



NEW

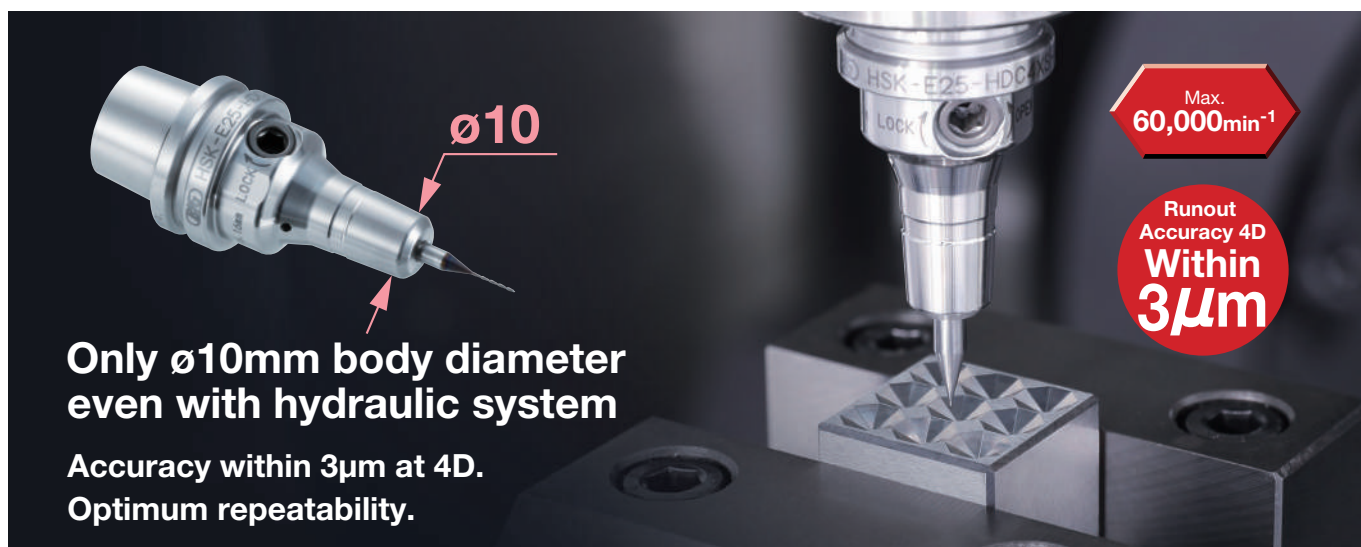
PRODUCTS

CATALOG No. **EXm3-4**



HYDRAULIC CHUCK EXTRA SLIM TYPE
HYDRAULIC CHUCK SUPER SLIM TYPE
NEW BABY CHUCK BIG PLUS TYPE
HYDRAULIC CHUCK LATHE TYPE
MEGA DOUBLE POWER CHUCK MEGA12DS
CK BORING SW CARTRIDGE Type N
SMART DAMPER SW HEAD
SMART DAMPER FACE MILL ARBOR
SMART DAMPER SCREW ON HOLDER
ANGLE HEAD BBT30 Light Weight Type
BIG CAPTO C4 TOOLING
FULLCUT MILL
C-CUTTER MINI

HYDRAULIC CHUCK Type EXTRA SLIM



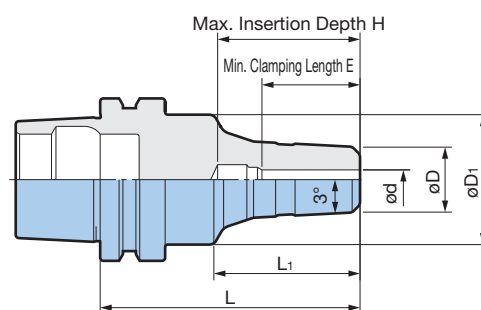
Only ø10mm body diameter even with hydraulic system

Accuracy within 3μm at 4D. Optimum repeatability.

Max. 60,000min⁻¹

Runout Accuracy 4D Within 3μm

[HSK-E SHANK] Clamping diameter: ø3 · ø4



Model	Clamping Diameter ød	øD	øD ₁	L	L ₁	H	E	Weight (kg)
HSK-E25-HDC 3XS- 40	3	10	20	40	22.5	22	16	0.07
-HDC 4XS- 40	4							

1. Cannot be used with center through.

2. Adjusting Screw cannot be used.

- It is recommended to use a Grip Bar to periodically confirm the gripping force of the Hydraulic Chuck.



· Use only cutting tools that have a shank tolerance within h6.

· Do not use with cutting tools made with a flat on the shank. (ie: Weldon type shank)

· We do not recommend use with roughing endmills.

· Do not clamp without a tool.

· Always insert the cutting tool into the holder beyond min. clamping length E.

HYDRAULIC CHUCK Type SUPER SLIM

Accuracy within 3 μ m at 4D.
Optimum repeatability.

High precision and easy operation.

[HSK-E SHANK] Clamping diameter: $\phi 3$ - $\phi 12$

Runout
Accuracy 4D
Within
3 μ m

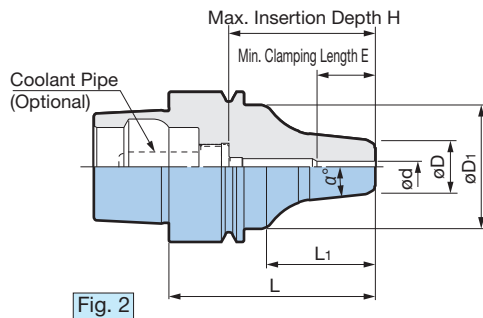


Fig. 2 Center through

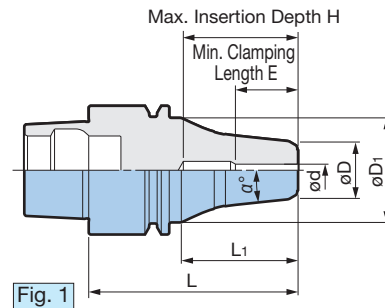


Fig. 1

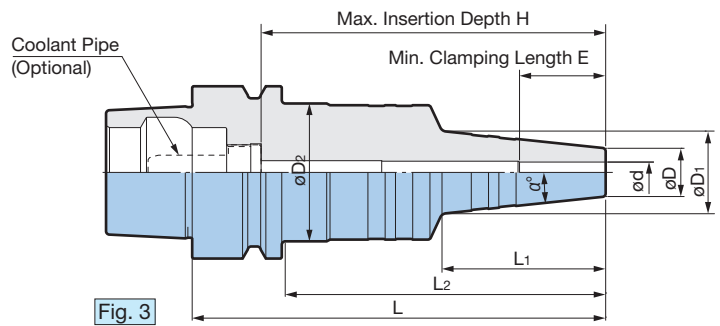


Fig. 3

Center through

Model	Fig.	Clamping Diameter ød	øD	øD ₁	øD ₂	L	L ₁	L ₂	α°	H	E	Max. min ⁻¹	Weight (kg)	
HSK-E25-HDC 3S - 40	1	3	14	20	—	40	27	—	6°	22	16	60,000	0.09	
-HDC 3.175S- 40		3.175												
-HDC 4S - 40		4								21				
-HDC 6S - 45※		6		23		45	31		8°	26	21		0.11	
HSK-E32-HDC 3S - 52	1	3	14	26	—	52	29	—	6°	28	16	45,000	0.19	
-HDC 3.175S- 52		3.175								19				
-HDC 4S - 52		4								25	0.20			
-HDC 6S - 57		6				57	34			33	25			
HSK-E40-HDC 3S - 55▲	2	3	14	33	—	55	29	—	6°	39	16	42,000	0.31	
-HDC 3.175S- 55▲		3.175								19				
-HDC 4S - 55▲		4				75	40			59	40,000	0.36		
- 75▲ 		6				60	34			—	40	25	42,000	0.32
-HDC 6S - 60						75	40			48	40,000	0.36		
- 75 						65	39			39	31	40,000	0.33	
-HDC 8S - 65		8	17			65	39			39	31	40,000	0.33	
-HDC10S - 70		10	19			70	40			42	33	38,000	0.37	
-HDC12S - 70		12	21	36	0.38									
HSK-E50-HDC 4S -120	3	4	14	24	40	120	47	93	6°	100	19	30,000	0.90	
-HDC 6S -120		6								25				
-HDC 8S -120		8	17	28			48			85	31		0.92	
-HDC10S -120		10	19	30							33			
-HDC12S -120		12	21	32			49				36			0.93

1. HSK-E25 and -E32 cannot be used with center through.

2. Coolant pipe is not included.

3. Adjusting Screw cannot be used.

● It is recommended to use a Grip Bar to periodically confirm the gripping force of the Hydraulic Chuck.

4. ※HSK-E25-HDC6S-45 has a body diameter of $\phi 23$ (ISO standard: $\phi 20$ or less).

Note that it may not be usable depending on the machine.

5. For machines with HSK-E40 spindle which cannot be used with a through hole, order a plug separately.

6. When using coolant with models marked with ▲, some coolant may leak from the inner diameter slits.



· Use only cutting tools that have a shank tolerance within h6.

· Do not use with cutting tools made with a flat on the shank. (ie: Weldon type shank)

· We do not recommend use with roughing endmills.

· Do not clamp without a tool.

· Always insert the cutting tool into the holder beyond min. clamping length E.

HYDRAULIC CHUCK Type SUPER SLIM

For versatile high-precision machining including molds and automotive components.

Slim design minimizes workpiece interference, ideal for mold making.

