.15
	60			60	0.15

Red figures are achievable with cylindrical tools made of carbide.

● Cylindrical Tool Type/ST10 (Diameter $\phi 12 - 14$)

Workpiece	Projection Length	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)
		Nose Radius	Grade		
Carbon Steel Alloy Steel	30	0.2	T1500A	120	0.20
	45			140	0.20
	60			100	0.20
	70			75	0.15
	80	0.1	A1	50	0.10
Stainless Steel	30	0.2	AC520U	120	0.20
	45			130	0.20
	60			90	0.20
	70			55	0.15
	80	0.1	A1	40	0.10
Hardened Steel	30	0.2	BN2000	80	0.10
	45			60	0.10
	60			30	0.10
Cast Iron	30	0.2	H1 (FN)	120	0.20
	45			130	0.20
	60			90	0.15
	75			60	0.15
	90	0.1	A1	30	0.10
Aluminum	30	0.2	H1 (FLA)	150	0.25
	45			180	0.25
	60			150	0.20
	75			90	0.20
	90	0.1	A1	60	0.15

Red figures are achievable with cylindrical tools made of carbide.

● Cylindrical Tool Type/ST12 (Diameter $\phi 14 - 16$)

Workpiece	Projection Length	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)
		Nose Radius	Grade		
Carbon Steel Alloy Steel	40	0.2	T1500A	120	0.20
	60			180	0.20
	80			150	0.20
	95			90	0.15
	110	0.1	A1	50	0.10
Stainless Steel	40	0.2	AC520U	120	0.20
	60			130	0.20
	80			100	0.20
	95			70	0.15
	110	0.1	A1	40	0.10
Hardened Steel	40	0.2	BN2000	80	0.10
	50			60	0.10
	65			30	0.10
Cast Iron	40	0.2	H1 (FN)	120	0.20
	60			130	0.20
	80			100	0.15
	95			70	0.15
	110	0.1	A1	40	0.10
Aluminum	40	0.2	H1 (FLA)	150	0.25
	60			200	0.25
	80			180	0.20
	100			130	0.20
	120	0.1	A1	60	0.15

Red figures are achievable with cylindrical tools made of carbide.

● Cylindrical Tool Type/ST14 (Diameter $\phi 16 - 18$)

Workpiece	Projection Length	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)
		Nose Radius	Grade		
Carbon Steel Alloy Steel	45	0.2	T1500A	130	0.20
	65			180	0.20
	80			150	0.20
	100			90	0.15
	120	0.1	A1	50	0.10
Stainless Steel	45	0.2	AC520U	120	0.20
	65			130	0.20
	80			120	0.20
	100			80	0.15
	120	0.1	A1	40	0.10
Hardened Steel	45	0.2	BN2000	80	0.10
	60			60	0.10
	75			30	0.10
Cast Iron	45	0.2	H1 (FN)	120	0.20
	65			130	0.20
	80			120	0.15
	100			80	0.15
	120	0.1	A1	40	0.10
Aluminum	45	0.4	H1 (FLA)	150	0.25
	65			200	0.25
	80			180	0.20
	100			120	0.20
	120	0.1	A1	60	0.15

Red figures are achievable with cylindrical tools made of carbide.

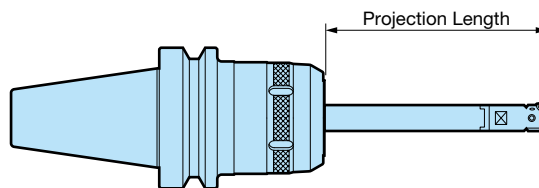
● Cylindrical Tool Type/ST16 (Diameter $\phi 18 - 50$)

Workpiece	Projection Length	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)
		Nose Radius	Grade		
Carbon Steel Alloy Steel	45	0.4	T1500A	130	0.20
	60			180	0.20
	80			150	0.20
	110			90	0.15
	140	0.1	A1	50	0.10
Stainless Steel	45	0.4	AC520U	120	0.20
	60			130	0.20
	80			120	0.20
	110			80	0.15
	140	0.1	A1	40	0.10
Hardened Steel	45	0.2	BN2000	80	0.10
	60			60	0.10
	80			30	0.10
Cast Iron	45	0.4	H1 (FN)	120	0.20
	60			130	0.20
	80			120	0.15
	110			80	0.15
	140	0.1	A1	40	0.10
Aluminum	45	0.4	H1 (FLA)	150	0.25
	60			200	0.25
	80			180	0.20
	110			120	0.20
	140	0.1	A1	60	0.15

Red figures are achievable with cylindrical tools made of carbide.

<EW MICRO HEAD>

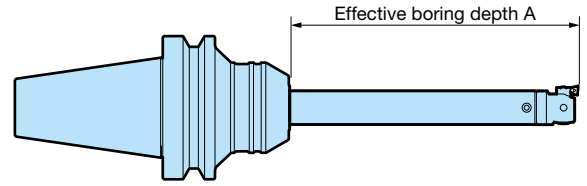
1. This table is a guideline for selecting cutting parameters.
Adjust them as needed according to the machine and workpiece conditions.
2. Internal high pressure coolant may cause deflection of the holder.
Lower the pressure when close tolerance is required.
3. These conditions are determined when the cylindrical tool is mounted on the
BIG NEW Hi-POWER MILLING CHUCK or NEW BABY CHUCK.



