

# Instruction manual for AXD4000 shank type and screw-in type

## 1. Applicable inserts

Please use appropriate holder type according to the insert corner radius as shown in below table.

Holder	Insert corner radius
AXD4000*****A (A type)	~ 3.2
AXD4000*****B (B type)	4.0~ 5.0

## 2. How to locate the insert

- Prior to locating the insert, remove the dust around the seat with air blow.
- Press firmly down on the insert when tightening the clamp screws.
  - Tighten the screws according to the order shown in Figure 1.
  - To prevent seizing, apply anti-seize lubricant to the screws and tighten at the prescribed tightening torque.

The prescribed torque value is **1.5N·m (1.11ft·lb)**.
- For overall tool safety, be sure to use clamp screws with the appropriate order number shown below.

Clamp screw number	Tightening torque	Shape
TS3SB (φ20: TS3SBS)	1.5N·m (1.11ft·lb)	

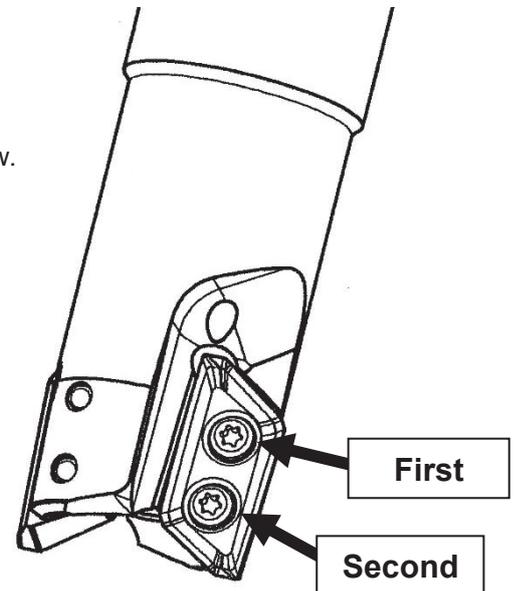


Fig. 1 Tightening order

- Check that there is no gap between the insert and the insert seat.

## 3. Maximum allowable spindle speed

- Maximum allowable spindle speeds are shown in Table 1.  
Be sure to operate under the maximum allowable spindle speed. The maximum allowable spindle speeds are determined in accordance with ISO15641. (Milling Cutters for high speed machining – Safety requirements)

Table 1 Maximum allowable spindle speed (min<sup>-1</sup>)

Cutting edge diameter DC	φ20	φ25	φ28	φ32	φ35	φ40
Shank type	15,000	49,000	48,500	48,000	45,000	41,000
Screw-in type	-	49,000	48,500	48,000	41,000	38,000

- Adjust the balance quality (with the chuck) to satisfy G6.3 or better based on ISO1940 is recommended, when using over maximum spindle speed shown in table 2. In case of screw-in type, do not take additional machining for tool body. Please adjust the balance quality with the chuck and shank.  
It is also recommended to replace the clamp screws with new ones when changing the insert.  
Be sure to use in an enclosed area for safety.  
The balance quality for shank type (without inserts and clamp screws) is satisfied G6.3 or better at 10,000min<sup>-1</sup>.  
Attention : Screw-in type is not assured balance quality.

Table 2 Maximum spindle speed without balance tuning with the chuck (min<sup>-1</sup>)

Cutting edge diameter DC	φ20	φ25	φ28	φ32	φ35	φ40
Shank type	15,000	12,000	10,800	9,500	8,600	7,600
Screw-in type						

## 4. Other instruction

- Take into consideration the maximum allowable spindle speed of the milling chuck when setting the spindle speed.
- Only use the genuine part produced by Mitsubishi Materials.
- Replace the clamp screws periodically to avoid damaging by overuse.  
Do not use the damaged or the worn clamp screws.
- Please refer to our catalog for more details of cutting condition.
- When using with long overhang, please operate under low cutting conditions.  
(feed, depth of cut, width of cut, etc.)
- When using for ramping or helical milling, the feed must be 0.05mm/tooth or under.
- There is the risk of injuries when touching the sharp edges of the inserts with bare hand.  
Be sure to wear protective equipment.