

1. Applicable inserts

AXD4000 has two types of holder.

A type is used for small corner radius insert, and B type for large corner radius insert.

Details are shown in the right table. Please use appropriate holder.

Holder	Insert corner radius
AXD4000UR*****A (A type holder)	0.016" – 0.125"
AXD4000UR*****B (B type holder)	0.157" – 0.197"


2. How to locate the insert

1. Prior to locating the insert, air blow the insert seat.
2. Press firmly down on the insert when tightening the clamp screw.
3. When tightening the clamp screws, follow the order in Figure 1.
4. To prevent the screw from seizing, use anti-seize lubricant, and tighten at the prescribed tightening torque.

The prescribed tightening torque value is 13.3 lbf-in (1.5N·m).

5. Use of the correct insert clamp screws is especially important to ensure overall tool safety.

Be sure to use clamp screws with the appropriate code number.

Clamp screw number	Tightening torque	Shape
TS3SB	13.3 lbf-in (1.5N·m)	

6. Ensure that there is no space between the insert and the insert seat.

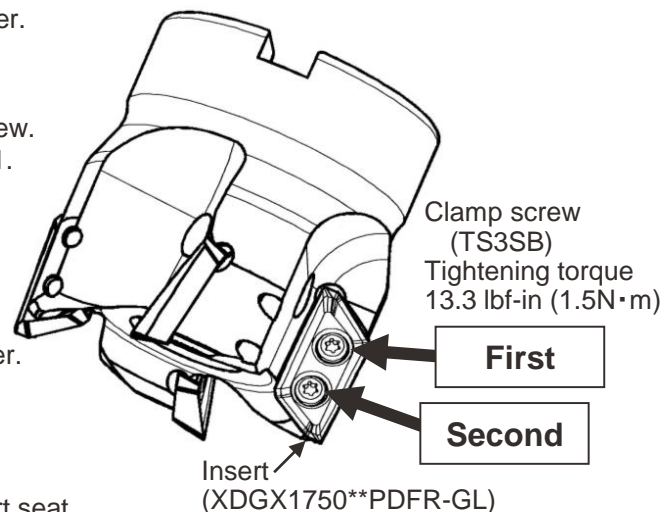
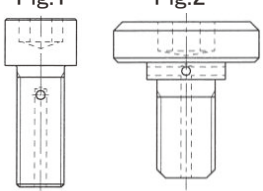


Fig. 1 Tightening order

3. How to attach the tool (arbor)

1. Before attaching to an arbor, ensure that all locating faces have been cleaned and are free of any obstructions.
2. Set the tool into the arbor, and locate using the set bolt provided with the tool. Refer to Table 1 for tightening torque.
3. The set bolt provided with the AXD is specially designed for through coolant.

Table 1 Set bolt

Shape	Order No.	Tightening torque	Cutting edge diameter D1	Figure
	HSCU25014H	102 lbf-in (12N·m)	φ 1.50"	Fig.1
	HSCU37513H	350 lbf-in (40N·m)	φ 2.00"	
HSCU50014H	710 lbf-in (80N·m)	φ 2.50"		
HSCU62516H	960 lbf-in (108N·m)	φ 3.00"		
HSCU75016H	1300 lbf-in (147N·m)	φ 4.00"		
MBAU75016H	2800 lbf-in (316N·m)	φ 5.00"	Fig.2	

4. Maximum allowable spindle speed

1. The maximum allowable spindle speeds are shown in Table 2.

Ensure that the cutter operates under the maximum allowable spindle speed.

The maximum allowable spindle speeds for safety purposes are determined in accordance with ISO15641 (Milling Cutters for high speed machining—Safety requirements).

Table 2 Maximum allowable spindle speed (min⁻¹)

Cutting edge diameter D1	φ 1.50"	φ 2.00"	φ 2.50"	φ 3.00"	φ 4.00"	φ 5.00"
Max. allowable spindle speed	41,000	35,000	30,000	27,000	23,000	20,000

2. Even when operating under the maximum allowable spindle speed, if the spindle speed is equal to or higher than the values shown in Table 3, it is recommended that the balance quality (with the arbor) conforms to G6.3 or better based on ISO1940.

It is also recommended to replace the clamp screws with new ones when changing inserts.

Furthermore, ensure that the tools are used in an enclosed area for safety reasons.

* The balance quality of the holder (without inserts and clamp screws) is G6.3 or better at 10,000min⁻¹.

Table 3 Maximum spindle speed when balancing with the arbor has not been achieved (min⁻¹)

Cutting edge diameter D1	φ 1.50"	φ 2.00"	φ 2.50"	φ 3.00"	φ 4.00"	φ 5.00"
Max. spindle speed	7,600	6,000	4,800	3,800	3,000	2,400

5. Other instruction

1. When setting the spindle speed, take into consideration the maximum allowable spindle speed of arbor.
2. Only use the inserts and parts provided by Mitsubishi Materials for this tool.
If other parts are used, the performance will be inferior and safety can not be assured.
3. Please replace the clamp screw periodically since they are consumption parts. Do not use damaged or worn clamp screws.
4. Please refer to catalog about cutting conditions.
5. When using AXD with a long arbor, please set the cutting conditions low (feed, depth of cut, width of cut, etc..)
6. When using AXD for ramping and helical milling, the feed must be 0.002 inch/tooth or under.
7. The inserts have sharp cutting edges and handling them with bare hands may cause injuries.

Always wear safety gloves when handling the inserts.