Runout Accuracy 4D
Within **3 μ m**

[HSK-A SHANK] Clamping diameter: $\varnothing 3 - \varnothing 12$ **Center through**

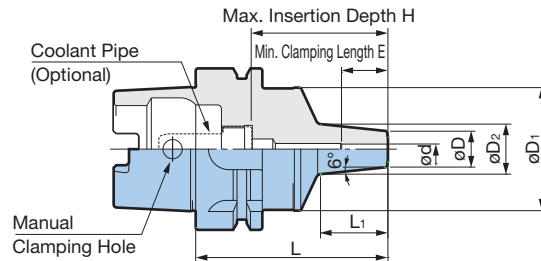


Fig. 1

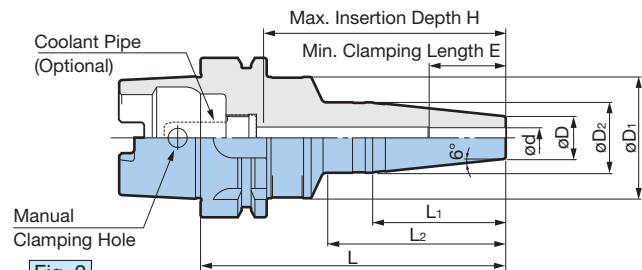


Fig. 2

Model	Fig.	Clamping Diameter ød	øD	øD ₁	øD ₂	L	L ₁	L ₂	H	E	Weight (kg)		
HSK-A40-HDC 4S- 65	1	4	14	33	21	65	28	—	49	19	0.33		
-HDC 6S- 75 		6			23	39	25			0.34			
-HDC 8S- 75 		8	17		26	75	40	47	31	0.36			
-HDC10S- 75 		10	19		28				33	0.37			
-HDC12S- 80 		12	21		31	80	45			36	0.40		
HSK-A50-HDC 4S- 75	1	4	14	40	21	75	31	—	55	19	0.56		
HSK-A63-HDC 3S- 90▲	1	3	14	48	24	90	43	—	68	16	1.0		
-120▲	2				26	120	57	72	98		1.1		
-HDC 4S- 75	1	4			20	75	26	—	53	19	1.0		
- 90					23	90	43		68				
-120	2	5			26	120	57	72	98	21	1.1		
-HDC 5S-120								70		25		1.3	
-HDC 6S-120		6			28	120	52	85	128	31	1.2		
-150								70	95			1.3	
-HDC 8S-120		8			17	150		85	125	33	1.2		
-150								70	94			1.4	
-HDC10S-120		10			19	30		150	87	124	36	1.2	
-150									70	93			1.4
-HDC12S-120		12			21	32	120	87	90	123	36	1.2	
-150									90	123			1.4
HSK-A100-HDC 4S-150 	2	4	14	52	26	150	57	90	121	19	2.7		
-HDC 6S-150 		6								25			
-HDC 8S-150 		8	17				54			28	52	31	2.8
-HDC10S-150 		10	19				56			30		33	
-HDC12S-150 		12	21				58			32			

1. Adjusting Screw cannot be used.

2. Coolant pipe is not included.

3. When using coolant with models marked with ▲, some coolant may leak from the inner diameter slits.

● It is recommended to use a Grip Bar to periodically confirm the gripping force of the Hydraulic Chuck.



· Use only cutting tools that have a shank tolerance within h6.

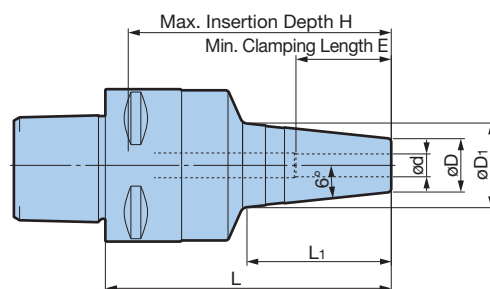
· Do not use with cutting tools made with a flat on the shank. (ie: Weldon type shank)

· We do not recommend use with roughing endmills.

· Do not clamp without a tool.

· Always insert the cutting tool into the holder beyond min. clamping length E.

[BIG CAPTO SHANK] Clamping diameter: $\varnothing 4 - \varnothing 12$ **Center through**



Model	Clamping Diameter ød	øD	øD ₁	L	L ₁	H	E	Weight (kg)
C4-HDC 4S-75 NEW	4	14	23	75	38	69	19	0.43
-HDC 6S-75 NEW	6						25	0.42
-HDC 8S-75 NEW	8						31	0.45
-HDC10S-75 NEW	10				33		0.45	
-HDC12S-75 NEW	12				36		0.46	

1. Adjusting Screw cannot be used.

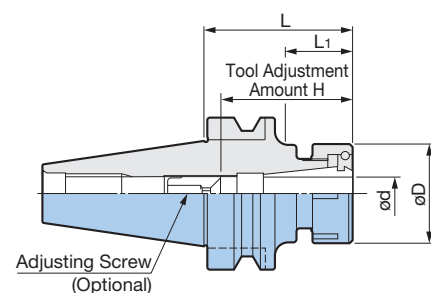


- Use only cutting tools that have a shank tolerance within h6.
- Do not use with cutting tools made with a flat on the shank. (ie: Weldon type shank)
- We do not recommend use with roughing endmills.
- Do not clamp without a tool.
- Always insert the cutting tool into the holder beyond min. clamping length E.

Collet Chuck System

NEW BABY CHUCK

[BIG PLUS SHANK] Clamping diameter: $\varnothing 1.5 - \varnothing 16$ **Center through**



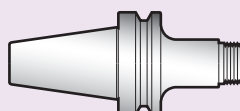
BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

BIG-PLUS BBT SHANK Model	Clamping Diameter $\varnothing d$	$\varnothing D$	L	L ₁	H	Collet Model	Weight (kg)
BBT30-NBS10-45 NEW	1.5 - 10	30	45	20	35 - 45	NBC10-□	0.44
-NBS13-45 NEW	2.5 - 13	35		21	41 - 53	NBC13-□	0.42
-NBS16-45 NEW	2.5 - 16	42			45 - 53	NBC16-□	0.40

1. Nut is included but Adjusting Screw, collet, and wrench must be ordered separately.
2. Center through coolant supply is available.
3. Weight includes the nut but not the collet.
4. Tool adjustment amount "H" indicates the adjustment amount with an Adjusting Screw (NBA).

When ordering a BABY PERFECT SEAL, the "Nut-Less Body" without the standard nut attached is also available.

● **Example** Attach /NL (Nut less) to the end of the holder model number and order the NBC Collet/BABY PERFECT SEAL separately.



NEW BABY CHUCK Model + NL
BBT30-NBS10-45/NL
(NL at the end of the model number means nut not attached)

+



NBC Collet
NBC10-3AA

+



BABY PERFECT SEAL Model
BPS10-03035

NEW innovation for CNC automatic lathes

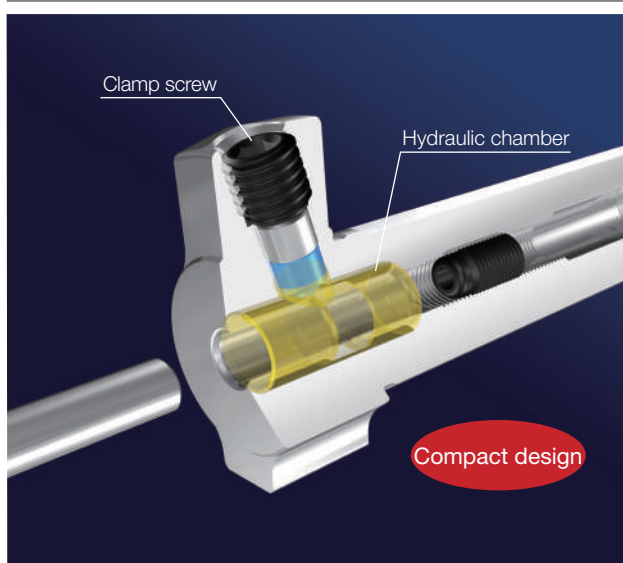
The Hydraulic Chuck supports high-precision drilling and reaming on CNC automatic lathes.



Easy to change tools even inside a machine with limited space, using a single wrench.

Repeatability within **1 μm** at 4D

Integral sleeve construction

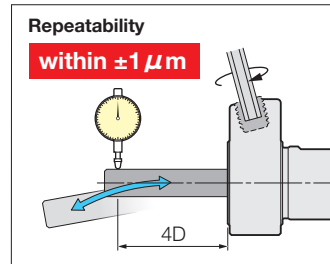


Integrated design provides high durability and easy maintenance. Also the rigidity is greatly improved by the short overhang and dual pressure points.

Repeatability within $\pm 1 \mu\text{m}$

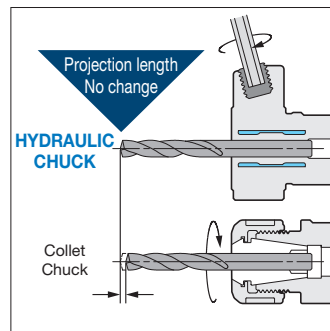
High precision repeatability less than $1 \mu\text{m}$ at 4d improves the tool life.

The cutting tool can be clamped or unclamped easily and securely with just one wrench.



No change in tool length

Since the projection length of the cutting tool does not change before and after tightening the clamp screw, it is easy to adjust the length on the machine.



Front-side Clamping Type



- Adjusting Screw can be used for some models.

Back-side Clamping Type



Extensive product lineup!!

- Clamping screw is located opposite to the cutting tool.