Workpiece	Projection Length	Diameter: ø15 - 18				Diameter ø18 - 22			
		ST14W-EW15-110. (140)				ST16W-EW18-100. (160)			
		Insert		Cutting Speed Vc	Cutting Depth	Insert		Cutting Speed Vc	Cutting Depth
		Nose Radius	Grade	m/min	mm/ø	Nose Radius	Grade	m/min	mm/ø
Carbon Steel Alloy Steel	20	0.2	T1200A	200	0.20	0.2	T1200A	200	0.20
	40			200	0.20			200	0.20
	60			180	0.20			200	0.20
	80			160	0.15			180	0.18
	100			120	0.15			150	0.15
	120			70	0.10			100	0.10
	140			30	0.10			60	0.10
	160			-	-			30	0.10
Stainless Steel	20	0.2	T1200A	150	0.20	0.2	T1200A	150	0.20
	40			150	0.20			150	0.20
	60			150	0.20			150	0.20
	80			130	0.15			140	0.18
	100			100	0.15			120	0.15
	120			70	0.10			100	0.10
	140			30	0.10			60	0.10
	160			-	-			30	0.10
Cast Iron	20	0.2	H1	150	0.20	0.2	H1	150	0.20
	40			150	0.20			150	0.20
	60			140	0.20			150	0.20
	80			120	0.15			140	0.18
	100			100	0.15			120	0.15
	120			60	0.10			100	0.10
	140			30	0.10			60	0.10
	160			-	-			30	0.10
Aluminum	20	0.2	H1	280	0.20	0.2	H1	320	0.20
	40			280	0.20			320	0.20
	60			280	0.20			320	0.20
	80			250	0.20			280	0.20
	100			180	0.15			220	0.15
	120			100	0.12			160	0.12
	140			60	0.12			100	0.12
	160			-	-			60	0.10

<CK Carbide Cylindrical Shank>

1. This table is a guideline for selecting cutting parameters.
Adjust them as needed according to the machine and workpiece conditions.
2. Internal high pressure coolant may cause deflection of the holder.
Lower the pressure when close tolerance is required.
3. Coated cermet T2000Z or T2500F is recommended to reduce wear when machining steel.
4. T130A is recommended to prevent edge chipping for interrupted cutting of steel.
5. These conditions are determined when the cylindrical tool is mounted on the BIG HYDRAULIC CHUCK.



Head Model	Workpiece Material	A	Insert		Cutting Speed Vc (m/min)	Cutting Depth (mm/ø)	Feed f (mm/rev)	
			Nose Radius	Grade			Recommended	Max.
EWN20	Carbon Steel	90	0.2	T1500A	200	0.20	0.06	0.12
		150	0.2	T1500A	120	0.20	0.06	0.12
		175	0.2	T1500A	60	0.15	0.06	0.10
		200	0.2	T1500A	25	0.15	0.06	0.10
	Cast Iron	90	0.2	H1 (FN)	180	0.20	0.06	0.12
		150	0.2	H1 (FN)	120	0.20	0.06	0.12
		175	0.2	H1 (FN)	60	0.15	0.06	0.10
		200	0.2	H1 (FN)	25	0.15	0.06	0.10
	Aluminum	90	0.2	DA2200	400	0.20	0.06	0.12
		150	0.2	H1 (FLA)	200	0.20	0.06	0.12
		175	0.2	H1 (FLA)	100	0.20	0.06	0.10
		200	0.2	H1 (FLA)	40	0.15	0.06	0.10
		230	0.1	A1 (FLA)	25	0.15	0.04	0.08
EWN25	Carbon Steel	125	0.4	T1500A	200	0.25	0.08	0.15
		175	0.2	T1500A	120	0.20	0.06	0.12
		200	0.2	T1500A	60	0.20	0.06	0.10
		250	0.2	T1500A	25	0.15	0.06	0.10
	Cast Iron	125	0.4	H1 (FN)	180	0.25	0.08	0.15
		175	0.2	H1 (FN)	120	0.20	0.06	0.12
		200	0.2	H1 (FN)	60	0.20	0.06	0.10
		250	0.2	H1 (FN)	25	0.15	0.06	0.10
	Aluminum	125	0.4	DA2200	500	0.25	0.08	0.15
		175	0.4	H1 (FLA)	200	0.25	0.08	0.15
		200	0.2	H1 (FLA)	100	0.20	0.06	0.10
		250	0.2	H1 (FLA)	40	0.20	0.06	0.10
		285	0.1	A1 (FLA)	25	0.15	0.04	0.08
EWN32 EWB32	Carbon Steel	135	0.4	T1500A	200	0.25	0.08	0.15
		160	0.2	T1500A	130	0.20	0.06	0.12
		200	0.2	T1500A	80	0.20	0.06	0.10
		250	0.2	T1500A	25	0.15	0.06	0.10
	Cast Iron	135	0.4	H1 (FN)	180	0.25	0.08	0.15
		160	0.2	H1 (FN)	130	0.20	0.06	0.12
		200	0.2	H1 (FN)	80	0.20	0.06	0.10
		250	0.2	H1 (FN)	25	0.15	0.06	0.10
	Aluminum	135	0.4	DA2200	500	0.25	0.08	0.15
		160	0.4	H1 (FLA)	220	0.25	0.08	0.15
		200	0.2	H1 (FLA)	120	0.20	0.06	0.10
		250	0.2	H1 (FLA)	40	0.20	0.06	0.10
		310	0.1	A1 (FLA)	25	0.15	0.04	0.08

