MITSUBISHI MATERIALS

Instruction manual for AXD4000 arbor type (inch)

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

1. Prior to locating the insert, remove the dust around the seat with air blow.
2. 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 13.3lbf-in (1.5N・m).
3. For overall tool safety, be sure to use clamp screws with the appropriate order number shown below.

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

4. Ensure that there is no gap between the insert and the insert seat.

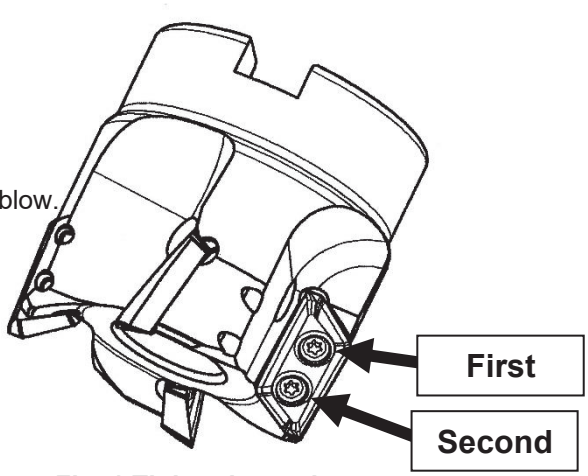
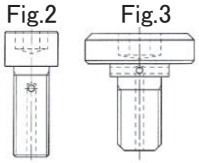


Fig. 1 Tightening order

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
Fig.2 Fig.3 	HSCU25014H	102 lbf-in(12N・m)	φ1.50"	Fig.2
	HSCU37513H	350 lbf-in(40N・m)	φ2.00"	
	HSCU50014H	710 lbf-in(80N・m)	φ2.50"	
	HSCU62516H	960 lbf-in(108N・m)	φ3.00"	
	HSCU75016H	1300 lbf-in(147N・m)	φ4.00"	
	MBAU75016H	2800 lbf-in(316N・m)	φ5.00"	Fig.3

4.Maximum allowable spindle speed

1. Maximum allowable spindle speeds are shown in Table 2. 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 2 Maximum allowable spindle speed (min^{-1})

Cutting edge diameter D1	φ1.50"	φ2.00"	φ2.50"	φ3.00"	φ4.00"	φ5.00"
Max. allowable spindle speed	41,000	35,000	30,000	27,000	23,000	20,000

2. 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 3. 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 of the holder (without inserts and clamp screws) is satisfied 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	φ1.50"	φ2.00"	φ2.50"	φ3.00"	φ4.00"	φ5.00"
Max. spindle speed	7,600	6,000	4,800	3,800	3,000	2,400

5.Other instruction

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