Rear-post Type

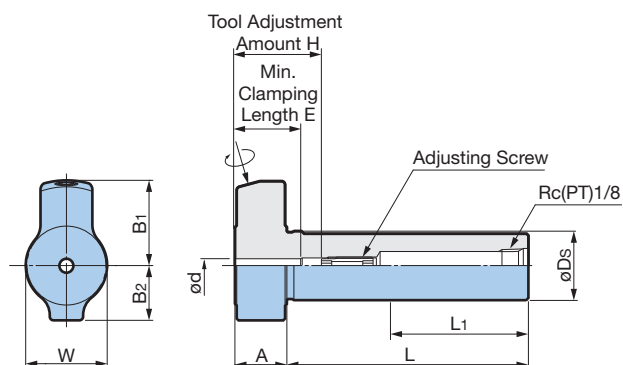
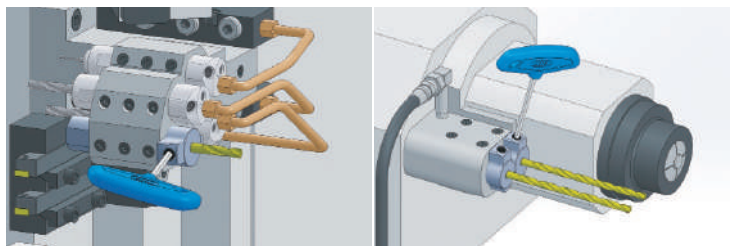


- For Rear end tool post
- Easy operation also on the lower stage.

Front-side Clamping Type

Clamping diameter: $\phi 3 - \phi 12$

- Most popular design available for various tool posts.
- Rc(PT)1/8 piping thread preparation for coolant through tool.
- Adjusting Screw can be used with some models.



Model	Clamping Diameter ød	øDs	L	L ₁	A	B ₁	B ₂	W	H	E	Adjusting Screw (Optional)	Weight (kg)	
SL19.05-HDC 3-60※	3	19.05	60	20	15	24.5	15.8	22	20 - 32	16	HDA4-05015W	0.18	
-HDC3.175-60※	3.175								23 - 32	19		0.18	
-HDC 4-60	4								31 - 48	25		NBA6B	0.18
-HDC 6-60	6								65	31	—	0.17	
-HDC 8-60▲	8					25.5							75
SL20 -HDC 3-70※	3	20	70	30	15	24.5	15.8	23	20 - 32	16	HDA4-05015W	0.22	
-HDC 4-70	4								23 - 32	19		0.22	
-HDC 6-70	6								31 - 48	25	NBA6B	0.22	
-HDC 8-70▲	8					25.5			75	31	—	0.21	
SL22 -HDC 3-70※	3	22	70	30	15	24.5	15.8	25	20 - 32	16	HDA4-05015W	0.26	
-HDC 4-70	4								23 - 32	19		0.26	
-HDC 6-70	6								31 - 48	25	NBA6B	0.26	
-HDC 8-70▲	8					25.5			75	31	—	0.25	
-HDC10-70▲	10					27	16.8		70	33			0.24
SL25 -HDC 3-65※	3	25	65	25	15	23	14	28	20 - 32	16	HDA4-05015W	0.31	
-HDC 4-65	4					24.5	15		23 - 32	19		0.31	
-HDC 6-65	6								31 - 48	25	NBA6B	0.31	
-HDC 8-65▲	8					25.5	16		70	31	—	0.31	
-HDC10-65▲	10					27	17		65	33			0.29
-HDC12-65▲	12					28	18						
SL25.4 -HDC 3-80※	3	25.4	80	40	15	23	14	28	20 - 32	16	HDA4-05015W	0.37	
-HDC 4-80	4					24.5	15		23 - 32	19		0.37	
-HDC 6-80	6								31 - 48	25	NBA6B	0.37	
-HDC 8-80▲	8					25.5	16		85	31	—	0.37	
-HDC10-80▲	10					27	17		80	33			0.35
-HDC12-80▲	12					28	18						

1. L₁ is the longest possible cutoff position.
2. Tool adjustment amount "H" indicates the adjustment length with an Adjusting Screw.
Models marked with ▲ cannot be used with Adjusting Screw. The "H" dimension is the max. insertion depth.
3. Adjusting screw can be adjusted from the shank side as well.
For HDC8 alone, the adjusting screw cannot be used.
4. Tool adjustment amount "H" indicates the adjustment length with an adjusting screw.
For HDC8 it shows the max. tool shank length that can be inserted into the holder.
5. When using coolant with models marked with ※, some coolant may leak from the inner diameter slits.

- It is recommended to use a Grip Bar to periodically confirm the gripping force of the Hydraulic Chuck.



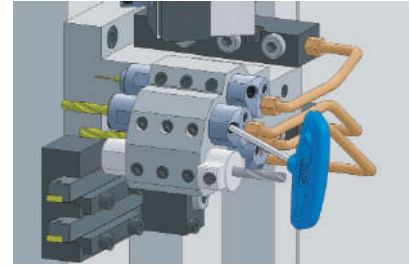
- Use only cutting tools that have a shank diameter within h6.
- Do not use with cutting tools made with a flat on the shank. (ie: Weldon type shank).
- Do not clamp without a tool.
- Always insert the cutting tool into the holder beyond min. clamping length E.

HYDRAULIC CHUCK LATHE Type

Back-side Clamping Type

Clamping diameter: $\phi 3 - \phi 12$

- Tighten from the opposite side of the cutting tool. Ideal for use on the Tool-Post 1.
- Rc(PT)1/8 piping thread preparation for coolant through tool.
- Slim design avoids interference with adjacent tools.



Extensive product lineup!

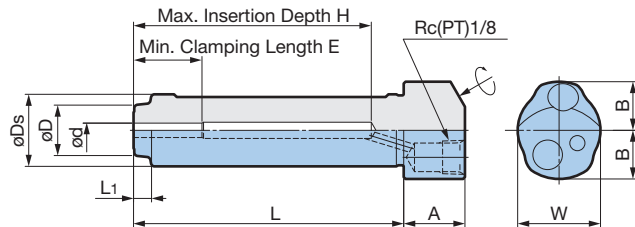


Fig. 1

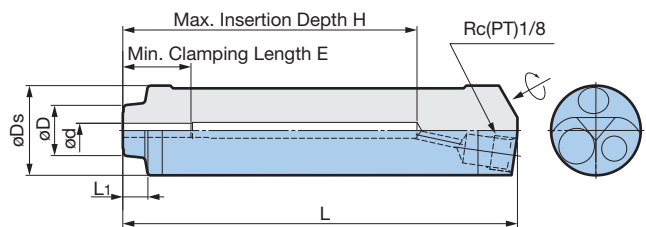


Fig. 2

Model	Fig.	Clamping Diameter ϕd	ϕD	ϕD_s	L	L ₁	A	B	W	H	E	Weight (kg)								
SL19.05F-HDC 3- 85※	1	3	14	19.05	85	5	17	13.5	22	76	16	0.22								
-HDC3.175- 85※		3.175									19									
-HDC 4- 85		4																		
-HDC 6- 80		6	71		25	0.20														
-HDC 8- 80		8			31	0.19														
SL20F -HDC 3- 75※	1	3	14	20	75	5	17	13.5	23	66	16	0.22								
-HDC 4- 75		4									19									
-HDC 6- 70		6											25	0.20						
-HDC 8- 70		8	61		31	0.19														
SL22F -HDC 3- 75※	1	3	14	22	75	5	17	13.5	25	66	16	0.26								
-HDC 4- 75		4									19									
-HDC 6- 70		6											25	0.24						
-HDC 8- 70		8	61		31	0.23														
-HDC 10- 70		10								33	0.22									
SL25F -HDC 3-110※ NEW		2	3		14	25				110	7	—	—	—	82	16	0.37			
-HDC 4-110 NEW	4		19																	
-HDC 6-105 NEW	6			77			25	0.34												
-HDC 8-100 NEW	8		17		100				3	—	—				—	72	31	0.31		
-HDC 10- 95 NEW	10																		95	—
-HDC 12- 90 NEW	12			90			61	36												
SL25.4F-HDC 3-105※ NEW	2		3	14	25.4		105	7	—	—	—				77	16	0.36			
-HDC 4-105 NEW		4	19																	
-HDC 6-100 NEW		6				72						25	0.34							
-HDC 8- 95 NEW		8	17	95			3	—						—	—	67	31	0.30		
-HDC 10- 90 NEW		10																	90	—
-HDC 12- 85 NEW		12				85						56	36							

1. When using coolant with models marked with ※, some coolant may leak from the inner diameter slits.

2. Adjusting Screw cannot be used.

- It is recommended to use a Grip Bar to periodically confirm the gripping force of the Hydraulic Chuck.
- Confirm in advance the mounting dimensions of the machine to be used.

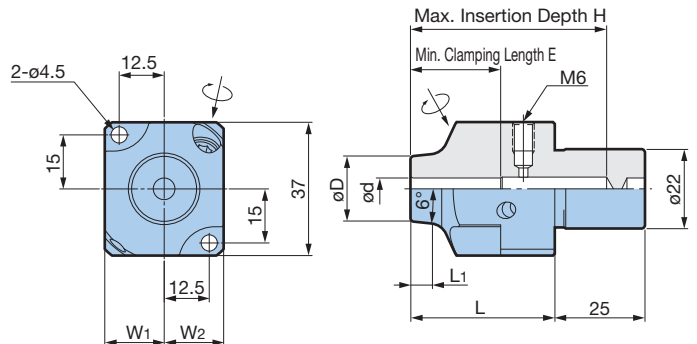
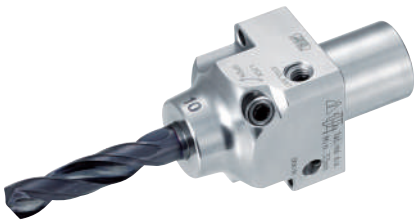
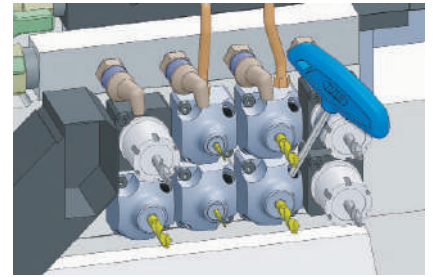


- Use only cutting tools that have a shank diameter within h6.
- Do not use with cutting tools made with a flat on the shank. (ie: Weldon type shank).
- Do not clamp without a tool.
- Always insert the cutting tool into the holder beyond min. clamping length E.

