BIG DAISHOWA KAISER BORING SYSTEM

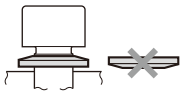
SW HEAD

OPERATION MANUAL

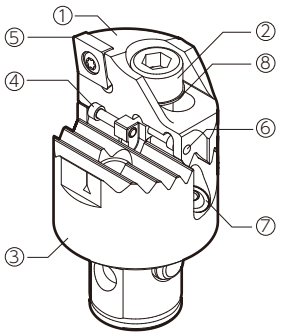
Please read these instructions before use and keep them where the operator may refer to them whenever necessary.

NAME OF EACH PART

①SW Cartridge	⑤Insert (cutting edge)
②Clamping screw	⑥Adjusting access
③SW Head	⑦Coolant nozzle
④Radial adjusting screw	⑧Belleville spring



Direction of bellevlle spring



Coolant nozzles ⑦ equipped on SW53 and larger head models are direction-adjustable.

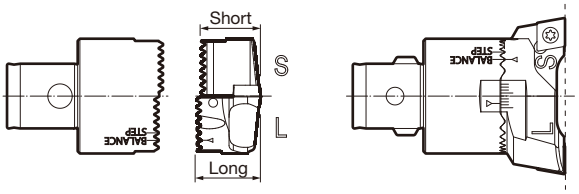
HOW TO CHOOSE THE CUTTING METHODS

With Type E Cartridges for blind hole or Type N Cartridges, 2 different cutting methods, “Balance cut” and “Step cut”, can be made by changing the mounting positions of 2 different SW Cartridges① on the SW Head③. Please make sure to set the proper SW Cartridges on the proper mounting positions. If the positions are incorrect, proper boring cannot be achieved.

Balance cut

A type E type N type

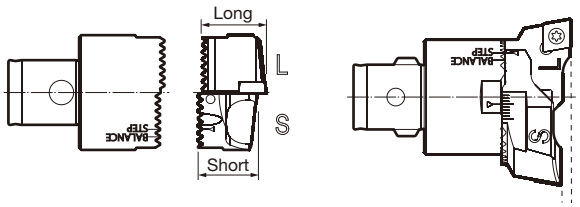
By setting the height and diameter between 2 different cutting edges the same, high feed rate is achieved.



Step cut

E type N type

By setting height and diameter between 2 different cutting edges differently, boring with large stock removal is possible.



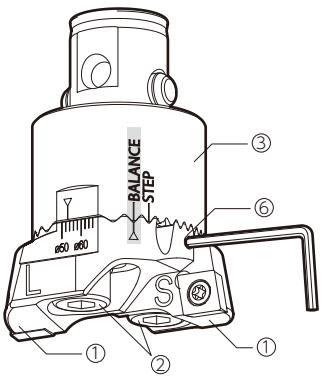
⚠ CAUTION

Type A Cartridge for through hole operations can be used only for “Balance cut” and cannot be used for “Step cut”.

ADJUSTMENT OF BORING DIAMETER

A type E type N type

1) Mount the SW Cartridge ① on the SW Head ③. Make sure to align “△” on the SW Cartridge to “BALANCE” on the SW Head.
2) Adjust the cutting edges to the same diameter by rotating the radial adjusting screw with the hexagon wrench provided.
3) The scale on the SW Cartridges helps to rough adjust the diameter setting. For fine adjustment, use a Tool Presetter.
4) Make sure to tighten the clamp screws on SW cartridges, refer to the recommended tightening torque in Table 1.



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Step cut E type N type

1) Mount the SW Cartridge ① on the SW Head ③. Make sure to align "△" on the SW Cartridge to "STEP" on the SW Head.
2) Adjust the cutting edge of "S" marked SW Cartridge ① to the final diameter.
3) Adjust the cutting edge of "L" marked SW Cartridge ① to half of the stock allowance.
4) Cutting edges can be adjusted by rotating the eadial adjusting screw with the hexagon wrench provided.
5) The scale on the SW Cartridges helps to rough adjust the diameter setting. For fine adjustment, use a Tool Presetter.
6) Make sure to tighten the clamping screws on the SW Cartridges. Refer to the recommended tightening torque in Table 1.

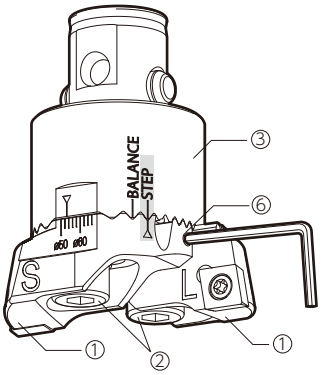

Table 1

Head Model	Tightening torque N·m(lbf・Ft)	Wrench (mm)
SW 20	4 (2.95)	3
SW 25	7 (5.2)	4
SW 32	12 (8.9)	5
SW 41	20 (14.8)	6
SW 53	35 (25.8)	8
SW 68	35 (25.8)	8
SW 98	40 (29.5)	10
SW148	40 (29.5)	10

⚠ CAUTION

Make sure that the boring head is always assembled with a short SW Cartridge "S" and a long SW Cartridge "L". If "△" on the SW Cartridges is aligned to both "BALANCE" and "STEP" markings, an incorrect insert holder ① has been mounted and should be checked again.

ADDITIONAL CAUTION

⚠ CAUTION

- Do not use a clamp screw other than genuine or attached one.
- Be aware of cutting your hand with a cutting edge when exchanging the insert.
- Since the insert clamping screw is expendable, exchange them periodically.
- Wipe the each attaching surfaces thoroughly with a waste.
- Boring range of the boring head must not be exceeded.
- It is recommended to conduct trial boring, because the boring diameter may change depending on cutting condition.
- NEVER conduct boring under unsuitable cutting conditions. Refer to the General Catalog for recommended cutting conditions.
- Ensure that there are no dust, damage and rust on the part of CK connection, and clamp CK connection securely.
- Do not connect KAISER BORING SYSTEM with any other boring system.
- NEVER continue using the boring head if it has suffered strong impact by bumping.
- Wear safety glasses during boring operation.

MAXIMUM ALLOWABLE SPINDLE SPEED

Head Model	Max. spindle speed (RPM)
SW 20	12,000
SW 25	9,000
SW 32	7,000
SW 41	5,500
SW 53	4,000
SW 68	3,000
SW 98	2,000
SW148	1,500

⚠ CAUTION

- NEVER exceed the maximum allowable spindle speed.
- This maximum allowable spindle speed is the limit value determined from the structure of the tool. It is not guaranteed to be applicable for actual boring.
- When actually determining cutting condition, check the rigidity of a machine spindle and workpiece and the length of a tool which change the condition of vibration and etc. Therefore, increase the cutting condition gradually from general one.