

ROUGH BORING

Steel, Stainless Steel, Cast Iron
RAC-E P.61



CC
 Positive type
 25~ 130

Heavy Duty Boring
RAC P.63



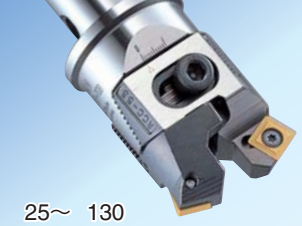
CN
 Negative type
 43~ 130

Aluminium
RAC-A P.65



25~ 130

Through Hole / Multi Sheets
RAC-K P.67



25~ 130

SEMI-FINISH BORING

ZMAC-R P.75



32~ 180

ZMAC P.73



16~ 180

FINISH BORING

ZMAC-X P.78



25~ 180

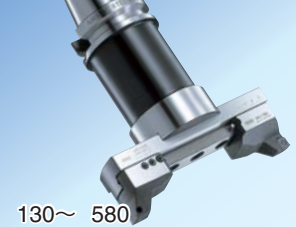
DJ P.83



3~ 50

BORING ARBOR FOR LARGE DIA

Roughing
RAC P.71



130~ 580

Roughing · Finishing
BCB P.80



130~ 595

Finishing
BAC P.79



130~ 595

SPECIAL BORING

Multi-Stage, External P.91



MODULAR SYSTEM

Base Holder
Q P.85



Spacer
SP P.86

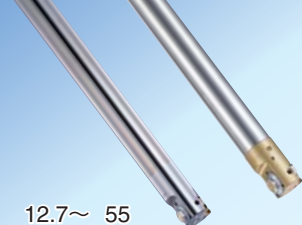


STRAIGHT SHANK

K-RAC
K-ZMAC P.89
K-DJ P.91



S-BCBX
S-ZMACX P.90



12.7~ 55

COOLANT THROUGH TOOL

High pressure coolant through tool is available for all boring heads.



RAC-C



ZMAC-C

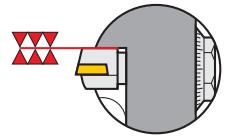


DJ-C



RAC / BAC-C for LARGE DIA.

MODULAR ZMAC BORING BAR



BASE-HOLDER

Q26 type base holder can be used for various combinations. Ideal for low volume production on manual machine with wide variety of boring sizes. We recommend that you also use the Q42 base holder on #50 M/C.

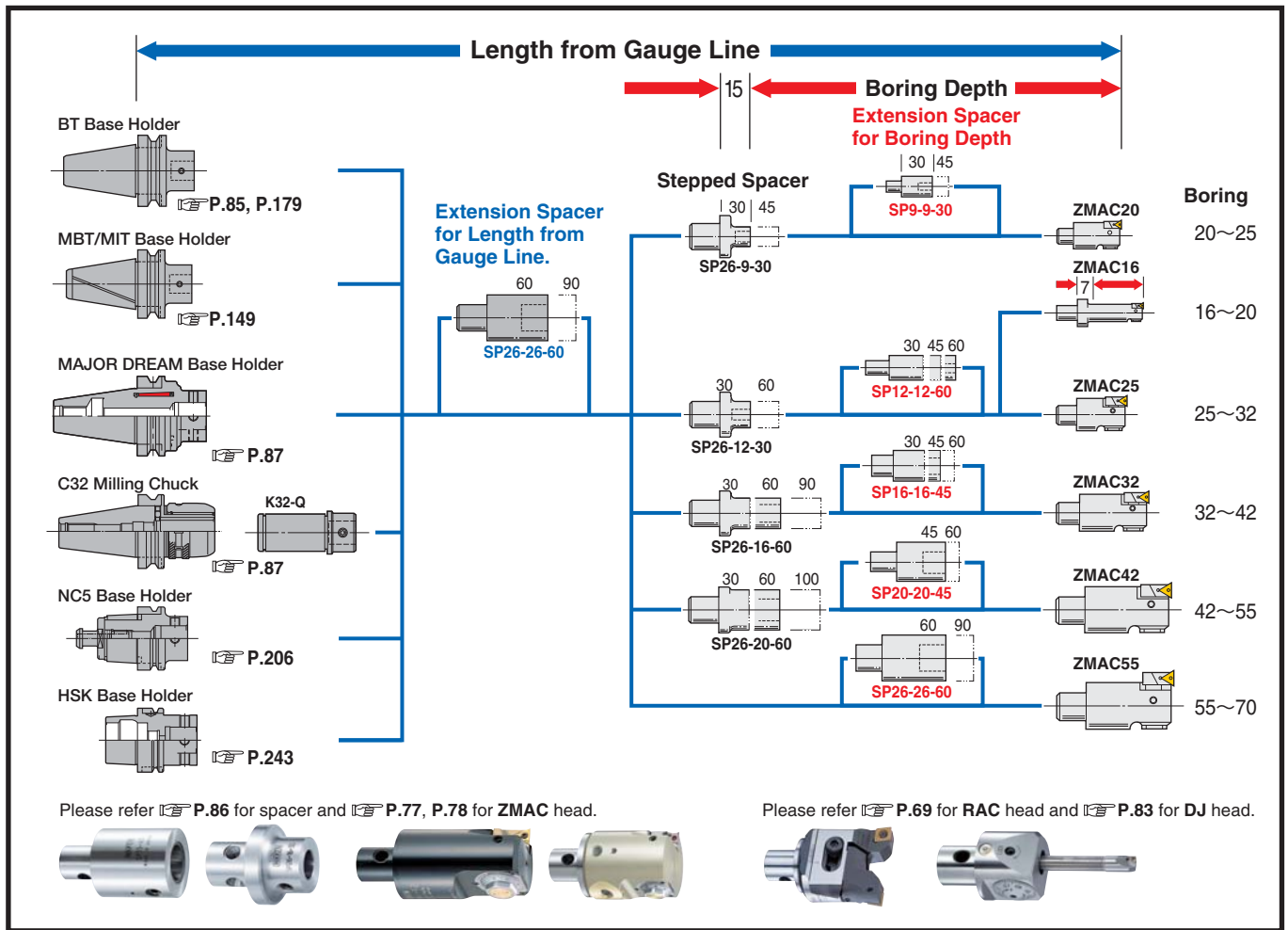
Spacer & Head

The extensive range of heads & spacers allow the correct selection to suit your boring applications.

Method of Selection for Modular ZMAC Boring Arbors

Firstly, select a head, spacer and stepped spacer from boring diameter and depth. Then select base holder and SP26 extension spacer by the length from gauge line.

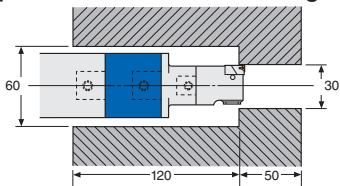
No Micro Vibration due to Double-Contact Support of Cartridge. Long Tool-Life & High Accuracy.



Extension Spacer

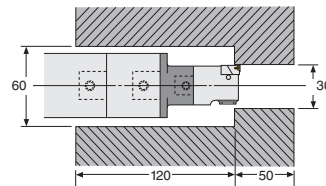
Stepped Spacer

Example of small diameter boring in a deep recess using the largest diameter extension spacer in order to maintain rigidity.



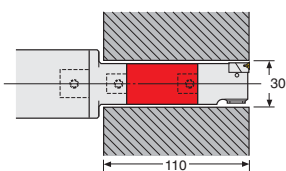
BT40-Q26-95
SP26-26-60
 SP26-12-30
 12-ZMAC25-40

Example of small diameter boring in deep recess using stepped spacer with the same diameter as head.



BT40-Q26-95
 SP26-26-60
SP26-12-30
 12-ZMAC25-40

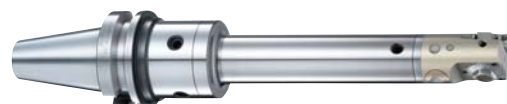
Example of deep hole boring using the extension spacer with the same diameter as head.



BT40-Q26-95
 SP26-12-30
SP12-12-60
 12-ZMAC25-40

A1 Spacer

The combination of **A1 spacer** and **ZMAC** head is recommended when L/D is less than 6 times.



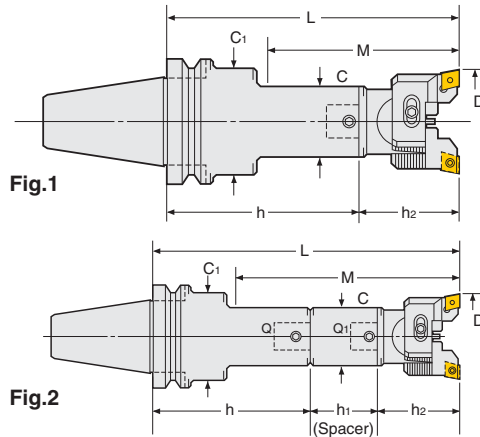
BALANCE-CUT BORING ARBOR (RAC-E)



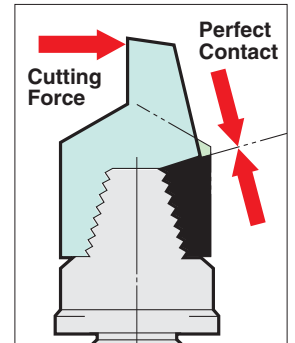
Rough Boring — For Steel, Stainless Steel and Cast Iron
CC Insert (Positive type)



RAC-E



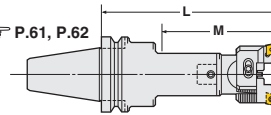
Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.62		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 25-135E	25~32	67	12	24	35	BT40-Q12- 80	—	12-RAC025- 55E	CC07-C	2.0	1
	(IT40) -165E		105				-Q12-110				2.1	
	-180E		112				-Q12- 80				2.1	
	-RAC 32-150E	32~45	77	16	31	42	-Q16- 95	—	16-RAC 32- 55E	CC08-C	2.4	1
	-180E		110				-Q16-125				2.6	
	-195E		122				-Q16- 95				2.6	
	-RAC 43-150E	43~55	97	20	40	50	-Q20- 80	—	20-RAC 43- 70E	—	2.7	1
	-180E		130				-Q20-110				2.9	
	-210E		157				-Q20- 80				3.2	
	-RAC 53-165E	53~70	135	26	50	50	-Q26- 95	—	26-RAC 53- 70E	CC12-C	2.5	1
	-210E		180				-Q26-140				3.3	
	-225E		195				-Q26- 95				3.2	
	-RAC 70-180E	70~100	180	34	64	64	-Q34- 95	—	34-RAC 70- 85E	—	4.8	1
	-195E		195				-Q34-110				5.2	
	-240E		240				-Q34- 95				6.2	
	-RAC100-195E	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100E	—	6.8	1

- ★“C” grade (Coated) inserts are supplied as standard with the head. P.62 Please refer P.93 for cutting condition.
- ★Please refer P.85 for base holder, P.86 for spacer and P.67 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165-C
Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.61, P.62
- ★When L length is required longer than standard, please specify the boring depth M.

★Code No. of RAC25 and RAC32 are changed to RAC25E and RAC32E.
e.g. BT40-RAC25-135 → BT40-RAC25-135E
12-RAC25- 55 → 12-RAC25- 55E



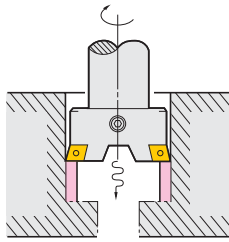
High Pressure Coolant Through Tool

BALANCE-CUT BORING ARBOR (RAC-E)

NIKKEN

Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is ideal for rough and medium boring.

Double Cutting Capability

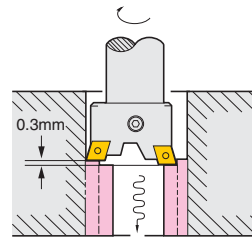


Please use RAC-K for through hole boring.

☞ P.67, P.68



Example of 2 Stepped Balance Cut



Approx. double removal of below cutting condition is possible by -0.3 Cartridge.
☞ P.70

TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.62		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.50	BT50-RAC 25-150E	25~ 32	67	12	24	44	BT50-Q12- 95	—	12-RAC025- 55E	CC07-C	4.7	1
	(IT50) -180E		105				4.9					
	-195E		112				4.8					
	-RAC 32-180E	32~ 45	77	16	31	50	-Q16-125N	—	16-RAC 32- 55E	CC08-C	5.4	1
	-210E		110				5.6					
	-225E		122				5.6					
	-RAC 43-180E	43~ 55	97	20	40	60	-Q20-110	—	20-RAC 43- 70E	—	5.7	1
	-195E		130				5.8					
	-225E		142				6.1					
	-240E		157				6.2					
	-RAC 53-210E	53~ 70	117	26	50	65	-Q26-140	—	26-RAC 53- 70E	—	6.9	1
	-240E		182				7.0					
	-270E		177				7.6					
	-RAC 70-255E	70~100	205	34	64	80	-Q34-170	—	34-RAC 70- 85E	—	9.5	1
	-285E		235				9.9					
	-315E		265				10.9					
	-RAC100-225E		225				12.5					
	-290E	100~130	290	42	83	83	-Q42-125	—	42-RAC100-100E	—	15.2	1
-325E	325		16.5									

★“C” grade (Coated) inserts are supplied as standard with the head. ☞ P.62 Please refer ☞ P.95 for cutting condition. ★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E.
★Please refer ☞ P.85 for base holder, ☞ P.86 for spacer and ☞ P.69 for head. e.g. BT50-RAC25-150 → BT50-RAC25-150E
★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210E-C
★BT50-RAC100-375E, 425E and 475E are also available. 12-RAC25- 55 → 12-RAC25- 55E

Insert tip for RAC-E

● : best ○ : good

Material	Steel		Stainless Steel		Cast Iron		Aluminium	
	Coated Carbide M	Coated Carbide K	Coated Carbide M	Coated Carbide K	Coated Carbide M	Coated Carbide K	Coated Carbide M	Coated Carbide K
	Grade	C	Grade	C	Grade	C	Grade	C
Applicable Arbor	Dimension	Code No.	Nose R	AC630M	AC410K	Material	AC630M	AC410K
RAC025E		CC07-○4	0.4	●	●	CCMT0803○L	●	●
		CC07-○8	0.8	●	●			
RAC25E, RAC32E		CC08-○4	0.4	●	●	CCMT09T3○N	●	●
		CC08-○8	0.8	●	●			
RAC43E - RAC530E		CC12-○4	0.4	●	●	CCMT1204○N	●	●
		CC12-○8	0.8	●	●			

Please add the grade indication into ○, and add the insert tip material indication at the end of the Code No. e.g. CC12-C8 (AC630M)

★Minimum order quantity : 10pcs.

BALANCE-CUT BORING ARBOR (RAC)

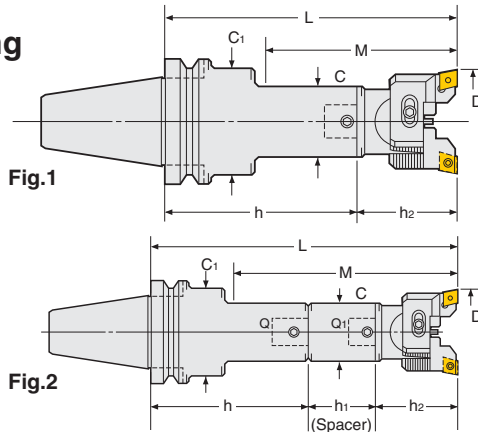


Rough Boring— For Heavy Duty Boring of Iron and Cast Iron
CN Insert (Negative type)

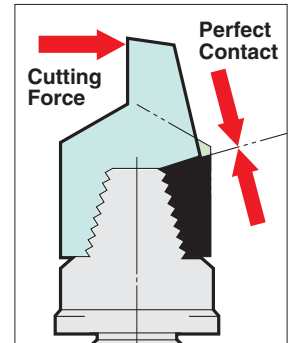


Heavy Duty Boring

RAC



Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.64		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 43-150	43~55	97	20	40	50	BT40-Q20- 80	—	20-RAC 43- 70	CN08-C	2.7	1
	(IT40) -180		130				-Q20- 110	SP20-20-60			2.9	
	-210		157				-Q20- 80	—			3.2	
	-RAC 53-165	53~70	135	26	50	64	-Q26- 95	—	26-RAC 53- 70	2.5	1	
	-210		180				-Q26-140	—		3.3		
	-225		195				-Q26- 95	SP26-26-60		3.2		
	-RAC 70-180	70~100	180	34	64	64	-Q34- 95	—	34-RAC 70- 85	4.8	1	
	-195		195				-Q34-110	—		5.2		
	-240		240				-Q34- 95	SP34-34-60		6.2		
	-RAC100-195	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100	6.8	1	

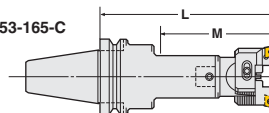
★“C” grade (Coated) inserts are supplied as standard with the head. P.64 Please refer P.95 for cutting condition.

★Please refer P.85 for base holder, P.86 for spacer and P.69 for head.

★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165-C

★When L length is required longer than standard, please specify the boring depth M.

★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.61, P.62



High Pressure Coolant Through Tool

BALANCE-CUT BORING ARBOR (RAC)

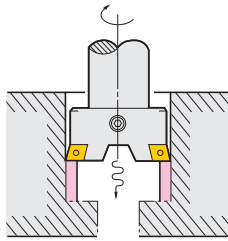
NIKKEN

Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is ideal for rough and medium boring.

Double Cutting Capability

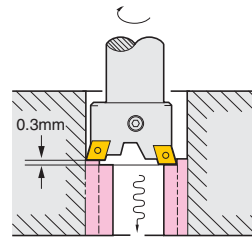
Please use RAC-K for through hole boring.

☞ P.67, P.68



Example of 2 Stepped Balance Cut

Approx. double removal of below cutting condition is possible by -0.3 Cartridge. ☞ P.70



TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.64		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.50	BT50-RAC 43-180	43~ 55	97	20	40	60	BT50-Q20-110	—	20-RAC 43- 70	CN08-C	5.7	1
	(IT50) -195		130				-Q20-125				5.8	
	-225		142				-Q20-110				6.1	2
	-240		157				SP20-20-45				6.2	
	-RAC 53-210	53~ 70	117	26	50	65	-Q26-140	—	26-RAC 53- 70	CN08-C	6.9	1
	-240		182				-Q26-170N				7.0	
	-270		177				-Q26-140				7.6	2
	-RAC 70-255	70~100	205	34	64	80	-Q34-170	—	34-RAC 70- 85	CN08-C	9.5	1
	-285		235				-Q34-200				9.9	
	-315		265				-Q34-170				10.9	2
	-RAC100-225	100~130	225	42	83	83	-Q42-125	SP34-34-60	42-RAC100-100	CN08-C	12.5	1
	-290		290				-Q42-190				15.2	
	-325		325				-Q42-225A				16.5	2

★“C” grade (Coated) inserts are supplied as standard with the head. ☞ P.64 Please refer ☞ P.95 for cutting condition. ★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.61, P.62
 ★Please refer ☞ P.85 for base holder, ☞ P.86 for spacer and ☞ P.69 for head.
 ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210-C
 ★BT50-RAC100-375, 425 and 475 are also available.

Insert tip for RAC for Heavy Duty Boring

Material	Steel	●	
	Stainless Steel	●	
Material	Cast Iron	●	
	Aluminium	●	
		Coated Carbide M	
		Grade C	
		Material AC630M	
Applicable Arbor	Dimension	Code No.	Nose R
RAC43 - RAC530		CN08-○8	0.8 ●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. CC08-C8 (AC630M)

★Minimum order quantity : 10pcs.
 ★When CN08 insert (CN○1204○○) in the market is used, please use the eccentric bolt type cartridge (S.RCC-○○Q) ☞ P.92. Nikken CN08-○8 insert can be used on the eccentric bolt type cartridge.

