

Counter Bore Series

YOUNG
CUTTING TOOLS





Features Description

Patent design with carbide strip on the head to improve cutter tool life. Most economical with 4 cutting edge insert. 4 in 1 counterbore reduce machining process from 4 steps to 2 steps.

- Counter Bore : M8-M36
- Counter Bore with chamfer: M8-M36
- 4 In 1 Counter Bore: M3-M12



4 IN 1 COUNTER BORE



Video

Patent No.
M473882
M474588
M473881

Patent No.
201310453057.2
201320772697.5

PCT Priority No.
PCT/ CN2013/086393

Features



Available in
materials



Cost
300~500%
DOWN



Variety of
Machines
Milling / Drilling
/ Radial drilling

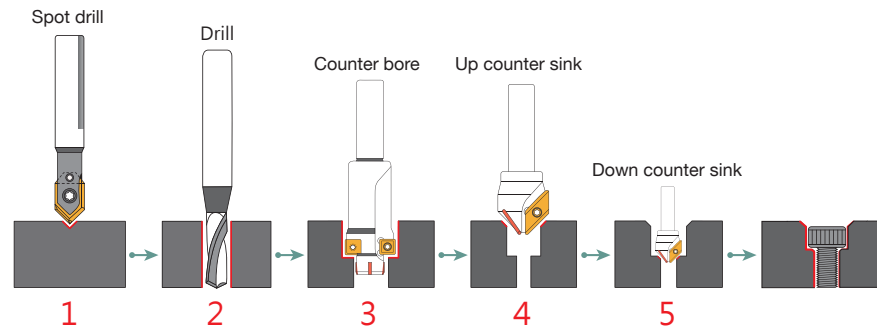


Efficiency
300%
UP



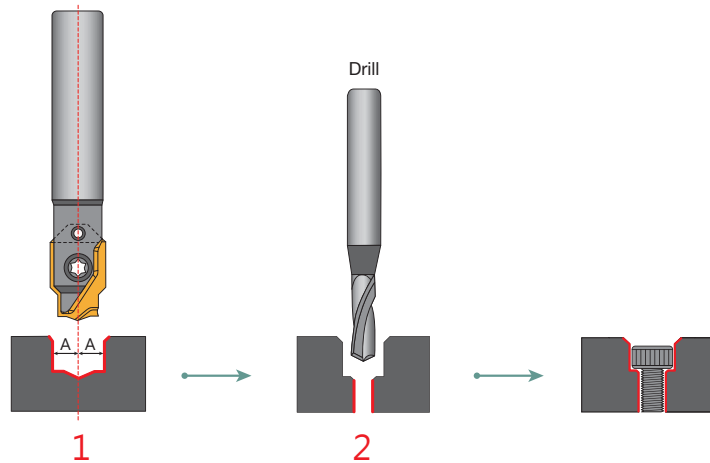
Durability
300%
UP

Standard Procedure: Need 5 Tools



New Procedure: Need Only 2 Tools

4 in 1 counter bore = 1+3+4+5



- Accurate spot drill, no vibration.
- Center of bore and counter bore is synchronized.
- Just need 3 seconds.

Counterbore

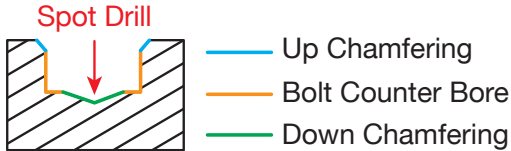
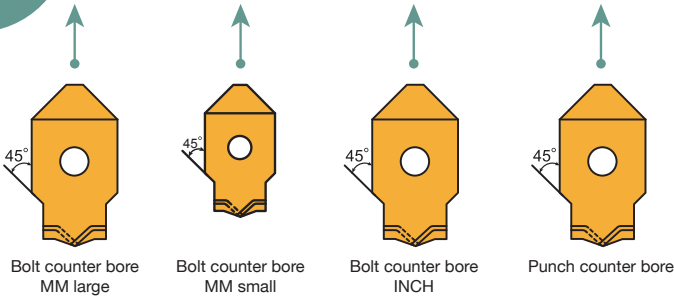
Product Design