Cutting Speed Selection Graph for Cutting Steel

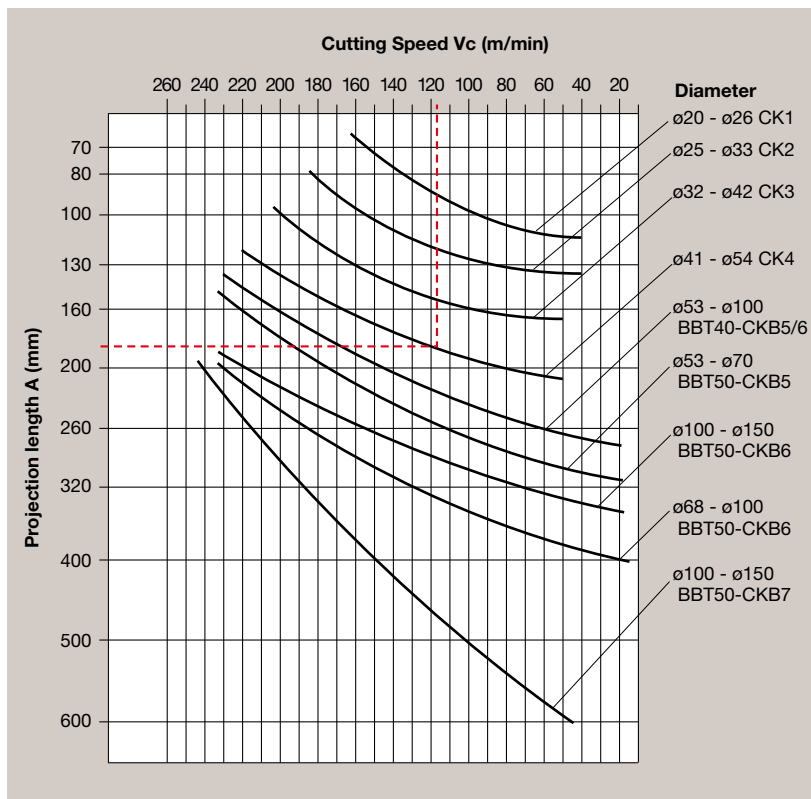
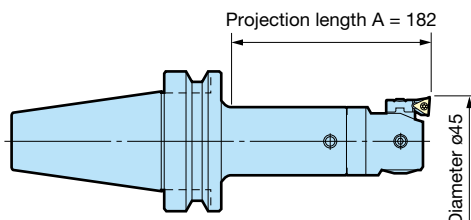
Chatter is always an issue in boring. The figure at right shows how the cutting speed (rotational speed) inevitably decreases as the bar becomes longer. Refer to the cutting conditions listed in this graph and on the previous pages when selecting the optimum cutting conditions.

For cast iron, 10-20% longer projection length is generally permissible.

[Reference Example]

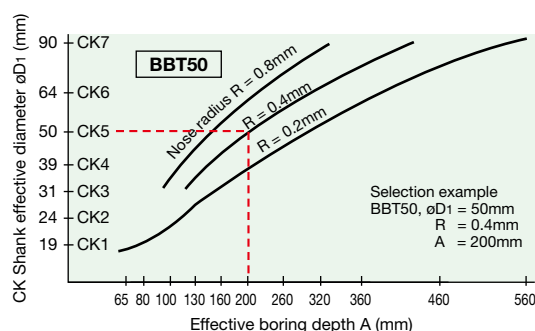
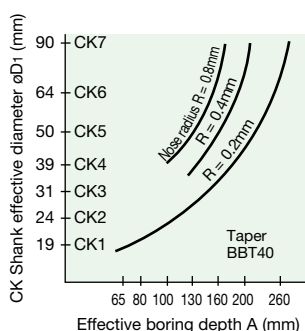
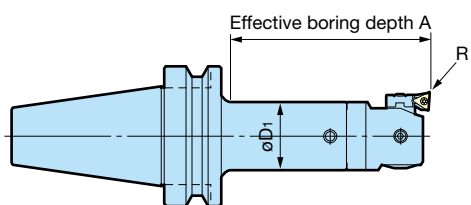
Indicated by - - - - in the graph at right

Example below shows the projection length A of 182mm; and the diameter of $\phi 45$ mm ($\phi 41 - \phi 54$ CK4). The recommended cutting speed is 118m/min. Select an appropriate cutting speed based on this reference example.