BT

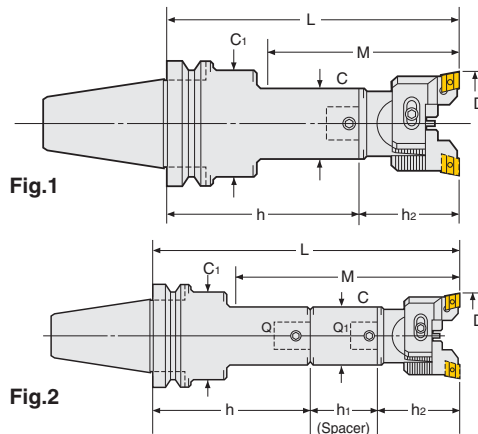
BALANCE-CUT BORING ARBOR (RAC-A)

NIKKEN

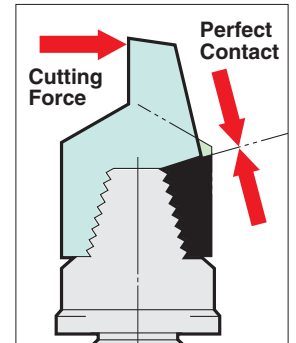
Rough Boring—For Aluminium



RAC-A

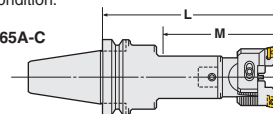


Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.66		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 25-135A	25~32	67	12	24	35	BT40-Q12- 80	—	12-RAC 25- 55A	AEG12	2.0	1
	(IT40) -165A		105				-Q12-110				2.1	
	-180A		112				-Q12- 80				2.1	
	-RAC 32-150A	32~45	77	16	31	42	-Q16- 95	—	16-RAC 32- 55A	AEG12	2.4	1
	-180A		110				-Q16-125				2.6	
	-195A		122				-Q16- 95				2.6	
	-RAC 43-150A	43~55	97	20	40	50	-Q20- 80	—	20-RAC 43- 70A	AEG16	2.7	1
	-180A		130				-Q20-110				2.9	
	-210A		157				-Q20- 80				3.2	
	-RAC 53-165A	53~70	135	26	50	50	-Q26- 95	—	26-RAC 53- 70A	AEG16	2.5	1
	-210A		180				-Q26-140				3.3	
	-225A		195				-Q26- 95				3.2	
	-RAC 70-180A	70~100	180	34	64	64	-Q34- 95	—	34-RAC 70- 85A	AEG16	4.8	1
	-195A		195				-Q34-110				5.2	
	-240A		240				-Q34- 95				6.2	
	-RAC100-195A	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100A	AEG16	6.8	1

★“F” grade inserts are supplied as standard with the head. P.66 Please refer P.95 for cutting condition.
 ★Please refer P.85 for base holder, P.86 for spacer and P.69 for head.
 ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165A-C
 ★When L length is required longer than standard, please specify the boring depth M.



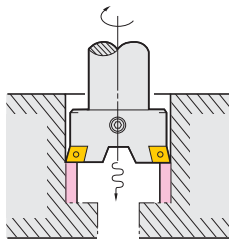
High Pressure Coolant Through Tool

BALANCE-CUT BORING ARBOR (RAC-A)

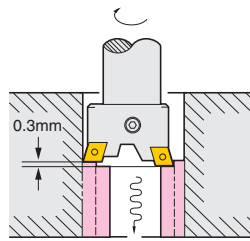
NIKKEN

Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is Ideal for rough and medium boring.

Double Cutting Capability



Example of 2 Stepped Balance Cut



Approx. double removal of below cutting condition is possible by **-0.3 Cartridge**.
 ☞ P.70

TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.66		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.50	BT50-RAC 25-150A	25~ 32	67	12	24	44	BT50-Q12- 95	—	12-RAC 25- 55A	AEG12	4.7	1
	(IT50) -180A		105				-Q12-125				4.9	
	-195A		112				-Q12- 95				4.8	
	-RAC 32-180A	32~ 45	77	16	31	50	-Q16-125N	—	16-RAC 32- 55A	AEG12	5.4	1
	-210A		110				-Q16-155				5.6	
	-225A		122				-Q16-125N				5.6	
	-RAC 43-180A	43~ 55	97	20	40	60	-Q20-110	—	20-RAC 43- 70A	AEG16	5.7	1
	-195A		130				-Q20-125				5.8	
	-225A		142				-Q20-110				6.1	
	-240A		157				SP20-20-45 SP20-20-60				6.2	
	-RAC 53-210A	53~ 70	117	26	50	65	-Q26-140	—	26-RAC 53- 70A	AEG16	6.9	1
	-240A		182				-Q26-170N				7.0	
	-270A		177				-Q26-140				7.6	
	-RAC 70-255A	70~100	205	34	64	80	-Q34-170	—	34-RAC 70- 85A	AEG16	9.5	1
	-285A		235				-Q34-200				9.9	
	-315A		265				-Q34-170				10.9	
	-RAC100-225A	100~130	225	42	83	83	-Q42-125	—	42-RAC100-100A	AEG16	12.5	1
	-290A		290				-Q42-190				15.2	
-325A	325		-Q42-225A				16.5					

★“F” grade inserts are supplied as standard with the head. ☞ P.66 Please refer ☞ P.95 for cutting condition.
 ★Please refer ☞ P.85 for base holder, ☞ P.86 for spacer and ☞ P.69 for head.
 ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210A-C
 ★BT50-RAC100-375A, 425A and 475A are also available.

Insert tip for RAC-A

Material	Steel		Code No.	Grade	Material
	Stainless Steel	Cast Iron			
	Aluminium				●
					Coated Carbide K
				F	
Applicable Arbor	Dimension				
RAC25A, RAC32A			AEG12-○1	0.1	●
			AEG12-○2	0.2	●
			AEG12-○4	0.4	●
RAC43A-RAC530A			AEG16-○1	0.1	●
			AEG16-○2	0.2	●
			AEG16-○4	0.4	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No.
 e.g. AEG16-F2 (KW10)

★Minimum order quantity : 10pcs.

B1

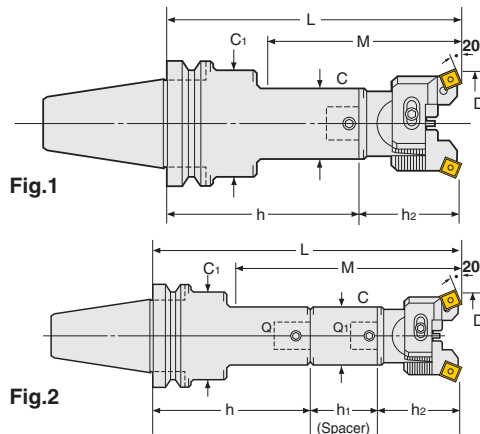
BALANCE-CUT BORING ARBOR (RAC-K)



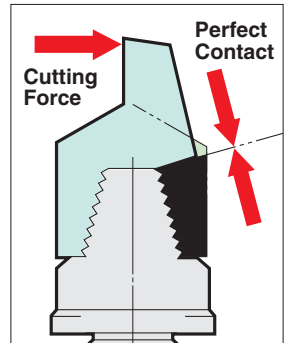
Rough Boring—For Through Hole and Multi Sheets



RAC-K

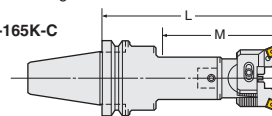


Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.68		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 25-135K	25~32	67	12	24	35	BT40-Q12- 80	—	12-RAC 25- 55K	SC09	2.0	1
	(IT40) -165K		105				-Q12-110				2.1	
	-180K		112				-Q12- 80				2.1	
	-RAC 32-150K	32~45	77	16	31	42	-Q16- 95	—	16-RAC 32- 55K	SC12	2.4	1
	-180K		110				-Q16-125				2.6	
	-195K		122				-Q16- 95				2.6	
	-RAC 43-150K	43~55	97	20	40	50	-Q20- 80	—	20-RAC 43- 70K	SC12	2.7	1
	-180K		130				-Q20-110				2.9	
	-210K		157				-Q20- 80				3.2	
	-RAC 53-165K	53~70	135	26	50	64	-Q26- 95	—	26-RAC 53- 70K	SC12	2.5	1
	-210K		180				-Q26-140				3.3	
	-225K		195				-Q26- 95				3.2	
	-RAC 70-180K	70~100	180	34	64	64	-Q34- 95	—	34-RAC 70- 85K	SC12	4.8	1
	-195K		195				-Q34-110				5.2	
	-240K		240				-Q34- 95				6.2	
	-RAC100-195K	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100K	SC12	6.8	1

- ★“C” grade (Coated) inserts are supplied as standard with the head. P.68 Please refer P.95 for cutting condition.
- ★Please refer P.85 for base holder, P.86 for spacer and P.69 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165K-C
- ★When L length is required longer than standard, please specify the boring depth M.



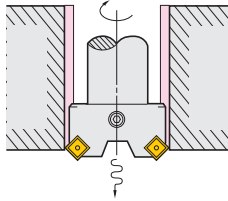
High Pressure Coolant Through Tool

BALANCE-CUT BORING ARBOR (RAC-K)

NIKKEN

Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is Ideal for rough and medium boring.

Double Cutting Capability



TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C ₁	Shank Code No.	Spacer Code No.	P.68		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.50	BT50-RAC 25-150K	25~ 32	67	12	24	44	BT50-Q12- 95	—	12-RAC 25- 55K	SC09	4.7	1
	(IT50) -180K		105				-Q12-125	—			4.9	
	-195K		112				-Q12- 95	SP12-12-45			4.8	2
	-RAC 32-180K	32~ 45	77	16	31	50	-Q16-125N	—	16-RAC 32- 55K	SC09	5.4	1
	-210K		110				-Q16-155	—			5.6	
	-225K		122				-Q16-125N	SP16-16-45			5.6	2
	-RAC 43-180K	43~ 55	97	20	40	60	-Q20-110	—	20-RAC 43- 70K	SC12	5.7	1
	-195K		130				-Q20-125	—			5.8	
	-225K		142				-Q20-110	SP20-20-45			6.1	2
	-240K		157				-Q20-110	SP20-20-60			6.2	
	-RAC 53-210K	53~ 70	117	26	50	65	-Q26-140	—	26-RAC 53- 70K	SC12	6.9	1
	-240K		182				-Q26-170N	—			7.0	
	-270K		177				-Q26-140	SP26-26-60			7.6	2
	-RAC 70-255K	70~100	205	34	64	80	-Q34-170	—	34-RAC 70- 85K	SC12	9.5	1
	-285K		235				-Q34-200	—			9.9	
	-315K		265				-Q34-170	SP34-34-60			10.9	2
	-RAC100-225K	100~130	225	42	83	83	-Q42-125	—	42-RAC100-100K	SC12	12.5	1
	-290K		290				-Q42-190	—			15.2	
	-325K		325				-Q42-225A	—			16.5	2

★“C” grade (Coated) inserts are supplied as standard with the head. P.68 Please refer P.95 for cutting condition.

★Please refer P.85 for base holder, P.86 for spacer and P.69 for head.

★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210K-C

★BT50-RAC100-375K, 425K and 475K are also available.

Insert tip for RAC-K

● : best ○ : good

Material	Steel	●	○		
	Stainless Steel	●	○		
Material	Cast Iron	○	●		
	Aluminium	○	○		
Applicable Arbor	Dimension	Code No.	Nose R	Coated Carbide M	Coated Carbide K
				Grade	C
Material	Nose R	AC630M	AC410K		
				RAC25K, RAC32K	0.4
RAC43K-RAC100K	0.8	●	●		

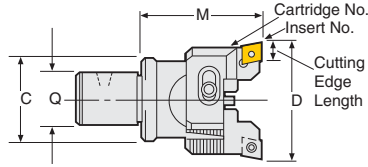
Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. SC12-C8 (AC630M)

★Minimum order quantity : 10pcs.

MODULAR TYPE RAC BORING HEAD

NIKKEN

RAC-E Balance-Cut Boring Head



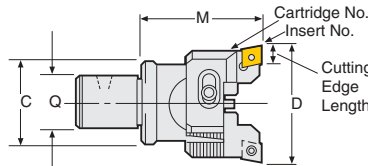
For Steel, Stainless Steel and Cast Iron
CC Insert (Positive type)

P.62

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
12-RAC025 - 55E	25 ~ 32	55	12	24	RCC-025E	CC07	8.0	0.4
16-RAC 32 - 55E	32 ~ 45		16	31	RCC- 32E	CC08	9.7	0.5
20-RAC 43 - 70E	43 ~ 55	70	20	40	RCC- 43E	CC12	12.9	0.7
26-RAC 53 - 70E	53 ~ 70		26	50	RCC- 53E			0.8
26-RAC 70 - 70E	70 ~ 100		26	50	RCC- 70E			1.0
34-RAC 70 - 85E		85				34	64	1.5
42-RAC100 -100E	100 ~ 130	100	42	83	RCC-100E			2.9

★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. ★Insert tips are supplied as an option. P.62 Please refer P.95 for cutting condition.
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70E-C

RAC Balance-Cut Boring Head



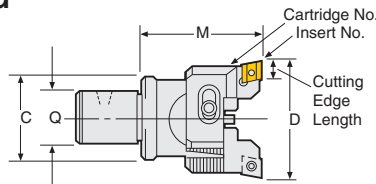
For Heavy Duty Boring of Iron and Cast Iron
CN Insert (Negative type)

P.64

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
20-RAC 43 - 70	43 ~ 55	70	20	40	RCC- 43	CN08	12.9	0.7
26-RAC 53 - 70	53 ~ 70		26	50	RCC- 53			0.8
26-RAC 70 - 70	70 ~ 100	26	50	RCC- 70	1.0			
34-RAC 70 - 85					85	34	64	1.5
42-RAC100 -100	100 ~ 130	100	42	83	RCC-100			2.9

★Insert tips are supplied as an option. P.64 Please refer P.95 for cutting condition.
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70-C

RAC-A Balance-Cut Boring Head



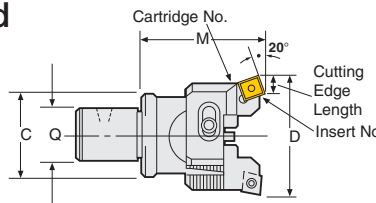
For Aluminum

P.66

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
12-RAC 25 - 55A	25 ~ 32	55	12	24	RAC- 25A	AEG12	9.5	0.4
16-RAC 32 - 55A	32 ~ 45		16	31	RAC- 32A	0.5		
20-RAC 43 - 70A	43 ~ 55	70	20	40	RAC- 43A	AEG16	15.875	0.7
26-RAC 53 - 70A	53 ~ 70		26	50	RAC- 53A			0.8
26-RAC 70 - 70A	70 ~ 100		26	50	RAC- 70A			1.0
34-RAC 70 - 85A		85				34	64	1.5
42-RAC100 -100A	100 ~ 130	100	42	83	RAC-100A			2.9

★Insert tips are supplied as an option. P.66 Please refer P.95 for cutting condition.
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70A-C

RAC-K Balance-Cut Boring Head



For Through Hole and Multi Sheets

P.68

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
12-RAC 25 - 55K	25 ~ 32	55	12	24	RAC- 25K	SC09	7.4	0.4
16-RAC 32 - 55K	32 ~ 45		16	31	RAC- 32K	0.5		
20-RAC 43 - 70K	43 ~ 55	70	20	40	RAC- 43K	SC12	11.9	0.7
26-RAC 53 - 70K	53 ~ 70		26	50	RAC- 53K			0.8
26-RAC 70 - 70K	70 ~ 100		26	50	RAC- 70K			1.0
34-RAC 70 - 85K		85				34	64	1.5
42-RAC100 -100K	100 ~ 130	100	42	83	RAC-100K			2.9

★Insert tips are supplied as an option. P.68 Please refer P.95 for cutting condition.
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70K-C

BT

CARTRIDGE for RAC BORING HEAD



B1

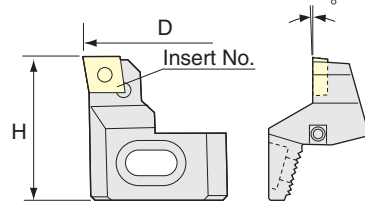
RAC Base () is common for all types of cartridges.

Please select suitable cartridge and insert tip for your application such as material and machining.

For Steel, Stainless Steel and Cast Iron
CC Insert (Positive type)



S.RCC-E Cartridge



Set Code No.	Boring Range D	H	Insert Code No.	
			Steel, Stainless Steel	Cast Iron
S.RCC- 25E	25 ~ 32	41	CC08-C (AC630M)	CC08-C (AC410K)
			CC07-C (AC630M)	CC07-C (AC410K)
- 32E	32 ~ 45	41	CC08-C (AC630M)	CC08-C (AC410K)
- 43E	43 ~ 55	46	CC12-C (AC630M)	CC12-C (AC410K)
- 53E	53 ~ 70	50		
- 70E	70 ~ 100	55		
-100E	100 ~ 130	57		

★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E.

★Insert tips are supplied as an option. P.62 Please refer P.95 for cutting condition.

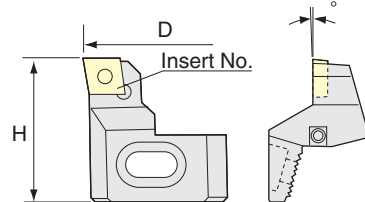
★Please order set of cartridges. e.g S.RCC-70E

★2 stepped balance cut with H=0.3 cartridge is also available. e.g. S.RCC-70E (0.3)

For Heavy Duty Boring of Iron and Cast Iron
CN Insert (Negative type)



S.RCC Cartridge



Set Code No.	D	H	Insert Code No.	
			Iron and Cast Iron	
S.RCC- 43	43 ~ 55	46	CN08	
- 53	53 ~ 70	50		
- 70	70 ~ 100	55		
-100	100 ~ 130	57		

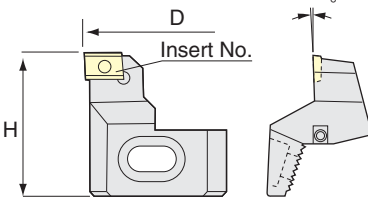
★Insert tips are supplied as an option. P.64 Please refer P.95 for cutting condition.

★Please order set of cartridges. e.g S.RCC-70

★When CN08 insert (CN00120400) in the market is used, please use the eccentric bolt type cartridge (S.RCC-00Q) P.92. Nikken CN08-08 insert can be used on the eccentric bolt type cartridge.

For Aluminum

S.RCC-A Cartridge



Set Code No.	D	H	Insert Code No.	
			For Aluminum	
S.RCC- 25A	25 ~ 32	38	AEG12	
- 32A	32 ~ 45	41		
- 43A	43 ~ 55	46		
- 53A	53 ~ 70	50		
- 70A	70 ~ 100	55		
-100A	100 ~ 130	57		

★Insert tips are supplied as an option. P.66 Please refer P.95 for cutting condition.

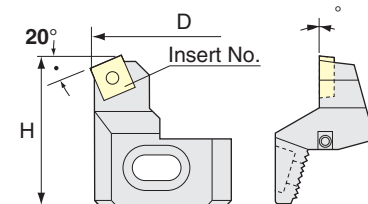
★Please order set of cartridges. e.g S.RCC-70A

★2 stepped balance cut with H=0.3 cartridge is also available. e.g. S.RCC-70A (0.3)

★S.RCC-A cartridge can be used for the bottom face finishing of iron and cast iron.

For Through Hole and Multi Sheets

S.RCC-K Cartridge

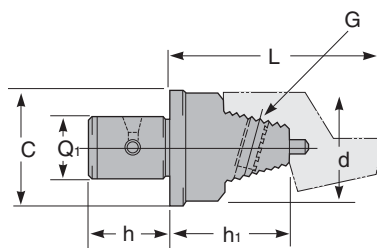


Set Code No.	D	H	Insert Code No.	
			Steel, Stainless Steel	Cast Iron
S.RCC- 25K	25 ~ 32	41	SC09-C (AC630M)	SC09-C (AC410K)
- 32K	32 ~ 45	41		
- 43K	43 ~ 55	46	SC12-C (AC630M)	SC12-C (AC410K)
- 53K	53 ~ 70	50		
- 70K	70 ~ 100	55		
-100K	100 ~ 130	57		

★Insert tips are supplied as an option. P.68 Please refer P.95 for cutting condition.

★Please order set of cartridges. e.g S.RCC-70E

Dimension of RAC Base



Code No.	Boring Range	h	h ₁	C	G	d
	D					
12-RAC 25- 55B	25~33	18	31	24	M5	23
12-RAC025- 55B						
16-RAC 32- 55B	32~45	22	31	31	M6	30
20-RAC 43- 70B						
26-RAC 53- 70B	53~70	24	42	40	M8	35
26-RAC 70- 70B						
34-RAC 70- 85B	70~100	28	40	50	M8	45
42-RAC100-100B						
	100~130	36	53	64	M8	60
	100~130	42	66	83	M8	70

★Dimension "L" is "58mm" in combination of RCC-25K and 12-RAC25-55B.

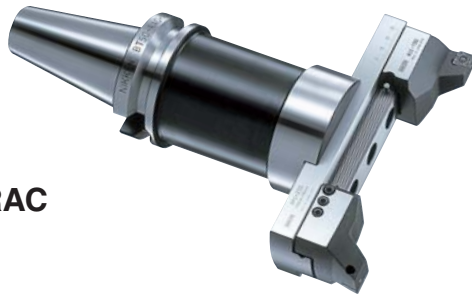
★For centre through tool coolant type except 26-RAC70-70B, please add "-C" at the end of Code No. e.g. 34-RAC70-85B-C

BALANCE-CUT RAC BORING ARBOR for LARGE DIA.