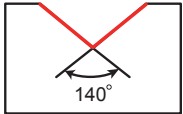
- Bolt counter bore
- 140° spot drill
- Standard punch
- 1 shank for different types of inserts

* Patent Pending

4 main functions



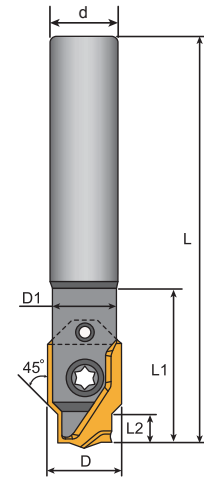
Can make 140° Spot for accurate drilling



4 In 1 Counter Bore Shank

- Insert P. 234 - 236
- Cutting Data P. 238

14

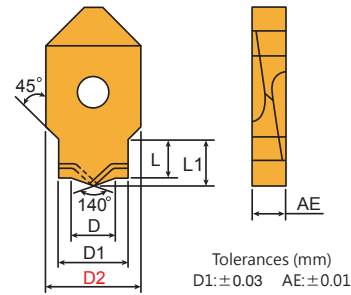


Counterbore

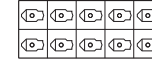
Order code	Screw Dimensions		Dimensions (mm)						KG	Screw	Key
	MM	INCH	D	D1	d	L	L1	L2			
14-0803-70	3.0	1/8	8	7.4	8	70	15	3.1	0.12	C02506 S025025	T08P L013
14-0803-90	3.5	-				90	20	3.6			
14-1004-80	4.0	3/16	10	9.4	10	80	16	4.2	0.13	C03007 S02503	T09P L013
14-1004-100						100	21	0.15			
14-1206-80	5.0	-	12	11.3	12	80	20	5.3	0.18	C03008 S0303	T09P L015
14-1206-110	6.0	1/4				110	25	6.4			
14-1208-80	7.0 8.0	5/16	16	15.4	16	80	22	8.4	0.19	C03510 S0405	T10P L02
14-1608-100		-				100	25	7.4			
14-1608-130	5/16	130	30	8.4	0.32						
14-2010-100	10	3/8	20	19.0	20	100	30	10.3	0.26	C04012 S0506	T15P L025
14-2010-140	12					140					

4 In 1 Counter Bore Insert

MM / INCH standard size dimensions- DIN373



Inserts 6 PCS / Box
Only for insert :26-20***



Inserts 10 PCS / Box

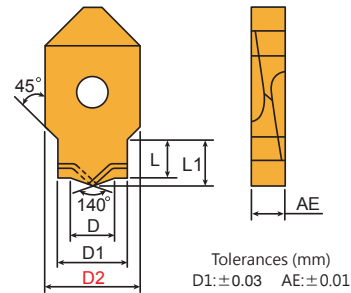
Dimensions in mm								
D	D1	D2	L	L1	AE	MM	INCH	
3.6	5.8	8	3.1	3.7	2.0	M3.0	1/8	
4.1	6.3		3.6	4.3		M3.5	-	
4.6	7.4	10	4.2	5.0	2.5	M4.0	-	
5.6	9.3		5.3	6.2		M5.0	3/16	
6.7	10.4	12	6.4	7.4		M6.0	1/4	
7.7	11.5		7.4	8.4		M7.0	-	
8.7	13.5	16	8.4	9.8		M8.0	5/16	
10.8	16.5		10.3	12.0		M10	3/8	
13.3	19.0	20	12.3	14.5	3.5	M12	-	

Inserts	Order code	Grades										Corresponding shank					
		Carbide					Metal cermet		Uncoated								
		C125	B350	C350	F20	F30	CE25	CE60		K10	CE						
	26-0803-E																
	26-0803-M	⊙															14-0803-70
	26-0835-E																14-0803-90
	26-0835-M	⊙															
	26-1004-E																14-1004-80
	26-1004-M	⊙															14-1004-100
	26-1205-E																
	26-1205-M	⊙															14-1206-80
	26-1206-E																14-1206-110
	26-1206-M	⊙															
	26-1607-E																
	26-1607-M	⊙															14-1208-80
	26-1608-E																14-1608-100
	26-1608-M	⊙															14-1608-130
	26-2010-E																
	26-2010-M	⊙															14-2010-100
	26-2012-E																14-2010-140
	26-2012-M	⊙															

