BIG DAISHOWA KAISER BORING SYSTEM

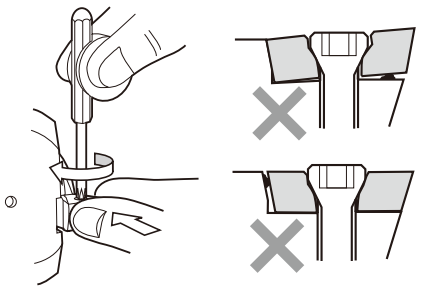
EWN HEAD

OPERATION MANUAL

Please read these instructions before use and keep them where the operator may refer to them whenever necessary.

ATTACHMENT OF INSERT

- Ensure that the locating surface of the indexable insert and the seating area of the toolholder is free of any particles or oil by using compressed air.
- Position the indexable insert by placing the insert into the toolholder, then by locating the clamping screw supplied through the indexable insert, proceed to rotate the clamping screw until the indexable insert is securely clamped into position.
- Ensure that there is no gap between the locating surfaces of the insert and the toolholder.

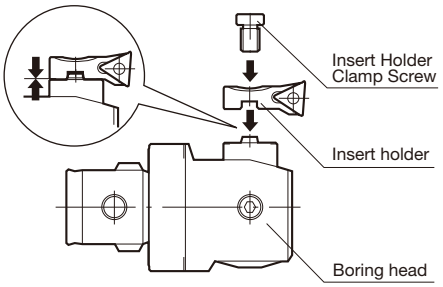


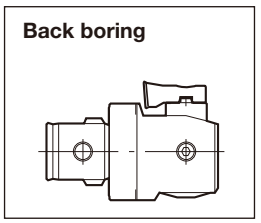
⚠ CAUTION

- Use only genuine clamping screws to avoid any unnecessary damage.
- Regularly replace clamping screws to ensure the maximum clamping force can be maintained.

INSERT HOLDER INSTALLATION

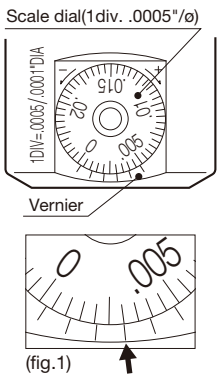
① Clean the mounting surface of the insert holder and the head body.
② Mount the insert holder while fitting into the convex on the body. (Attach the insert holder turned over 180° for back boring.)
③ Ensure that there are no gap and misalignment.
④ Tighten the Insert Holder Clamp Screw securely.



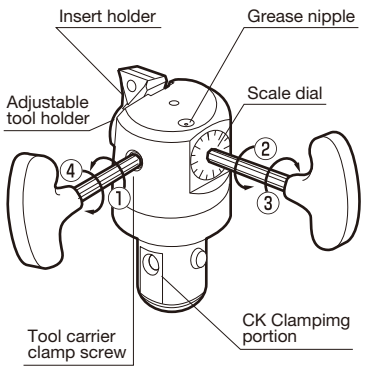


ADJUSTMENT OF BORING DIAMETER

① Loosen the Tool Carrier Clamp Screw in a counterclockwise direction.
② Rotate the scale dial in a counterclockwise direction passed the desired size required.
③ Rotate the scale dial in a clockwise direction until the desired bore is reached. The boring diameter is adjusted on the basis of the line "0"on the vernier.
《How to use the vernier.》
It is possible to read .0001"/ø from the value at which the vernier and the scale dial are matched. (.0003" in the fig.1)
④ Tighten the Tool Carrier Clamp Screw with reference to the tightening torque shown on the backside. If the Tool Carrier Clamp Screw is tightened excessively, it may be broken or the dimensional accuracy becomes wrong.



(fig.1)



⚠ CAUTION

- NEVER adjust the diameter before loosening the Tool Carrier Clamp Screw or exceed the adjustable boring range. Precision components in the head are damaged.
- Never use the key with an extension.

ADDITIONAL CAUTION

⚠ CAUTION

- Boring range of the boring head must not be exceeded.
- It is recommended that a semi-finished bore diameter is machined to determine the influence of the cutting conditions to the actual bored diameter.
- NEVER conduct boring under unsuitable cutting conditions. Refer to the General Catalog for recommended cutting conditions.
- Ensure that CK Clamping Portion is free of damage, particles rust.
- Safety Goggles must be worn during any boring operation.