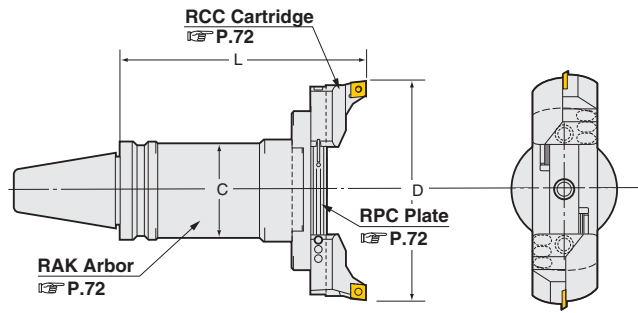
NIKKEN

For Roughing

- With the screws for slight adjustment
- Boring Dia. : 130~ 580mm



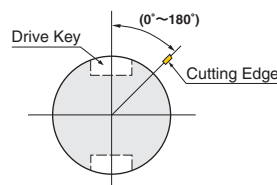
RAC



Boring Dia. : 130~580mm

TAPE	Code.No	D	L	C	RAK Arbor Code No.	RPC Plate No.	RCC Cartridge No.	Weight (Kg)			
		MIN.~MAX.									
No.40	BT40-RAC130-205	130~180	205	61	BT40-RAK-130	RPC-130		7.0			
	(IT40)-RAC180-205	180~230						8.0			
No.50	BT50-RAC130-185	130~180	185	90	BT50-RAK-110A	RPC-130	For Heavy Duty Boring of Iron and Cast Iron RCC-130 x2 Insert Tip CN08	9.8			
	(IT50)-235		235					-160A	12.5		
	-285		285					-210A	15.2		
	-335		335					-260A	17.9		
	-385		385					-310A	20.6		
	-435		435					-360A	23.3		
	-485		485					-410A	26.0		
	-RAC180-185		185					-RAK-110A	10.4		
	-235	235	-160A		13.1						
	-285	285	-210A		15.8						
	-335	335	-260A		18.5						
	-385	385	-310A		21.2						
	-435	435	-360A		23.9						
	-485	485	-410A		26.6						
	-RAC230-185	185	-RAK-110A		11.1						
	-235	235	-160A		13.8						
	-285	285	-210A		16.5						
	-335	335	-260A		19.2						
	-385	385	-310A		21.9						
	-435	435	-360A		24.6						
	-485	485	-410A		27.3						
	-RAC280-185	185	-RAK-110A		11.7						
	-235	235	-160A		14.4						
	-285	285	-210A		17.1						
	-335	335	-260A		19.8						
	-385	385	-310A		22.5						
	-435	435	-360A		25.2						
	-485	485	-410A		27.9						
	-RAC330-210*	330~380	210 (220*)		98	BT50-RAK330-125 IT50-RAK330-135		RPC-330		16.0	
	-RAC380-210*	380~430								-380	17.0
	-RAC430-210*	430~480								-430	18.0
	-RAC480-210*	480~530								-480	19.0
-RAC530-210*	530~580	-530		20.0							

- ★The Code No. on above table are the boring arbors with **RCC-130** cartridge (Insert tip: **CN08**) the Heavy Duty Boring of Iron and Cast Iron. Please refer **P.95** for cutting condition.
- ★Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (E), for Aluminum (A) and for Through Hole & Multi Sheets (K) are available. Please refer **P.72** for cartridges. e.g. **BT50-RAC130-185E**
- ★Please refer **P.72** for **RAK** arbor and **RPC** plate.
- ★Arbor, plate and cartridges are delivered in separate packages.
- ★Please check the interference of the arbor with your M/C not to occur the interference in the tool magazine.
- ★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify (e.g. **BT50-RAC180-235 (90°)**)
- ★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. **BT50-RAC130-185-C**
- ★The boring arbors marked * with **IT50**, L (gauge length) is 220. e.g. **IT50-RAC330-220**



View from Cutting Edge

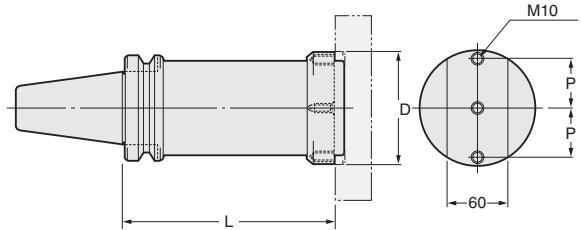


High Pressure Coolant Through Tool

MODULAR TYPE ARBOR



BALANCE CUT RAK BORING ARBOR for LARGE DIA. <RAK Arbor>



RAK

Code No.	Boring Range	L	D	P	Weight (Kg)	Applicable RPC Plate	Hex. Socket bolt
BT40 (IT40) -RAK-130	130~230	130	102	35	4.9	RPC-130, 180	M1035
BT50 -RAK-110A	130~330	110			7.2	RPC-130, 180, 230, 280	
(IT50) -RAK-160A		160			9.9		
-RAK-210A		210			12.6		
-RAK-260A		260			15.3		
-RAK-310A		310			18.0		
-RAK-360A		360			20.7		
-RAK-410A		410			23.4		
-RAK330-125*	330~580	125	240	100	12.0	RPC-330, 380, 430, 480, 530	M1045

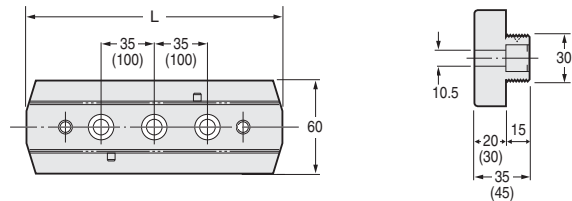
★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify . e.g. BT50-RAK-160A (90°)

★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. BT50-RAK-160A-C 2 set of coolant nozzles are standard accessory.

★IT40-RAK-130 is available. ★* : In case of IT50, IT50-RAK-330-135 is standard gauge length.



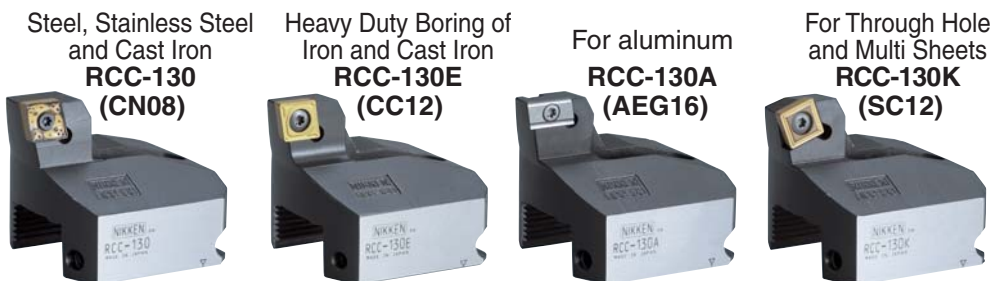
BALANCE CUT PLATE for LARGE DIA. <RPC Plate>



Dimensions in () are for RPC-330, 380, 430, 480 and 530.

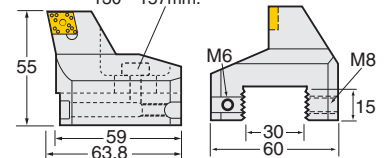
Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)
RPC-130	130~180	118	1.4	RPC-330	330~380	316	5.3	RPC-530	530~580	516	8.7
-180	180~230	166	2.0	-380	380~430	366	6.1				
-230	230~280	216	2.7	-430	430~480	416	7.0				
-280	280~330	266	3.3	-480	480~530	466	7.9				

Accessories for Balance-Cut RAC



Cartridge Lock Bolt

Please remove the bolt when using RAC-130 type for 130~157mm.



Weight : 0.6Kg

Accessories	Insert Tip	Clamp Bolt	Adjust Screw	Adjust Wrench	Wrench for Insert	Set Screw (M8)	L-Wrench for M815 Bolt	Hex Socket Bolt	Applicable RPC Plate
Code No.	*	CSM-70	M540	M3	20S	M815	M4	M625	RPC-130, 180, 230, 280, 330, 380, 430, 480, 530

★* : The insert tip is RCC-130: CN08 (P.64), RCC-130E: CC12 (P.62), RCC-130A: AEG16 (P.66), RCC-130K: SC12 (P.68) Please refer P.95 for cutting condition.

★There are two different types clamping system. One is eccentric system, the other is screw on system. Above parts are for screw on system.

★Code No. RCC-130 indicates a single cartridge. When ordering a pair cartridge, please appoint to us Code No. S.RCC-130.

★The Code No. of the cartridges for 2 stepped balance cut is SRCC-130-0.3

ZMAC BORING ARBOR (ZMAC)



Boring for Finishing



ZMAC

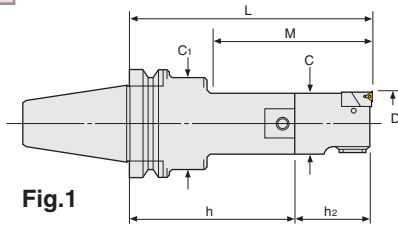


Fig.1

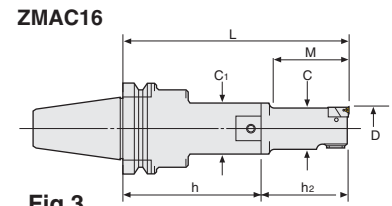


Fig.3

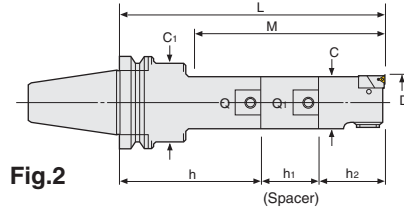


Fig.2

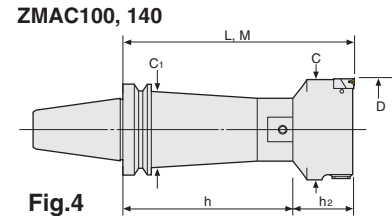


Fig.4

Code No. of the insert tip are shown.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C1	Shank Code No.	Extension Spacer Code No.	P.98		Weight (kg)	Fig.
								Head No.	Insert No.		
						BT No.-Q-h	Q-Q1-h1	Q- Min.D -h2			
No.40	BT40-ZMAC16 -125	15.9~20.2	38	15	24	BT40-Q12- 80	—	12-ZMAC16-45	3MP-C,B	1.9	3
	(IT40) -135		48					12-ZMAC16-55			
	-ZMAC20 -120	45	19	30	-Q 9- 80	—	9-ZMAC20-40	1.9		1	
	-135	67			-Q 9- 95N			1.9			
	-150	75	-Q 9- 80	SP9-9-30	2.0	2					
	-ZMAC25 -120	52	24	35	-Q12- 80	—	12-ZMAC25-40	2.0		1	
	-150	90			-Q12-110			2.1			
	-165	97	-Q12- 80	SP12-12-45	2.1	2					
	-ZMAC32 -150	77	31	42	-Q16- 95	—	16-ZMAC32-55	2.5		1	
	-180	110			-Q16-125			2.7			
	-195	122	-Q16- 95	SP16-16-45	2.7	2					
	-ZMAC42 -150	97	40	50	-Q20- 80	—	20-ZMAC42-70	3.0	1		
	-180	130			-Q20-110			3.2			
	-210	157	-Q20- 80	SP20-20-60	3.5	2					
	-ZMAC55 -165	135	53	50	-Q26- 95	—	26-ZMAC55-70	3.9	1		
	-210	180			-Q26-140			4.6			
	-225	195	-Q26- 95	SP26-26-60	4.6	2					
	-ZMAC70 -165	165	67	64	-Q34- 95	—	34-ZMAC70-70	5.4	1		
	-180	180			-Q34-110			5.8			
	-225	225	-Q34- 95	SP34-34-60	6.8	2					
-ZMAC85 -195	195	83	62	-Q42- 95	—	42-ZMAC85-100	9.0	1			

★MIN. dial readout : ZMAC25 & smaller is 0.02mm on diameter. ZMAC32 and larger are 0.01mm on diameter.

★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life) . Please refer P.96 for cutting condition.

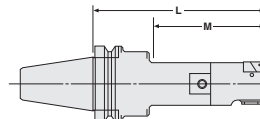
We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

★Please refer P.85 for Shank & Spacer, and P.77, P.78 for Head.

★For Centre Through Tool Coolant type, please add “C” at the end of Code No. e.g. BT40-ZMAC55-165C.

★For BT30, modular connection system is applied. Please refer P.85 for Base Holder.

★When L length is required longer than standard, please specify boring depth M.



Boring Arbor with Extension Spacer

ZMAC for Multi-Stage Boring Bar

Please contact us for the special boring bar.



High Pressure Coolant Through Tool

ZMAC BORING ARBOR (ZMAC)



■ With ZMAC α Boring Head
Please add "AA" at the end of Code No.
e.g. BT40-ZMAC42-150AA



ZMAC α

Diameter can be adjusted easily and quickly by new handle with wrench.



Unlock

Adjust diameter

Lock

Code No. of the insert tip are shown.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C ₁	Shank Code No.	Extension Spacer Code No.	P.98		Weight (kg)	Fig.
								Head No.	Insert No.		
						BT No.-Q-h	Q-Q ₁ -h ₁	Q- Min.D -h ₂			
No.50	BT50-ZMAC16 -140	15.9~20.2	38	15	24	BT50-Q12- 95	—	12-ZMAC16-45	3MP-C,B	4.7	3
	(IT50) -150		48					12-ZMAC16-55			
	-ZMAC20 -150	19.8~25.2	45	19	40	-Q 9-110	9-ZMAC20-40	4.8			
	-165		67			-Q 9-125N		4.8			
	-180		75			-Q 9-110	SP9-9-30	4.9			
	-ZMAC25 -135	24.8~32.2	52	24	44	-Q12- 95	12-ZMAC25-40	4.8			
	-165		90			-Q12-125		4.8			
	-180		97			-Q12- 95	SP12-12-45	4.9			
	-ZMAC32 -180	31.8~42.2	77	31	50	-Q16-125N	16-ZMAC32-55	5.5			
	-210		110			-Q16-155		5.6			
	-225		122			-Q16-125N	SP16-16-45	5.7			
	-ZMAC42 -180	41.8~55.2	97	40	60	-Q20-110	20-ZMAC42-70	6.0			
	-195		130			-Q20-125		6.0			
	-225		142			-Q20-110	SP20-20-45	6.4			
	-240		157			SP20-20-60	6.5				
	-ZMAC55 -210	54.8~70.2	117	53	65	-Q26-140	26-ZMAC55-70	7.5			
	-240		182			-Q26-170N		7.6			
	-270		177			-Q26-140	SP26-26-60	8.1			
	-ZMAC70 -240	69.8~85.2	190	67	80	-Q34-170	34-ZMAC70-70	10.0			
	-270		220			-Q34-200		10.6			
	-300		250			-Q34-170	SP34-34-60	11.5			
	-ZMAC85 -225	84.8~100.2	182	83	83	-Q42-125	42-ZMAC85-100	12.5			
	-290		247			-Q42-190		15.0			
	-315		272			-Q42-125	SP42-42-90	16.0			
	-ZMAC100-225	99.5~140.5	225	95	98	-Q42-125	42-ZMAC100-100	12.4			
	-290		290			-Q42-190		15.1			
	-325		325			-Q42-225A		17.8			
	-375		375			-Q42-275A		20.5			
	-425		425			-Q42-325A		23.2			
	-ZMAC140-225		139.5~180.5			225		135	98	-Q42-125	42-ZMAC140-100
-290	290	-Q42-190		16.5							
-325	325	-Q42-225A		19.2							
-375	375	-Q42-275A		21.9							
-425	425	-Q42-325A		24.6							

★MIN. dial readout : ZMAC25 & smaller is 0.02mm on diameter. ZMAC32 and larger are 0.01mm on diameter.
 ★When L length is required longer than standard, please specify boring depth M. ★For Centre Through Tool Coolant type, add "C" at the end of Code No. e.g. BT50-ZMAC55-210C.
 ★"C" grade (Coated) insert for Steel, Stainless&Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). P.98
 We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.96 for cutting condition.
 ★Please refer P.85 for Shank & Spacer, and P.77, P.78 for Head.

BT

ZMAC BORING ARBOR (ZMAC-R)



Boring for Semi-Finishing—ZMAC-R



ZMAC-R

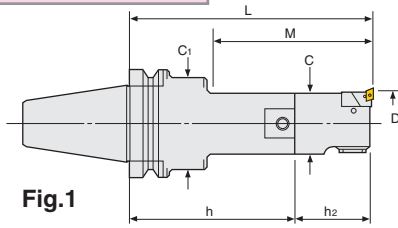


Fig.1

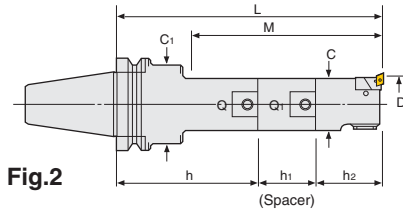


Fig.2

ZMAC100, 140

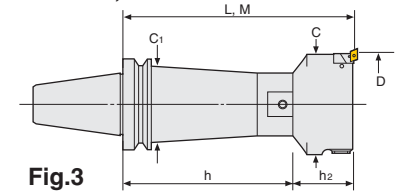







Fig.3

Code No. of the insert tip  are shown.


TAPER	Code No.	Boring Range D	Boring Depth M	C	C ₁	Shank Code No.	Extension Spacer Code No.	P.76		Weight (kg)	Fig.	
								Head No.	Insert No.			
						BT No.-Q-h	Q-Q ₁ -h ₁	Q- Min.D -h ₂				
No.40	BT40-ZMAC32R -150	31.8~42.2	77	31	42	BT40-Q16- 95	—	16-ZMAC32R-55	CC06-C	2.5	1	
	(IT40) -180		110			-Q16-125				2.7		
	-195		122			-Q16- 95				SP16-16-45		2.7
		-ZMAC42R -150	41.8~55.2	97	40	50	-Q20- 80	—	20-ZMAC42R-70	CC06-C	3.0	1
		-180		130			-Q20-110				3.2	
		-210		157			-Q20- 80				SP20-20-60	
		-ZMAC55R -165	54.8~70.2	135	53	50	-Q26- 95	—	26-ZMAC55R-70	CC06-C	3.9	1
		-210		180			-Q26-140				4.6	
		-225		195			-Q26- 95				SP26-26-60	
		-ZMAC70R -165	69.8~85.2	165	67	64	-Q34- 95	—	34-ZMAC70R-70	CC08-C	5.4	1
		-180		180			-Q34-110				5.8	
		-225		225			-Q34- 95				SP34-34-60	
	-ZMAC85R -195	84.8~100.2	195	83	62	-Q42- 95	—	42-ZMAC85R-100		9.0	1	

★MIN. dial readout : ZMAC25 & smaller is 0.02mm on diameter. ZMAC32 and larger are 0.01mm on diameter.

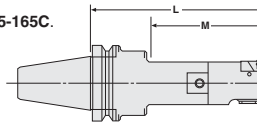
★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.76 Please refer  P.96 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

★Please refer  P.85 for Shank & Spacer, and  P.77, P.78 for Head.

★For Centre Through Tool Coolant type, please add “C” at the end of Code No. e.g. BT40-ZMAC55-165C.

★For BT30, modular connection system is applied. Please refer  P.85 for Base Holder.

★When L length is required longer than standard, please specify boring depth M.



Boring Arbor with Extension Spacer



ZMAC for Multi-Stage Boring Bar

Please contact us for the special boring bar.



High Pressure Coolant Through Tool

ZMAC BORING ARBOR (ZMAC-R)



Insert Tip for ZMAC-R

● : best ○ : good

Material	Steel	●	
	Stainless Steel	●	
Cast Iron	Aluminium	○	●
	High Speed finish for Cast Iron		
Hardened Steel			
High Speed finish for Aluminium			
			Coated Carbide M
			Coated Carbide K
			Grade C
			Material
			Nose R
			AC630M
			AC410K

Applicable Arbor	Dimension	Code No.	Nose R	AC630M	AC410K
ZMAC32R, ZMAC42R, ZMAC55R		CC06-○4	0.4	●	●
		CC06-○8	0.8	●	●
		CC08-○4	0.4	●	●
ZMAC70R, ZMAC85R		CC08-○4	0.4	●	●
		CC08-○8	0.8	●	●
		CC12-○4	0.4	●	●
ZMAC100R, ZMAC140R		CC12-○4	0.4	●	●
		CC12-○8	0.8	●	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. CC12-C8 (AC630M)

There is the CBN insert tip which both corners can be used. Please refer P.98 for ISO code of the insert tip.



Code No. of the insert tip are shown.