Relationship between Nose Radius and Effective Boring Depth

The insert nose radius and boring bar length (machining depth limit) are closely related. Refer to the graph below when selecting a CK Shank. Depths 1.1 - 1.3 times greater than listed in the graph are possible for cast iron (FC). Refer to the Cutting Conditions table on the previous page for information about cutting conditions. The cutting speed, in particular, inevitably decreases when the bar projection length increases. Refer to the above graph for details.





CK SHANK (DV: DIN69871 A and D Standards IV: ISO7388 Standard compatible)

Coolant-through hole



Not BIG-PLUS (DUAL CONTACT) specification

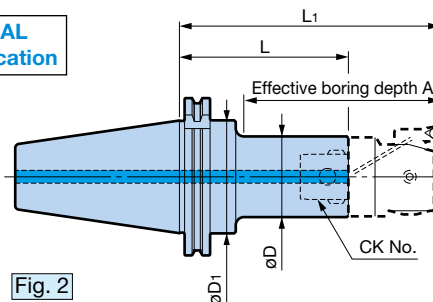


Fig. 2

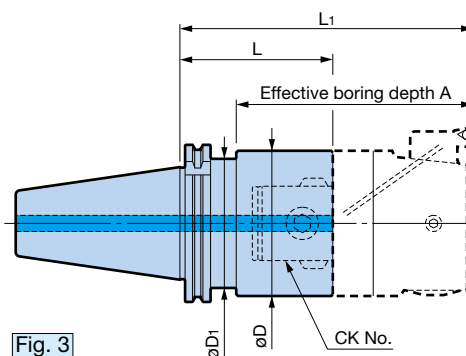


Fig. 3

● Model Description

IV40 - CKB1 - 75

● L dimension

● CK No.

● Shank standard and taper No.

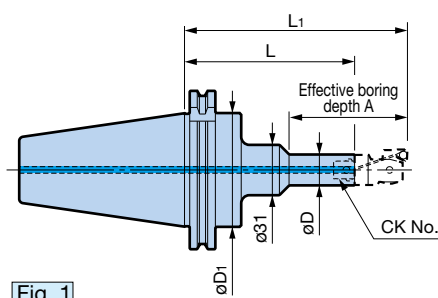


Fig. 1

IV and DV Shank models are mounted on DIN standard spindles.

IV/DV SHANK Model	Fig.	CK No.	øD ₁	øD	L	L ₁	A	Weight (kg)
IV40-CKB1- 75	1	CK1	44.7	19	75	107.5	69.5	1.1
-CKB2- 85	2	CK2		24	85	120.5	82.5	1.1
-CKB3- 95		CK3		31	95	135	97	1.3
-CKB4- 90		CK4		39	90	137	101	1.4
IV50-CKB1-105	1	CK1	70.1	19	105	137.5	73	3.0
-CKB2-115	2	CK2		24	115	150.5	107	3.0
-CKB3-125		CK3		31	125	165	122	3.2
-CKB4-120		CK4		39	120	167	122	3.5
-180					180	227	182	4.0
-CKB5-105		CK5		50	105	162	122	3.7
-180					180	237	197	4.8
-225					225	282	242	5.5
-CKB6- 95		CK6		64	95	166	130	4.1
-170					170	241	205	6.0
-230					230	301	267	7.4
DV40-CKB5- 80	3	CK5	49.6	50	80	137	102	1.5
-CKB6- 65		CK6		64	65	136	101	1.4
DV50-CKB7- 95	3	CK7	80	90	95	182	147	5.3

1. The L₁ and A diameters in the table are the values when the EWN BORING HEAD is attached.
2. Cutting edges and drive keys are aligned with boring heads mounted.
3. Center through coolant supply is available.
4. Mounting the DV Shank model on an ISO standard spindle may cause interference.

<CAT and ANSI standard shanks are also available upon request.>

For heads, **A39**

BIG+KAISER Boring System with a high reputation for many years.
Basic holder for the high precision rough and finish boring head series.

Center through

CK SHANK

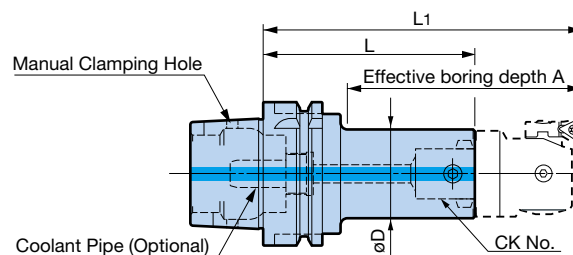


● Model Description

HSK-A40 - CKB1 - 73

● CK No.

