

# Instruction manual for AXD4000A arbor type (mm)

## 1. Applicable inserts

AXD4000A has two types holders.  
D type is used for small corner radius insert,  
and E type for large corner radius insert.

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

Holder	Insert corner radius
AXD4000A*****D (D type holder)	0.4~3.2
AXD4000A*****E (E type holder)	4.0~5.0

## 2. How to clamp the insert

1. Before clamp the insert, air blow the holder seat.
2. When tightening the clamp screws, follow the order in Figure 1.
3. To prevent the screw from seizing, use anti-seize lubricant,  
and tighten at the prescribed tightening torque.

The prescribed tightening torque value is **3.0N·m (2.21ft·lbf)**.

4. 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.  
※Not use the clamp screws of AXD4000 (TS3SB).

5. Ensure that there is no clearance between the holder seat and insert.

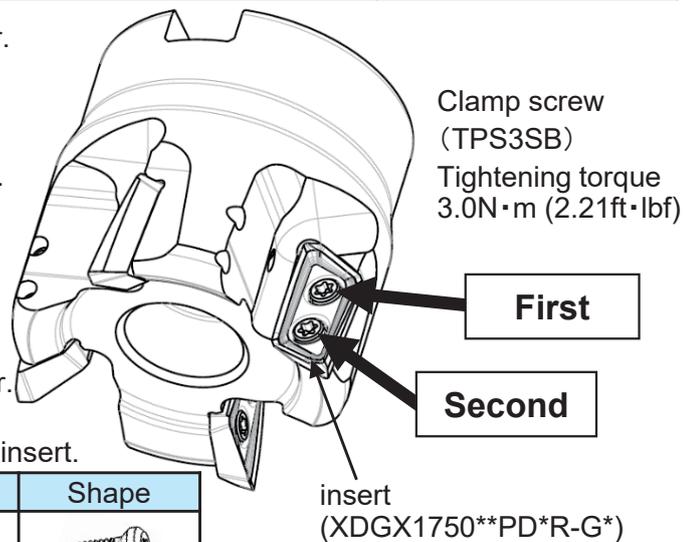


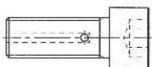
Fig. 1 Tightening order

Clamp screw number	Drive size	Tightening torque	Shape
TPS3SB	10IP	3.0N·m (2.21ft·lbf)	

## 3. How to attach the tool (arbor)

1. Before attaching to an arbor, ensure that all locating faces have been cleaned and there are no 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 AXD4000A is specially designed for through coolant.

Table 1 Set bolt

Shape	Order No.	Tightening torque	Cutting edge diameter D1
	HSC10030H	40N·m	Φ50

## 4. Maximum allowable spindle speed

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

Be sure to operate under the maximum allowable spindle speed in table 2- i ).

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

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 2- ii ), 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.

3. The balance quality ( the residual unbalance) of the holder (without inserts and clamp screws) is U=1.5gmm or better (ISO16084 : Balancing of rotating tools and tool systems).

Table 2 Maximum allowable spindle speed (min<sup>-1</sup>)

i ) Balancing with the arbor has been achieved.	ii ) Balancing with the arbor has not been achieved.
34,000	6,000

## 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. Replacing the clamp screw simultaneously with insert replacement is recommended.  
Do not use damaged or worn clamp screws.
4. Please refer to catalog about cutting conditions.
5. When using AXD4000A with a long arbor, please set the cutting conditions low (feed, depth of cut, width of cut , etc..)
6. When using AXD4000A for ramping and helical milling, the feed must be 0.05mm/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.