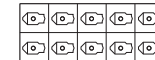
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: 26-0803-E, F20

4 In 1 Counter Bore Insert

MM large size dimensions- DIN373



Inserts 6 PCS / Box
Only for insert :26-20***



Inserts 10 PCS / Box

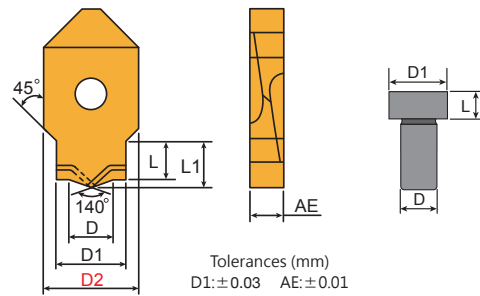
Dimensions in mm						
D	D1	D2	L	L1	AE	MM
3.8	6.5	8	3.1	3.7	2.0	M3
4.8	8.0	10	4.2	5.0	2.5	M4
5.8	10	12	5.3	6.2	3.0	M5
6.9	11		6.4	7.4		M6
9.3	15	16	8.4	9.8		M8
11.3	18	20	10.3	12	3.5	M10

Inserts	Order code	Grades										Corresponding shank	
		Carbide					Carbide		Uncoated				
		C125	B350	C350	F20	F30	CE25	CE60	K10	CE			
	26-0803S-E												14-0803-70
	26-0803S-M		⊙										14-0803-90
	26-1004S-E												14-1004-80
	26-1004S-M		⊙										14-1004-100
	26-1205S-E												14-1206-80 14-1206-110
	26-1205S-M		⊙										
	26-1206S-E												
	26-1206S-M		⊙										
	26-1608S-E												14-1208-80
	26-1608S-M		⊙										14-1608-100 14-1608-130
	26-2010S-E												14-2010-100
	26-2010S-M		⊙										14-2010-140

- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: 26-0803S-E, F20

Counterbore

4 In 1 Punch Counter Bore Inserts



Tolerances (mm)
D1: ±0.03 AE: ±0.01



Inserts 6 PCS / Box
Only for insert :27-20***



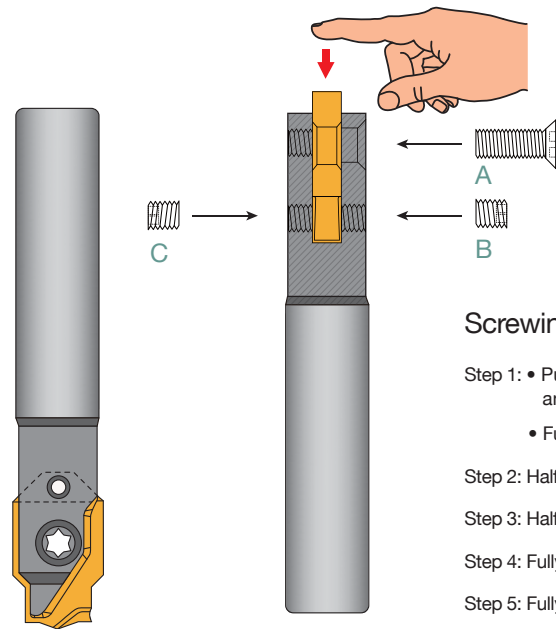
Inserts 10 PCS / Box

Dimensions in mm						
D	D1	D2	L	L1	AE	MM
5.0	8	10	5	-	2.5	M5.0
5.5						M5.5
6.0	10		6	-		M6.0
6.5		12				M6.5
7.0					3.0	M7.0
7.5	11					M7.5
8.0	13					M8.0
9.0	14	16	8	-		M9.0
10	15					M10
11	16					M11
12	17	20			3.5	M12
14	19					M14

Inserts	Order code	Grades									Corresponding shank	
		Carbide					Metal cermet		Uncoated			
		C125	B350	C350	F20	F30	CE25	CE60	K10	CE		
	27-1005-M											14-1004-80
	27-10055-M											14-1004-100
	27-1206-M											
	27-12065-M											14-1206-80
	27-1207-M											14-1206-110
27-12075-M												
	27-1608-M											14-1208-80
	27-1609-M											14-1608-100
	27-1610-M											14-1608-130
	27-2011-M											
27-2012-M											14-2010-100	
27-2014-M											14-2010-140	

- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: 27-1005-M, C350

How to Fit Insert - Screw A.B.C.



