

# <BORING SYSTEM> FIRSTCUT [Small-hole Boring Tool]

Precision Tuning Small-hole Boring Tool



A Higher Level of Stability  
A Higher Level of Stability



Adjustment dial  
High feeding precision

Auxiliary ring  
Eliminates dimension matching errors.

Collet  
Allows the operator to change the diameter of the boring bar handle.

Lock bolt  
Can be locked with light force.

Throwaway jig borer tool  
The tip is mounted so as to minimize cutting resistance.  
Ensures that hole diameters will not diverge.

DIMENSIONS BT ▶ P.72 | HSK ▶ P.135 | ST ▶ P.150

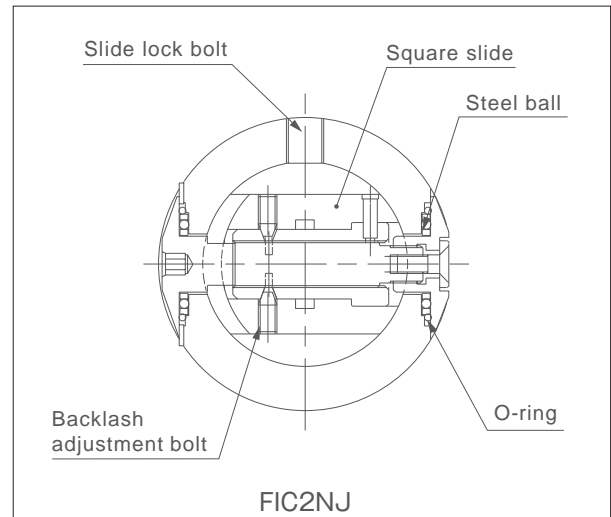
DIMENSIONS JIG BORER TOOLS, COLLET, INSERTS ▶ P.73, 136

DIMENSIONS EXTENSION, REDUCTION ▶ P.74, 137

## High Rigidity Pre-balanced Design

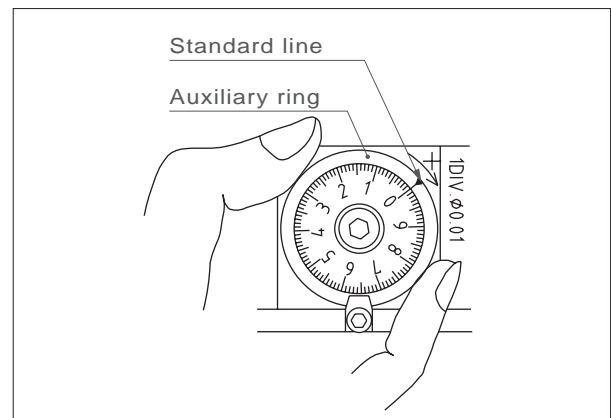
Square slide, through feed screw, steel balls on both sides of feed screw, feed screw fixed with double screws, and backlash-adjusted internal thread: very robust structure without any gaps.

The feed screw is polished at high precision and thus moves smoothly, allowing for accurate dimensional adjustment with the dial scale (backlash-free). The dial is calibrated to 0.01 mm for FIC2NJ, 0.005 mm for FIC1NJ.



## With auxiliary ring

An auxiliary ring is placed on the outer circumference of the dial. Rotating this manually makes dimensional adjustment easier and eliminates reading errors.



## Throwaway Boring Tool

We utilize our own proprietary design for our throwaway boring tools. These tools are designed to minimize cutting resistance and fully utilize the tip features, in order to avoid making trumpet-shaped machined holes. ISO tips can be used. The shank has a coolant hole that allows the reliable supply of through coolant to the blade edge.

The heads can be used with through coolant systems, provided that you use our dedicated throwaway tools.