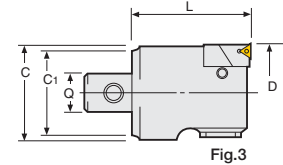
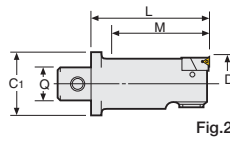
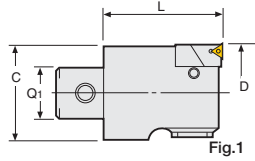
TAPER	Code No.	Boring Range D	Boring Depth M	C	C ₁	Shank Code No.	Extension Spacer Code No.	P.76		Weight (kg)	Fig.			
								Head No.	Insert No.					
						BT No.-Q-h	Q-Q ₁ -h ₁	Q- Min.D -h ₂						
No.50	BT50-ZMAC32R -180	31.8~42.2	77	31	50	BT50-Q16-125N	—	16-ZMAC32R-55	CC06-C	5.5	1			
	(IT50) -210		110			-Q16-155	5.6							
	-225		122			-Q16-125N	SP16-16-45			5.7				
	-ZMAC42R -180	41.8~55.2	97	40	60	-Q20-110	—	20-ZMAC42R-70	CC06-C	6.0	1			
			-195			130	-Q20-125			6.0				
			-225			142	-Q20-110			SP20-20-45		6.4		
			-240			157	SP20-20-60			6.5	2			
			-ZMAC55R -210			54.8~70.2	117			-Q26-140		—	7.5	1
							-240			182		-Q26-170N	26-ZMAC55R-70	
	-270	177		-Q26-140	SP26-26-60		8.1							
	-ZMAC70R -240	69.8~85.2	190	67	80	-Q34-170	—	34-ZMAC70R-70	CC08-C	10.0	1			
			-270			220	-Q34-200			10.6				
			-300			250	-Q34-170			SP34-34-60	11.5	2		
			-ZMAC85R -225			84.8~100.2	182			-Q42-125	—		12.5	1
	-290	247		-Q42-190	42-ZMAC85R-100		15.0							
	-315	272		-Q42-125	SP42-42-90		16.0							
	-ZMAC100R -225	99.5~140.5	225	95	98	-Q42-125	—	42-ZMAC100R-100	CC12-C	12.4	3			
			-290			290	-Q42-190			15.1				
			-325			325	-Q42-225A			17.8				
			-375			375	-Q42-275A			20.5				
-425			425			-Q42-325A	23.2							
-ZMAC140R -225			139.5~180.5			225	135			98		-Q42-125	—	42-ZMAC140R-100
	-290	290		-Q42-190	16.5									
	-325	325		-Q42-225A	19.2									
	-375	375		-Q42-275A	21.9									
	-425	425		-Q42-325A	24.6									

★MIN. dial readout : ZMAC25 & smaller is 0.02mm on diameter. ZMAC32 and larger are 0.01mm on diameter.
 ★When L length is required longer than standard, please specify boring depth M. ★For Centre Through Tool Coolant type, add "C" at the end of Code No. e.g. BT50-ZMAC55-210C.
 ★"C" grade (Coated) insert for Steel, Stainless&Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). P.76
 We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.96 for cutting condition.
 ★Please refer P.85 for Shank & Spacer, and P.77, P.78 for Head.

MODULAR TYPE ZMAC BORING HEAD

NIKKEN

ZMAC Triangular Insert type head





Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)
				C	C1	Unit No.	Insert No.	Fig.	
12-ZMAC 16- 45	15.9~20.2	38	12	15	24	M 2HZ- 16	3MP-C,B	2	0.4
12-ZMAC 16- 55		48							0.4
9-ZMAC 20- 40	19.8~25.2	40	9	19	24	M 2HZ- 20	4MP-C,B	1	0.4
12-ZMAC 25- 40	24.8~32.2		12			M 3HZ- 25			0.5
16-ZMAC 32- 55	31.8~42.2	55	16	31	-	M 4HZ- 32	6MP-C,B	3	0.7
20-ZMAC 42- 70	41.8~55.2	70	20	40		M 5HZ- 42			1.1
26-ZMAC 55- 70	54.8~70.2		26	53	-	M 5HZ- 55	1.2		
34-ZMAC 70- 70	69.8~85.2	34	67	M 7HZ- 70		2.0			
42-ZMAC 85-100	84.8~100.2	100	42	83	83	M10HZ- 85	6MP-C,B	1	4.3
42-ZMAC100-100	99.5~140.5			95		M10HZ-100			4.9
42-ZMAC140-100	139.5~180.5	135	M10HZ-140	6.3					

★MIN. dial read out: ZMAC25 and smaller is 0.02mm on dia.

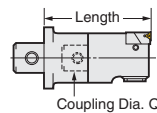
ZMAC32 and larger is 0.01mm on dia.

★The above boring ranges are based on heads with Nose/R 0.2 insert.

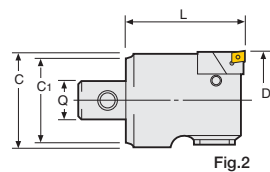
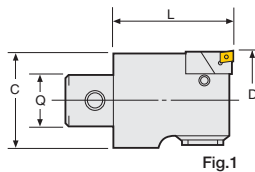
★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life) .  P.98 Please refer  P.96 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

★For Centre Through Tool Coolant type, please add “C” at the end of Code No. e.g. 26-ZMAC55-70C

★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-Length e.g. Q26-20-ZMAC42-100





ZMAC- R Rhomboid Insert type head



Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)
				C	C1	Unit No.	Insert No.	Fig.	
16-ZMAC 32R - 55	31.8~42.2	55	16	31	40	M 4HZ- 32R	CC06-C	1	0.7
20-ZMAC 42R - 70	41.8~55.2					20			M 5HZ- 42R
26-ZMAC 55R - 70	54.8~70.2	70	26	53	-	M 5HZ- 55R	CC08-C	1	1.2
34-ZMAC 70R - 70	69.8~85.2					34			M 7HZ- 70R
42-ZMAC 85R -100	84.8~100.2	100	42	83	83	M10HZ- 85R	CC12-C	2	4.3
42-ZMAC 100R -100	99.5~140.5			95		M10HZ-100R			4.9
42-ZMAC 140R -100	139.5~180.5	135	M10HZ-140R	6.3					

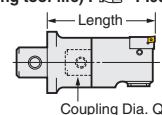
★MIN. dial read out: ZMAC25 and smaller is 0.02mm on dia.

ZMAC32 and larger is 0.01mm on dia.

★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life) .  P.98 Please refer  P.96 for cutting condition.

★For Centre Through Tool Coolant type, please add “C” at the end of Code No. e.g. 26-ZMAC55R-70C

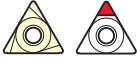
★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-Length e.g. Q26-20-ZMAC42R-100

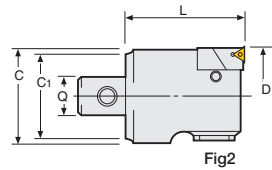
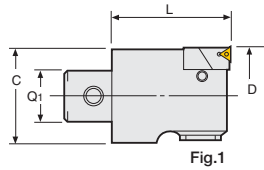


MODULAR TYPE ZMAC& BORING HEAD

NIKKEN

For High Speed/Deep Hole Boring

ZMAC&  Triangular Insert type head





Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)			
				C	C1	Unit No.	Insert No.	Fig.				
12-ZMAC 25- 40AA	24.8~32.2	40	12	24	-	M 3HZ- 25	3MP-C,B	1	0.4			
16-ZMAC 32- 55AA	31.8~42.2	55	16	31		M 4HZ- 32	4MP-C,B		0.5			
20-ZMAC 42- 70AA	41.8~55.2	70	20	40		M 5HZ- 42	6MP-C,B		1	0.8		
26-ZMAC 55- 70AA	54.8~70.2		26	53		M 5HZ- 55				0.7		
34-ZMAC 70- 70AA	69.8~85.2		34	67		M 7HZ- 70				1.1		
42-ZMAC 85-100AA	84.8~100.2	100	42	83		83				M10HZ- 85	2	2.3
42-ZMAC100-100AA	99.5~140.5			95						M10HZ-100		2.8
42-ZMAC140-100AA	139.5~180.5			135	M10HZ-140			3.1				

★MIN. dial read out: ZMAC25 and smaller is 0.02mm on dia.

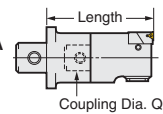
ZMAC32 and larger is 0.01mm on dia.

★The above boring ranges are based on heads with Nose/R 0.2 insert.


★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.98 Please refer  P.96 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

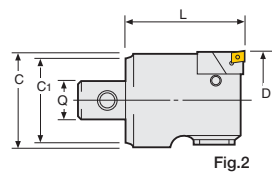
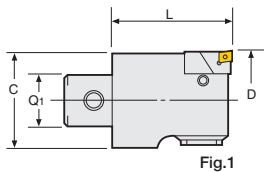
★Centre Through Tool Coolant function is available as standard.

★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-Length AA e.g. Q26-20-ZMAC42-100AA



For High Speed/Deep Hole Boring



ZMAC& - R  Rhomboid Insert type head



Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)	
				C	C1	Unit No.	Insert No.	Fig.		
16-ZMAC 32R - 55AA	31.8~42.2	55	16	31	-	M 4HZ- 32R	CC06-C	1	0.5	
20-ZMAC 42R - 70AA	41.8~55.2	70	20	40		M 5HZ- 42R			0.8	
26-ZMAC 55R - 70AA	54.8~70.2		26	53		M 5HZ- 55R			0.7	
34-ZMAC 70R - 70AA	69.8~85.2		34	67		M 7HZ- 70R	CC08-C		1.1	
42-ZMAC 85R -100AA	84.8~100.2	100	42	83		M10HZ- 85R			2.3	
42-ZMAC 100R -100AA	99.5~140.5			95		83	M10HZ-100R		CC12-C	2.8
42-ZMAC 140R -100AA	139.5~180.5			135		M10HZ-140R	3.1			

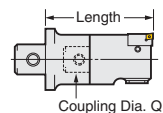
★MIN. dial read out: ZMAC25 and smaller is 0.02mm on dia.

ZMAC32 and larger is 0.01mm on dia.

★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.98 Please refer  P.96 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

★Centre Through Tool Coolant function is available as standard.

★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-Length AA e.g. Q26-20-ZMAC42R-100AA



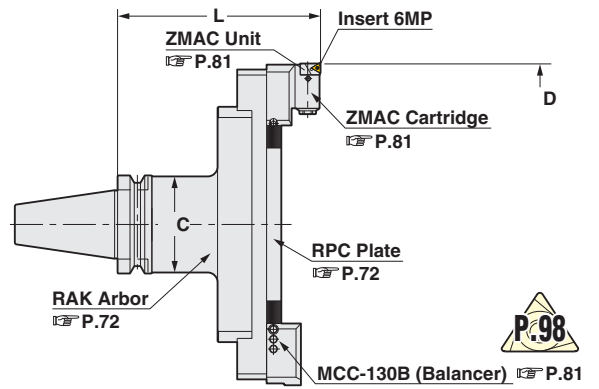
BALANCE-CUT BAC BORING ARBOR for LARGE DIA.

NIKKEN



For Finishing

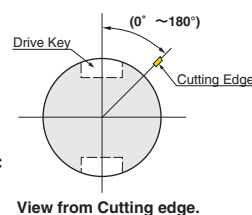
BAC



Boring Dia: 130~595mm

TAPER	Code.No	D		L	C	RAK Arbor Code No.	PPC Plate No	Cartridge (Balancer)	Weight (Kg)	
		MIN.	MAX.							
No.40	BT40-BAC130-205	130	195	205	61	BT40-RAK-130	RPC-130		7.0	
	(IT40)-BAC180-205	180	245						-180	8.0
No.50	BT50-BAC130-185	130	195	185	90	BT50-RAK-110A	RPC-130	MCCZ-130 (MCC-130B) Insert 6MP	10.0	
	(IT50)-235			235		-160A			12.7	
	-285			285		-210A			15.4	
	-335			335		-260A			18.1	
	-385			385		-310A			20.8	
	-435			435		-360A			23.5	
	-485			485		-410A			26.2	
	-BAC180-185			185		-RAK-110A			10.6	
	-235	235	-160A	13.3						
	-285	285	-210A	16.0						
	-335	335	-260A	18.7						
	-385	385	-310A	21.4						
	-435	435	-360A	24.1						
	-485	485	-410A	26.8						
	-BAC230-185	185	-RAK-110A	11.3						
	-235	235	-160A	14.0						
	-285	285	-210A	16.7						
	-335	335	-260A	19.4						
	-385	385	-310A	22.1						
	-435	435	-360A	24.8						
	-485	485	-410A	27.5						
	-BAC280-185	185	-RAK-110A	11.9						
	-235	235	-160A	14.6						
	-285	285	-210A	17.3						
	-335	335	-260A	20.0						
	-385	385	-310A	22.7						
	-435	435	-360A	25.4						
	-485	485	-410A	28.1						
	-BAC330-210*	330	395	210 (220*)		98	BT50-RAK330-125 IT50-RAK330-135		RPC-330	16.7
	-BAC380-210*	380	445						-380	17.0
	-BAC430-210*	430	495						-430	18.0
	-BAC480-210*	480	545						-480	19.0
-BAC530-210*	530	595	-530		20.0					

- ★“C” grade (Coated) Inserts are supplied as standard. P.98 Please refer P.96 for cutting condition.
- ★Unit “M5HZ-55” is provided as standard, please refer P.72 for Arbor (RAK) and Plate (RPC).
- ★Arbor, Plate and Cartridge are delivered in separate packages.
- ★When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★The location of cutting edge is same as drive key in standard.
The different location is available, please specify in Code No. e.g. BT50-BAC180-235 (90°)
- ★The boring arbors marked * with IT50, L (gauge length) is 220. e.g. IT50-BAC330-220
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-BAC130-185-C



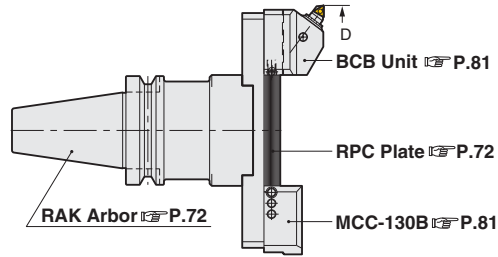
High Pressure Coolant Through Tool

BALANCE-CUT BCB BORING ARBOR for LARGE DIA.



BCB

For Roughing / Finishing



Boring Dia: 130~595mm

TAPER	Code.No	D		L	C	RAK Arbor Code No.	RPC Plante No	Cartridge (Balancer)	Weight (Kg)									
		MIN.	MAX.															
No.40	BT40-BCB130-215	130	195	215	61	BT40-RAK-130	RPC-130		7.5									
	(IT40)-BCB180-215	180	245						-180	8.5								
No.50	BT50-BCB130-195	130	195	195	90	BT50-RAK-110A	RPC-130		10.3									
	(IT50)-245								245	-160A	13.0							
	-295								295	-210A	15.7							
	-345								345	-260A	18.4							
	-395								395	-310A	21.1							
	-445								445	-360A	23.8							
	-495								495	-410A	26.5							
	-BCB180-195								180	195	195	90	BT50-RAK-110A	RPC-180		10.9		
	-245															245	-160A	13.6
	-295															295	-210A	16.3
	-345	345	-260A	19.0														
	-395	395	-310A	21.7														
	-445	445	-360A	24.4														
	-495	495	-410A	27.1														
	-BCB230-195	230	195	195	90	BT50-RAK-110A	RPC-230		11.6									
	-245								245	-160A	14.3							
	-295								295	-210A	17.0							
	-345								345	-260A	19.7							
	-395								395	-310A	22.4							
	-445								445	-360A	25.1							
	-495	495	-410A	27.8														
	-BCB280-195	280	195	195	98	BT50-RAK-110A	RPC-280		12.2									
	-245								245	-160A	14.9							
	-295								295	-210A	17.6							
	-345								345	-260A	20.3							
	-395								395	-310A	23.0							
	-445								445	-360A	25.7							
	-495	495	-410A	28.4														
	-BCB330-220*	330	395	220 (220*)	98	BT50-RAK330-125 IT50-RAK330-135	RPC-330		16.5									
	-BCB380-220*	380	445						-380	17.5								
	-BCB430-220*	430	495						-430	18.5								
	-BCB480-220*	480	545						-480	19.5								
	-BCB530-220*	530	595						-530	20.5								

★10MP-T (Cermet) is supplied as standard. P.98 Please refer P.96 for cutting condition.
 ★MIN. dial readout on dia.: 0.02mm, Sub scale: 0.002mm
 ★The boring arbor marked * with IT50, L (gauge length) is 220. e.g. IT50-BCB330-220.

Up to 800 is also available. Please contact with us.

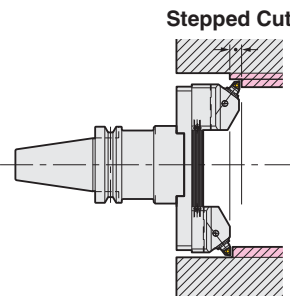
Double Cut Style BCB Boring Bar



BCB-W

★Double cut style can be done with both side of BCB-130 cartridges. Please add "W" at the end of Code No. e.g. BT50-BCB130W-195

- True balance cut can be done to adjust the height by micro adjustment first and then to adjust the diameter by adjust screw.
- Stepped cut can be done to change the height of the cartridges.

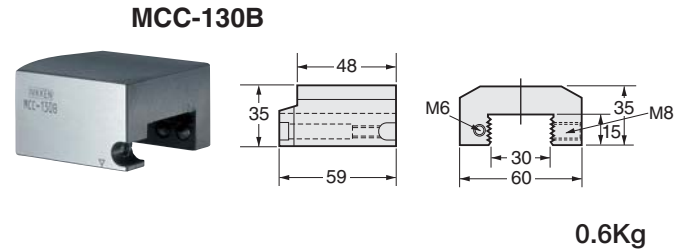
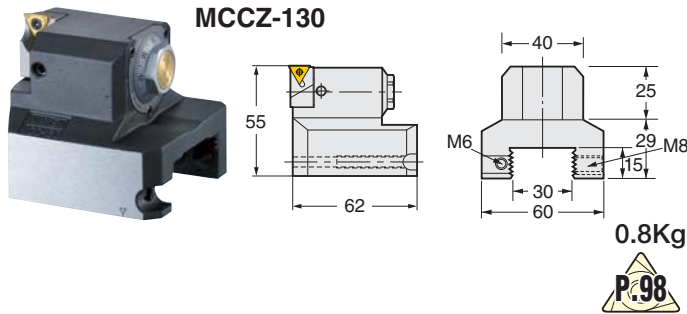


BT

Accessories for Balance-Cut BAC

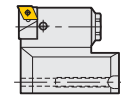
Balance-Cut MAC type cartridge for large dia.

MAC type Balancer for Balance-Cut large dia.



Accessories	ZMAC Unit	Insert Tip	Clamp Bolt	Wrench for Insert	Lock Screw	Adjust Screw	Set Screw (M8)	L-Wrench for M815 Belt	Adjust Wrench	Adjustment Handle	Applicable RPC Plate
Code No.	M5HZ-55	6MP-C	M2577	T8	M366	M540	M815	M4	M3	M5HZL	RPC-130,180,230,280,330,380,430,480,530

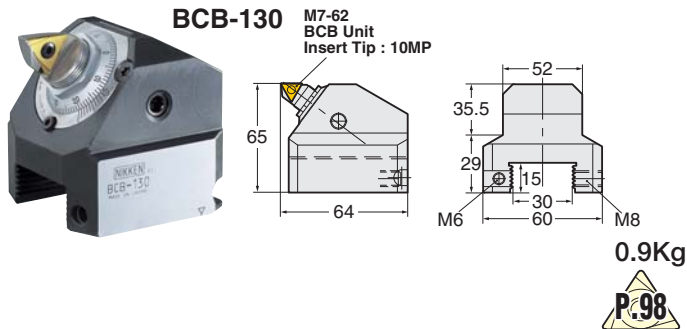
★Please refer P.72 for RPC Plate. ★Set Code No. is S.MCCZ-130.
 ★M5HZ-55R with CC06-C insert tip is available. Please specify code No. MCCZ-130R.
 ★6MP-C insert tip is supplied as standard. P.98 Please refer P.96 for cutting condition.



Accessories for Balance-Cut BCB

Balance-Cut BCB type cartridge for large dia.

MAC type Balancer for Balance-Cut large dia.



Accessories	BCB Unit	Insert Tip	Clamp Bolt	Wrench for Insert	Lock Screw	Adjust Screw	Set Screw (M8)	L-Wrench for M815 Belt	Adjust Wrench	Adjustment Handle	Applicable RPC Plate
Code No.	M7-62	10MP-T	M67	20S	B357, B367	M540	M815	M4	M3	M397	RPC-130,180,230,280,330,380,430,480,530

★Please refer P.72 for RPC Plate. ★Set Code No. is S.BCB-130.
 ★10MP-T insert tip is supplied as standard. P.98 Please refer P.96 for cutting condition.