Screwing the Insert

- Step 1: • Put the insert into the slot of shank and press it with the finger
 • Fully tighten the screw A first
- Step 2: Half tighten the screw B on one side
- Step 3: Half tighten the screw C on other side
- Step 4: Fully tighten the screw B again
- Step 5: Fully tighten the screw C again


Standard spare parts

Insert dimension D2 (mm)	Screw A	Screw B/C	Key	Key
8	C02506	S025025	T08P	L013
10	C03007	S02503	T09P	L015
12	C03008	S0304	T10P	L02
16	C03510	S0404	T15P	L025
20	C04012	S0506		

Counterbore

Recommended Cutting Data And Insert Grade

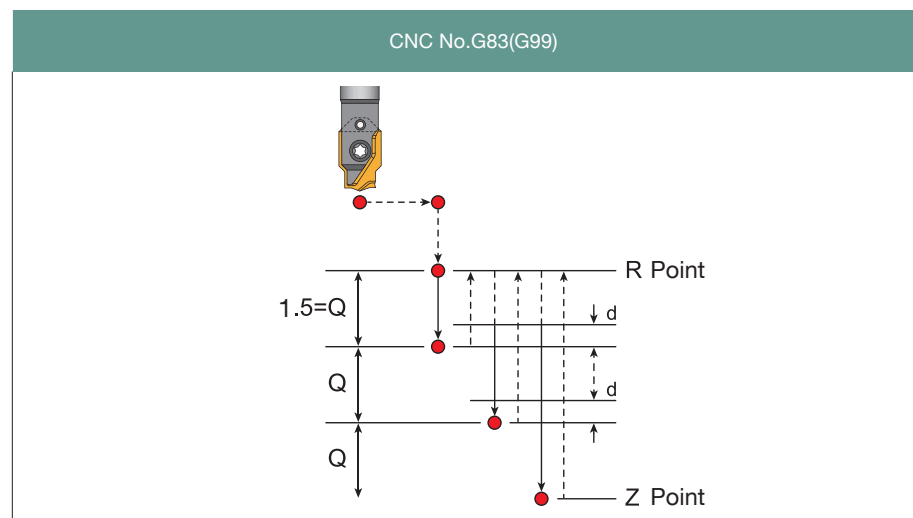
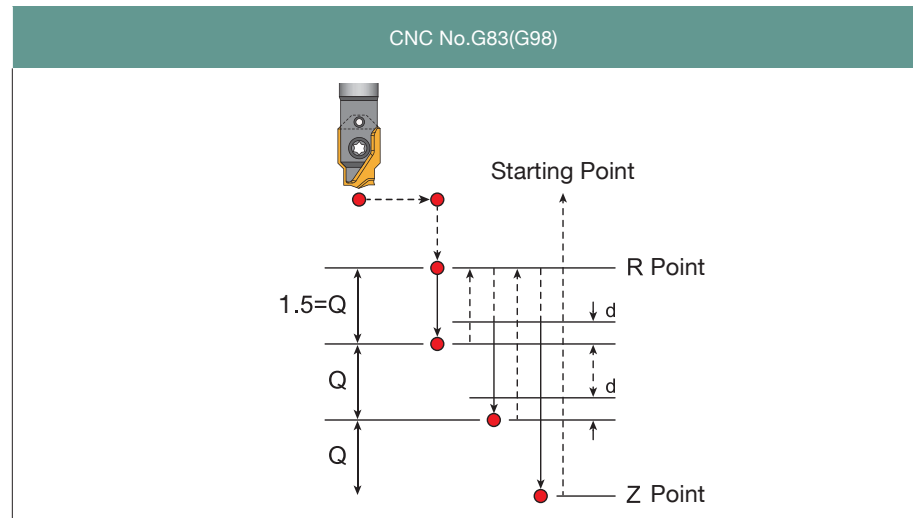
Recommended cutting speed, V_c (m/min), Feed, f_z (mm/tooth). The effective no. of teeth is calculated with 1 flute.

