

NEW

NIKKEN

eMAC DIGITAL BORING HEAD

- Fine boring head
Min. readout : $\phi 0.002\text{mm}/0.0001\text{inch}$
- Easy digital display
- Wide boring range $\phi 6 - \phi 110$
- Coolant through : 4Mpa
- Level of protection : IP67



NIKKEN KOSAKUSHO WORKS, LTD.

CAT.NO.1191

MODULAR TYPE eMAC DIGITAL BORING HEAD

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Precision Digital Scale Boring Head



Boring Head



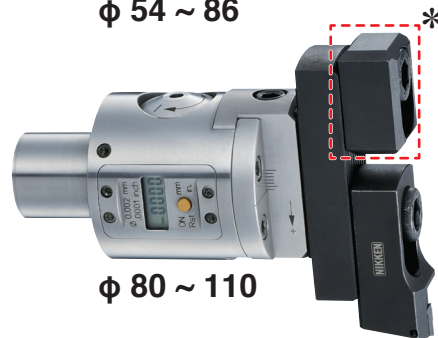
ϕ 6 ~ 30



ϕ 28 ~ 56



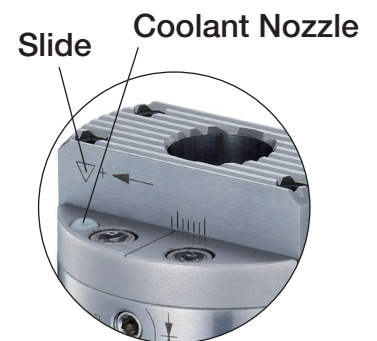
ϕ 54 ~ 86



ϕ 80 ~ 110



Digital Display



Slide

Coolant Nozzle



Battery Cover

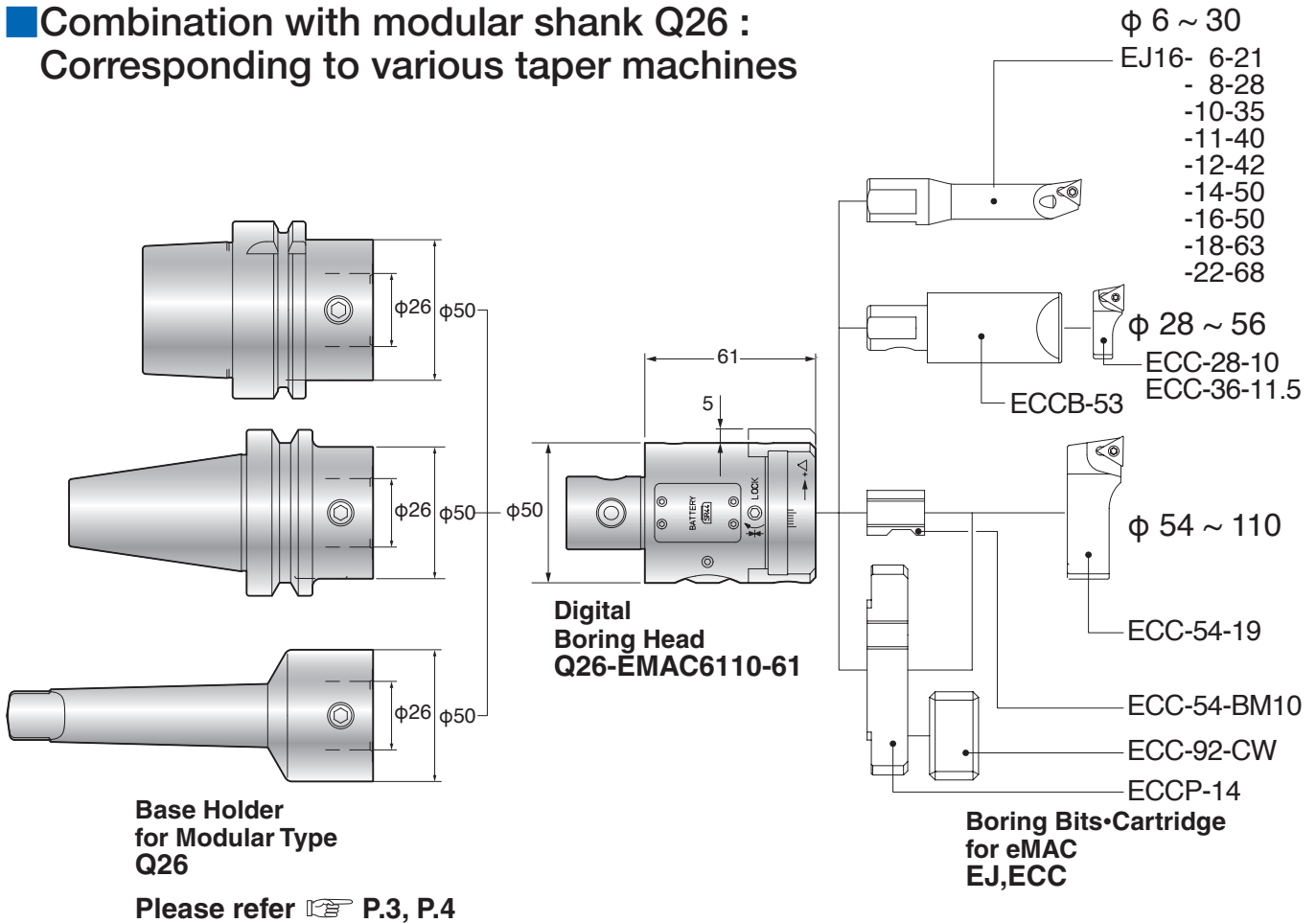
*Counter weight is needed when boring over ϕ 92