Rear-post Type

Clamping diameter: $\varnothing 3 - \varnothing 10$

- Tool change with a single wrench avoiding adjacent tools and coolant pipes.
- Easy tool setup even at the lower tool post.
- M6 piping thread preparation for coolant through tool available in upper tool post.



Model	Clamping Diameter $\varnothing d$	$\varnothing D$	L	L ₁	W ₁	W ₂	H	E	Weight (kg)
SL22R-HDC 3- 40 ※	3	14	40	7	16.5	16.5	35	16	0.34
-HDC 4- 40	4			9			42	19	0.33
-HDC 6- 40	6			5			55	25	0.36
-HDC 8- 40	8			6	17.5	17.5	54	31	0.36
-HDC10- 40	10							33	0.35

1. When using coolant with models marked with ※, some coolant may leak from the inner diameter slits.
2. Adjusting Screw cannot be used.

- It is recommended to use a Grip Bar to periodically confirm the gripping force of the Hydraulic Chuck.
- Confirm in advance the mounting dimensions of the machine to be used.



Caution

- Use only cutting tools that have a shank diameter within h6.
- Do not use with cutting tools made with a flat on the shank. (ie: Weldon type shank).
- Do not clamp without a tool.
- Always insert the cutting tool into the holder beyond min. clamping length E.

MEGA DOUBLE POWER CHUCK (MEGA12DS)



High Speed & High Performance MEGA DOUBLE POWER CHUCK $\phi 12$ mm diameter clamping series is now available

High gripping force, 3-times greater than collet chuck, secures performance with long endmills.

Ideal for Trochoidal milling with anti-vibration endmills.

Clamping diameter $\phi 12$

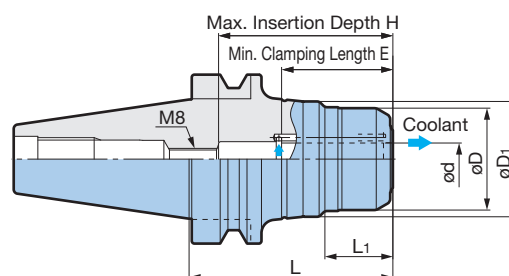
MAX. 30,000 min^{-1}



[BIG PLUS SHANK] Clamping diameter: $\phi 12$

Center through

BIG-PLUS
SPINDLE SYSTEM
DUAL CONTACT



BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Model	Clamping Diameter ϕD	ϕD	ϕD_1	L	L_1	H	E	MEGA WRENCH Model	Weight (kg)
BBT30-MEGA12DS- 58	12	38	43	59	25	61	43	MGR38	0.64
BBT40-MEGA12DS- 75	12	38	43	76	25	65	43	MGR38	1.4
-105				106					1.8
BBT50-MEGA12DS-105	12	38	43	106	25	65	43	MGR38	4.2
-135				136					4.7
-165				166					5.2

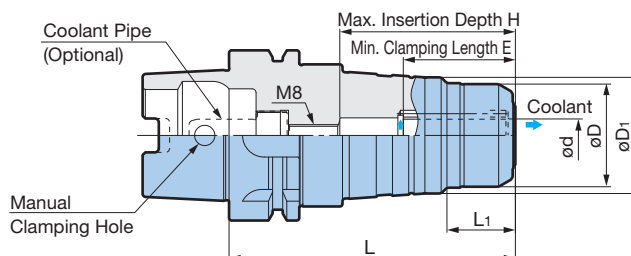
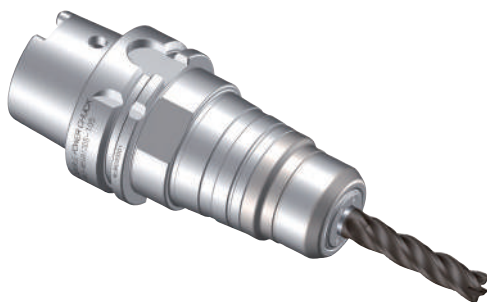
1. Wrench is not included. Please order separately.

2. Please note that the practical spindle speed may be considerably influenced by the machine rigidity and tool balance. When using, slowly ramp up to the appropriate speed starting from slow speeds.

3. To adjust the insertion depth, use a hex socket head screw (M8). However, please contact us if using for jet through applications.

[HSK-A SHANK] Clamping diameter: $\phi 12$

Center through



Model	Clamping Diameter ϕD	ϕD	ϕD_1	L	L_1	H	E	MEGA WRENCH Model	Weight (kg)
HSK-A 63-MEGA12DS- 75※	12	38	43	76	25	51	43	MGR38	1.1
-105				106		65			1.5
HSK-A100-MEGA12DS-105	12	38	43	106	25	65	43	MGR38	3.0
-135				136					3.5

1. Wrench is not included. Please order separately.

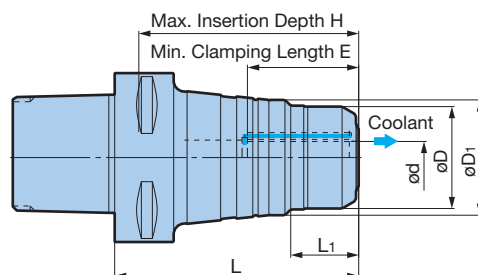
2. Please note that the practical spindle speed may be considerably influenced by the machine rigidity and tool balance. When using, slowly ramp up to the appropriate speed starting from slow speeds.

3. To adjust the insertion depth, use a hex socket head screw (M8). However, please contact us if using for jet through applications.

4. Coolant pipe is not included.

Models marked with ※ cannot be used with hex socket head screws (M8).

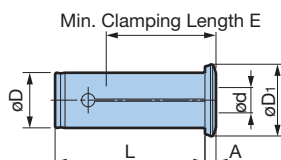
[BIG CAPTO SHANK] Clamping diameter: $\phi 12$ **Center through**



Model	Clamping Diameter ϕd	ϕD	ϕD_1	L	L ₁	H	E	MEGA WRENCH Model	Weight (kg)
C6-MEGA12DS-90	12	38	43	91	25	82	43	MGR38	1.4

1. Wrench is not included. Please order separately.
2. Please note that the practical spindle speed may be considerably influenced by the machine rigidity and tool balance. When using, slowly ramp up to the appropriate speed starting from slow speeds.

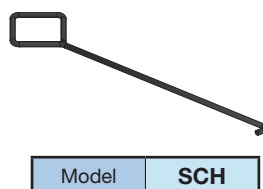
■ **PJC Straight Collet (Jet Through Type)**



Model	ϕd	ϕD	ϕD_1	A	L	E
PJC12D- 6	6	12	20.4	4.6	40	35
8	8			4.8		37
10	10			4.8		39

1. Use the collet hook (SCH) for collet removal.
2. PJC12D can be used with the MEGA DOUBLE POWER CHUCK (MEGA12DS) and NEW Hi- POWER MILLING CHUCK (HMC12J) in common.

■ **Collet Hook**



■ **MEGA WRENCH**

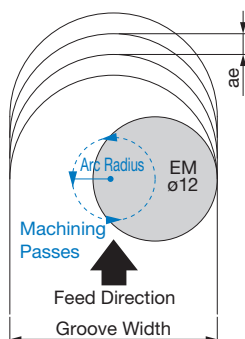
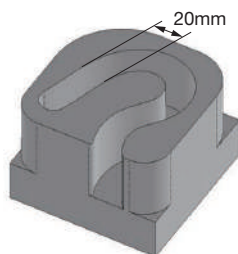
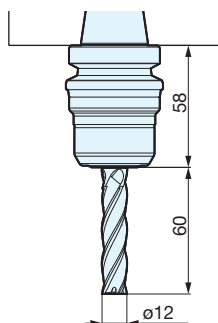
MEGA WRENCH makes nut fastening work easier with a one-way clutch system



Model	MGR38
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APPLICATION EXAMPLES

Trochoidal milling

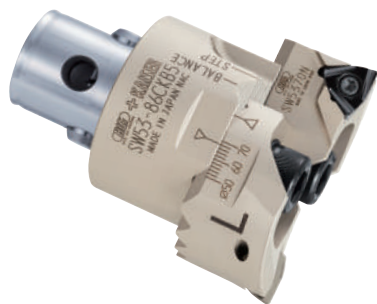


Cutting Conditions

Machine	BBT30 (Vertical MC)
Holder	BBT30-MEGA12DS-58
Tool	$\phi 12$ carbide damper endmill (4 inserts)
Workpiece material	S50C
Spindle speed n	5836 (min ⁻¹)
Cutting speed Vc	220 (m/min)
Feed	1868 (mm/min)
Feed rate fz	0.08 (mm/t)
Axial DOC ap	48 (mm)
Radial DOC ae	0.8 (mm)

Result Stable machining was possible without endmill fallout on a #30 machine as well.

SW CARTRIDGE Type N



Diameter
ø32~ø203

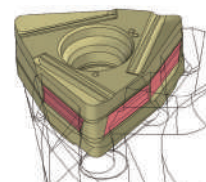
Highly efficient 6-corner inserts for highly functional SW Boring Head

Double-sided 6-cornered specifications with an 80° apex angle balancing economy and insert strength.
Parallel cutting edge shape for flat machining surface.