SPECIAL DESIGNED BORING ARBOR

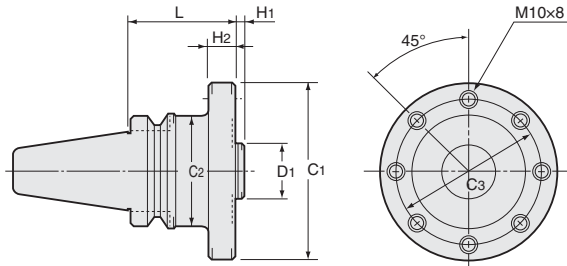


There exist various kinds of boring applications which cannot be managed using standard boring arbors. NIKKEN has great experience of special boring applications, utilizing the double contact shoulder support ZMAC boring heads. NIKKEN can also design and manufacture special boring arbors to suit your special applications.

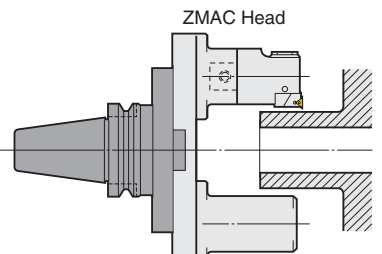


RAA

Base Arbor for Special Boring Head

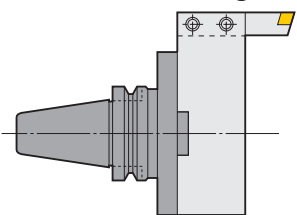


For Overturning



Counter Balance

For U Axis Boring Arbor

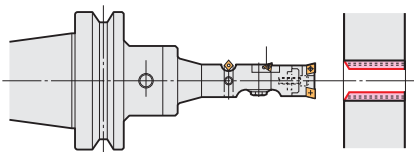


TAPER	Code No.	D ₁	L	H ₁	H ₂	C ₁	C ₂	C ₃	Weight (kg)
No.40	BT40-RAA32- 60 (IT40)	32 h7	60	7	15	102	61	82	2.5
	BT50-RAA32- 60 (IT50)		60		12				
No.50	-120	32 h7	120	20	102	98	82	15.5	5
	-180		180						9

★The Base Holder with long gauge length is available on demand.
 ★High Pressure Centre Through Tool Coolant Type is available on demand.
 ★The dimension with () is for IT40 and IT50.
 ★For BT40, D₁=22mm is also available.

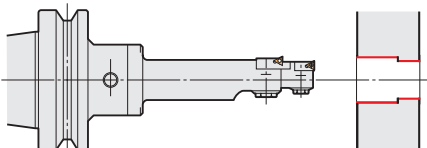
Multi Stage Boring Arbor

For Simultaneous machining for rough, finish and chamfer.



Please specify the boring dia., depth, and necessary length from the gauge line.

For stepped hole boring with restricted concentricity.



Please specify each boring dia., depth, and necessary length from the gauge line.

For decreasing the number of A.T.C with one arbor for two different size of the bores.

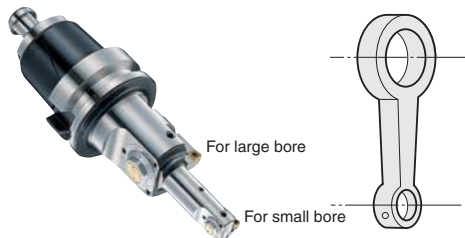


Photo shows with NC5 Shank.

The above are just samples. Pre-Balanced type Boring Arbor for High Speed Application and Aluminium Body Head are also available. Please contact with us about your special boring applications.

DRILLING OPERATION by COMBAT Z DRILL



“Rationalization is Study of Drilling.” which is our Slogan for developing NIKKEN COMBAT Z DRILL. P.255 Please try it. Pilot Drill and 3-Phases Heat Treatment significantly improves Cutting Condition, Secure Drilling and Tool Life.

Ultra Long Size Boring Bar

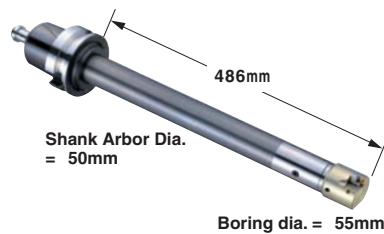
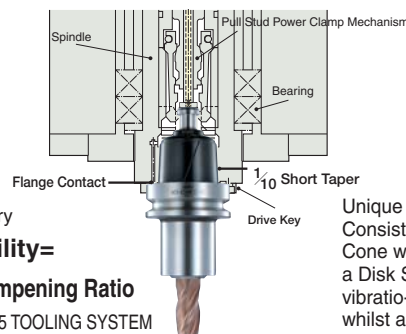


Photo shows with NC5 Shank.

For Extreme Deep Hole Boring Operation, please study the Machine with NC5 Spindle P.193 or 3LOCK Spindle P.139. In case of BT/IT spindle, we recommend ZMAC type Head for these applications.



E · H · MERRITT's Theory

Chattering Stability=

Static Stiffness × Dampening Ratio

Thus, the advantage of NC5 TOOLING SYSTEM is clearly demonstrated.

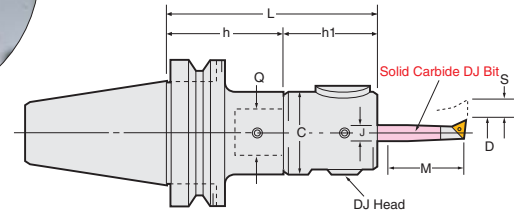
Unique Construction : Consist-ing of a Slotted Taper Cone which is Pre-Loaded by a Disk Spring to increase its vibratio-nal dampening effect whilst ad-justing minute gaugeline errors, completely.

DJ BORING BAR

NIKKEN



High Pressure Coolant Through Tool is available. Please contact us.



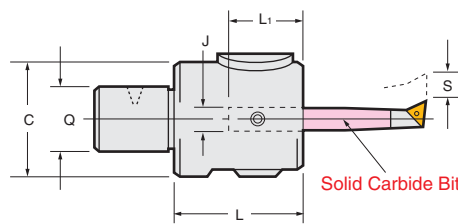
BT-DJ

TAPER	Code No.	Boring Range	Boring Depth	L	C	Bit Hole Size	Shank Code No.	Head Code No.	Bit Stroke	DJ Bit Code No.	Weight (Kg)
No.30	BT30-DJ3- 76	3~28	14~ 80	76	45	10	BT30-Q26- 40	Q26-DJ3-36	5.2	J10	1.0
	-DJ8- 84AN	3~50	14~130	84	59	16		-DJ8-44AN	6.0	J16	1.2
No.40	BT40-DJ3- 86	3~28	14~ 80	86	45	10	BT40-Q26- 50	Q26-DJ3-36	5.2	J10	1.6
	(IT40) -131			131							
	-DJ8- 94AN	3~50	14~130	94	59	16	BT40-Q26- 50	-DJ8-44AN	6.0	J16	1.9
	-139AN			139							
No.50	BT50-DJ3-101	3~28	14~ 80	101	45	10	BT50-Q26- 65	Q26-DJ3-36	5.2	J10	4.2
	(IT50) -206			206							
	-DJ8-109AN	3~50	14~130	109	59	16	BT50-Q26- 65	-DJ8-44AN	6.0	J16	4.5
	-214AN			214							

- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each boxed set of DJ3 and DJ8 Boring Bars include 4 pcs of DJ Boring Bits as standard.
- ★Bits included for BT40-DJ8-94A : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- ★Bits included for BT40-DJ8-94AN : J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★DJ Boring Bar without Boring Bits is also available. Please add “-BD” at the end of Code No. e.g. BT40-DJ3-86-BD
- ★Shank and DJ Head (including Boring Bits) are delivered in separate packages.
- ★Please refer P.84 for Boring Bits. Please refer P.97 for cutting condition.

DJ BORING HEAD with DJ BORING BIT

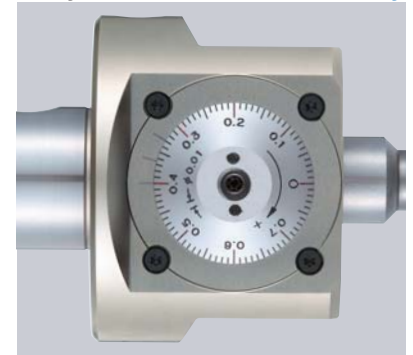
NIKKEN



DJ



Easy to Set Micron Accuracy



▲ 1 Graduation: 0.01mm on dia.

DJ No.	Code No.	Boring Range	Boring Depth	Q	L	C	Bit Hole Size	L ₁	Bit Stroke	Weight (kg)	Bit Code No. (Standard Accessories)	Insert Tip Code No.
DJ3	Q26-DJ3-36	3~28	14~80	26	36	45	10	24	5.2	0.5	J10- 3-14	—
											J10- 5-35	CC03-C
											J10- 8-40	3MP-C
											J10-18-65	6MP-C
DJ8	Q26-DJ8-44AN	3~50	14~130	26	44	59	16	32	6.0	0.8	J16- 8-40	3MP-C
											J16-18-60	3MP-C
											J16-28-65	6MP-C
											J16-38-65	6MP-C

- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each boxed set of DJ3 and DJ8 Boring Bars include 4 pcs. of DJ Bits, Insert, Insert Clamp Handle, (T6, T8, (10S for DJ3) Micro Adjusting Handle (M2.5) as standard.
- ★Bits included for Q26-DJ8-44A : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- ★Bits included for Q26-DJ8-44AN : J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★Please refer P.84 for Boring Bits. Please refer P.97 for cutting condition.
- ★DJ Boring Head without Bits is also available. Please add “-BD” at the end of Code No. e.g. Q26-DJ3-36-BD, Q26-DJ8-44A-BD
- ★Weight of wooden box of DJ head with Boring Bits: Q26-DJ3-36 : 1.2kg, Q26-DJ8-44AN : 2.2kg, Q26-DJ8-44A : 2.5kg

DJ BORING BIT SOLID CARBIDE

NIKKEN

NEW



New Bit Series for DJ8

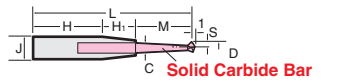


Fig.1

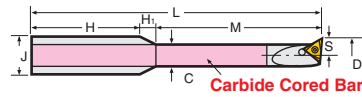


Fig.2

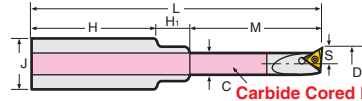


Fig.3

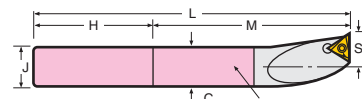


Fig.4

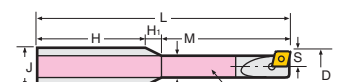


Fig.5

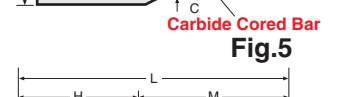


Fig.6

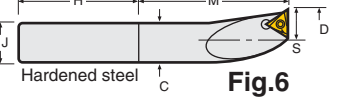
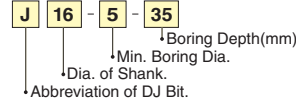


Fig.7

Explanation of the Code No.

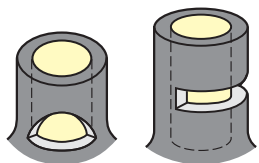


Style	Code No.	Boring Range	Boring Depth	J	L	H	H ₁	C	S	Insert No.	Insert Clamping Bolt No.	Insert Clamping Handle No.	Fig.	Weight (g)
		D	M											
DJ3	J10- 3- 14	3~ 8	14	10	62	30	18	2.2	1.5	-	-	-	1	30
	- 5- 35	5~15	35		70		5.0	4.3	2.5	CC03-C	M611	10S	5	30
	- 8- 40	8~18	40		75	32.5	2.5	7.2	4.0	3MP-C	M2040	T6	2	50
	- 8- 55*		55		90								11.2	6.0
	-12- 55*	12~22	55		85	26	-	12	9.0	6MP-C	M2577	T8	4	130
	-18- 65	18~28	65		91								106	130
	-18- 80*	18~28	80		106									
DJ8	J10- 3- 14*	3~ 8	14	10	62	30	18	2.2	1.5	-	-	-	7	30
	J16- 5- 25*	5~15	25	16	60	31.5	3.5	4.3	2.5	CC03-C	M611	10S	5	76
	- 5- 35*		35		78	33	10						80	
	- 8- 35*	8~18	35	70	32.5	2.5	7.2	4.0	3MP-C	M2040	T6	2	90	
	- 8- 40		40	83	32	10						100		
	- 8- 55*	55	98	35			-	11.2	6.0	M2045	3	110		
	-12- 50*	12~22	50		90	40.5					2.5	140		
	-12- 60*		60	103	16	9.0	6MP-C	M2577	T8	2	170			
	-18- 60	93	150											
	-18- 80	18~28	80	113	-	16	14.0	4	300					
	-18-100*		100	133					350					
	-18-120*	120	153	400										
	-28- 65	28~39	65	98	33	19.0	6	150						
	-28- 85		85	118				300						
	-28-100*	100	133	350										
	-28-130*	130	163	450										
	-38- 65	38~50	65	98	23	19.0	6	200						
	-38- 85		85	118				350						
	-38-100*	100	133	370										
	-38-130*	130	163	470										

- *The Bits marked * are optional accessories.
- ★Please refer P.84 for boring bits. Please refer P.97 for cutting condition. The insert tip for J10-8,-12 and J16-8,-12 were changed from 3MS to 3MP.
- ★9DJ8-J10-ADP adapter option is necessary to use J10-3-14 for DJ8 head.
- ★The shorter bits are added for J16-5, J16-8 and J16-12. ★“C” grade (Coated) insert tip is supplied. Please refer P.97 for cutting condition.
- ★Coolant through tool is basically available for the boring bits with MIN. boring diameter is 12mm. e.g. J16-12-60C Please contact us.

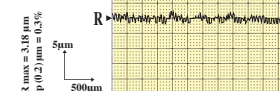
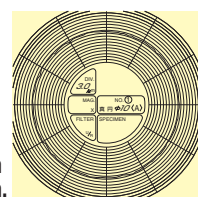
Example of hardened steel boring with CBN Insert

Reduce L/D as small as possible:MAX. 3times
For bits of L/D shorter than standard one are also available. Please contact with us.



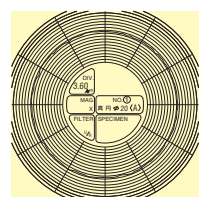
Example of intermittent boring of hardened steel (HRC60) 10mm

Results of concentricity on 24 pcs. were all within 3 m.



Results of surface finish on 24 pcs. were all within 3.3 microns. (R MAX.)

Results of concentricity on 24 pcs. were all within 3.6 m.



No.20 C(20)



Results of surface finish on 24 pcs. were all within 2.8 microns. (R MAX.)

Example of intermittent boring of hardened steel (HRC60) 20mm

B1

BASE HOLDER for MODULAR TYPE (BT Shank)



Q

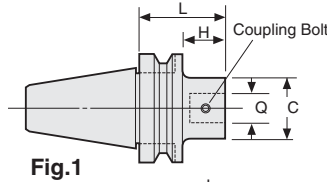


Fig.1

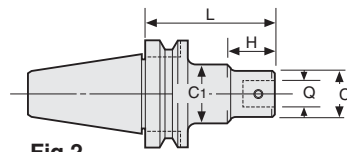


Fig.2

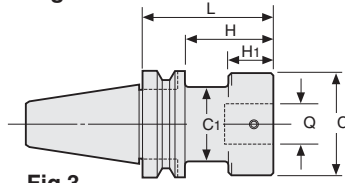


Fig.3

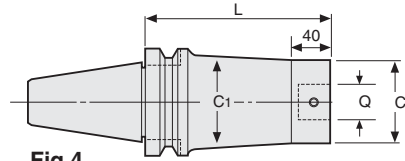


Fig.4

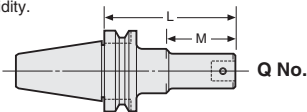
TAPER	Code No.	Coupling Dia Q	L	C	C1	H	H1	Coupling Bolt No.	Fig.	Weight (kg)	
No.30	BT30-Q 9- 50	9	50	19	30	20	-	B19	2	0.5	
	-Q12- 65	12	65	24	-	40		B12	1	0.5	
	-Q16- 50	16	50	31		25		B16		0.5	
	-Q20- 50	20	50	40		26		B20		0.5	
	-Q26- 40	26	40	50		45		18		6	B26N
No.40	BT40-Q 9- 80	9	80	19	30	5	-	B19	2	1.2	
	- 95N		95			27				1.2	
	-Q12- 80	12	80	24	35	12		B12		1.2	
	- 110		110			50				1.3	
	-Q16- 95		16			95				31	42
	- 125	125		55	1.6						
	-Q20- 80	20	80	40	50	27		B20	1.5		
	- 110		110			60			1.7		
	-Q26- 50	26	50	50	-	20		B26N	1	1.1	
	- 95		95			65			1.8		
	- 140		140			110			2.4		
	-Q34- 95	34	95	64	62	68		55	B34	3	2.2
	- 110		110			83					70
	-Q42- 95	42	95	83	-	68		55	B42	3	2.8
	No.50	BT50-Q 9- 110	9	110	19	40		5	-	B19	2
- 125N		125		27			4.1				
-Q12- 95		12	95	24	44	12	B12	4.0			
- 125			125			50		4.0			
-Q16- 125N			16			125		31		50	
- 155		155		55	4.6						
-Q20- 110		20	110	40	60	27	B20	4.6			
- 125			125			60		4.5			
-Q26- 65		26	65	50	65	27	-	B26N		1	3.7
- 140			140			47				2	5.3
- 170N			170			112				5.4	
-Q34- 140		34	140	64	80	102	-	B34		1	5.6
- 170			170			120				2	6.5
- 200			200			150				7.1	
-Q42- 125		42	125	83	-	87	-	B42		1	6.5
- 190			190			152					9.1
-Q42- 225A		42	225	83	98	-	-	B42		4	12.9
- 275A			275								15.6
- 325A	325		18.3								
- 375A	375		21.0								

★ C of Q26 base holder has been increased from 45mm to 50mm due to improvement of its rigidity.

★All base holders have a centre through-tool coolant hole.

★The Coupling screw & wrench are supplied as standard.

★When L length is required longer than standard, please specify the boring depth M.

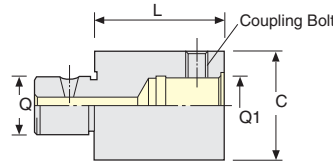


Q No.

SPACER for MODULAR TYPE

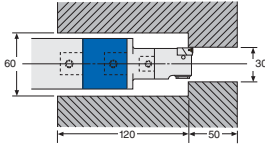


Extension Spacer



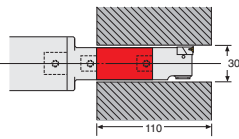
SP

Example of small diameter boring in a deep recess using the largest diameter extension spacer in order to maintain rigidity.



BT40-Q26-95
SP26-26-60
 SP26-12-30
 12-ZMAC25-40

Example of deep hole boring using the extension spacer with the same diameter as head.

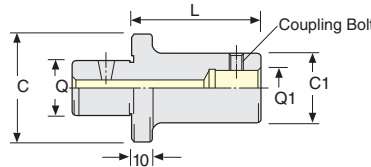


BT40-Q26-95
 SP26-12-30
SP12-12-60
 12-ZMAC25-40

Code No. Q-Q1-L	Coupling Dia		C	Coupling Bolt No.	Weight (kg)
	Q	Q1			
SP 9- 9-30, 45	9	9	19	B19	0.06, 0.1
SP 12-12-30, 45, 60	12	12	24	B12	0.1, 0.15, 0.2
SP 16-16-30, 45, 60	16	16	31	B16	0.15, 0.25, 0.35
SP 20-20-45, 60	20	20	40	B20	0.4, 0.5
SP 26-26-60, 90	26	26	50	B26N	0.8, 1.2
SP 34-34-60, 90	34	34	64	B34	1.4, 2.0
SP 42-42-60, 90	42	42	83	B42	2.4, 3.4

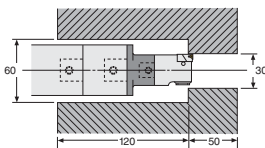
★ C of SP26 Spacer has been increased from 45mm to 50mm due to improvement of its rigidity.
 ★All spacers have a centre through-tool coolant hole. ★The Coupling screw is included as standard.

Stepped Spacer



SP

Example of small diameter boring in deep recess using stepped spacer with the same diameter as head.