- Slide travel distance shown on the digital display
- Min. readout : 0.002mm / 0.0001inch
By direct scale
- Wide boring range : ϕ 6 ~ ϕ 110
- Coolant through : 4 MPa
- Level of protection : IP 67
- Required Battery is SR44 (2 off)

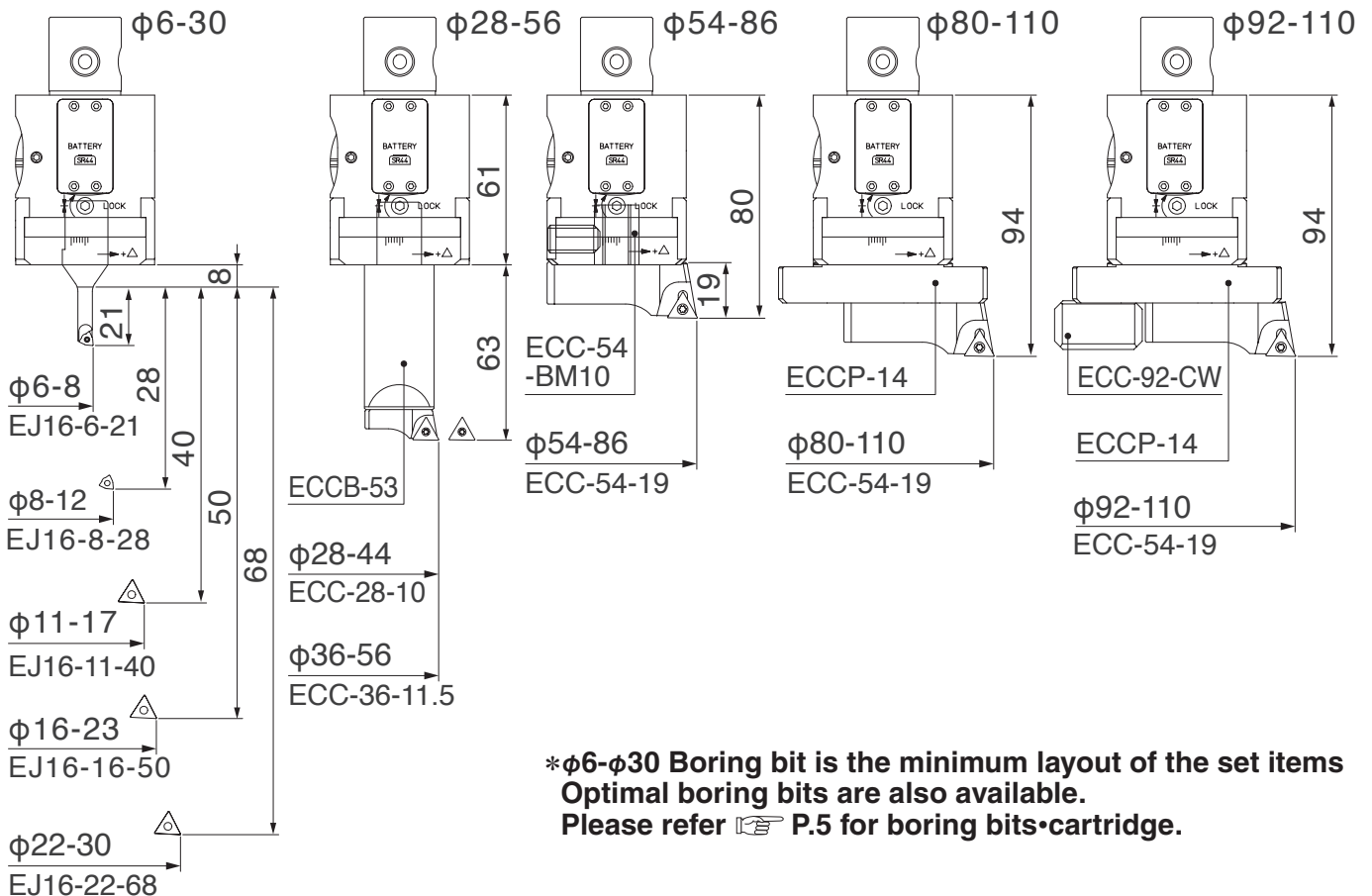
MODULAR TYPE eMAC DIGITAL BORING HEAD



■ Combination with modular shank Q26 :
Corresponding to various taper machines



■ Boring Head & EJ Boring Bit · ECC Cartridge Layout



BASE HOLDER for MODULAR TYPE (Q26)

NIKKEN

Interface of Taper Shank

TAPER	Code No.	Coupling Dia. Q	L	C	C ₁	H	H ₁	Coupling Bolt No.	Fig.	Weight (Kg)		
BT	BT30 -Q26- 40	26	40	50	45	18	6	B26	3	0.5		
	BT40 -Q26- 50		50		-	20	-	B26N	1	1.1		
	- 95		95			65				1.8		
	-140		140			110				2.4		
	BT50 -Q26- 65		65			27				3.7		
	-140		140		47	5.3						
	-170N		170		112	5.4						
	2LOCK NBT		NBT30 -Q26- 40		26	40			50	45	18	6
NBT40 -Q26- 50		50	-	20		-				B26N	1	1.1
- 95		95		65			1.8					
-140		140		110			2.4					
NBT50 -Q26- 65		65		27			3.7					
-140		140	47	5.3								
-170N		170	112	5.4								
3LOCK MBT		MBT40 -Q26- 50	26	50			50	-			20	-
	- 95	95		65	1.8							
	-140	140		110	2.4							
	MBT50 -Q26- 65	65		27	3.7							
	-140	140		47	5.3							