● HSK Shank Type

**A** Type (DIN 69893-1) (ISO 12164)Select a head and holder
with matching **CK No.**

Model	CK No.	øD	L	L ₁	A	Weight (kg)
HSK-A 40-CKB1- 73	CK1	19	72.5	105	73	0.38
-CKB2- 85	CK2	24	84.5	120	89	0.41
-CKB3- 80	CK3	31	80	120	92	0.48
-CKB4- 73	CK4	39	73	120	—	0.57
HSK-A 50-CKB1- 73	CK1	19	72.5	105	65	0.5
-CKB2- 85	CK2	24	84.5	117	80	0.6
-CKB3- 80	CK3	31	80	120	82	0.7
-CKB4- 73	CK4	39	73		76	0.8
-CKB5- 83	CK5	50	83	140	—	1.0
HSK-A 63-CKB1- 78	CK1	19	77.5	110	73	0.9
-CKB2- 90	CK2	24	89.5	125	88	1.0
-CKB3-100	CK3	31	100	140	103	1.1
-130			130	170	133	1.3
-CKB4- 93	CK4	39	93	140	103	1.2
-123			123	170	133	1.5
-CKB5- 83	CK5	50	83	140	105	1.3
-113			113	170	135	1.8
-CKB6- 79	CK6	64	79	150	—	1.5
-109			109	180		2.3
HSK-A100-CKB1-103	CK1	19	102.5	135	73	2.5
-CKB2-115	CK2	24	114.5	150	107	2.6
-CKB3-125	CK3	31	125	165	122	2.8
-CKB4-118	CK4	39	118	165	122	3.0
-178			178	225	182	3.5
-CKB5-108	CK5	50	108	165	122	3.3
-183			183	240	197	4.4
-228			228	285	242	5.0
-CKB6- 94	CK6	64	94	165	122	3.4
-169			169	240	197	5.3
-229			229	300	257	6.7
-CKB7-123	CK7	90	123	210	181	5.8
-213			213	300	271	10.2
-273			273	360	331	13.2
HSK-A125-CKB6- 94	CK6	64	94	165	122	4.9
-CKB7-123	CK7	90	123	210	161	7.5

1. Center through coolant supply is available.

2. Coolant pipe is not included.  **C65**3. The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.

4. Cutting edges and drive keys are aligned with boring heads mounted.

For EWN and EWB BORING HEADS, the cutting edge is on the orientation notch side.

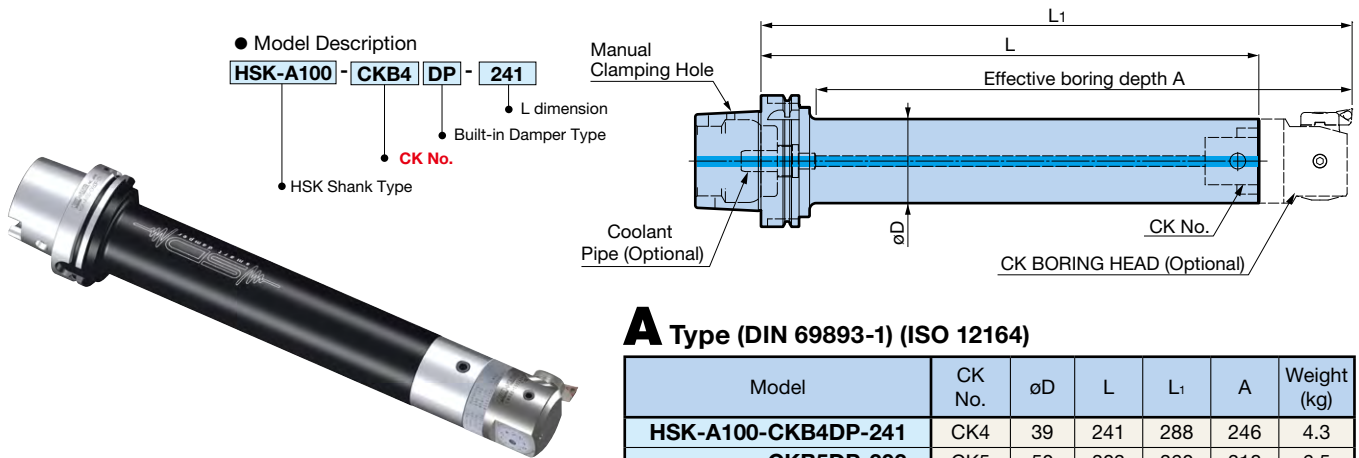


For boring heads, refer to the Roughing and Finishing pages.

Built-in Damper SMART DAMPER PAT.

Center through

- Built-in damper eliminates chatter in deep hole boring.



1. The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.
2. Cutting edges and drive keys are aligned with boring heads mounted.
3. Head and inserts are not included.
4. Extension should not be used due to possible chatter.
5. Coolant pipe is not included. C65

SMART DAMPERS other than the above are also available.



FINISH BORING HEAD and SMART DAMPER have been integrated

SMART DAMPER
EWN BORING HEAD

For details, **A50**



Instantly absorbs chatter even for rough boring with high load

SMART DAMPER
SW HEAD PAT.

