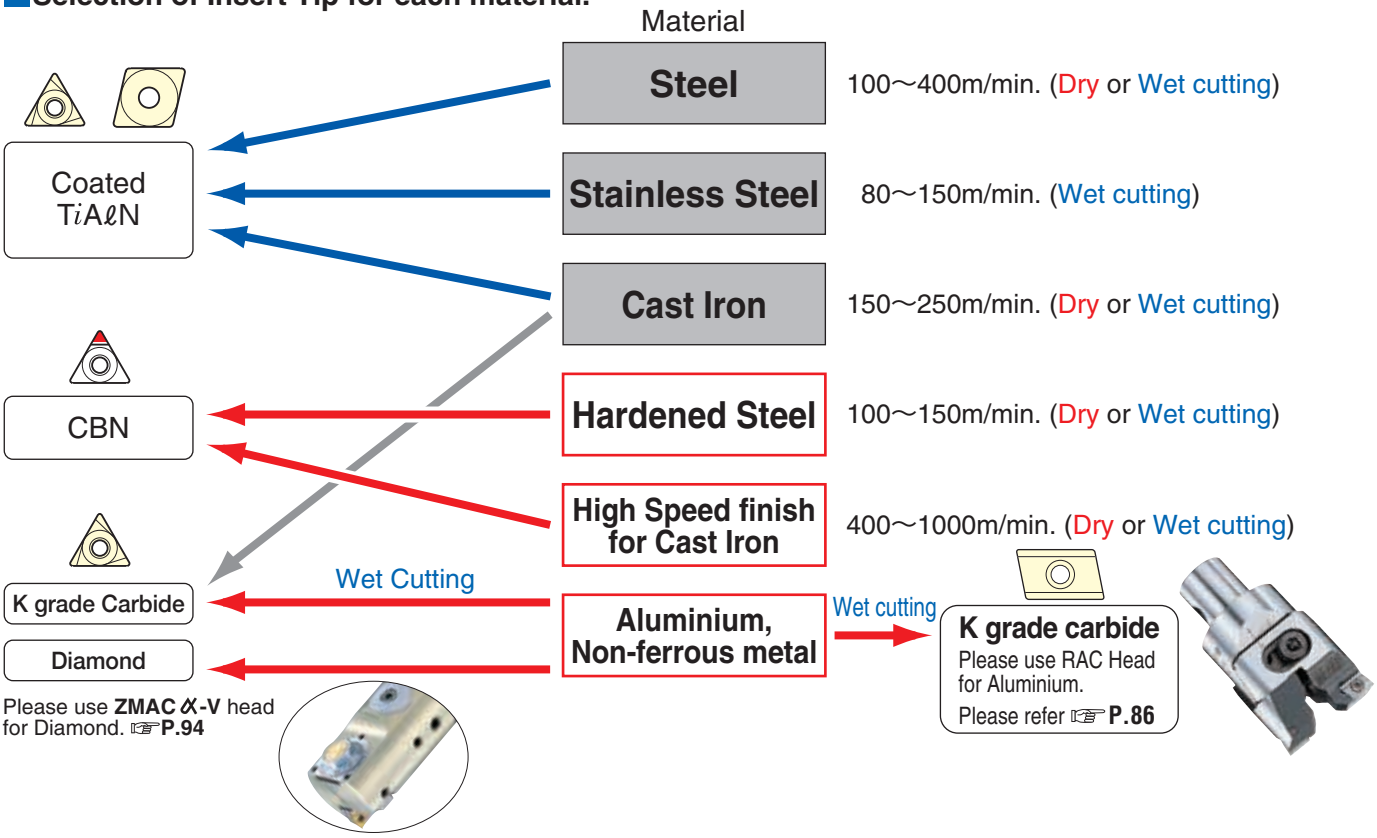
ZMAC ADVANCED BORING SYSTEM CUTTING DATA NIKKEN

Selection of Insert Tip for each material.



Recommended Cutting Speed ◎···Best ○···Good —···Unsuitable

Insert			SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Hardened Steel			Inter-rupted Cutting
	Code No.	Grade									SCM	SKD	SUJ	
	C	Coated	◎ 100～400	◎ 150～400	◎ 150～400	◎ 80～150	◎ 80～150	○ 150～250	◎ 80～150	–	–	–	–	◎
	E	P10	○ 60～100	○ 60～100	○ 80～120	○ 40～100	◎ 60～100	–	○ 40～ 80	–	–	–	–	◎
	F	K10	–	–	–	–	–	◎ 60～130	–	○ 400～1000	–	–	–	◎
	T	Cermet	◎ 200～400	◎ 200～400	◎ 200～400	◎ 80～150	◎ 80～150	–	◎ 120～180	–	–	–	–	○
	B	CBN	–	–	–	–	–	◎ 300～800	–	–	◎ 100～150	◎ 70～100	◎ 120～150	○
	D	Diamond	–	–	–	–	–	–	–	◎ 400～2000	–	–	–	–
	C	Coated Carbide M	◎ 100～400	◎ 150～400	◎ 150～400	◎ 80～150	○ 80～150	○ 150～250	◎ 80～150	–	–	–	–	◎
		Coated Carbide K	○ 100～400	○ 150～400	○ 150～400	○ 80～150	◎ 80～150	◎ 150～250	○ 80～150	–	–	–	–	○

★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/Φ	Feed mm/rev.	Removal mm/Φ	Feed mm/rev.	Removal mm/Φ	Feed mm/rev.	Removal mm/Φ	Feed mm/rev.
φ16～ 20	ZMAC16-V	0.2～0.4	0.05～0.07	1.0	0.1				
φ20～ 25	ZMAC20-V	0.2～0.4	0.05～0.07	1.5	0.1				
φ25～ 32	ZMAC25-V	0.2～0.4	0.05～0.07	2.0	0.1				
φ32～ 42	ZMAC32-V	0.2～0.4	0.05～0.08	2.0	0.2	1.0～3.0	0.1～0.15	5.0	0.2
φ42～ 55	ZMAC42-V	0.2～0.5	0.05～0.08	4.0	0.2	1.0～3.0	0.1～0.15	5.0	0.2
φ55～ 70	ZMAC55-V	0.2～0.5	0.05～0.08	4.0	0.2	1.0～3.0	0.1～0.15	5.0	0.2
φ70～ 85	ZMAC70-V	0.2～0.8	0.05～0.1	4.0	0.25	1.0～4.0	0.1～0.2	8.0	0.25
φ85～	ZMAC85-V~	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 NoseR and accuracy required.

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