	-170N	170		112	5.4							
NC5	NC5- 46 -Q26- 40	26	40	50	45	18	6	B26	6	0.4		
	NC5- 63 -Q26- 50		50		-	20	-	B26N	4	0.9		
	- 95		95			65				1.5		
	-140		140			110				2.3		
	NC5- 85 -Q26- 65		65			27				2.5		
	-140		140		102	40			4.6			
	-170		170		132	110			4.7			
	NC5-100 -Q26- 65		65		27	-			3.6			
	-140		140		97	45			5.7			
	-170		170		127	110			5.8			
HSK-A	HSK40A -Q26- 75	26	75	50	33.6	55			40	-	B26N	6
	HSK50A -Q26- 75		75		41.6	48	33	1.1				
	HSK63A -Q26- 60		60		-	33	-	B26N	4			1.0
	- 95		95			68						1.5
	-140		140			113						2.3
	HSK100A-Q26- 65		65			33						2.4
	-140		140		106	45			4.5			
	-170N		170		136	110			4.6			
POLYGONAL TAPER	C6 -Q26- 50	26	50	50	-	27			-	B26N	4	1.1
	C8 -Q26- 60		60			29						2.0
NT	T30W -Q26- 40	26	40	50	-	-	-	B26	7	0.6		
	T40U -Q26- 35		35		-	-	-	B26N		1.1		
	T40M -Q26- 35		35		-	-	-			1.1		
	T50U -Q26- 45		45		-	-	-			3.3		
	T50M -Q26- 45		45		-	-	-			3.3		
HA	TT35 -Q26- 35	26	35	50	-	-	-	B26	8	0.7		
	TT45 -Q26- 45		45		-	-	-			1.8		
MT	MT3T -Q26- 45	26	45	50	-	-	-	B26N	9	0.8		
	MT4T -Q26- 45		45		-	-	-			1.1		
	MT5T -Q26- 35		35		-	-	-			1.9		
	MT6T -Q26- 60		60		-	-	-			5.1		
K	K32 -Q26- 40	26	40	50	-	-	-	B26N	10	0.8		
	K42 -Q26- 40		40		-	-	-			1.3		