BT40-Q26-95
 SP26-26-60
SP26-12-30
 12-ZMAC25-40

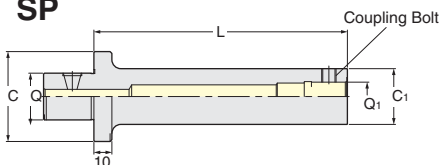
Code No. Q-Q1-L	Coupling Dia		C	C1	Coupling Bolt No.	Weight (kg)
	Q	Q1				
SP 12- 9-45	12	9	24	19	B19	0.1
SP 16- 9-45	16	9	31	19	B19	0.15
-12-60		12		24	B12	0.25
SP 20- 9-45	20	9	40	19	B19	0.2
-12-60		12		24	B12	0.3
-16-60, 90		16		31	B16	0.4, 0.6
SP 26- 9-30, 45	26	9	50	19	B19	0.3, 0.3
-12-30, 60		12		24	B12	0.3, 0.4
-16-30, 60, 90		16		31	B16	0.3, 0.5, 0.6
-20-30, 60, 100		20		40	B20	0.4, 0.6, 1.0
SP 34-16-60, 90	34	16	64	31	B16	0.7, 0.9
-20-60, 100		20		40	B20	1.0, 1.3
-26-60, 100		26		50	B26N	1.1, 1.5
SP 42-20-60, 100	42	20	83	40	B20	1.2, 1.6
-26-60, 100		26		50	B26N	1.4, 1.9
-34-60, 100		34		64	B34	1.8, 2.5

★ C of SP26 Spacer has been increased from 45mm to 50mm due to improvement of its rigidity.
 ★All spacers have a centre through-tool coolant hole. ★Coupling bolt is supplied as standard.

A1 Spacer for Deep Hole



SP



L/D:MAX.6 times

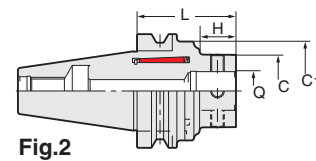
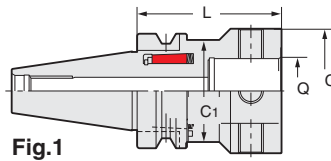
Code No. Q-Q1-L	Coupling Dia		C	C1	MAX. L	Weight (kg)
	Q	Q1				
SP 26- 9- 85-A1	26	9	50	19	85	0.6
-12-115-A1		12		24	115	0.7
-16-140-A1		16		31	140	0.9
-20-180-A1		20		40	180	1.2
-26-190-A1		26		50	190	1.5

Please specify the "L" length when ordering. Code No. is e.g SP26-9-85-A1 (Q1=9 and L=85)



Modular connection system is the face contact system drawing-in by the bolt, which top shape is gentle taper.

1. Insert a head by adjusting the hole positions.
2. Tighten the bolt temporary, then loosen slightly.
3. Tighten the bolt again by moving the head CW and CCW. (Centering each other)
4. Then tighten the bolt completely until face contact.

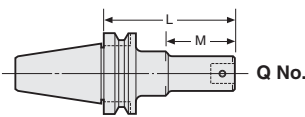


MDQ

Photo shows with A1 spacer and ZMAC head.

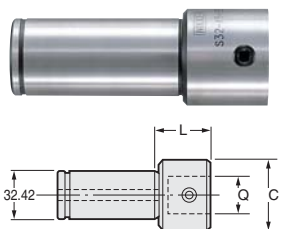
TAPER	Code No.	Q	L	C	C1	H	Weight (kg)	ZMAC Boring Range	Fig
No.30	NBT30-MDQ26- 60	26	60	50	50	37.5	-	16~70	1
No.40	NBT40-MDQ26- 65	26	65	50	54	30.0	1.3	16~70	2
No.50	NBT50-MDQ26- 80	26	80	50	87	22.0	4.6	16~70	2
	-MDQ34- 90	34	90	64	87	32.0	4.9	16~85	
	-MDQ42-100	42	100	83	87	45.0	5.7	16~180	

- ★All base holders are used for centre through tool coolant.
- ★Coupling bolt and wrench are supplied as standard.
- ★ZMAC head is recommended to use with the MAJOR DREAM base holder for anti-vibration.
- ★When L length is required longer than standard, please specify the boring depth M and Q No.



MODULAR TYPE STRAIGHT SHANK

K-Q



Code No.	Coupling Dia.	C	L	Coupling Bolt.	Weight (Kg)
	Q				
K32-Q 9-20	9	19	20	B19	0.4
-40			40		0.5
-Q12-20	12	24	20	B12	0.4
-60			60		0.6
-Q16-20	16	31	20	B16	0.5
-55			55		0.7
-Q20-40	20	40	40	B20	0.7
-Q26-40	26	50		B26N	0.8
K42-Q26-40				B26N	1.2

★All straight shank base holders are used for centre through tool coolant.

CHANFERING CUTTER for Modular System

CAF



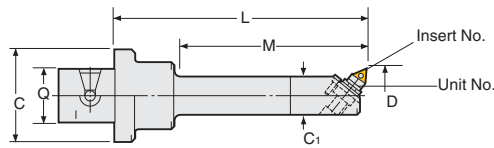
Code No.	Coupling Dia.	Chamfering Dia.	Code No.	Coupling Dia.	Chamfering Dia.
CAF 9- 32	9	20~32	CAF20- 60	20	42~60
CAF12- 38	12	25~38	CAF26- 85A	26	56~85
CAF16- 45	16	33~45	CAF34-110	34	70~110

★Chamfering angle is 45°

MODULAR TYPE BORING HEAD

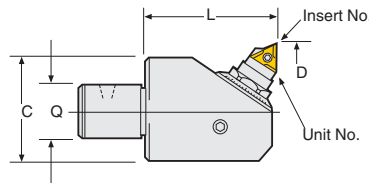
NIKKEN

BCB Micro-Cut Boring Head



Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	Total Length L	C	C ₁	Unit No.	Insert No.
Q26-BCB12.7S- 95	12.7~14.5	60	26	95	50	12	M1-12.7	1MP-T
Q26-BCB14.5S-100	14.5~19.5	65		100		13	M1-14.5	
Q26-BCB19 S-125	19 ~22.5	90		125		18	M2-19	

★“T” grade (Cermet) insert is supplied as standard. P.98 Please refer P.96 for cutting condition.

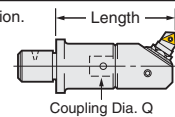


Set/Head Code No	Boring Range D	Boring Depth M	Coupling Dia Q	Remarks		
				C	Unit No.	Insert No.
9-BCB 22 - 40	22 ~29.5	40	9	20	M 2- 22	3MS-T
12-BCB 29 - 40	29 ~ 41		12	25	M 3- 29	
16-BCB 38 - 55	38 ~ 50	55	16	35	M 5- 38	6MP-C
20-BCB 48 - 70	48 ~ 65	70	20	41	M 5- 48	
26-BCB 62 - 70	62 ~ 90		26	54	M 7- 62	10MP-T
34-BCB 82 - 85	82 ~ 110	34	67			
42-BCB100 -100	100~ 140	100	42	85	M10-100	

★“6MP-C” (Coaterd) insert or “T” grade (Cermet) insert is supplied as standard. P.98 Please refer P.96 for cutting condition.

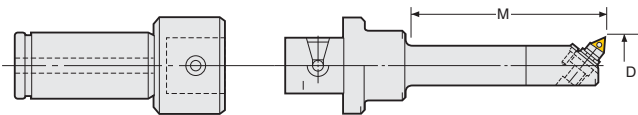
★Min. dial readout (on dia) : 0.02mm (Sub scale : 0.002mm)

★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-BCB○-Length e.g. Q26-20-BCB48-100



Straight Shank MICRO CUT BORING BAR

NIKKEN



The sales of micro cut boring bar will be finished, when the stock is sold out.



K-BCB

Style	Code. No.	Q Holder Code. No.	Head No.	Boring Range D	Boring Depth	Insert No.
K32	K32-BCB12.7S-135	K32-Q26-40	Q26-BCB12.7S- 95	12.7~14.5	60	1MP-T
	-BCB14.5S-140		-BCB14.5S-100	14.5~19.5	65	

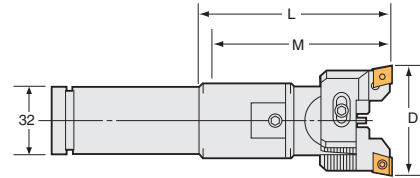
★Please refer P.87 for straight shank base holder and P.88 for micro cut head.

★“T” grade (Cermet) Insert is supplied as standard. P.98 Please refer P.96 for cutting condition.

★Please use ZMAC Boring Bar for the bore dia. is larger equal to 16mm. P.88

Straight Shank BALANCE CUT BORING BAR

NIKKEN



K-RAC

You can use following boring tools with C32 Milling Chuck. It is convenient for Various/Small Volume Productions. Use with Straight Shank ZMAC Boring Bar.

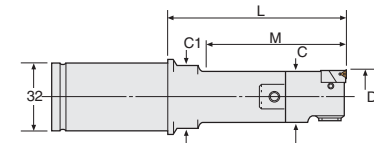
P.62

Code. No.	Boring Range D	Boring Depth M	Shank Code No.	Head No.	Insert No.	Weight (kg)
K32-RAC25- 75E	25~ 32	70	K32-Q12-20	12-RAC025- 55E	CC07-C	0.8
-115E		93	-Q12-60			0.9
-RAC32- 75E	32~ 45	70	-Q16-20	16-RAC 32- 55E	CC08-C	1.1
-110E			-Q16-55			1.3
-RAC43-110E	43~ 55	105	-Q20-40	20-RAC 43- 70E	CC12-C	1.7
-RAC53-110E	53~ 70		-Q26-40	26-RAC 53- 70E		1.8
-RAC70-110E *	70~ 100			26-RAC 70- 70E		1.9

★Balance cut boring bar on above table is the boring bar with the cartridges (E) for steel, stainless and cast iron. "C" grade (Coated) insert tip is supplied as standard. P.62
 ★Boring bar with the cartridges for heavy duty boring of iron and cast iron P.64, for aluminium (A) P.66 and for through hole and multi sheets (K) . P.68
 Please refer P.95 for cutting condition.
 ★Shank (P.87) and head (P.69) are delivered in separate packages.
 ★For centre through tool coolant type except **K32-RAC70-110E** marked *, please add "C" at the end of Code No. e.g. **K32-RAC53-110E-C**

Straight Shank Z MAC BORING BAR

NIKKEN



K-ZMAC

You can use following boring tools with C32 Milling Chuck. It is convenient for Various/Small Volume Productions.

Code No.	Boring Range D	Boring Depth M	C	C ₁	Shank Code No.	P.98		P.74		Weight (kg)
						Head No.	Insert No.	Head No.	Insert No.	
K32-ZMAC16- 65	15.9~20.2	38	15	-	K32-Q12-20	12-ZMAC16-45				0.5
- 75		48				12-ZMAC16-55				0.5
-ZMAC20- 60	19.8~25.2	55	19	-	-Q 9-20	9-ZMAC20-40	3MP-C,B			0.6
- 80		63								-Q 9-40
-ZMAC25- 60	24.8~32.2	55	24	-	-Q12-20	12-ZMAC25-40				0.6
-100		83								-Q12-60
-ZMAC32- 75	31.8~42.2	70	31	-	-Q16-20	16-ZMAC32-55	4MP-C,B	16-ZMAC32R-55	CC06-C	0.9
-110										-Q16-55
-ZMAC42-110	41.8~55.2	105	40	-	-Q20-40	20-ZMAC42-70	6MP-C,B	20-ZMAC42R-70		1.5
-ZMAC55-110	54.8~70.2		53		-Q26-40	26-ZMAC55-70				26-ZMAC55R-70

★All Codes shown are for Heads with Triangular Inserts. P.98

For Heads with Rhomboid Inserts, please add "R" to the Code No. e.g.) **K32-ZMAC32 R -75**

★MIN. dial read out: **ZMAC25** and smaller is 0.02mm on dia. **ZMAC32** and larger is 0.01mm on dia.

★"C" grade (coated) Insert for Steel, Stainless and Cast Iron is supplied as standard with the Head. (Smooth Boring and Long tool-life) Please refer P.96 for cutting condition.

We would recommend "B" grade (CBN) Insert for Hardened Steel and High Speed Boring of Cast Iron.

★For Centre Through Tool Coolant type, please add "C" at the end of Code No. e.g. **K32-ZMAC42-110C**.

Straight Shank DEEP HOLE ZMACX BORING BAR



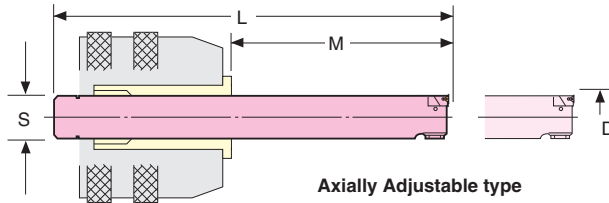
Axially Adjustable and **Solid Carbide**



For Deep Hole Boring



For Deep Hole Boring with Extended Gauge Length



ZMACX25, 32, 42 are the centre through tool coolant type with ZMACX head as standard.



S-ZMACX

Code. No.	Boring Range D	Boring Depth M	L	S	Unit No.	Insert No.	Weight (kg)	Suitable Holder	
								Chuck	KM Collet
S12-BCBX12.7- 95	12.7~14.5	50~95	130	12	M1-12.7	1MP-T	0.2	BT40-C32 BT50-C32	KM32-12
S13-BCBX14.5-105	14.5~19.5	50~105	135	13	M1-14.5				-13
S15-ZMACX16-120	15.9~20.2	65~120	150	15	M2HZ-16	3MP-C, B	0.3		-15
S19-ZMACX20-150	19.8~25.2	100~150	180	19	M2HZ-20		0.6		-19
S24-ZMACX25-190C	24.8~32.2	140~190	220	24	M3HZ-25	4MP-C, B	1.3		-24
S30-ZMACX32-260C	31.8~42.2	190~260	290	30	M4HZ-32		2.6		-30
S32-ZMACX42-330C	41.8~55.2	260~330	360	32	M5HZ-42	6MP-C, B	3.8	-	

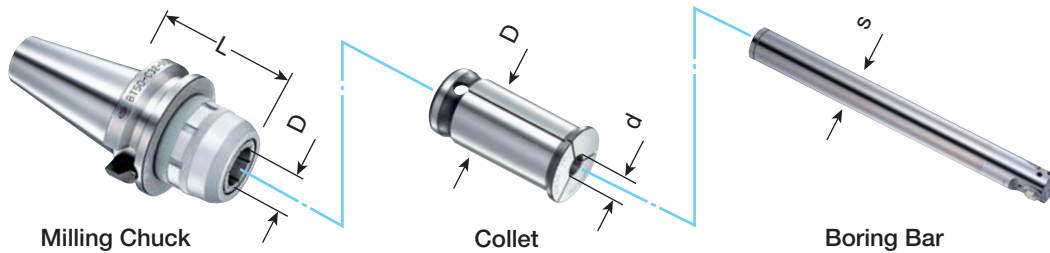
★T grade (Cermet) insert tip or "C" grade (Coated) insert tip is supplied as standard for BCBX or ZMACX respectively. P.98 Please refer P.96 for cutting condition.

★Centre Through Tool Coolant type is available. Please add "C" at the end of Code No. e.g. S19-ZMACX20-150C

Deep Hole Boring Operation with combination of Milling Chuck, Collet and S-ZMACX Boring Bar.

Ultra Deep Hole Boring MAX.L/D=8 times with Carbide Solid Boring Bar

Axially Adjustable with Milling Chuck



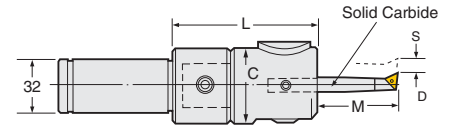
TAPER	Milling Chuck Code No.	Collet
No.40	BT40 -C20- 70, 90, 105, 120	KM20
	-C25- 70, 90, 120	KM25
	-C32- 85, 105, 120	KM32
No.50	BT50 -C20-105, 135, 165, 180	KM20
	-C25-105, 135, 165	KM25
	-C32- 90, 105, 120, 135, 165	KM32
	-C42- 95, 105, 120, 135, 165	KM42

KM Collet No.
KM20-12
-13
KM25-12
-13
-15
KM32-12
-13
-15
-19
-24
-30
-

Deep Hole Boring Bar Code No.
S12-BCBX12.7- 95
S13-BCBX14.5-105
S12-BCBX12.7- 95
S13-BCBX14.5-105
S15-ZMACX16-120
S12-BCBX12.7- 95
S13-BCBX14.5-105
S15-ZMACX16-120
S19-ZMACX20-150
S24-ZMACX25-190
S30-ZMACX32-290C
S32-ZMACX42-360C

★KM42-12, 13, 15, 19, 24 are also available.

Straight Shank DJ BORING BAR



K-DJ

You can use following boring tools with C32 Milling Chuck. It is convenient for Various/Small Volume Productions.



Code No.	Boring Range D	Boring Depth M	L	C	Bit Hole Size L	Shank Code No.	Head No.	Bit Stroke S	Bit Code No.	Weight (kg)
K32-DJ3-76	3~28	14~ 80	76	45	10	K32-Q26-40	Q26-DJ3-36	5.2	J10	1.3
-DJ8-84AN	3~50	14~130	84	59	16		-DJ8-44AN	6.0	J16	1.6

- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each box set of DJ3 and DJ8 Boring Bar includes 4 pcs of Boring Bits and insert tips.
- ★Bits included to **K32-DJ8-84A** : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- ★Bits included to **K32-DJ8-84AN** ; J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★Please refer [P.84](#) for Boring Bit. Please refer [P.97](#) for cutting condition.
- ★DJ Boring Bar without Boring Bits is available. Please add “-BD” at the end of Code No. e.g. K32-DJ8-84A-BD

MULTI STAGE BORING BAR



Please provide your material drawing, machining drawing and machine information for multi stage boring bars.

Multi-Boring



Rough Boring by ISO Cartridge



Boring, Over Turning



Rough Boring by ISO Cartridge

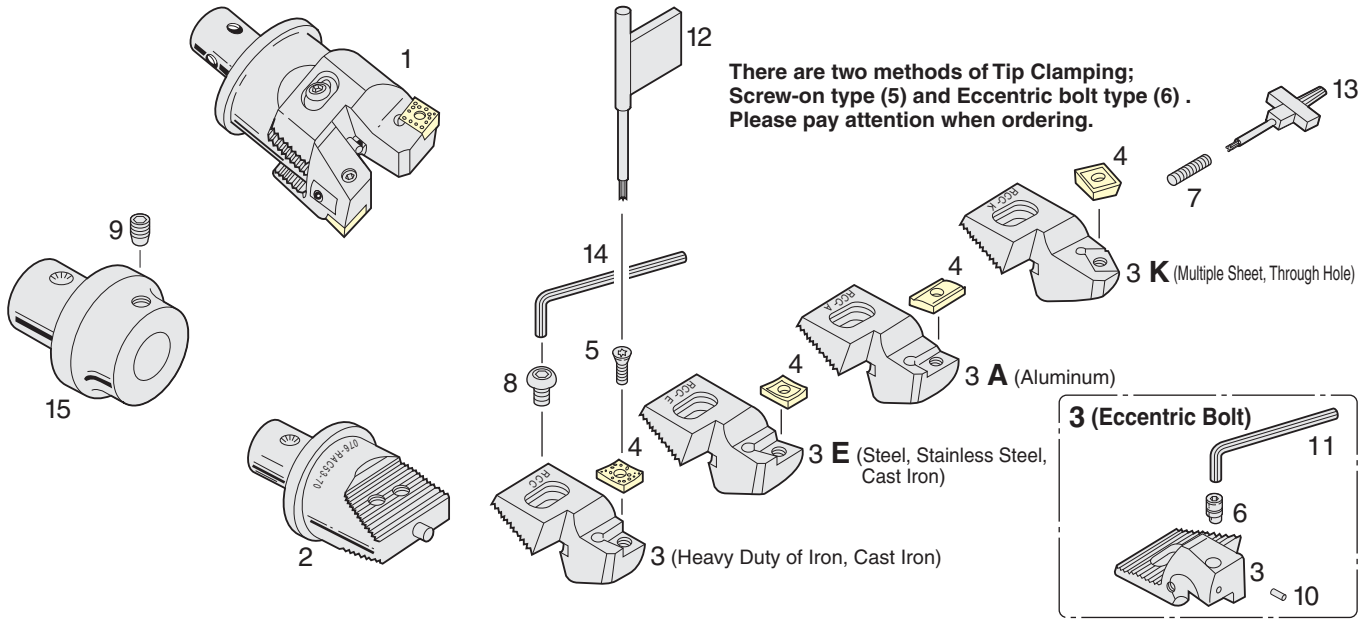


Multi-Boring



Please supply ISO cartridges basically, even we can provide by ourselves.