For details, **A41**



Standard CK Shanks can be used, allowing flexible tool layout

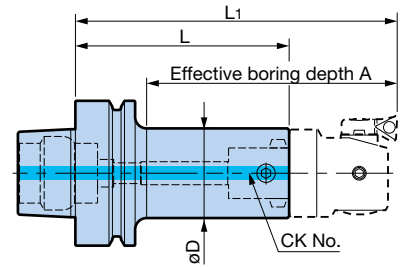
SMART DAMPER
Extension

For details, **A76**

CK SHANK



- Model Description
HSK-F63 - **CKB1** - **78**
 • CK No.
 • L dimension
 • HSK Shank Type



Select a head and holder with matching **CK No.**

F Type (DIN 69893-6)

Model	CK No.	øD	L	L ₁	A	Weight (kg)
HSK-F63-CKB1- 78	CK1	19	77.5	110	73	0.8
CKB2- 90	CK2	24	89.5	125	94	0.8
CKB3-100	CK3	31	100	140	108	1.0
CKB4- 93	CK4	39	93		114	1.2
CKB5- 83	CK5	50	83			1.3

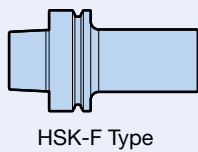
1. The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.

For heads, **A39**

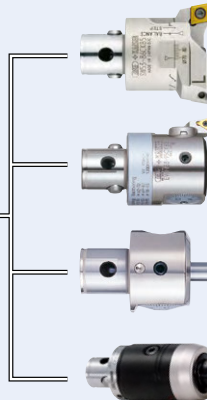
- Supports various applications from rough to finish boring with abundant heads and accessories.

BIG + **KAISER**
 BIG DAISHOWA

CK BORING SYSTEM Diagram



CK1 - CK5



Diameter: ø20 - ø86
 ROUGH HEAD **A39**

Diameter: ø20 - ø95
 FINISH HEAD **A49**

Diameter: ø1 - ø32
 FINISH HEAD
 (Cylindrical tool type) **A57**

M2 - M36
 MEGA SYNCHRO TAPPING HOLDER **A83**

A wide variety of products are available in addition to the listed boring head accessories.

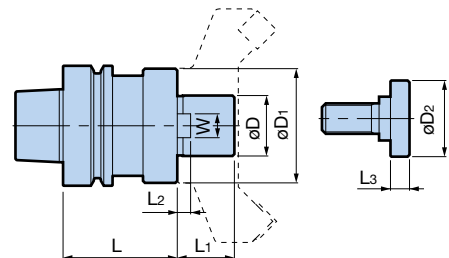
Back boring available

Diameter: ø30 - ø95

General Toolholder FACE MILL ARBOR TYPE A



- Model Description
HSK-F63 - **FMA** **25.4** - **45**
 • L dimension
 • Spigot diameter
 • FACE MILL ARBOR TYPE A
 • HSK Shank Type



F Type (DIN 69893-6)

Model	øD	øD ₁	øD ₂	L	L ₁	Drive Key		L ₃	Clamp Screw	Weight (kg)
						L ₂	W			
HSK-F63-FMA25.4-45	25.4	45	33	45	22	5	9.5	10	MBA-M12	1.0

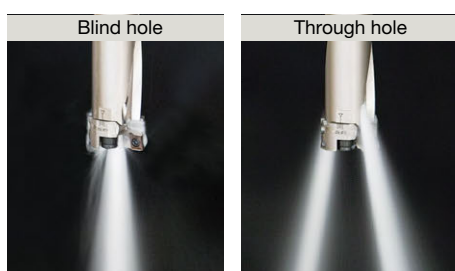
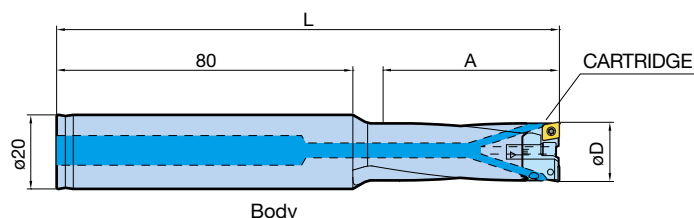
1. Cutter clamp screw is included.

MW BORING HEAD PAT. (for roughing)

Center through

Achieves high efficiency small diameter rough boring with 2 inserts.

- Designed with versatile $\phi 20$ cylindrical shank.

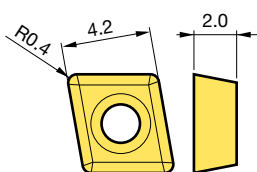


Diameter ϕD	Model	Cartridge Model	L	Effective boring depth A	Weight (kg)
16 - 19	ST20-MW1619-45	MW1619E	136	45	0.24
	-60		151	60	0.26
18 - 21	-MW1821-50	MW1821E	141	50	0.26
	-65		156	65	0.28

Threads for plug screws are prepared in the coolant holes to change the coolant directions.

- Insert clamp screw and wrench are included.
- Cartridges are not included with the body and must be ordered separately.
Cartridge models are a 2-piece set.
- The weight is that of the body and cartridge combined.
- Inserts must be ordered separately.