Material group	 Cutting Speed V_c (m/min)	Feed, f_z (mm/ tooth)				Grades	
		140°				M	E
		(D2) 8	(D2) 10	(D2) 12	(D2) 16-20		
1-2	50-70	0.06 0.08	0.06 0.08	0.07 0.09	0.07 0.09	B350/C350	-
3	50-70	0.06 0.08	0.06 0.08	0.07 0.09	0.07 0.09	B350/C350	-
4-5-6	45-60	0.05 0.07	0.05 0.07	0.06 0.08	0.06 0.08	B350/C350	-
7	25-30	0.04 0.06	0.04 0.06	0.05 0.07	0.05 0.07	B350	-
8-9	35-45	0.06 0.08	0.06 0.08	0.07 0.09	0.07 0.09	B350	-
10-11	35-40	0.05 0.07	0.05 0.07	0.06 0.08	0.06 0.08	B350	-
12-13	70-90	0.12 0.15	0.12 0.15	0.13 0.16	0.13 0.16	F30	-
14-15	60-80	0.11 0.14	0.11 0.14	0.12 0.15	0.12 0.15	F30	-
16-18	100-150	0.10 0.13	0.10 0.13	0.11 0.14	0.11 0.14	-	F20

- While using for spot drill, RPM and FEED can be increased to 50%.

4 In 1 Counter Bore Program Description

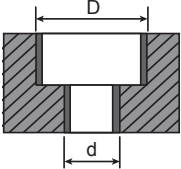
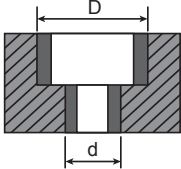
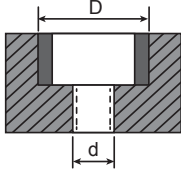
Peck drilling (CNC No.G83)



Counterbore

- The G83 cycle or peck drilling is for deep drilling or milling with chip breaking. The retracts in this cycle clear the hole of chips and cut off any long stringers (which are common when drilling in aluminum). This cycle takes a Q number which represents a "delta" increment along the Z-axis.
Program: G83 X_Y_Z_A_R_L_Q. It is an error if: The Q negative or zero. Peck drilling is not necessary in cast iron machining.

Bolt counter bore dimensions (DIN 373 - ISO 4205)

Screw Dimensions	Standard (D x d)	Large (D x d)	Screw (D x d)
Dimension			
M1.0	2.1 x 1.1	2.2 x 1.2	2.2 x 0.75
M1.2	2.4 x 1.3	2.5 x 1.4	2.5 x 0.95
M1.4	2.7 x 1.5	2.8 x 1.6	2.8 x 1.1
M1.5-M1.6	3.2 x 1.7	3.3 x 1.8	3.3 x 1.25
M1.7	3.7 x 1.8	3.8 x 1.9	3.8 x 1.3
M2.0	4.2 x 2.2	4.3 x 2.4	4.3 x 1.6
M2.2	4.6 x 2.4	4.8 x 2.6	4.8 x 2.6
M2.3	5.0 x 2.7	5.2 x 2.9	5.0 x 1.9
M2.5-M2.6	5.4 x 2.8	5.5 x 3.0	5.5 x 2.1
M3.0	5.8 x 3.2	6.0 x 3.4	6.0 x 2.5
M3.5	6.3 x 3.7	6.5 x 3.9	6.5 x 2.9
M4.0	7.4 x 4.3	8.0 x 4.5	8.0 x 3.3
M5.0	9.3 x 5.3	10.0 x 5.5	10.0 x 4.2
M6.0	10.4 x 6.4	11.0 x 6.6	11.0 x 5.0
M8.0	13.5 x 8.4	15.0 x 9.0	15.0 x 6.8
M10	16.5 x 10.5	18.0 x 11	18.0 x 8.5
M12	19.0 x 13	20.0 x 14	20.0 x 10.2
M14	24.0 x 15	24.0 x 16	-
M16	26.0 x 17	26.0 x 18	-