# <BORING SYSTEM> FIRSTCUT [Machining diameter $\Phi 25$ - $\Phi 73$ ]

Adjustable Boring for Ultra-precision Finish



Adjustable Boring System for Ultra-precision Finish  
Achieved by High-precision Feeding



DIMENSIONS

BT ▶ P.71 | HSK ▶ P.134 | ST ▶ P.150

DIMENSIONS

THROWAWAY SQUARE SHANK TOOLS, INSERTS ▶ P.73, 136

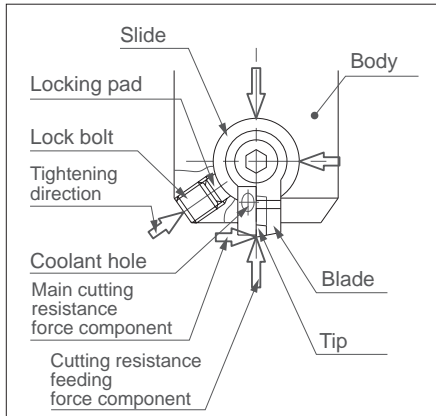
DIMENSIONS

EXTENSION, REDUCTION ▶ P.74, 137

## Eliminating the Staggering of Blade Edge Dimensions

### The blade edge does not stagger even when the slide is locked.

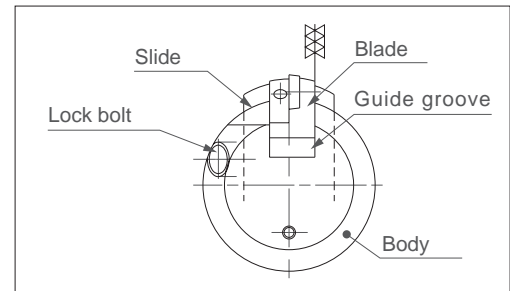
The slight clearance between the slide and the body hole is properly adjusted. In addition, a locking pad is placed between the lock bolt and slide, preventing torsional action on the slide at tightening. Moreover, the lock is set in a slanting direction so as to deal with both the main and feeding force components of the cutting resistance force. These measures thus eliminate staggering of the blade edge when locking the slide.



## Reinforced Machining Stability

### A guide groove on the body ensures stable machining.

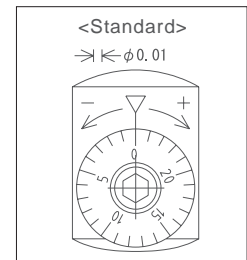
In order for the body to securely absorb the cutting resistance force, it is equipped with a polished guide groove to keep the blade fixed, thus absorbing the component force and improving machining stability.



## Backlash-free Dial Calibrated to 0.01 dia.

### Direct reading accuracy of 0.01 dia.

The dial is very easy to read because a gear is incorporated to widen the calibration pitch. In addition, its structure eliminates backlash, thereby improving its operability.



## High Feeding Precision

### Accurate feeding is maintained via the high-precision feed screw.

The feed screw, an essential point of feeding precision, has been polished with high precision after heat treatment. For this reason, it will maintain a highly accurate feed, allowing the user to reliably correct dimensions on the machine.

## Support for through coolant

### Coolant is reliably supplied to the blade edge.

Through a steady supply of coolant, chippings are easily expelled and both the blade edge and machined area of workpieces can be prevented from heating up. This has the following benefits:

- ① Improved tip lifetime
- ② Higher cutting speed/cutting feed
- ③ Improved surface roughness of workpieces
- ④ Improved dimensional accuracy of workpieces

As a result, you can expect accurate machining at high efficiency.



# <BORING SYSTEM> FIRSTCUT [Machining diameter $\Phi 70$ - $\Phi 360$ ]

Adjustable Boring for Ultra-precision Finish



Adjustable Boring System for Ultra-precision Finish  
Achieved by High-precision Feeding