Strong Contact Mechanism

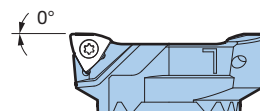
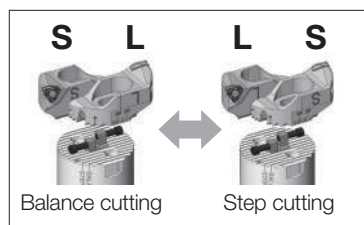
Original mechanism supports the side strip for high-strength, dependable insert clamping.



[N Type for Blind Holes]



Adapted for both balance and step cutting by simple replacement of standard cartridges.



● N Type (6 corners of the insert can be used)

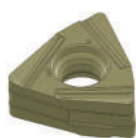
Diameter øD	Cartridge Model	Head Model	Insert	Insert Clamp Screw Set
32~ 42	SW3242N	SW 32- 51CKB3	ZN05	S2.508S-7IP
41~ 51	SW4151N			
41~ 54	SW4154N	SW 41- 66CKB4		
53~ 66	SW5366N			
53~ 70	SW5370N	SW 53- 86CKB5	ZN08	S412S-15IP
69~ 86	SW6986N			
68~ 90	SW6890N	SW 68-110CKB6		
88~110	SW88110N			
98~126	SW98126N	SW 98-153CKB6 SW 98-153CKB7		
125~153	SW125153N			
148~176	SW148176N	SW148-203CKB6 SW148-203CKB7		
175~203	SW175203N			

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

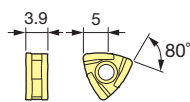
1. Inserts must be ordered separately.
2. The insert clamping screw set (optional) contains 10 screws and 1 wrench.

■ Insert (optional accessory)

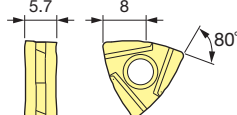
Uneven hexagon-type insert with double-sided 6-cornered specifications.



《ZN05》



《ZN08》



Insert Model	Nose Radius	No. of Corners	Workpiece Material	Grade	Material
ZNMU050308EM	0.8	6	General Steels	CW20PA	Coated Carbide
ZNMU080508EM				CW15KA	
ZNMU050308EM			Cast Iron	CW20PA	
ZNMU080508EM				CW15KA	

1. Inserts are available in packets of 10 pcs.

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

<Example> **ZNMU050308EM (CW20PA)**10 Pcs
Insert Model Grade

Insert Grade Description

CW20PA	CW15KA
Suppressing abnormal damage through a smoother surface, this grade provides highly stable tool life in diverse conditions.	With a high-adhesion, high-strength coating, this highly wear- and fracture-resistant grade is recommended for cast iron machining.

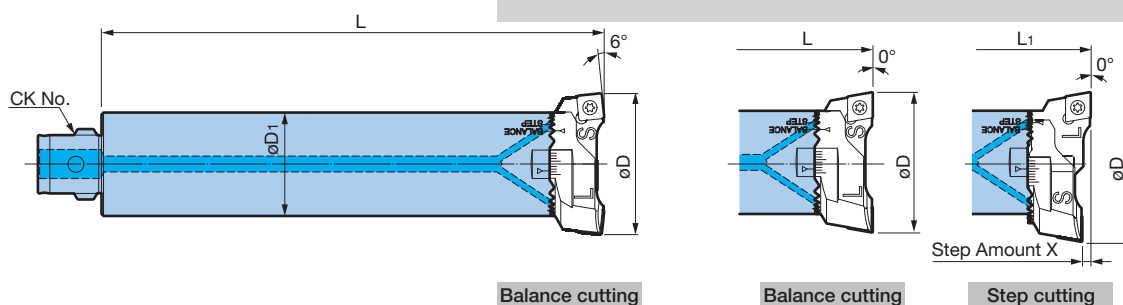
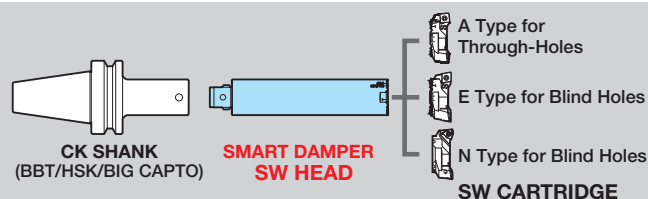
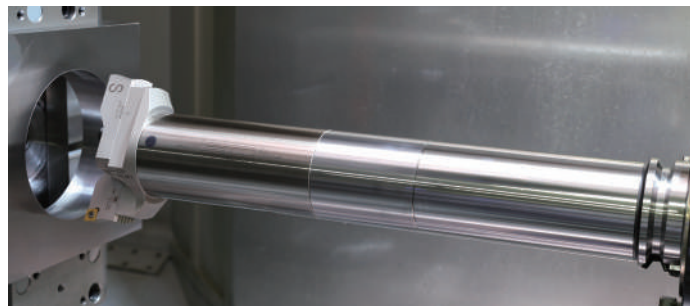
SMART DAMPER SW BORING HEAD



Diameter: $\varnothing 41 \sim \varnothing 203$

Extended boring range up to ø203 mm diameter

Unique dynamic damper eliminates chatter in heavy-duty rough boring.

For Through Hole **A Type**

Balance cutting only.

For Blind Hole **E Type** **N Type**

Step cutting

Figure shows E type.

Diameter øD	SMART DAMPER SW HEAD Model	Cartridge Model			CK No.	øD ₁	L	L ₁	Step amount X	Weight (kg)		
		A Type	E Type	N Type								
41～ 54	CKB4-SW41DP -190	SW4154A	SW4154E	SW4154N	CK4	39	190	190.2	0.4	2.4		
53～ 66		SW5366A	SW5366E	SW5366N								
53～ 70	CKB5-SW53DP -220	SW5370A	SW5370E	SW5370N	CK5	50	220	220.2		4.5		
69～ 86		SW6986A	SW6986E	SW6986N								
68～ 90	CKB6-SW68DP -245	SW6890A	SW6890E	SW6890N	CK6	64	245	245.2		8.3		
88～110		SW88110A	SW88110E	SW88110N								
98～126	CKB6-SW98DP -260 	SW98126A	SW98126E	SW98126N			CK7	90		260	260.2	8.8
125～153		SW125153A	SW125153E	SW125153N								
98～126	CKB7-SW98DP -260 	SW98126A	SW98126E	SW98126N	CK6	64						16.4
125～153		SW125153A	SW125153E	SW125153N								
148～176	CKB6-SW148DP-260 	SW148176A	SW148176E	SW148176N	CK7	90	16.9					
175～203		SW175203A	SW175203E	SW175203N								
148～176	CKB7-SW148DP-260 	SW148176A	SW148176E	SW148176N	CK7	90	16.9					
175～203		SW175203A	SW175203E	SW175203N								

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. Each cartridge model consists of a pair of cartridges and an insert clamping wrench.
5. Coolant through is standard for all the SW heads.
6. The diameter range is the value when inserts with nose radius 0.8 are used.

■ **SW Cartridge** (optional accessory)

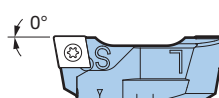
A Type

SC Insert
4 corners



E Type

CC Insert
2 corners



N Type

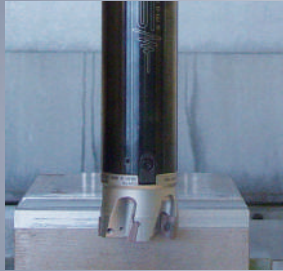
ZN Insert
6 corners



SMART DAMPER FACE MILL ARBOR

Optimizes cutter performance for high-efficiency machining.

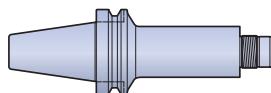
- New sizes available as a series.
FMH25.4/FMH32



Center through

For FMH22 / FMH25.4 / FMH27 / FMH32

Select from the Basic Holder and Damper Head according to the application.



Basic Holder

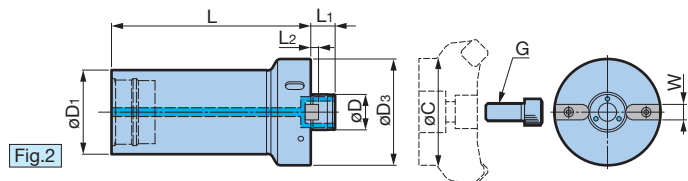
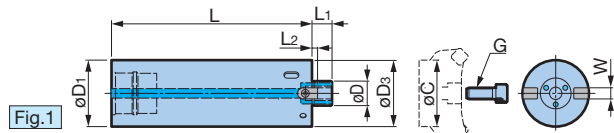


Damper head

Caution

Damper head becomes unremovable from the basic holder once they are used for machining after assembled.