Machines And Tools Application

Suitable for various kinds of machines



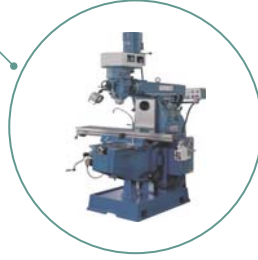
A. Drill machine



B. Milling machine



C. Radial drilling machine



D. Milling machine

Counterbore



INDEXABLE COUNTER BORE



Video


Features

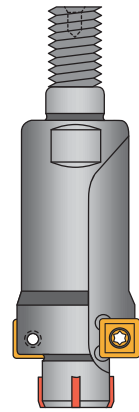
- Available in materials
P K M
S H
- Cost
300~500% DOWN
- Combination type is available
max. 300mm
- Variety of Machines
Milling / Drilling / Radial drilling
- Efficiency
300% UP
- Durability
300% UP

Product Design

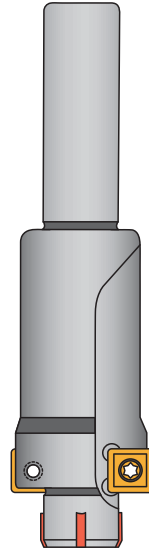


Counter bore tools application for bolts, nuts & screws

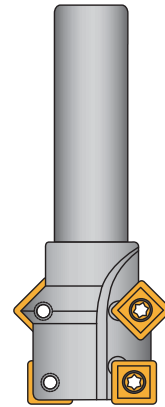
 Patent No. ZL 01 2 23413.3



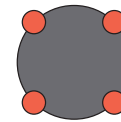
HBM



CBK



CBI

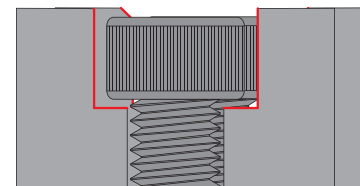


CBK

better cutter toollife
with patented carbide strip



Screw M8~M36



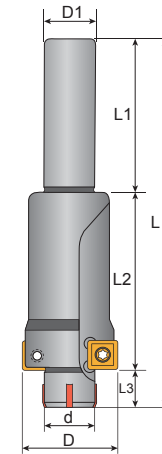
counterbore

counterbore + chamfer

PRODUCT SPECIFICATIONS

Counterbore Toolholders

- Insert P. 247
- Cutting Data P. 247



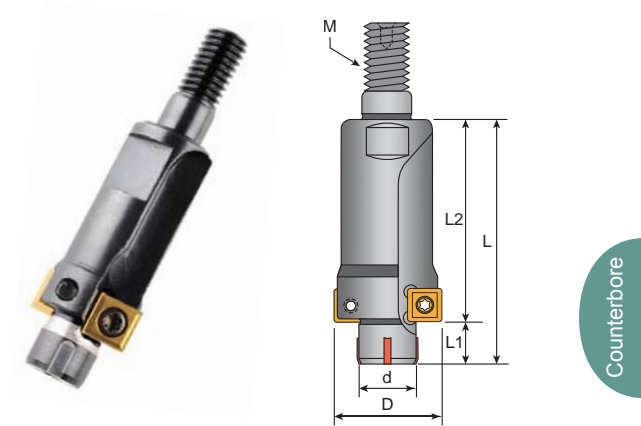
CBK

DIN 974

Order code	Dimensions(mm)								KG	MAX RPM	Insert	Screw	Key
	D	d	D1	L	L1	L2	L3						
CBK-08	14	8.4	10	70	30	32	8	2	0.2	25000	SDET 060208	C025045	T08P
CBK-08S	15	8.9											
CBK-10	18	10.9											
CBK-10S	20	13.4	12	80	35	37	8	2	0.3	22000	SDET 09T	C02506	T15P
CBK-12	22												
CBK-12S	24												
CBK-14	24	14.9	12	90	38	44	8	2	0.35	17000	SDET 09T	C04007	T15P
CBK-14S	25	15.4											
CBK-16	26	17.4											
CBK-16S	27												