★The coupling bolt and wrench are supplied as standard. ★All series have center through (MAX : 4MPa). ★Other shanks are also available. Please contact us for more detail.

Interface of Taper Shank

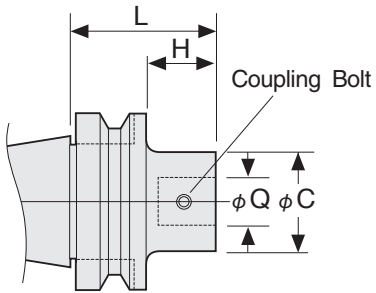


Fig.1

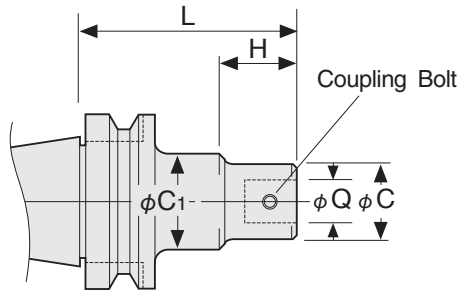


Fig.2

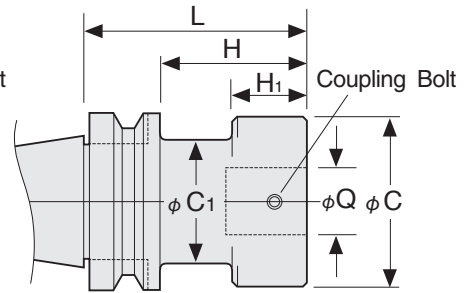


Fig.3

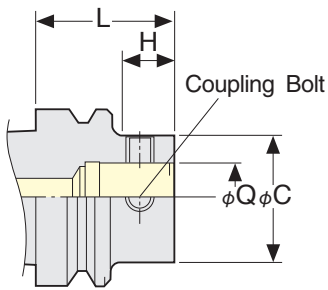


Fig.4

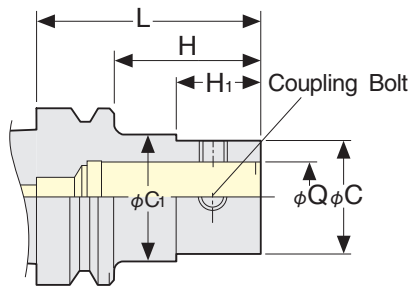


Fig.5

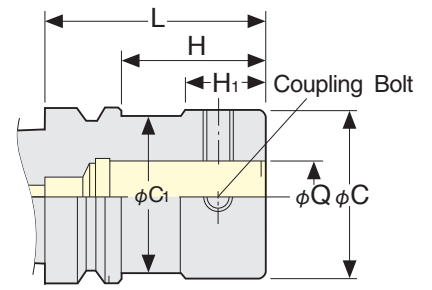


Fig.6

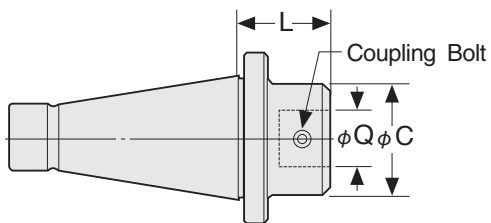


Fig.7

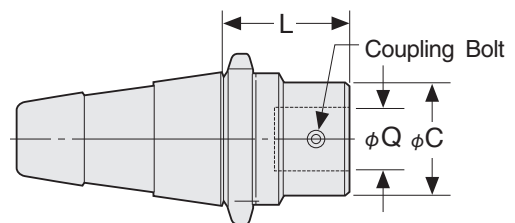


Fig.8

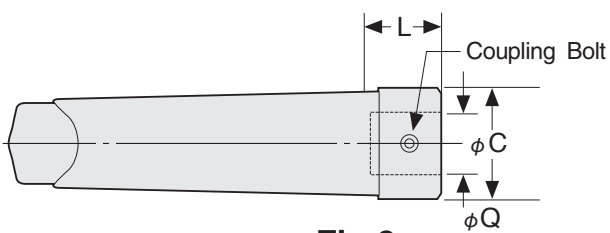


Fig.9

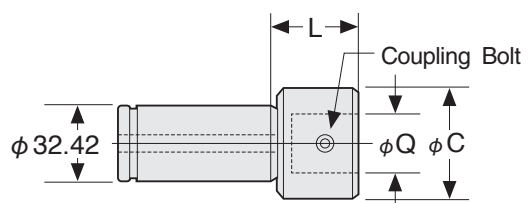


Fig.10

MODULAR TYPE eMAC DIGITAL BORING HEAD



Digital Boring Head



Code No.
Q26-EMAC6110-61

※Please select boring bit, cartridge and inserts accordingly for the boring head and your cutting conditions.

Boring Bit·Cartridge