Damper head



Model	Fig.	øD	øD ₁	øD ₃	L	L ₁	L ₂	W	G	Weight (kg)	Wrench model	Min. flange diameter øC
SDF36-FMH22DP -47-180	1	22	47	47	180	18	5	10	M10	3.0	FK45-50L	36
-60-180			60	60		20	6	12	M12	4.5	FK58-62L	49
-FMH27DP -60-180		27								4.5		46
SDF51-FMH25.4DP-70-180 NEW	1	25.4	70	70	180	22	5	9.5	M12	6.6	FK68-75L	46
SDF57-FMH27DP -76-180	1	27	76	76	180	20	6	12	M12	8.1	FK68-75L	48
-FMH32DP -96-180 NEW	2	32	96	96		22	7	14	M16	8.7	FK92-100	58

1. Refer to the operation manual regarding the mounting method to the basic holder.

2. The weight does not include the cutter.

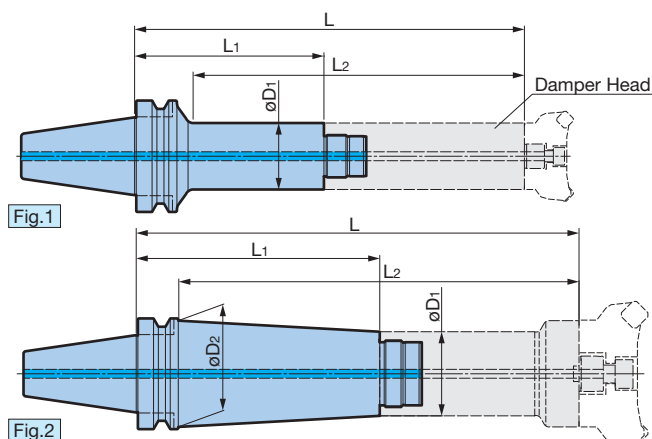
3. A hook wrench and cutter tightening clamp screw are included.

4. øC indicates the smallest mounting surface diameter of the cutter that can be mounted on the arbor. Be careful when using a cutter with the mounting diameter considerably smaller than the cutting diameter, as it may not fit.

Basic Holder

[BBT50 SHANK]

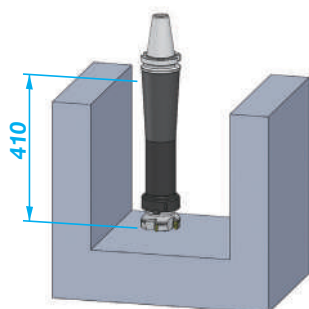
Center through



BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Model	Fig.	ϕD_1	ϕD_2	L	L ₁	L ₂	Weight (kg)	Compatible Damper Head
BBT50-SDF36-47- 70	1	47	—	250	70	197	4.3	SDF36-FMH22DP-47
-47-120				300	120	247	5.0	
-47-170				350	170	297	5.6	
-47-220				400	220	347	6.3	
-SDF36-60- 70	1	60	—	250	70	197	4.6	SDF36-FMH22DP-60 -FMH27DP-60
-60-120				300	120	247	5.7	
-60-170				350	170	297	6.7	
-60-220				400	220	347	7.8	
-SDF51-70-170 NEW	1	70	—	350	170	307	8.0	SDF51-FMH25.4DP-70
-70-220 NEW				400	220	357	9.7	
-SDF57-76- 70	1	76	—	250	70	207	5.3	SDF57-FMH27DP-76 -FMH32DP-96
-76-120				300	120	257	7.0	
-76-170				350	170	307	8.8	
-76-220				400	220	357	10.5	
-SDF57-76-220T NEW	2	76	96	400	220	360	12.5	SDF57-FMH27DP-76 -FMH32DP-96

Damper effect with a shoulder milling cutter $\phi 100$



Cutting Conditions

Machine	Vertical MC (BBT50)
Workpiece material	S55C
Cutting speed	210m/min
Feed	0.14mm/t
Radial DOC	100mm

○ = Acceptable × = Chatter

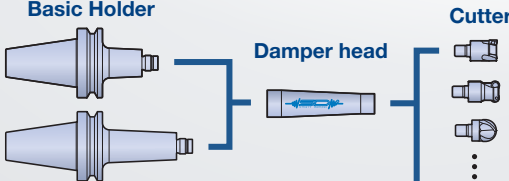
Arbor	Axial DOC (mm)								Result
	0.5	0.6	0.7	0.8	1.0	1.2	1.4	1.6	
Without Damper	○	○	×						 Axial DOC 2x higher
Built-In Damper NEW SMART DAMPER BBT50-SDF57-76-220T + SDF57-FMH32DP-96-180	○	○	○	○	○	○	○	×	

SCREW ON HOLDER with Built-in Damper

Dynamic damper secures damping effect even screw-on tool assembly.

Tapered body design maximizes rigidity while minimizing interference.

Center through

Basic Holder

Damper head

Cutter

Caution

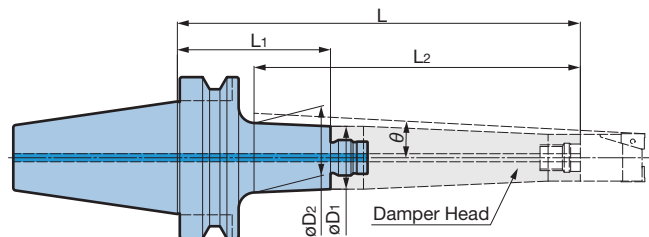
Damper head becomes unremovable from the basic holder once they are used for machining after assembled.



Basic Holder

[BBT50 SHANK]

Center through



BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Model	ϕD_1	ϕD_2	L	L ₁	L ₂	θ	Weight (kg)	Damper Head
BBT50-SDF20-39-95T	39	43.1	250	95	202.4	2°	4.2	SDF20-M16DP-29-155T
-145T		47.5	300	145	252.4		4.8	
BBT50-SDF28-50-70T	50	52.1	250	70	204.3	2°	4.2	SDF28-M16DP-38-180T
-120T		56.3	300	120	252.4		5.1	
-170T		60.7	350	170	302.4		6.2	

Damper head

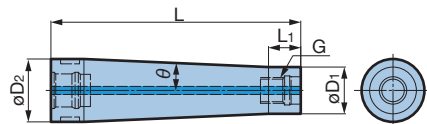


Fig.1

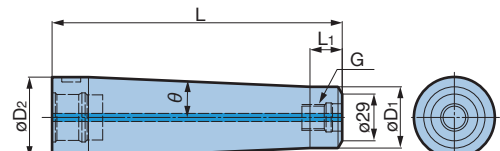


Fig.2

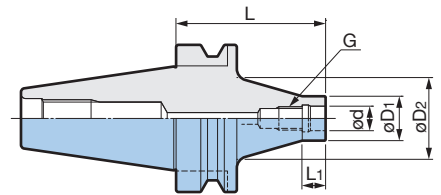
Model	Fig.	ϕD_1	ϕD_2	L	L ₁	θ	G	Weight (kg)
SDF20-M16DP-29-155T	1	29	39	155	20	2.5°	M16	1.2
SDF28-M16DP-38-180T	2	38	50	180	20	2.5°	M16	2.5

- For how to mount the Basic Holder, see the operation manual.
- The weight does not include the cutter.
- Using cutter with cutting diameter more bigger than the ϕD_1 in the table.

- Hook wrench for damper head tightening is included.
- The spanner for cutter head is not included.

SCREW ON HOLDER

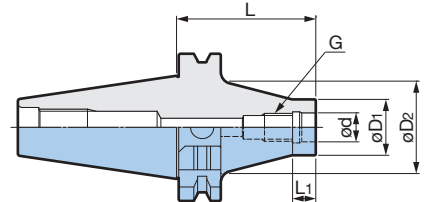
[BBT SHANK] Center through



BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Model	ød	øD ₁	øD ₂	L	L ₁	G	Weight (kg)
BBT30-M 8-15- 50	8.5	15	30	50	10	M 8	0.44
-M10-19- 45	10.5	19	35	45		M10	0.45
-M12-24- 40	12.5	24	40	40		M12	0.45
-M16-29- 35	17	29		35		M16	0.41
BBT40-M 8-15- 70	8.5	15	30	70	10	M 8	1.1
-115			32	115			1.3
-M10-19- 65	10.5	19	35	65		M10	1.1
-110				110			1.3
-M12-24- 60	12.5	24	40	60		M12	1.1
-105				105			1.4
-M16-29- 55	17	29	45	55		M16	1.2
-100				100			1.5

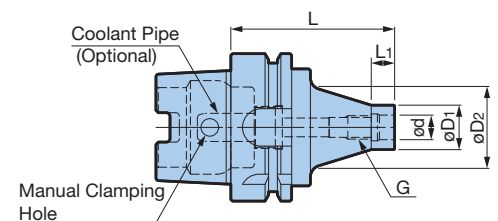
[BDV SHANK] Center through



BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional DV spindles.

Model	ød	øD ₁	øD ₂	L	L ₁	G	Weight (kg)
BDV40-M10-19- 65	10.5	19	35	65	10	M10	1.0
-110				110			1.2
-M12-24- 60	12.5	24	40	60		M12	1.0
-105				105			1.3
-M16-29- 55	17	29	45	55		M16	1.1
-100				100			1.4

[HSK SHANK] Center through



Model	ød	øD ₁	øD ₂	L	L ₁	G	Weight (kg)
HSK-A 63-M 8-15-75	8.5	15	30	75	10	M 8	0.9
-M10-19-70	10.5	19	35	70		M10	0.9
-M12-24-65	12.5	24	40	65		M12	0.9
-M16-29-60	17	29		60		M16	0.9

1. Coolant pipe is not included. Please order separately.

ANGLE HEAD BBT30 Light Weight Type

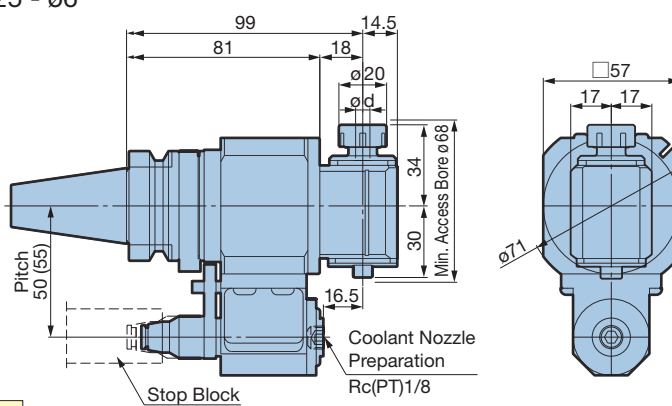
Lightweight: **2kg** or less

Compatible with high-speed ATC of ø30 taper machining center

Body weight sharply reduced.
Tool change time can be shortened.