- Insert (optional)



Workpiece material	Insert Model	Materials
Steel/ Stainless steel	MW0404F Z30P	P30 equivalent carbide substrate TiAlN + AlCrN coating
Cast iron/ Ductile	MW0404S Z30K	K20 equivalent carbide substrate TiAlN + AlCrN coating
Non-ferrous metal/ Aluminum	MW0404E D15N	K15 equivalent carbide substrate DLC coating

- Inserts sold in packets of 10 pcs.
Example: MW0404F Z30P... 10 pcs

- Insert Clamping Screw Set (optional)



Set Model	Thread size	Wrench
S1.6S-T6	M1.6 x 4.2	FA-T6

- The set contains ten screws and a wrench.
※ Wrenches are also available separately.

With Carbide Shank

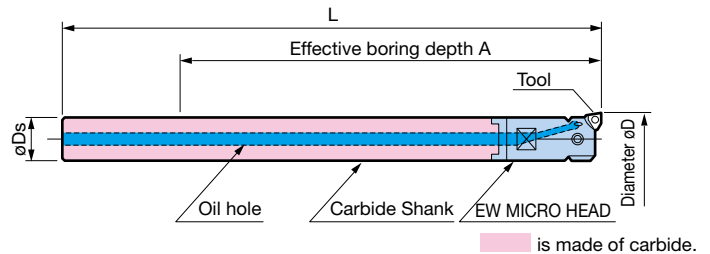
EW MICRO HEAD Diameter: $\phi 15$ - $\phi 22$

Carbide

Center through

Smaller head while maintaining popular $\phi 0.01\text{mm/div.}$ adjusting mechanism.

- Adjustment with only micro-quill eccentricity preserves high speed capability.
- The solid carbide cylindrical shank allows high-rigidity boring.



● Model Description

ST14	W	EW	15	110
• Cylindrical shank diameter			• Min. diameter	• Effective boring depth
			• FINISH HEAD	
			• Carbide	

Model	øDs	Diameter øD	L	A	Tool Model	Insert	Insert Clamping Screw Set	Weight (kg)
ST14W-EW15-110	14	15 - 18	151	110	EN15	WC02	S2S-B	0.10
-140			181	140				0.29
ST16W-EW18-100	16	18 - 22	144	100				0.28
-160			204	160				0.43



Caution

The maximum boring depth differs depending on the workpiece material.

1. The carbide shank and micro head are integrated and cannot be sold separately.
2. Inserts must be ordered separately.



A87



A95

CK Cylindrical Shank



● Model Description

ST32	-	CKB1	-	77
		• CK No.		• L dimension
		• Cylindrical shank No.		

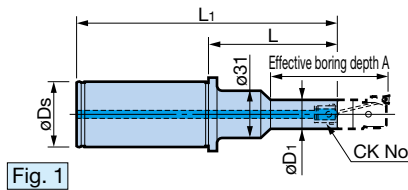


Fig. 1

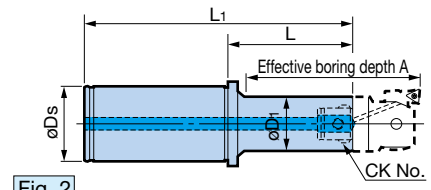


Fig. 2

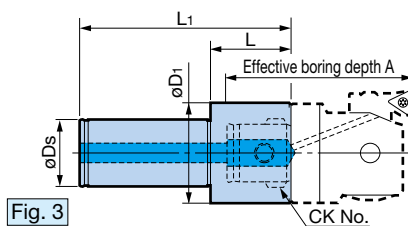


Fig. 3

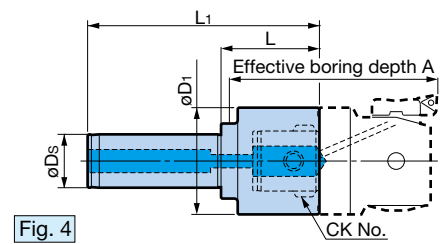


Fig. 4

Model	Fig.	CK No.	øD1	øDs	L	L1	A	Weight (kg)
ST32-CKB1-77	1	CK1	19	32	77	157	73	0.7
-CKB2-73	2	CK2	24		72.5	152.5	100	0.7
-CKB3-69		CK3	31		69	149		0.8
-CKB4-58	3	CK4	39		58	138		0.9
-CKB5-48	4	CK5	50		48	128	125	0.9
-CKB6-59		CK6	64		59	139		1.5
ST42-CKB1-77	1	CK1	19	42	77	157	73	1.0
-CKB2-73	2	CK2	24		72.5	152.5	100	1.0
-CKB3-69		CK3	31		69	149		1.1
-CKB4-63	3	CK4	39		63	143		1.2
-CKB5-48		CK5	50		48	128	125	1.3
-CKB6-59	4	CK6	64		59	139		1.8

1. The A dimension in the table is the reference value when EWN BORING HEAD is attached.
2. Head and insert must be ordered separately.



For heads, A39



For chucking

When using a cylindrical shank tool, we recommend

BIG NEW Hi- POWER
MILLING CHUCK
for its high accuracy and rigidity.



For details, A29

CK Carbide

Cylindrical Shank

- The solid carbide bar realizes efficient deep hole boring which was conventionally impossible.

