

XEBEC Brush™ Turning Machine Instruction Manual

Read this instruction manual before using this product. Failure to do so can result in serious injury or death. This instruction manual must be kept in the vicinity of the machine at all times so that it is accessible to the operator.

SAFETY PRECAUTIONS

Be sure to observe the contents of this manual.

Using the product in a way that is not consistent with the contents of this manual may result in serious injury or death.

⚠ WARNING

- There is the risk of operator loss of sight or injury resulting from this product detaching from the processing apparatus, bristles breaking off, workpieces breaking, etc.
- Fragments, cutting particles, burrs, etc. occur due to processing with this product, and these can pierce the eyes or skin of workers causing loss of sight and injury.
- Dust occurring as a result of processing with this product can cause lung damage, irritate skin, and bring on allergic reactions.
- Even if there is no problem at the pre-work check, if vibration or other abnormality occurs during use, discontinue use immediately. Continuing to use the product when there is an abnormality presents the risk of operator loss of sight or injury resulting from this product detaching from the processing apparatus, bristles breaking off, workpieces breaking, etc.
- Machining at a constant point for a prolonged time causes the tip of the tool to become hot which presents the risk of operator loss of sight or injury resulting from bristles coming loose or breaking off. Adjust the processing times on locations being processed so that it does not become hot. Also be careful not to touch the locations being processed directly with bare hands after use.
- Using this product outside the range of use in the processing conditions presents a risk of operator loss of sight or injury resulting from this product detaching from the processing apparatus, bristles breaking off, workpieces breaking, etc.
- Check the minimum deburring diameter that this product can support before using it. If this product is incompatible, there is the risk of operator loss of sight or injury resulting from bristles breaking off, parts breaking, etc.

NOTICE

Furthermore, as a result of the situations described above, there is also the risk of damage to machining tools, jigs, and workpieces.

Operator Safety Protection

⚠ Use of protective equipment

Be sure to wear personal protective gear including goggles, masks, gloves, and earmuffs to prevent injuries common during machining. Wear clothing with long sleeves or other clothing that does not expose the skin, and fasten the cuffs and hems tightly.

⚠ Attention to the work area

- Install an enclosure so that persons other than the operator do not enter the work area, and ensure that all persons, if any, in the work area are wearing protective equipment.
- In particular be careful that children do not enter the work area.
- Keep the floor of the work area clean at all times to prevent the risk of slipping or tripping on dust, cutting particles, oil, water, or other substance.
- There is the risk of fire caused by heating, sparks, or other factor resulting from use of the product. Do not use the product close to a flammable liquid or in an explosive atmosphere. Also be sure to enact fire prevention measures.

⚠ Precaution regarding cutting particles

Fragments, cutting particles, and other substances generated during work will be scattered into the surrounding area. Be sure to use a dust collector or other means to collect them.

Pre-Work Check

Make sure the product is clamped firmly inside the machine and that there is no looseness. Then perform a trial processing to ensure that everything is in order. Check again before the actual use.



Precautions for Use

Installation onto a machine tool and so on

⚠ **WARNING:** When installing onto processing equipment, grip the tool shank by 30mm or more. If gripped with a grip length less than the specified one, this product may fall from the processing equipment due to vibrations during the machining. There is the risk that this may cause operator loss of sight or injury.

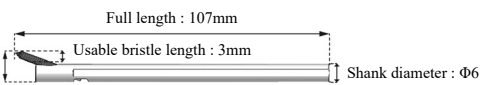
- When the product is used with precision machining equipment, there is the risk that cutting particles may have an adverse effect on the equipment sliding parts. Be sure to properly collect cutting particles and perform washing.
- When installing, use a chuck that is correct for the shank diameter.
- Install and use on processing equipment that can control the rotational speed.

Product specifications

Holder product code	Brush product code	Minimum deburring diameter	Compatible horizontal hole size
TM-SH-06	A11-TB025 	Φ12	Φ3 or less
TM-SH-12	A11-TB06 	Φ21	Not specified

TM-SH-06

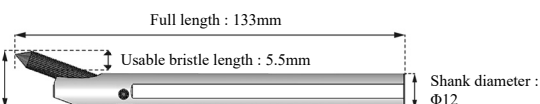
May be inserted into a hole with diameter of 11mm or larger



Full length : 107mm
Usable bristle length : 3mm
Shank diameter : Φ6

TM-SH-12

May be inserted into a hole with diameter of 20mm or larger



Full length : 133mm
Usable bristle length : 5.5mm
Shank diameter : Φ12

Features

Even on a turning machine without a milling function, deburring can be performed by bringing this product in contact with the workpiece while the workpiece is rotating.

Processing conditions (common to both sizes)

	Range of use	Standard processing condition
Machining speed (m/min)	60 - 250	150
Feed rate (mm/rev)	0.1 - 0.5	0.3
Depth of cut (mm)	0.5 - 2.0	1.0

- * If this product is used at a depth of cut greater than the remaining bristle length, the holder will make contact with the workpiece and the tool will be damaged.
- * Deburring varies depends on the rotating direction of the workpiece. Perform forward and reverse rotation as necessary.
- * It is recommended to make large burrs as small as possible in advance. Large burrs may cause significant wear on the brush and shorten its life.
- * If the burrs cannot be removed, try the following method.
 - Reduce the feed rate
 - Increase the number of passes

Installing the brush to the holder

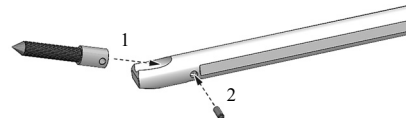
TM-SH-06

1. Insert the brush (A11-TB025) into the holder.
2. Insert the screw (M2.6-6) into the hole at the end of the holder, and fasten the screw with a hexagonal wrench.



TM-SH-12

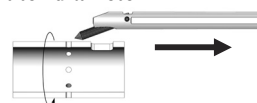
1. Insert the brush (A11-TB06) into the holder.
2. Insert the screw (M2.6-10) into the hole on the side of the holder, and fasten the screw with a hexagonal wrench.



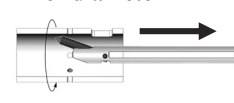
How to use (common to both sizes)

Regardless of whether you are deburring the outer or inner diameter of the workpiece, be sure to pull the brush toward the end face while deburring. Pushing may damage the brush.

Outer diameter



Inner diameter



- * The figure shows TM-SH-12.



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This document can also be viewed at the following website.
<http://www.xebec-tech.com/>

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