Optimum Boring Range φ	Type	Code No.		Insert Tip		Clamp Bolt	Thread Size	Insert Clamp Handle		
6 - 8	Boring Bit	EJ16- 6-21	-	EM02	-	TS21	M2	TORX	T-6	
8 - 10		EJ16- 8-28				TS211				
10 - 12		EJ16-10-35		-	-	EM09	CS250T	M2.5	TORX	T-8
11 - 13		EJ16-11-40								
12 - 14		EJ16-12-42								
14 - 16		EJ16-14-50								
16 - 18		EJ16-16-50								
18 - 22		EJ16-18-63								
22 - 30		EJ16-22-68								
28 - 44	Cartridge	-	ECC-28-10	-	EM09	CS250T	M2.5	TORX	T-8	
36 - 56		-	ECC-36-11.5	-	EM09	CS250T	M2.5	TORX	T-8	
54 - 110		-	ECC-54-19	-	EM11	CS300890T	M3	TORX	T-8	

★Bit EJ16-10-35,EJ16-12-42,EJ16-14-50,EJ16-18-63 is not included in the set. Please purchase single item.
★Carbide bit of L/D = 7 times or more is also available. Please contact us for more detail.

Insert Tip

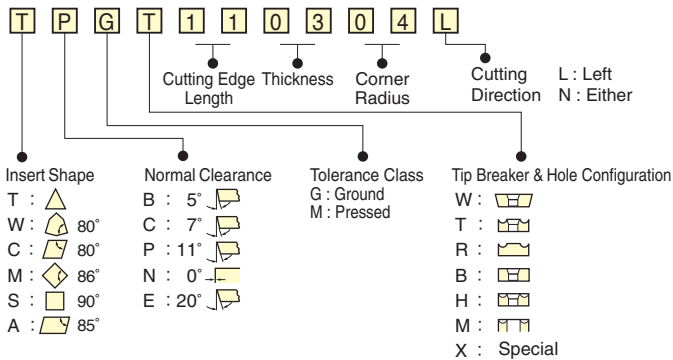
Material	Steel	●	
	Stainless Steel	●	
	Cast Iron	●	●
	Aluminium		●
	Heat-Resistant Alloy . Titanium		●

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.