Carbide

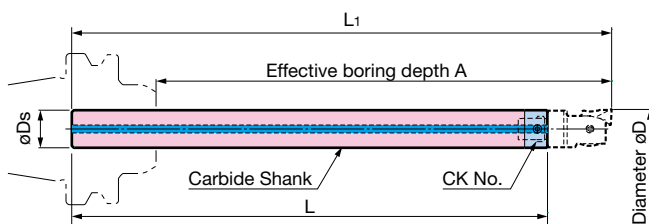
Center through



Model Description

ST19 W-CKB1-140

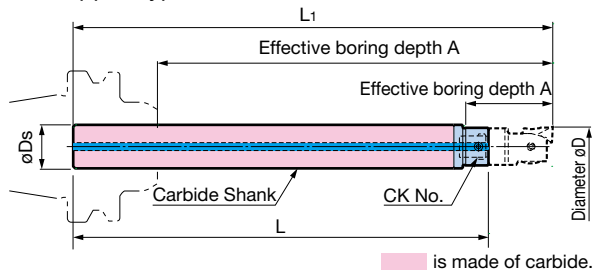
- ST19: CK No.
- W: Carbide
- CKB1: CK No.
- 140: L dimension
- Cylindrical shank diameter



Model	CK No.	øDs	Diameter øD	L	L ₁	A	Weight (kg)
ST19W-CKB1-140	CK1	19	20 - 36	140	172.5	130	0.5
-190				190	222.5	180	0.7
-240				240	272.5	230	0.9
ST24W-CKB2-160	CK2	24	25 - 47	160	195.5	150	0.9
-220				220	255.5	210	1.3
-290				290	325.5	280	1.7
ST31W-CKB3-200	CK3	31	32 - 60	200	240	184	1.8
-280				280	320	264	2.6
-350				350	390	334	3.3

- The A dimension in the table is the reference value when EWN BORING HEAD is attached and used with Hydraulic Chuck.
- Head and inserts are not included.

Stepped type



is made of carbide.

Model	CK No.	øDs	Diameter øD	L	L ₁	A	Weight (kg)
ST22W-CKB1-210	CK1	22	20 - 22	210	242.5	45	1.1
			22 - 36			200	
ST28W-CKB2-245	CK2	28	25 - 28	245	280.5	55	1.9
			28 - 47			235	

- The A dimension in the table is the reference value when EWN BORING HEAD is attached and used with Hydraulic Chuck.
- Head and inserts are not included.

For heads, **A39****Caution**

The maximum boring depth differs depending on the workpiece material.

Basic holder for rough and finish boring heads of the proven **BIG** + KAISER Boring System.

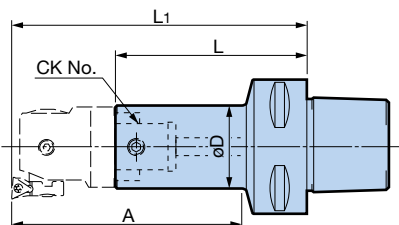
Center through



● Model Description

C4 - **CKB1** - **48**

● CK No. ● L dimension
● Shank No.



C4/C5/C6/C8

Model	CK No.	øD	L	L ₁	A	Weight (kg)
C4-CKB1- 48	CK1	19	47.5	80	55	0.4
-CKB2- 45	CK2	24	44.5	80	55	0.4
-CKB3- 40	CK3	31	40	80	57	0.5
-CKB4- 33	CK4	39	33	80	62	0.5
C5-CKB1- 73	CK1	19	72.5	105	80	0.5
-CKB2- 85	CK2	24	84.5	120	96	0.6
-CKB3- 55	CK3	31	55	95	70	0.6
-CKB4- 48	CK4	39	48	95	70	0.6
-CKB5- 50	CK5	50	50	107	—	0.6
-CKB6- 50	CK6	64	50	121	—	1.0
C6-CKB1- 78	CK1	19	77.5	110	83	1.2
-CKB2- 90	CK2	24	89.5	125	98	1.3
-CKB3- 65	CK3	31	65	105	78	1.3
-100			100	140	113	1.5
-CKB4- 58	CK4	39	58	105	78	1.3
- 93			93	140	113	1.7
-CKB5- 48	CK5	50	48	105	79	1.3
- 83			83	140	114	1.7
-CKB6- 59	CK6	64	59	130	—	1.6
- 94			94	165	—	2.3
C8-CKB4-118	CK4	39	118	165	130	2.4
-178			178	225	190	3.0
-CKB5-108	CK5	50	108	165	130	2.7
-183			183	240	205	3.8
-CKB6- 74	CK6	64	74	145	110	2.5
-169			169	240	206	4.8
-CKB7- 73	CK7	90	73	160	—	3.1
-123			123	210	—	5.6

1. Center through coolant supply is available.
2. The L₁ and A dimensions in the table are the reference values when EWN BORING HEAD is attached.

Modular boring system with secure and accurate connection mechanism

CK BORING SYSTEM

CK BORING SYSTEM

Supports various boring applications with abundant heads and accessories.