BALANCE CUT BORING UNIT PARTS LIST



Boring Range	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
	RAC Head	RAC Base	Cartridge	Tip	Tip Clamping Bolt	Eccentric Bolt	Adjusting Screw	Cartridge Clamping Bolt	Set Screw	Copper Pin	Tip Clamping L-Wrench	Tip Clamping Handle	Wrench for Adjustment	L-Wrench for Cartridge	Stepped Spacer					
25~ 32	12-RAC025- 55E	12-RAC025- 55B	RCC-025E	CC07	M3070	—	M508	G-25	B12	—	—	T10	—	—	M3	SP26-12-30				
	- 55A		- 25A	AEG12																
	- 55K		- 25K	SC09																
32~ 45	16-RAC 32- 55E	16-RAC 32- 55B	RCC- 32E	CC08	M4090	—	M512	G-32	B16	—	—	T15	—	—	M4	SP26-16-30				
	- 55A		- 32A	AEG12													M3070			
	- 55K		- 32K	SC09																
43~ 55	20-RAC 43- 70	20-RAC 43- 70B	RCC- 43	CN08	CSM-70	CSM-43	—	M514	G-43	B20	R12	M3	20S	—	—	M5	SP26-20-30			
	- 70E		- 43E	CC12	M5012	—					—	—	—					—	—	—
	- 70A		- 43A	AEG16	M4090															
	- 70K		- 43K	SC12	M5012															
53~ 70	26-RAC 53- 70	26-RAC 53- 70B	RCC- 53	CN08	CSM-70	CSM-43	—	M518	G-53	—	R12	M3	20S	—	—	M2.5	—			
	- 70E		- 53E	CC12	M5012	—					—	—	—					—	—	—
	- 70A		- 53A	AEG16	M4090															
	- 70K		- 53K	SC12	M5012															
70~100	26-RAC 70- 70	26-RAC 70- 70B	RCC- 70	CN08	CSM-70	CSM-43	—	M528	G-70	—	R12	M3	20S	—	—	M6	—			
	- 70E		- 70E	CC12	M5012	—					—	—	—					—	—	—
	- 70A		- 70A	AEG16	M4090															
	- 70K		- 70K	SC12	M5012															
	34-RAC 70- 85	34-RAC 70- 85B	RCC- 70	CN08	CSM-70	CSM-43	—	M528	G-70	—	R12	M3	20S	—	—	—	—			
	- 85E		- 70E	CC12	M5012	—					—	—	—					—	—	—
	- 85A		- 70A	AEG16	M4090															
	- 85K		- 70K	SC12	M5012															
100~130	42-RAC100-100	42-RAC100-100B	RCC-100	CN08	CSM-70	CSM-43	—	M538	G-70	—	R12	M3	20S	—	—	—	—			
	-100E		-100E	CC12	M5012	—					—	—	—					—	—	—
	-100A		-100A	AEG16	M4090															
	-100K		-100K	SC12	M5012															

★You can use only one type RAC Base irrespective of material and work piece. Suitable Cartridge and Carbide Insert must be selected. P.69

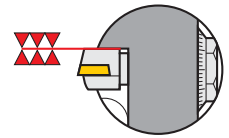
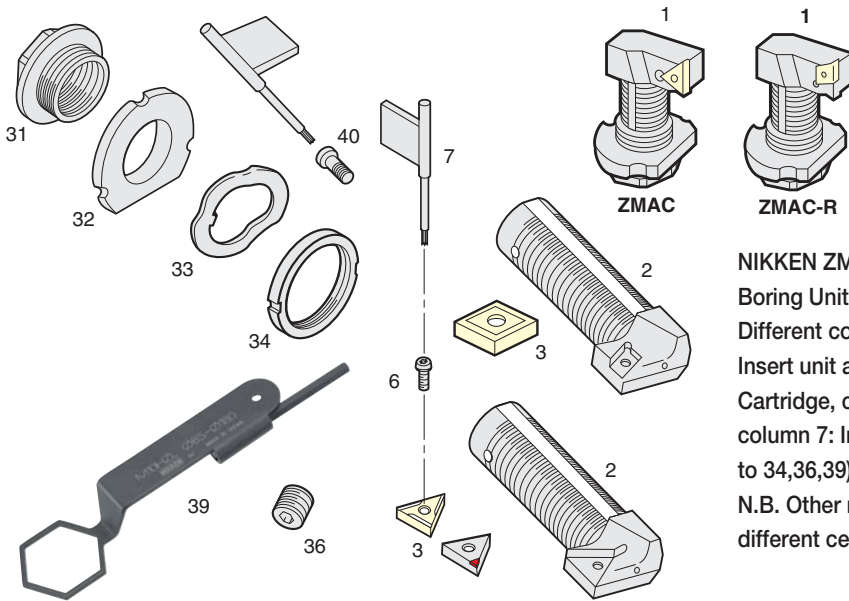
★Insert tip is available as an option.

★There are 2 methods of Tip Clamping; Screw-on type (5) and Eccentric Bolt type (6). Please pay attention when ordering for spare parts.

★Code No. of Cartridge means for Cartridge only. When ordering for cartridge set, please use set Code No. e.g. "S.RCC-025".

★The Code No. of Tip Clamping Handle is unified to T10, T15 and 20S.

ZMAC UNIT PARTS LIST



NIKKEN ZMAC Boring Heads come complete with ZMAC Boring Unit. See below part No. for spares.
 Different codes for the Triangular Insert unit & Rhomboid Insert unit are shown below : column 1: Boring unit, column 2: Cartridge, column 3: Insert, column 6: Insert clamp screw, column 7: Insert clamp handle, but all other parts (column 31 to 34,36,39) are common to both.
 N.B. Other manufacturers ISO Standard Insert Tip may have different centre hole diameters.

Boring Range	1	2	3	6	7	31	32	33	34	36	39	40	
	ZMAC Unit	Cartridge	Triangular Insert	Insert Clamp Screw	Insert Clamp Handle	Dial Ring	Lock Flange	Wave Spring	Preload Nut	Lock Screw	Adjustment Handle	Unit Clamp Bolt	
15.9~20.2	M 2HZ- 16	M 2HZ- 16C	3MP-C,B	M2045	T6	9M216D	9M216L	9M216W	9M216P	M361	M 2HZL-A	M2045	
19.8~25.2	M 2HZ- 20	M 2HZ- 20C				9M220D	9M220L		M362	M 2HZL-B			
24.8~32.2	M 3HZ- 25	M 3HZ- 25C				9M325D	9M325L	M333	9M325P	M363	M 3HZL		
31.8~42.2	M 4HZ- 32	M 4HZ- 32C	4MP-C,B	M2070	T8	9M432D	9M432L	M334	M344	M365	M 4HZL	M2577	
41.8~55.2	M 5HZ- 42	M 5HZ- 42C	6MP-C,B	M2577 (M2562D)*		9M542D	9M542L	M335	9M542P	M364	M 5HZL		
54.8~70.2	M 5HZ- 55	M 5HZ- 55C				9M770D	9M770L	M337	9M770P	M360	M 7HZL		M3090
69.8~85.2	M 7HZ- 70	M 7HZ- 70C				9M108D	9M108L	M330	9M108P	M367	M10HZL		M4012
84.8~100.2	M10HZ- 85	M10HZ- 85C				M368							
99.5~140.5	M10HZ-100	M10HZ-100C											
139.5~180.5	M10HZ-140	M10HZ-140C				M369							

★Each Unit and Cartridge are supplied without Insert Tip.
 ★Cartridge for base forming of bore is an option. Please specify the diameter and width of base forming.
 ★For Diamond Insert Tip (6MP-D), M2562D* must be used.
 ★Cartridge can not be supplied alone, please order ZMAC unit.



Special cartridge example for necking is available. Please contact us with the work piece drawing.

The cartridge head can be exchanged itself for the head bigger equal to ZMAC42.

Boring Range	1	2	3	6	7
	ZMAC Unit	Cartridge	Rhomboid Insert	Insert Clamp Screw	Insert Clamp Handle
31.8~42.2	M 4HZ- 32R	M 4HZ- 32RC	CC06-C	M2560	T8
41.8~55.2	M 5HZ- 42R	M 5HZ- 42RC		M2577	
54.8~70.2	M 5HZ- 55R	M 5HZ- 55RC			
69.8~85.2	M 7HZ- 70R	M 7HZ- 70RC	CC08-C	M4090	T15
84.8~100.2	M10HZ- 85R	M10HZ- 85RC		M4012	
99.5~140.5	M10HZ-100R	M10HZ-100RC	CC12-C	M5012	T15
139.5~180.5	M10HZ-140R	M10HZ-140RC			

Boring Range	Cartridge Head		Head Clamp Bolt
	Triangular	Rhomboid	
41.8~55.2	M 5HZ- 42CH	M 5HZ- 42RCH	M512C
54.8~70.2	M 5HZ- 42CH	M 5HZ- 42RCH	
69.8~85.2	M 7HZ- 70CH	M 7HZ- 70RCH	
84.8~100.2	M10HZ- 85CH	M10HZ- 85RCH	M825
99.5~140.5	M10HZ-100CH	M10HZ-100RCH	M835
139.5~180.5	M10HZ-100CH	M10HZ-100RCH	M835

★Each Unit and Cartridge are supplied without Insert Tip.
 ★Cartridge can not be supplied alone, please order ZMAC unit.

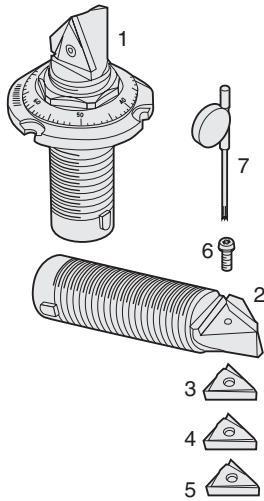
Detach •Loosen head clamp bolt after boring diameter is set to little larger than the MIN. boring diameter.
Attach •Insert the head into cartridge, then tighten head clamp bolt temporary.
 •Loosen side lock bolt.
 •Rotate the dial ring 0.2~0.3mm to minus direction.
 •Tighten head clamp bolt by pushing the head to the support portion of the main body.

MICRO-CUT BORING UNIT PARTS LIST



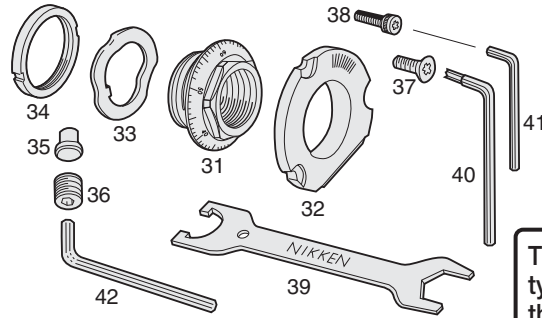
BCB

Screw on type



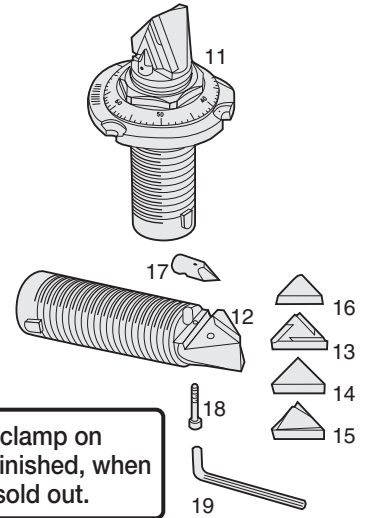
Relation between Micro-Cut Boring Arbor and Micro-Cut Boring Unit

NIKKEN Micro-Cut Boring Arbor is provided with Micro-Cut Boring Unit. When ordering each parts for spare, please place the order by Code No. of Insert, Cartridge and Unit of the following parts list.



BCB

Clamp on type



The sales of clamp on type will be finished, when the stock is sold out.

Boring Range	Screw on type							Clamp on type										
	1	2	3	4	5	6	7	11	12	13	14	15	16	17	18	19		
	BCB Unit	Cartridge	Insert for Alloy Steel	Insert for Cast Iron	Insert for Steel, Stainless Steel	Insert Clamp Bolt	Insert Clamp Handle	BCB Unit	Cartridge	Insert for Alloy Steel	Insert for Cast Iron	Insert for Steel, Stainless Steel	Insert Breaker	Clamp Piece	Insert Clamp Bolt	Insert Clamp Handle		
12.7~14.5	M 1-12.7	—	1MP-E	1MP-F	1MP-T	M61	10S	M 1S-2	M 1S-2C*	—	—	—	—	—	—	—		
14.5~19.5	M 1-14.5	—						M 1L-2	M 1L-2C*	—	—	—	—	—	—	—	—	—
19 ~22.5	M 2-19	M 2-19 C	3MS-E	3MS-F	3MS-T	M68	13S	M 2S-2	M 2S-2C*	—	—	—	—	—	—	—		
22 ~29.5	M 2-22	M 2-22 C						M 2L-2	M 2L-2C*	—	—	—	—	—	—	—	—	—
29 ~ 41	M 3-29	M 3-29 C				M 3L-2S	M 3L-2SC	3P-E	3P-F	3P-T	—	CP- 3	B183	M1.5	—	—	—	—
38 ~ 50	M 5-38	M 5-38 C	6MP-E	6MP-F	6MP-C	M2577	T8	M 5S-2S	M 5S-2SC	5P-E	5P-F	5P-T	5CB	CP- 5	B185	M2		
48 ~ 65	M 5-48	M 5-48 C						M 5L-2S	M 5L-2SC								—	—
62 ~ 90	M 7-62	M 7-62 C	10MP-E	10MP-T	10MP-T	M67	20S	M 7L-2S	M 7L-2SC	7P-E	7P-F	7P-T	7CB	CP- 7	B187	M2.5		
82 ~110	M 7-62	M 7-62 C						M 7L-2S	M 7L-2SC								—	—
100~140	M10-100	M10-100 C	—	—	—	M60	—	M10L-2S	M10L-2SC	10P-E	10P-F	10P-T	10CB	CP-10	B180	M3		

★Each Unit and Cartridge are supplied without Insert Tip.

★All brazed types marked * were stopped production on 2007 JAN.

★Each unit and cartridge are supplied without insert tip.

★Brazed type is available for the diameter of 29~ 200.

Boring Range	31	32	33	34	35	36	37	38	39	40	41	42
	Dial Ring	Lock Flange	Wave Spring	Pre-Load Nut	Lock Metal	Lock Screw	Unit Mounting Bolt A	Unit Mounting Bolt B	Adjustment Handle	Wrench for Unit Mounting Bolt A	Wrench for Unit Mounting Bolt B	Wrench for Lock Screw
12.7~14.5	B311	B321	B331	B341	B351	B361	—	B381	M391	—	M1.27	M1.5
14.5~19.5												
19 ~22.5	B312	B322	9M216W	9M216P	B352	B362	—	B382	M392	—	T6	M2
22 ~29.5						M363						
29 ~ 41	B313	B323	M333	9M325P	B353	B363	—	B384	M393	—	13S	M2.5
38 ~ 50												
48 ~ 65	B315	B325	M335	9M542P	B355	B365	—	B386	M395	—	20S	M3
62 ~ 90												
82 ~110	B317	B327	M337	9M770P	B357	B367	—	B388	M397	M407	M405	M5
100~140						B368						
100~140	B310	B320	M330	9M108P	B350	B360	M370	—	M390	M400	—	M6

★31, 32, 33 and 34 are set for spare parts. When ordering, please add "D" at the end of Code No.
e.g. D.M2-22 for Boring Range: 22~29.5mm

BALANCE-CUT BORING ARBOR CUTTING DATA



CN (Positive type) RAC-E



CC (Negative type) RAC



RAC-A



RAC-K



Material

Steel

60~150m/mim. (Dry or Wet cutting)

Stainless Steel

40~80m/mim. (Wet cutting)

Cast Iron

60~150m/mim. (Dry or Wet cutting)

**Aluminium,
Non-ferrous metal**

200~500m/mim. (Wet cutting)

**Multiple Sheets,
Through Hole**

40~120m/mim. (Dry or Wet cutting)

Recommended cutting Speed ○...Best ○...Good ---...Unsuitable

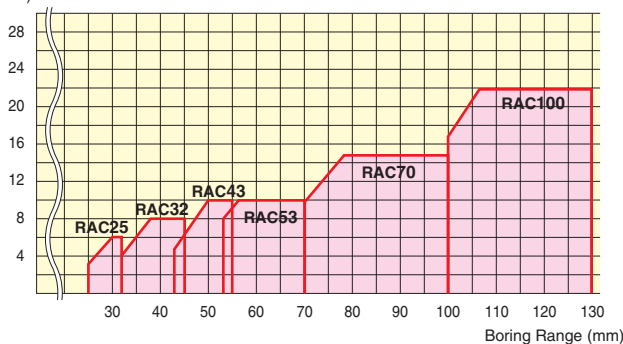
Insert		SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Interrupted Cutting
Code No.	Grade									
CC	Coated Carbide M	60~120	60~150	60~150	50~80	80~120	60~150	40~80	—	○
	Coated Carbide K	—	—	—	—	80~120	60~150	—	—	—
CN	Coated Carbide M	60~120	60~150	60~150	50~80	50~80	60~150	40~80	—	○
AEG	K10	—	—	—	—	—	—	400~800	—	○
SC	Coated Carbide M	60~120	60~150	60~150	50~80	80~120	60~150	40~80	—	○
	Coated Carbide K	—	—	—	—	80~120	60~150	—	—	—

★The cutting speed is recommended to be reduced to 50% for the interrupted cutting.

★When L/D is longer, the feed rate at the entrance is recommended to be reduced to 60 to 70%.

Relation between Boring Dia. & MAX. Removal

MAX. Removal on Dia. (mm)



Recommended Cutting Condition (removal, feed)

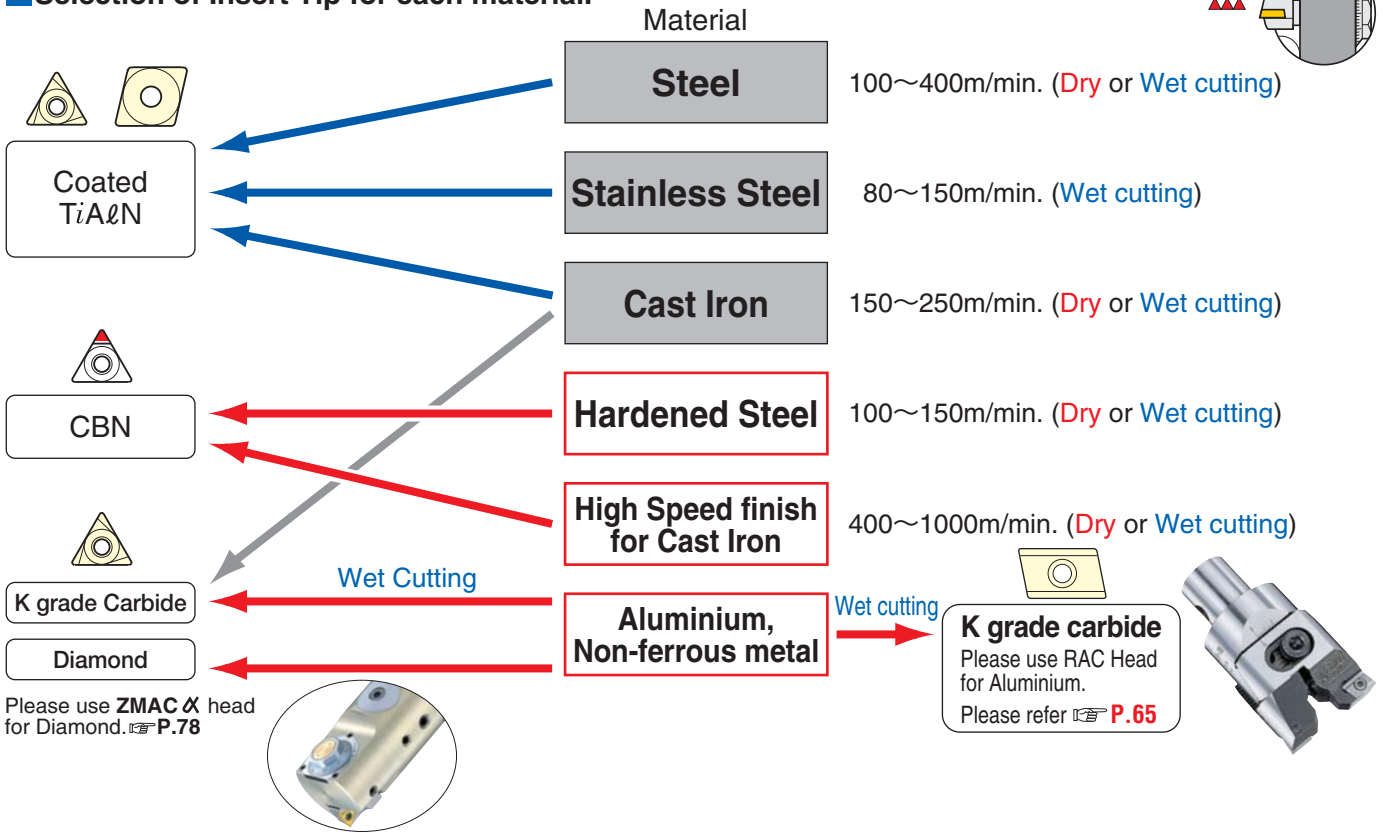
These figures are based on the application of L/D=3~3.5 times on cast iron.