**DIMENSIONS** BT ▶ P.71 | HSK ▶ P.134 | ST ▶ P.150

**DIMENSIONS** THROWAWAY SQUARE SHANK TOOLS, INSERTS ▶ P.73, 136

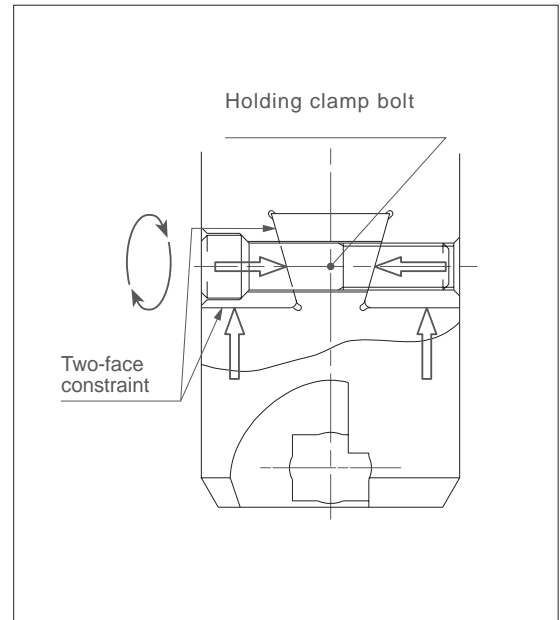
**DIMENSIONS** EXTENSION, REDUCTION ▶ P.74, 137

## High-rigidity clamp holding structure

The body and slide part are integrated with a hand-finished dovetail that is aligned to the actual workpiece and held fixed with clamp bolts. Since it is constrained in two places (the taper area of the dovetail and the bottom surface) a highly rigid assembly is ensured.

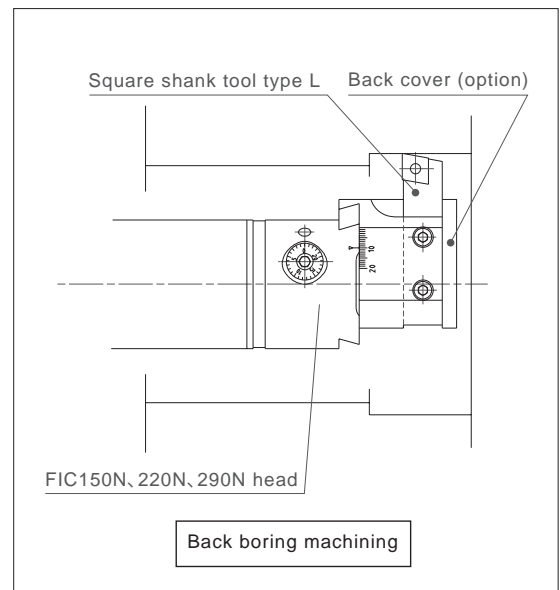
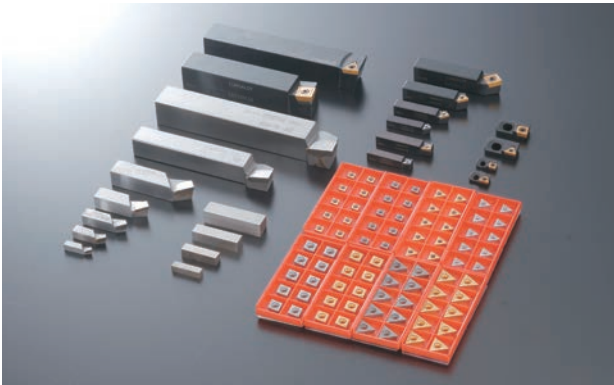
## Use of Precision Screws

FIC150N, FIC220N, FIC290N use polished worms/worm wheels, allowing fine-tuning with a precision of 0.01 dia. by direct reading.



## Wide Variety of Blade Edges

We adopt 90°square shank tool, and when choose L-type square shank tool, then back boring is available.  
We adopt ISO insert chip so according to the work you can select from chips made by any tool manufacture.  
※ L-type square shank tool for back boring and back cover to be quoted separately.



## Wide Machining Range

By using square shank tools, wider machining range that cannot normally be achieved with a normal boring head can be obtained not only by moving slide but by projecting square shank tools. Moreover, well balanced machining can be achieved by mainly adjusting the projection of shank tool and then decreasing the slide opening for the tuning.