[NEW BABY CHUCK Type] Clamping Diameter : $\varnothing 0.25 - \varnothing 6$

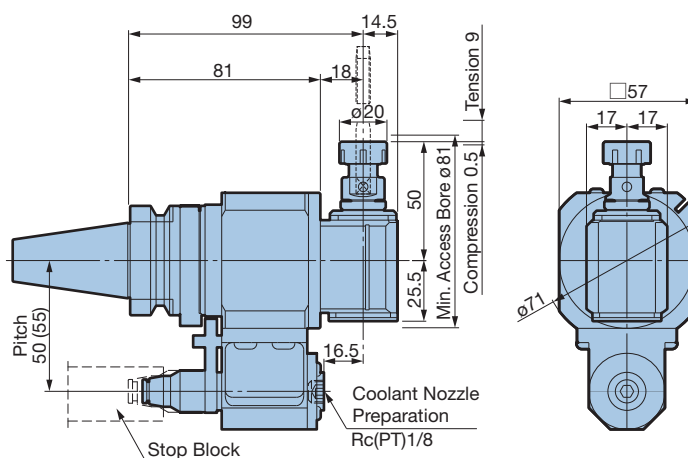
MAX.6,000min⁻¹

BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Model	Clamping Diameter ød	Collet Model	Speed Ratio Input:output	Weight (kg)
BBT30-AG90-6-99	0.25 - 6	NBC6	1:1	1.79

1. The cutting tool rotates in reverse to the machine spindle.
2. Nut and wrench are included. Collet is not included. Please order separately.
3. Stop Blocks must be ordered separately.

[TAPPER Type] M2 - M6

MAX.2,000min⁻¹

BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Model	Tapping range	Collet Model	Speed Ratio Input:output	Weight (kg)
BBT30-AG90-FT6-99	M2 - M6	NBC6	1:1	1.81

1. The cutting tool rotates in reverse to the machine spindle.
2. Nut and wrench are included. Collet is not included. Please order separately.
3. Stop Blocks must be ordered separately.

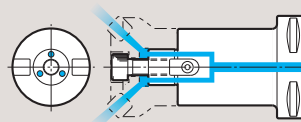
FACE MILL ARBOR Type H



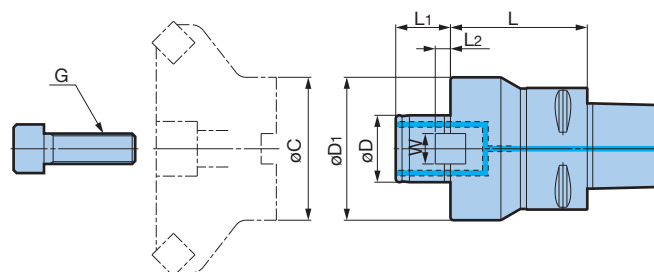
Face mill arbor for cutting edge-through cutters.

Center through

CAPTO is a trademark licensed by Sandvik Coromant.



Securely supplies coolant/air to the cutting edge.



Model	øD (h6)	øD ₁	L	L ₁	Drive Key		G	Min. flange diameter (øC)	Weight (kg)
					L ₂	W			
C4-FMH22-47-45 NEW	22	47	45	18	5	10	M10	38	0.7

Turning Tool 45° Type S (Mono-block Holder)

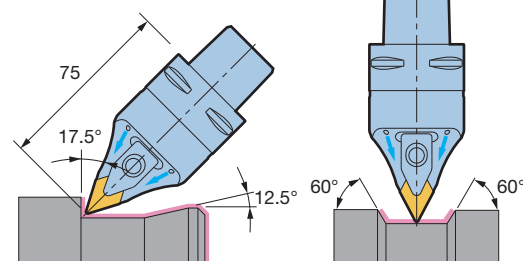


Coolant supplied from 2 locations.

Center through

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Right/left universal



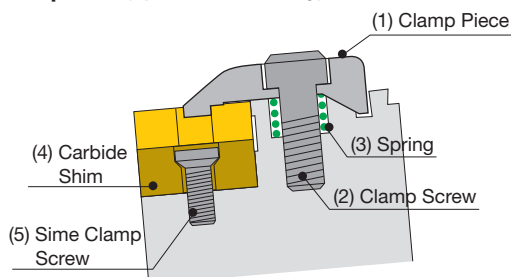
N Right/left universal

Entering Angle	Hand	Model	Insert	Clamp Piece Set
107.5°	N	C4-DDHNN-00075-15 NEW	DN1504 ※1 (DN1506) Rhombic 55°	SCP2S

1. Insert is not included.

※1. A carbide shim for DN1504 (thickness: 4.76mm) is included. When using a DN1506 insert (thickness: 6.35mm), replace the standard carbide shim with the DNS1506 (optional).

Spare parts (optional accessory)



Clamp Piece Set

Set Model	(1) Clamp Piece	(2) Clamp Screw	(3) Spring	Compatible Insert
SCP2S	CP2	M5×20	ø6.8×11.5	DN1504 DN1506

- 1 pc. each of the clamp piece, clamp screw and spring are included in the set.
- The tightening wrench is a 4mm hex wrench. T-type hex wrench is sold as Model T-4.

Carbide Shim Set

Compatible Insert	Set Model	(4) Carbide Shim	(5) Sime Clamp Screw	Torx Size
DN1504	SDNS1504	DNS1504	M4×8	T15
DN1506	SDNS1506	DNS1506	M4×8	T15

- 1 pc. each of the carbide shim and sime clamp screw are included in the set.
- Driver-type Torx wrench (Model DA-T-15) is also available.

FULLCUT MILL

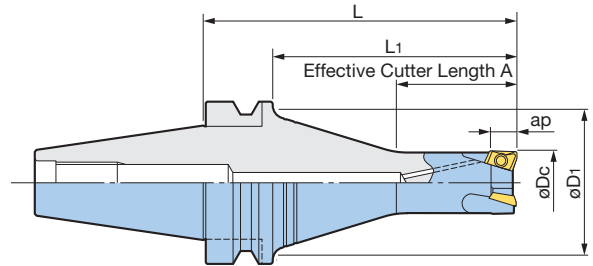
FCR Type

Cutter diameter : $\phi 16 - \phi 32$

Evolved rigidity realizes both heavy and stable ramping.

Slotting
Shoulder milling
Ramping
Helical milling
Peck-drilling

[BBT Integrated Type]



BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Cutter diameter ϕD_c	Model	Effective cutting edge length ap	ϕD_1	L	L ₁	A	Number of inserts	Insert Model	Weight (kg)
16	BBT30-FCR16082- 65	8	40	65	43	28	2	BRG1608□□	0.47
20	-FCR20083- 65			65	43	28	3	BRG2008□□	0.49
25	-FCR25083- 65			65	43	33	3	BRG2508□□	0.52
	-105 NEW	42	42	105	83	35			0.73
32	-FCR32103- 65	10	40	65	43	40	3	BRG3210□□	0.56
	-105 NEW		42	105	83	45			0.83

1. Wrench included. Inserts must be ordered separately.

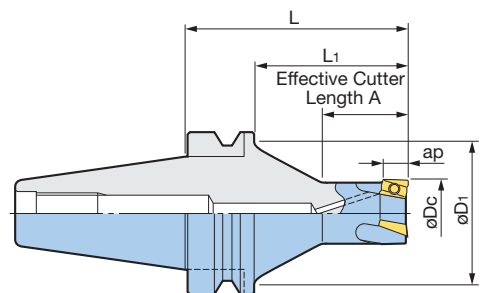
FCM Type

Cutter diameter : $\phi 16 - \phi 50$

Indexable insert endmills which combine sharpness and toughness are comparable to solid endmills.

Slotting
Shoulder milling

[BBT Integrated Type]



BIG-PLUS tools can be used on both BIG-PLUS spindles and conventional BT spindles.

Cutter diameter ϕD_c	Model	Effective cutting edge length ap	ϕD_1	L	L ₁	A	Number of inserts	Insert Model	Weight (kg)
16	BBT30-FCM16092- 65	9	40	65	43	23	2	ARG1609□□	0.48
20	-FCM20093- 65				43	28	3	ARG2009□□	0.49
25	-FCM25093- 65				43	33	3	ARG2509□□	0.52
	-105 NEW	42	42	105	83	34			0.72
32	-FCM32113- 65	11	40	65	43	38	3	ARG3211□□	0.56
	-105 NEW		42	105	83	44			0.83
40	-FCM40114- 50	—	—	50	28	25	4	ARG4011□□	0.54
50	-FCM50115- 50					28	5		0.65

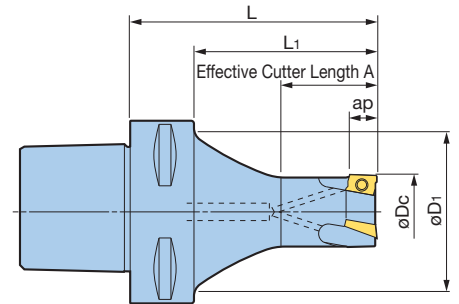
1. Wrench included. Inserts must be ordered separately.

