

OPERATION MANUAL

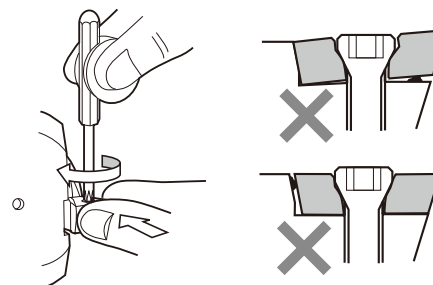
Please read these instructions before use and keep them where the operator may refer to them whenever necessary.

HOW TO ATTACH INSERTS

- 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.

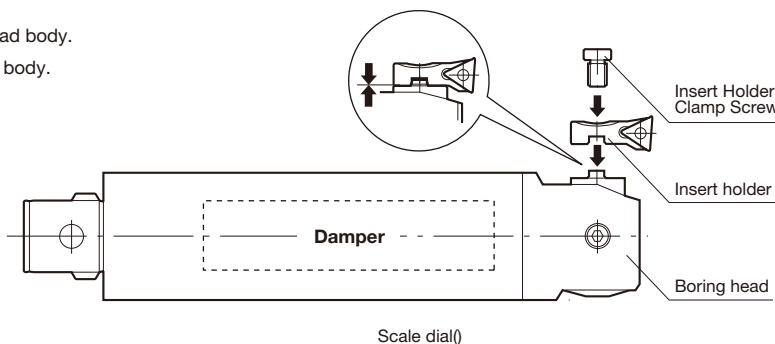
CAUTION

- 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.
- ③ Ensure that there are no gap and misalignment.
- ④ Tighten the Insert Holder Clamp Screw securely.

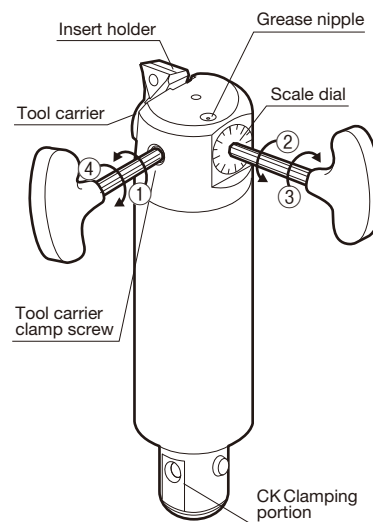
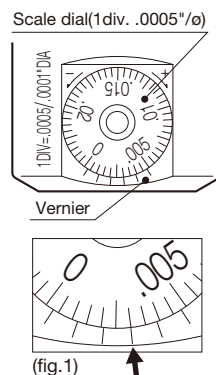


ADJUSTMENT OF BORING DIAMETER

- ① Loosen the tool carrier clamp screw in an anti-clockwise 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 dial scale 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.

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.
- Use only genuine hexagon key for unclamping, clamping and any adjustments.



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.
- Never clamp the section of the damper with a vise, or the damper is damaged.
- Heat generated by cutting deteriorates parts of the damper and decrease its performance. Air blow or coolant must be supplied through the tools.
- The damper head includes consumable parts in the damper whose age-related deterioration debases its performance. When the dampening effect becomes poor, or in about one year of constant use, consult **(BIG)** for overhaul through your store.
- When the boring head is not used for a long period of time, detach from a machine spindle or tool magazine and store it in an upright position.
- The maximum coolant pressure is 3MPa.

THE MAXIMUM ALLOWABLE SPEED

Model	CK No.	Insert holder model	Boring range	Back boring range	Min. entry bore for back boring	Projection length at 7D [G.L.-] (inch)	Max. spindle speed (RPM)		Insert model	※Tightening torque N·m (lbf·Ft)
							≤7D	>7D		
CK1-EWN 20EDP-100	CK1	ENH1-1	.787-1.024	—	.394 + (Back boring dia./2)	—	4,800		TP08	0.5(.37)
		ENH1-2	.984-1.220	—						
		ENH1-3	1.181-1.417	—						
CK2-EWN 25EDP-125	CK2	ENH2-1	.984-1.299	—	.492 + (Back boring dia./2)	8.5	7,600	3,800	TP08	1.5(1.11)
		ENH2-2	1.260-1.575	—						
		ENH2-3	1.535-1.850	1.654-1.850						
CKB3-EWN 32EDP-160	CK3	ENH3-1	1.260-1.654	—	.630 + (Back boring dia./2)	10.5	6,000	3,000	TP08	1.5(1.11)
		ENH3-2	1.614-2.008	—						
		ENH3-3	1.970-2.362	2.244-2.362						
CKB4-EWN 41EDP-185	CK4	ENH4-1	1.614-2.162	—	.787 + (Back boring dia./2)	13.0	4,600	2,300	TP08	2.5(1.84)
		ENH4-2	1.969-2.480	2.420-2.480						
		ENH4-3	2.402-2.913	2.638-2.913						
CKB5-EWN 53EDP-210	CK5	ENH5-1	2.087-2.756	—	1.004 + (Back boring dia./2)	16.0	3,600	1,800	TP08	6 (4.4)
		ENH5-2	2.559-3.228	2.913-3.228						
		ENH5-3	3.070-3.740	3.071-3.740						
CKB6-EWN 68EDP-240	CK6	ENH6-1	2.677-3.937	3.543-3.937	1.280 + (Back boring dia./2)	20.5	2,800	1,400	TC 11	10 (7.4)
		ENH6-2	3.700-4.960	3.701-4.961						
		ENH6-3	4.646-5.906	4.646-5.906						
CKB6-EWN100EDP-240	CK6	ENH6-1	3.937-6.024	4.213-6.024	1.791 + (Back boring dia./2)	26.5	1,900	1,000	TC 11	10 (7.4)
		ENH6-2	4.961-7.047	4.961-7.047						
		ENH6-3	5.906-8.000	5.906-8.000						
CKB7-EWN100EDP-240	CK7	ENH6-1	3.937-6.024	4.567-6.024	1.791 + (Back boring dia./2)	26.5	1,900	1,000	TC 11	10 (7.4)
		ENH6-2	4.961-7.047	4.961-7.047						
		ENH6-3	5.906-8.000	5.906-8.000						

(Caution) • Back boring must use Counter-Clockwise spindle rotation.

• The boring range are the values for which TP08 insert with the radius of 0.2 and TC11 insert with radius of 0.4.

※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.

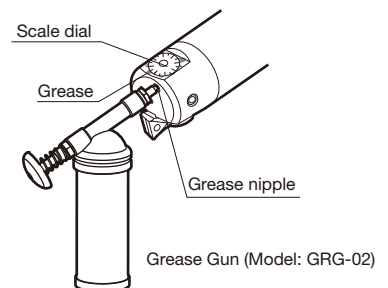
Grease Model : HSG50 (50g/net)

- 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.



CAUTION

Never overhaul boring heads.



BIG DAISHOWA SEIKI CO., LTD.