Boring Range	Type	Best Condition		MAX. Condition	
		Removal mm/	Feed mm/rev.	Removal mm/	Feed mm/rev.
25~ 32	RAC 25	2.0~ 4.0	0.2~0.3	0.5~ 6.0	0.1~0.4
32~ 43	RAC 32	3.0~ 5.0	0.2~0.3	1.0~ 8.0	0.1~0.4
43~ 53	RAC 43	4.0~ 7.0	0.2~0.3	1.0~10.0	0.1~0.5
53~ 70	RAC 53	4.0~ 7.0	0.2~0.3	1.0~10.0	0.1~0.5
70~100	RAC 70	5.0~10.0	0.3~0.4	1.0~15.0	0.1~0.5
100~130	RAC100	7.0~12.0	0.3~0.4	1.0~22.0	0.1~0.5

ZMAC BORING SYSTEM CUTTING DATA



Selection of Insert Tip for each material.



Recommended cutting Speed ○...Best ○...Good ---...Unsuitable

Insert	Code No.	Grade	SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Hardened Steel			Interrupted Cutting
			SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	SCM	SKD	SUJ	
	C	Coated	○	○	○	○	○	○	○	-	-	-	-	○
	E	P10	○	○	○	○	○	-	○	-	-	-	-	○
	F	K10	-	-	-	-	-	○	-	○	-	-	-	○
	T	Cermet	○	○	○	○	○	-	○	-	-	-	-	○
	B	CBN	-	-	-	-	-	○	-	-	○	○	○	○
	D	Diamond	-	-	-	-	-	-	-	○	○	-	-	-
	C	Coated Carbide M	○	○	○	○	○	○	○	-	-	-	-	○
		Coated Carbide K	○	○	○	○	○	○	○	-	-	-	-	○

- ★Existing Inserts (Cermet,P grade Carbide & K grade Carbide) are available.
- ★The cutting speed is recommended to be reduced to 50% for the interrupted cutting.
- ★When L/D is longer, the insert tip with small Nose R is recommended.
- ★When L/D is longer, the feed rate at the entrance is recommended to be reduced to 60 to 70%.

Recommended Cutting Condition (removal,feed)

Boring Range	Type								
		Best Condition		MAX. Condition		Best Condition		MAX. Condition	
		Removal mm/	Feed mm/rev.	Removal mm/	Feed mm/rev.	Removal mm/	Feed mm/rev.	Removal mm/	Feed mm/rev.
16~20	ZMAC16	0.2~0.4	0.05~0.07	1.0	0.1				
20~25	ZMAC20	0.2~0.4	0.05~0.07	1.5	0.1				
25~32	ZMAC25	0.2~0.4	0.05~0.07	2.0	0.1				
32~42	ZMAC32	0.2~0.4	0.05~0.08	2.0	0.2	1.0~3.0	0.1~0.15	5.0	0.2
42~55	ZMAC42	0.2~0.5	0.05~0.08	4.0	0.2	1.0~3.0	0.1~0.15	5.0	0.2
55~70	ZMAC55	0.2~0.5	0.05~0.08	4.0	0.2	1.0~3.0	0.1~0.15	5.0	0.2
70~85	ZMAC70	0.2~0.8	0.05~0.1	4.0	0.25	1.0~4.0	0.1~0.2	8.0	0.25
85~	ZMAC85~	0.2~0.8	0.05~0.1	4.0	0.25	1.0~4.0	0.1~0.2	8.0	0.25

In case of CBN insert, reduce L/D as small as possible : MAX. 3 times.
Stock removal on diameter.
D<32mm : less than 0.25mm
D>32mm : less than 0.3mm

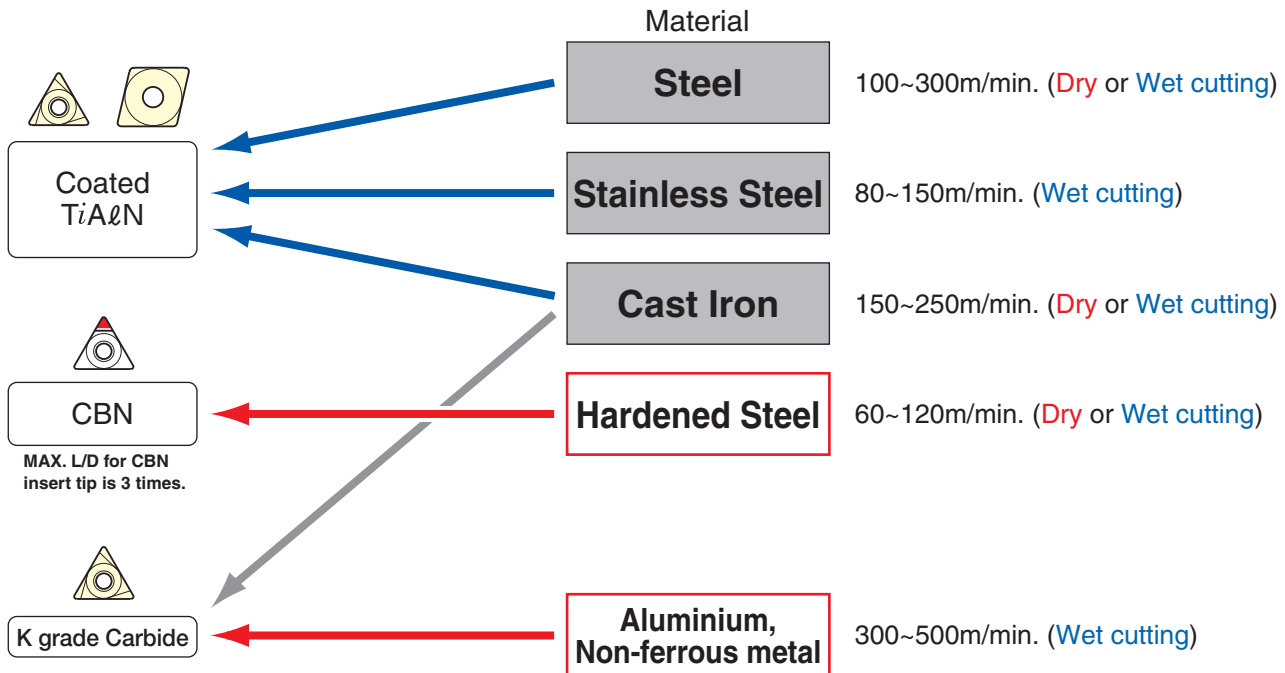
Feed per rev. depends on Nose/R and accuracy required.

Logical Surface Finish : $\frac{(\text{Feed per rev.})^2}{8 \times \text{Nose/R}}$

DJ BORING ARBOR CUTTING DATA



Selection of Insert Tip for each material.



Recommended cutting Speed ○...Best ○...Good -...Unsuitable

Insert	Code No.	Grade	SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Hardened Steel			Inter-rupted Cutting
											SCM	SKD	SUJ	
	C	Coated	○	○	○	○	○	○	○	-	-	-	-	○
	E	P10	○	○	○	○	○	-	○	-	-	-	-	○
	F	K10	-	-	-	-	-	○	-	○	-	-	-	○
	T	Cermet	○	○	○	○	○	-	○	-	-	-	-	○
	B	CBN	-	-	-	-	-	-	○	-	-	○	○	○
	C	Coated	○	○	○	○	○	○	○	-	-	-	-	○

★Existing Inserts (Cermet,P grade Carbide & K grade Carbide) are available.
 ★The cutting speed is recommended to be reduced to 50% for the interrupted cutting.

Recommended Cutting Condition (removal,feed)

Boring Range	Type		Best Condition		MAX. Condition	
	DJ3	DJ8	mm/	mm/rev.	mm/	mm/rev.
3~ 8	J10- 3		~0.1	0.03~0.07		
5~ 15	J10- 5		0.1~0.2	0.05~0.07		
8~ 18	J10- 8	J16- 8	0.1~0.2	0.05~0.08		
18~ 28	J10-18	J16-18	0.2~0.4	0.05~0.08	1.0	0.1
28~ 39		J16-28	0.2~0.4	0.05~0.08	1.5	0.15
38~ 50		J16-38	0.2~0.5	0.05~0.08	2.0	0.15

In case of CBN insert, reduce L/D as small as possible : MAX. 3 times.
 Stock removal on diameter.
 D<32mm : less than 0.25mm
 D>32mm : less than 0.3mm

Feed per rev. depends on Nose/R and accuracy required.

$$\text{Logical Surface Finish} = \frac{(\text{Feed per rev.})^2}{8 \times \text{Nose/R}}$$

NIKKEN INSERT TIP (EXCLUSIVE FOR BORING ARBOR) (1)



B1

Material	Steel	●	●		●	●							
	Stainless Steel	●	●		●	●							
	Cast Iron	●	●	●				●	●				
	Aluminium								●				
	High Speed finish for Cast Iron									●			
	Hardened Steel									●			
	High Speed finish for Aluminium												●

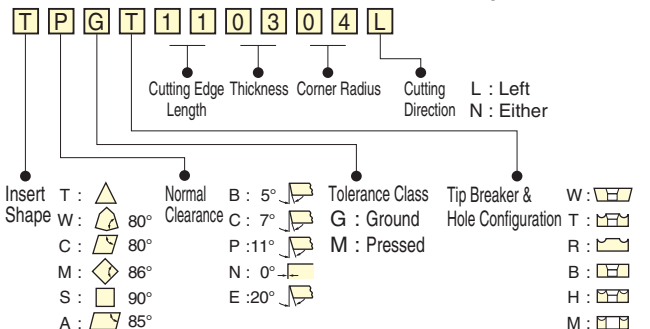
For the Boring of Large Diameter and Short Depth, the use of insert with large nose radius is recommended. The smaller nose radius inserts are ideal for smaller diameter boring or finishing operation.

Applicable Arbor	Dimension	Code No.	Grade	Material																		
				C				T		E	F-NB*2 w/o breaker	F	B	D								
				PV90*1	T2000Z	AC630M	AC410K	NS530	TN90	ST10P	H1	KBN10B	KPD010									
BCB12.7, BCB14.5		1MP-○2	0.2	●	*	1						●	●									
BCB19, BCB22, BCB29		3MS-○2	0.2	●	*	1						●	●	●	*	2	●	●				
ZMAC16, ZMAC20, ZMAC25 for DJ Bit		3MP-○2	0.2		●				●			●	●	●	*	2	●					
		3MP-○4	0.4		●													●	●			
ZMAC32		4MP-○2	0.2		●				●			●	●	●	*	2	●					
		4MP-○4	0.4		●													●	●			
ZMAC42 - ZMAC140 BCB38, BCB48 DJ Bit, MCCZ130 BAC130 - BAC530		6MP-○2	0.2	●	●				●			●	●	●	*	2	●	●	●	*	4	
		6MP-○4	0.4	●	●				●			●	●	●	●	*	2	●	●	●	*	4
		6MP-○8	0.8	●	●				●			●	●	●	●	*	2	●	●	●	*	4
DAC C type BCB62, BCB82, BCB100		10MP-○2	0.2	●	*	1						●	●	●	*	2	●	●				
		10MP-○4	0.4	●	*	1							●	●	●	*	2	●	●			
		10MP-○8	0.8	●	*	1							●	●	●	*	2	●	●			
J10-5, J16-5		CC03-○2	0.2	●																		
ZMAC32R, ZMAC42R, ZMAC55R		CC06-○4	0.4			●	●															
		CC06-○8	0.8			●	●															
RAC025		CC07-○4	0.4			●	●															
		CC07-○8	0.8			●	●															
ZMAC70R, ZMAC85R, RAC25, RAC32		CC08-○4	0.4			●	●															
		CC08-○8	0.8			●	●															
RAC43 - RAC530 (Eccentric Bolt Type)		CN08-○8	0.8			●																
ZMAC100R, ZMAC140R, RAC43E - RAC100E		CC12-○4	0.4			●	●															
		CC12-○8	0.8			●	●															

- ★Minimum quantity of CBN and Diamond: 1pcs, All other insert tip: 10pcs
- ★*1 "C (PV90)" is unified from "T".
- ★*2 "-NB" (w/o breaker) is recommended for cast iron.
- ★*3 Hole diameter of 6MP is 2.8mm. M2562D (Optional tip clamp bolt) is required for the ISO standard insert tip with the hole diameter of 3.3~ 3.5mm.
- ★*4 M2562D is necessary for 6MP-D (Diamond), because of the hole diameter is different.
- ★The ISO code No. surrounded with () is the Nikken original insert tip.

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No.
e.g. 6MP-C4 (PV90) , 6MP-F4-NB (H1)

Code No. of ISO standard Insert Tip



NIKKEN INSERT TIP (EXCLUSIVE FOR BORING ARBOR) (2)



Material	Steel	●	●			
	Stainless Steel	●				
	Cast Iron			●		
	Aluminium			●		
High Speed finish for Cast Iron				●		
Hardened Steel				●		
		Cermet (w/o coating)	Carbide P	Carbide K	CBN	
		Grade	T	E	F	B
		Material NOSE R	T12A	ST10P	HTi10	KBN10B
Applicable Arbor	Dimension	Code No.				
BCB29		3P-○2	0.2	●	●	●
BCB38, BCB48		5P-○4	0.4	●	●	●
BCB62, BCB82		7P-○4	0.4	●	●	●
		7P-○8	0.8	●	●	●
BCB100		10P-○4	0.4	●	●	●
		10P-○8	0.8	●	●	●

★Minimum quantity of CBN: 1pcs, All other insert tip: 10pcs
 ★The ISO code No. surrounded with () is the Nikken original insert tip.

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. 10P-T4 (T12A)

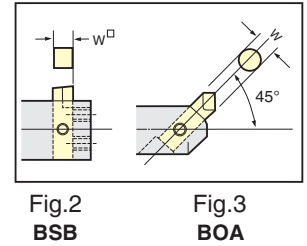
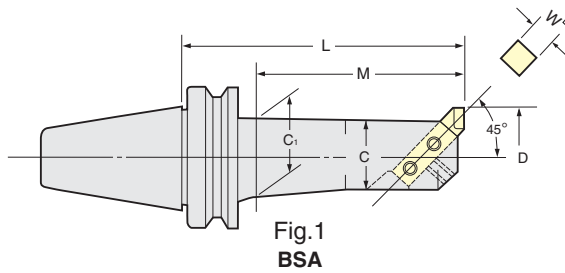
Grade & Material

Grade	Grade Indication	Insert Tip Material Indication	Specification
Coated Cermet	C	PV90	Applicable for the midium roughing and finishing on the steel. Very stable cutting with coolant to be improved the heat resistance and the impact resistance.
		T2000Z	ZX coated suitable for the high speed finishing on the steel with long insert life. Very fine surface finish to be improved the impact resistance and the fracture resistance.
		Coated Carbide M	AC630M
Coated Carbide K		AC410K	Very tough carbide K (base material) with the super FF coated. Very stable cutting for the ductile cast iron and normal cast iron.
Cermet (w/o coating)	T	TN90	Applicable for the roughing and finishing on the steel. Very stable cutting to be improved the heat resistance and the impact resistance.
		NS530	The general material for the steel and the cast iron with the heat resistance and the toughness.
		T12A	Applicable for the roughing and finishing on the steel. Very stable cutting to be improved the heat resistance and the impact resistance.
Carbide P	E	ST10P	Applicable for the middle to high speed cutting on the steel and the steel casting.
Carbide K	F	H1	Excellent wear resistance and applicable for the cast iron, non-ferrous metal and the non-metal.
		HTi10	Toughness and the excellent wear resistance. Applicable for the cast iron, non-ferrous metal and the non-metal.
		KW10	Stable wear resistance and the fracture resistance. Applicable for the cast iron, non-ferrous metal and the non-metal.K10
CBN	B	KBN10B	Excellent for the fracture resistance and wear resistance. Suitable for the high performance and high accuracy cutting on the harden steel
Diamond	D	KPD010	Suitable for the high speed cutting on the aluminium and the non-metal. Applicable for the cutting on the carbide, ceramics, glass fibere and the plastic also.

BORING BAR for SQUARE & CYLINDRICAL BORING TOOL



BSA BSB BOA



TAPER	Code No.	Boring Range	Boring Depth	Dimension				
	BTNo.-Min D -L	D	M	W	C	C ₁	Weight (kg)	Fig
No.40	BT40-BSA 25-135	25~ 38	108	8	20	22	1.3	Fig.1
	(IT40)-BSA 30-165	30~ 42	138		24	26	1.5	
	-BSA 38-180	38~ 52	153	10	30	33	1.8	
	-BSA 42-210	42~ 56	183		34	37	2.3	
	-BSA 50-180,225	50~ 65	153, 198	13	40	44	2.4, 2.9	
	-BSA 62-180,240	62~ 90	153, 218	16	50	56	3.2, 4.2	
	-BSA 72-180,240	72~110	153, 213	19	60	63	4.4, 5.7	
-BSA 90-180	90~125	180	75		5.4			
No.50	BT50-BSA 25-135	25~ 38	95	8	20	22	4.4	BSA
	(IT50)-BSA 30-165	30~ 42	125		24	26	4.6	
	-BSA 38-180	38~ 52	140	10	30	33	4.8	
	-BSA 42-210	42~ 56	170		34	37	5.0	
	-BSA 50-180,240	50~ 65	140, 200	13	40	44	5.4, 5.7	
	-BSA 62-195,270	62~ 90	155, 230	16	50	56	6.1, 7.5	
	-BSA 72-195,285	72~110	155, 245	19	60	66	6.9, 9.3	
-BSA 90-210,300	90~125	170, 260	75		80	9.2,12.3		
-BSA105-195,285	105~160	157, 247	25	90	90	10.5,15.0		
No.40	BT40-BSB 25-135	25~ 50	108	8	20	22	1.3	Fig.2
	(IT40)-BSB 38-180	38~ 70	153	10	30	33	1.9	
	-BSB 50-180,225	50~ 90	153, 198	13	40	44	2.6, 3.1	
	-BSB 62-180,225	62~115	153, 198	16	50	56	3.4, 4.1	
	-BSB 72-180,225	72~138	153, 198	19	60	63	4.7, 5.6	
-BSB 90-180,225	90~150	180, 225	75		5.7, 6.6			
No.50	BT50-BSB 25-135	25~ 50	95	8	20	22	4.1	BSB
	(IT50)-BSB 38-180	38~ 70	140	10	30	32	4.8	
	-BSB 50-180,240	50~ 90	140, 200	13	40	44	5.5, 5.7	
	-BSB 62-195,270	62~115	155, 230	16	50	56	6.4, 7.9	
	-BSB 72-195,285	72~138	155, 245	19	60	66	7.3, 9.6	
	-BSB 90-210,300	90~150	170, 260		75	80	9.6,12.6	
-BSB105-195,285	105~190	155, 245	25	90	94	11.0,15.0		
No.40	BT40-BOA 25-135	25~ 31	107	8	20	22	1.3	Fig.3
	(IT40)-BOA 30-165	30~ 35	137		24	26	1.5	
	-BOA 34-165	34~ 42	137	10	28	30	1.7	
	-BOA 40-180	40~ 46	152		32	35	2.3	
	-BOA 44-210	44~ 54	182	12	36	39	2.4	
	-BOA 52-180,225	52~ 60	152, 197		42	46	2.5, 3.0	
No.50	BT50-BOA 25-135	25~ 31	97	8	20	22	4.2	BOA
	(IT50)-BOA 30-165	30~ 35	127		24	26	4.4	
	-BOA 34-180	34~ 42	142	10	28	30	4.7	
	-BOA 40-210	40~ 46	172		32	35	5.0	
	-BOA 44-210	44~ 54	172	12	36	39	5.1	
	-BOA 52-180,240	52~ 60	142, 202		42	46	5.1, 6.0	

★Square or Cylindrical Boring Bit is not included.

★When L length is required longer than standard, please specify the boring depth M.