FCM Type Cutter diameter : $\phi 16 - \phi 50$
[BIG CAPTO Integrated Type]

Slotting

Shoulder milling

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Cutter diameter ϕD_c	Model	Effective cutting edge length ap	ϕD_1	L	L ₁	A	Number of inserts	Insert Model	Weight (kg)
16	C5-FCM16092 - 65	9	40	65	45	23	2	ARG1609□□	0.5
	- 90		44	90	70	30			0.6
20	-FCM20093 - 65	9	40	65	45	28	3	ARG2009□□	0.5
	- 90		44	90	70	35			0.6
25	-FCM25093 - 65	9	40	65	45	33	3	ARG2509□□	0.6
	- 90		44	90	70	40			0.7
32	-FCM32113 - 65	11	40	65	45	38	3	ARG3211□□	0.6
	- 90		44	90	70	45			0.8
40	-FCM40114 - 50	11	—	50	30	25	4	ARG4011□□	0.6
	- 90		46	90	70	60			1.0
50	-FCM50115 - 50	11	—	50	30	25	5	ARG4011□□	0.7
	- 90		—	90	70	65			1.0
16	C6-FCM16092 - 85 NEW	9	58	85	63	24	2	ARG1609□□	1.1
	-110 NEW		—	110	88	30			1.2
	-135 NEW		60	135	113	27			1.3
20	-FCM20093 - 85 NEW	9	58	85	63	28	3	ARG2009□□	1.1
	-110 NEW		—	110	88	34			1.2
	-135 NEW		60	135	113	32			1.4
25	-FCM25093 - 85 NEW	9	58	85	63	33	3	ARG2509□□	1.1
	-110 NEW		—	110	88	47			1.2
	-135 NEW		60	135	113	44			1.4
32	-FCM32113 - 85 NEW	11	58	85	63	38	3	ARG3211□□	1.2
	-110 NEW		—	110	88	61			1.4
	-135 NEW		60	135	113	54			1.6
40	-FCM40114 - 85 NEW	11	58	85	63	44	4	ARG4011□□	1.4
	-110 NEW		—	110	88	65			1.6
	-135 NEW		60	135	113	61			2.0
50	-FCM50115 - 70 NEW	11	59	70	48	43	5	ARG4011□□	1.5
	-110 NEW		—	110	88	70			2.0
	-135 NEW		60	135	113	72			2.4

1. Wrench included. Inserts must be ordered separately.

C-CUTTER MINI

[Multi-Insert Type]

Registered Design

Front and back chamfering

Front chamfering 30°
Back chamfering 60°



Front chamfering 45°
Back chamfering 45°



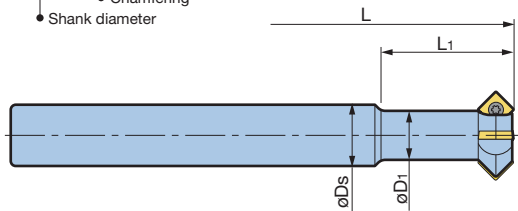
Front chamfering 60°
Back chamfering 30°



Model Description

ST12 - C 09 16 - 3060 B - 25

- Shank diameter
- Chamfering
- Min. bore
- Max. chamfer diameter
- Front and back chamfering angle
- Projection length (L₁)



Cutting Edge Details

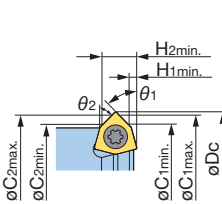


Fig. 1

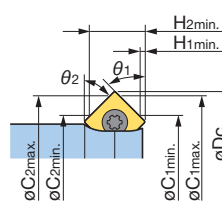


Fig. 2

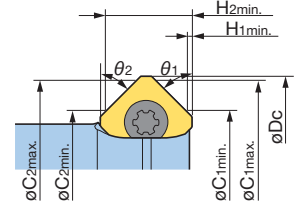


Fig. 3

Front chamfering Angle θ_1	Back chamfering Angle θ_2	Model	Face Milling Capability	Fig.	ϕ Dc	ϕ Ds	ϕ D ₁	L	L ₁	ϕ C _{1min.}	ϕ C _{1max.}	ϕ C _{2min.}	ϕ C _{2max.}	H _{1min.}	H _{2min.}	Insert Model	Number of inserts	
30°	60°	ST12-C0916-3060B-25 	—	2	16.7	12	11.2	98	25	9	16	13	16	0.2	5.7	CM05...	4	
		ST20-C1931-3060B-50 	—	3	32.7	20	19.4	130	50	19	31	26	32	0.2	11.2	CM10...		
45°	45°	ST10-C0810-45B -15	—	1	10.5	10	7.4	78	15	8	10	8	10	0.7	3.2	CM03...	3	
		-27						90	27									
		ST12-C1012-45B -20	—	1	12.7	12	9.0	93	20	10	12	10	12	1.0	3.7	CM04...	3	
		-35						108	35									
		ST12-C1116-45B -25	—	2	17.1	12	9.6	98	25	11	16	11	16	0.4	6.5	CM05...	4	
		-40						113	40									
		ST16-C1520-45B -50	—	2	20.7	16	13.2	123	50	15	20	15	20	0.6	6.3			
		ST20-C1924-45B -60	—	2	24.7	20	17.2	143	60	19	24	19	24	0.6	6.3			
		ST20-C2232-45B -50	○	3	32.7	20	19.2	130	50	22	32	22	32	0.3	12.4	CM10...		
		-80						160	80									
		ST32-C3242-45B -65	○	3	42.7	32	30.6	175	65	32	42	32	42	0.3	12.4			
		-100						211	100									
60°	30°	ST12-C1317-6030B-25 	—	2	17.4	12	8.4	98	25	13	17	10	16	0.3	6.4	CM05...		
		ST20-C2632-6030B-50 	—	3	32.7	20	17.0	130	50	26	32	19	31	1.5	12.4	CM10...		

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

2. In case of chatter in plunge cutting, it is recommended to reduce the number of inserts to only 1 or 2 pcs.

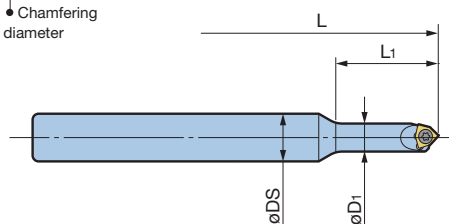
[Single Insert Type] Front chamfering



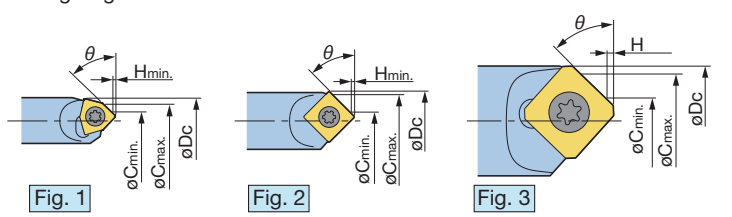
Model Description

ST10 - C 02 09 - 30 - 20

- Shank diameter
- Chamfering
- Min. bore
- Max. chamfer diameter
- Chamfering angle
- Projection length (L₁)



Cutting Edge Details



Front chamfering Angle θ	Model	Fig.	ϕD_c	ϕD_s	ϕD_1	L	L ₁	ϕC_{min}	ϕC_{max}	H _{min}	Insert Model
30°	ST10-C0209-30-20 NEW	2	9.7	10	9.4	81	20	2	9	0.2	CM05...
	ST16-C0214-30-40	3	15.9	16	15.4	105	40	2	14	0.2	CM10...
45°	ST 8-C0103-45-16	1	4.9	8	4.7	68	16	1	3	0.1	CM03...
	ST10-C0204-45-15	1	6.3	10	6.0	78	15	2	4	0.4	CM04...
	-25					88	25				
	ST10-C0207-45-20	2	8.1	10	7.8	81	20	2	7	0.4	CM05...
	-35					96	35				
	ST16-C0515-45-50	3	15.8	16	15.2	122	50	5	15	0.4	CM10...
60°	ST10-C0408-60-20 NEW	2	8.4	10	8.0	81	20	4	8	0.3	CM05...
	ST16-C0916-60-40	3	16.5	16	15.6	105	40	9	16	0.8	CM10...

- A wrench and screws are included. Inserts must be ordered separately.
- Spot drilling (centering) cannot be performed.

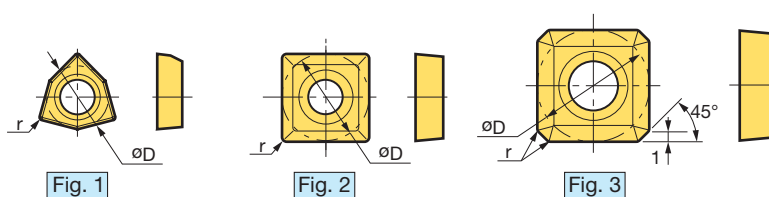
Insert (optional accessory)



Model Description

CM 03 02 ACP300

- C-CUTTER MINI
- Insert size
- Corner radius
- Grade



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

Model	Fig.	Inscribed Circle ϕD	r	Insert Grade						Insert Clamping Screw Set Model
				ACP200 (for steel)	ACP300 (for steel)	CWS20A NEW (for hardened steel)	ACM250F (for stainless steel)	NF15KA (for cast iron)	DS20 (for aluminum/ non-ferrous)	
CM0302	1	3.31	0.2	—	○	—	○	—	○	S1.6S-T3
CM0402	1	3.97	0.2	—	○	—	○	—	○	S2SS-T6
CM0502	2	5	0.2	○	—	○	○	○	○	S2TS-T6
CM0502SE				○	○	—	—	—	—	
CM10C1	3	10	0.2	○	—	○	○	○	○	S4S-T15
CM10C1SE				○	—	—	—	—	—	

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

<Example> CM0502 ACP20010 Pcs



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