MAXIMUM ALLOWABLE SPEED

The spindle speed of EWN can be calculated from the relationship between cutting speed and boring diameter. (Back boring must use Counter-Clockwise spindle rotation.)

■Max.cutting speed 4,000 SFM (1,200m/min)

Model	CK No.	Insert holder model	Boring range	Back boring range	Min. entry bore for back boring	Insert model	※Tightening torque N·m (lbf·Ft)
EWN 20- 36E-CKB1	CK1	ENH1-1	.787-1.024	—	0.039＋（Back boring dia.／2）	TP 08	0.5 (.37)
		ENH1-2	.984-1.220	1.181-1.220			
		ENH1-3	1.181-1.417	1.181-1.417			
EWN 25- 47E-CKB2	CK2	ENH2-1	.984-1.299	—	0.492 ＋（Back boring dia.／2）		
		ENH2-2	1.260-1.575	1.417-1.575			
		ENH2-3	1.535-1.850	1.535-1.850			
EWN 32- 60E-CKB3	CK3	ENH3-1	1.260-1.654	—	0.630＋（Back boring dia.／2）		1.5 (1.11)
		ENH3-2	1.614-2.008	1.811-2.008			
		ENH3-3	1.969-2.362	1.969-2.362			
EWN 41- 74E-CKB4	CK4	ENH4-1	1.614-2.162	—	0.787 ＋（Back boring dia.／2）	TC 11	2.5 (1.84)
		ENH4-2	1.969-2.480	2.087-2.480			
		ENH4-3	2.402-2.913	2.402-2.913			
EWN 53- 95E-CKB5	CK5	ENH5-1	2.087-2.756	2.441-2.756	1.004 ＋（Back boring dia.／2）		6 (4.4)
		ENH5-2	2.559-3.228	2.717-3.228			
		ENH5-3	3.071-3.740	3.071-3.740			
EWN 68-150E-CKB6	CK6	ENH6-1	2.677-3.937	3.150-3.937	1.280 ＋（Back boring dia.／2）		10 (7.4)
		ENH6-2	3.701-4.961	3.701-4.961			
		ENH6-3	4.646-5.906	4.646-5.906			
EWN100-203E-CKB6		ENH6-1	3.937-6.024	4.409-6.024	1.791 ＋（Back boring dia.／2）		
		ENH6-2	4.961-7.047	4.961-7.047			
		ENH6-3	5.906-8.000	5.906-8.000			
EWN100-203E-CKB7	CK7	ENH6-1	3.937-6.024	4.409-6.024			
		ENH6-2	4.961-7.047	4.961-7.047			
		ENH6-3	5.906-8.000	5.906-8.000			

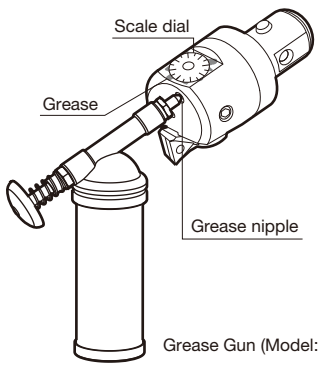
(Caution)
The boring range are the values for which TP08 insert with the radius of 0.008 and TC11 insert with radius of 0.016.
※This mark shows the tightening torque of the Tool Carrier Clamp Screw for adjustable tool holder.

⚠ CAUTION

- Use the boring head always under the maximum allowable speed only.
- Since the maximum allowable speed is the limit value in which the safety is concerned in the respect of construction of EWN head, it is not guaranteed to good boring with the maximum allowable speed.
- The rigidity of machine spindle and workpiece, the length of boring tool, and the usage of extension and reduction influence the condition such as vibration and etc. Therefore, in order to actually determine the cutting condition, please increase the speed gradually starting from the general cutting condition, while confirming safety.

MAINTENANCE

- Regularly apply grease into the grease nipple installed so that adequate lubrication of moving parts is maintained and to keep moving parts free from dust and coolant. **Grease Model : HSG50 (50g/net)**
- The boring head must be set on the smallest diameter when greased.
- Continue to inject grease until it appears to ooze out from behind the scale dial.
- Occasionally adjust the boring head through its entire range when storing for a period of time to avoid the grease from hardening.



Grease Gun (Model: GRG-02)

⚠ CAUTION
Never overhaul boring heads.