Counterbore Combi Cutters

- Insert P. 247
- Cutting Data P. 247



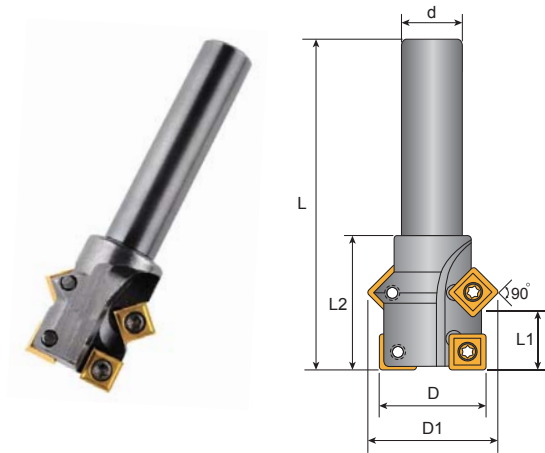
HBM

DIN 974

Order code	Dimensions(mm)							KG	MAX RPM	Insert	Screw	Key
	D	d	L	L1	L2	M						
HBM-16	26	17.4	48	8	40	16	2	0.5	17000	SDET09T	C04008	T15P
HBM-18	29	19.4	53		45							
HBM-20	33	21.9	56		48							
HBM-22	36	23.4	60	10	50	3	0.7	15000	SDET09T	C04011	T15P	
HBM-24	40	25.9	62		52							
HBM-30	50	32.9										
HBM-36	58	38.8					1.0	10000				

Counterbore + Chamfer Toolholders

- Insert P. 247
- Cutter Data P. 247

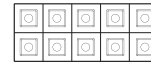
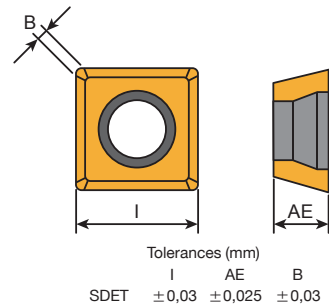


CBI

DIN 974-1


Order code	Dimensions(mm)							Zc		MAX RPM	Insert	Screw	Key
	D	d	D1	L	L1	L2							
CBI-08	15	10	20.0	65	9	23	4	2	0.2	25000	SDET 060208	C025045	T08P
CBI-10	18		22.0		11								
CBI-12	20	12	23.8	70	13	30			0.3	22000	SDET09T	C04007	T15P
CBI-14	24		31.4		15								
CBI-16	26	16	33.4	80	16.5	33			0.35	17000	C04008	T15P	
CBI-18	29		35.4		19.5								
CBI-20	33	20	37.4	90	21	40			0.4	16000	C04011	T15P	
CBI-22	36		40.4		23.5								
CBI-24	40	25	44.4	100	25	43			0.5	15000	C04011	T15P	
CBI-30	50		53.4		34								
CBI-36	58	25	61.4	110	38	60			6	4	0.6	14000	T15P
			61.4		38								

SDET / SEHT Inserts



Inserts 10 PCS / Box

Size	Dimensions in mm		
	I	AE	B
0602	6.0	2.3	1.0
09T3	9.0	3.97	1.2

Inserts	Part No .	Grades								
		Carbide					Metal cermet		Uncoated	
		B100	C200	C250	F20	F30	CE25	CE60	K10	CE
	SDET060208N-ME	☉								
	SDET09T308TN-M	☉								

- ■ Steel ■ Stainless Steel ☉ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
- ☉ Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: SDET060208N-ME, B100

Counterbore

Recommended Cutting Data and Insert Selection

- Recommended Cutting Speed, Vc (m/min), Feed, fz (mm/ tooth) Data Reference

Material group	Cutting Speed Vc(m/min)	Feed, Fz(mm/ tooth)		Insert Grade Selection	
		M8 - M12	M14 - M36	M	ME
1-2	40-70	0.06	0.10	B100	B100
		0.10	0.15	C250	
3	35-60	0.06	0.08	B100	B100
		0.10	0.12	C250	
4-5-6	30-55	0.06	0.08	B100	B100
		0.10	0.10	C250	
7	20-30	0.06	0.06	B100	B100
		0.08	0.08	C250	
12-13	40-70	0.08	0.10	F30	F30
		0.12	0.15		
14-15	35-65	0.08	0.10	F30	F30
		0.10	0.15		