Boring Bit·Cartridge	Dimension	Code No.	Grade	Cermet(w/o coating)	Carbide K	
			Material NOSE R	NX	HTI	
EJ16-6-21 -8-28		WCGT0201OL	EM02-○2	0.2	●	●
			EM02-○4	0.4	●	●
EJ16-10-35 -11-40 -12-42 -14-50 -16-50 -18-63 -22-68 ECC-28-10 -36-11.5		TPGX0902OL	EM09-○2	0.2	●	●
			EM09-○4	0.4	●	●
ECC-54-19		TPGX1103OL	EM11-○2	0.2	●	●
			EM11-○4	0.4	●	●

★Minimum quantity order is 10 pcs / case.
★Please use insert clamp bolt of other manufacturers when using insert of same manufacturers.

Code No. of ISO Standard Insert Tip



Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No.
 e.g. EM09-T4(NX)

Grade & Material

Grade	Grade Indication	Insert Tip Material Indication	Specification
NX	Cermet	T	Applicable for steel and cast iron. The grade has good heat resistance and toughness properties.
HTI	Carbide K K10	F	Applicable for cast iron, non-ferrous metal and non-metal. The grade has excellent wear resistance and toughness properties.

Reference Cutting Speed ○...Best ○...Good —...Unsuitable

Insert Tip		SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Ti
	Code No.									
	Grade									
	T	NX	○	○	○	○	○	○	○	-
F	HTI	-	-	-	-	-	○	-	○	○

★Please set the optimum conditions in reference to the above conditions. ★The cutting speed is recommended to be reduced to 50% for interrupted cutting. ★Rapid speed : ~6000min⁻¹.

Reference Cutting Condition (Removal,Feed)

Boring Range	Type		Best Condition		MAX. Condition	
	Boring Bit	Cartridge	mm/φ	mm/rev.	mm/φ	mm/rev.
φ 6~ 12	EJ16- 6-21 - 8-28		0.1~0.2	0.03~0.07	-	-
φ 10~ 30	EJ16-10-35 -11-40 -12-42 -14-50 -16-50 -18-63 -22-68		0.1~0.3	0.05~0.07	-	-
φ 28~ 56		ECC-28-10 -36-11.5	0.2~0.4	0.05~0.08	1.0	0.1
φ 54~110		ECC-54-19	0.2~0.5	0.05~0.08	2.0	0.15

$$\text{Spindle Speed } n(\text{min}^{-1}) = \frac{V_c \cdot 1000}{\pi D}$$

V_c : Cutting Speed(m/min⁻¹)

π : 3.14

$$\text{Feed per Min. } V_f (\text{mm/min}^{-1}) = n \cdot f$$

D : Cutting Diameter(mm)

f : Feed per Revolution(mm/rev)

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

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

MODULAR TYPE eMAC DIGITAL BORING HEAD

eMAC Boring Set Parts List



Code. No.	Part name	Code No.	Q'ty	Weight (Kg)	
S.EMAC6110	eMAC Boring Head	Q26-EMAC6110-61	1	0.85	
	Boring Bit	EJ16-6-21	1	0.04	
		EJ16-8-28	1	0.04	
		EJ16-11-40	1	0.06	
		EJ16-16-50	1	0.07	
		EJ16-22-68	1	0.1	
	Extension Bar for Cartridge(S/M)	ECCB-53	1	0.5	
	Cartridge	S	ECC -28-10	1	0.01
		M	ECC -36-11.5	1	0.02
		L	ECC -54-19	1	0.08
	Bush	ECC -54-BM10	1	0.02	
	Plate for Cartridge(L)	ECCP-14	1	0.2	
	Counter Weight for Large Dia.	ECC-92-CW	1	0.5	
	Insert Tip	EM02-T2(NX)	2	—	
		EM09-T2(NX)	5	—	
		EM11-T2(NX)	1	—	
	Clamp Bolt / Spare	TS21	1	—	
		TS211	1	—	
		CS250T	1	—	
		CS300890T	1	—	
Wrench Set		1	—		
Exclusive Case		1	—		

★Base holder for modular type is sold separately. Please refer P.3, P.4.

★Please refer P.5 for inserts.

●Specifications are subject to change without notice.

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D.KG.1.5