MAXIN™ Power Chuck - User's Guide

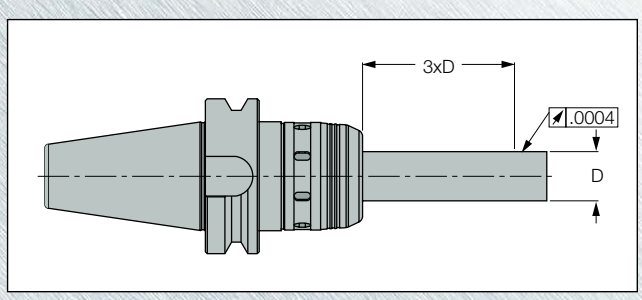
With this tool, only a small tightening torque compresses the frontal nose, providing an extremely high gripping force. It is designed for roughing and finishing applications in milling where high torque transmission, maximum accuracy, compactness and easy operation are required.

Features

- The clamping nut is not threaded (as in ER collet chucks)
- Designed for direct chucking of the tool shank – no need for intermediate collet for maximum gripping force
- Sealed nut construction
- No axial drawback of the tool shank as chuck is tightened
- Thick wall construction to withstand greater side loading forces

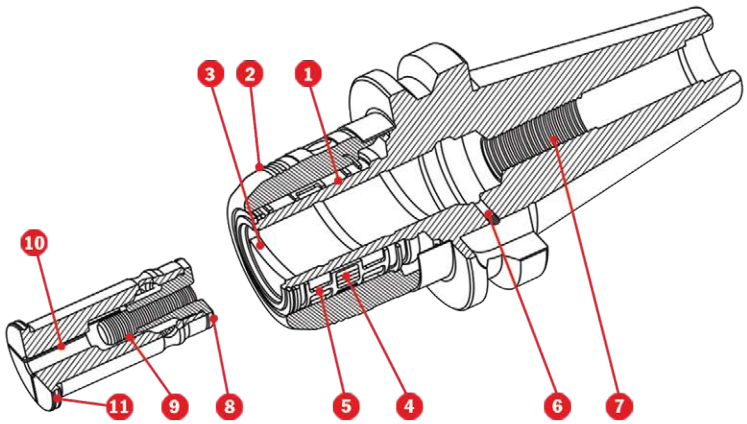
The high gripping force achieved by the MAXIN POWER CHUCK results from the shallow nose tapered cone (1) with helical slot (3) inside the internal chuck bore. It exerts a very high clamping force when the clamping nut (2) is rotated in the axial direction.The shallow taper of the tool nose (1) and the angled position of the needle bearing (4) that sit in the cage create the axial movement of the clamping nut (2).

This unique clamping mechanism eliminates axial movement of the shank while clamping, simplifying the preset process.



Runout Accuracy

Maximum runout at 3XD overhang is less .0004"



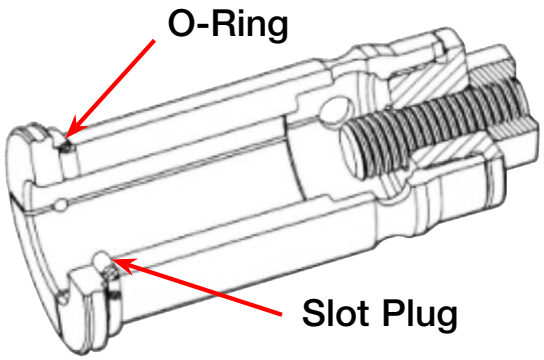
1. Shallow tapered front end cone
2. Clamping nut
3. Helical slot
4. Needle bearing cage
5. Front seal
6. Ventilation bore (thread M4)
7. Preset screw thread
8. Cap screw (for the preset screw)
9. Preset screw
10. Ground bore
11. Grip groove (for collet release)

Member IMC Group Ingersoll Cutting Tools

SC straight collets are available with an optional internal preset screw (8 & 9).

MAXIN Features:

- High accuracy runout at 100 mm, overhang of 0.01 mm.
- Only a small tightening torque will develop an extremely high tool gripping force due to the unique anti-friction mechanism
- High stiffness is achieved by the clamping mechanism, using the face contact between the clamping nut and the face of the shank
- Symmetric design for spindle speeds up to 8,000 RPM.
- Prolonged tool life die the the high rigidity achieved by the system
- Slim design for better accessibility in narrow/steep cavities
- Preset screws available for all SC straight collets for positioning of the tool.
- The MAXIN tool is produced from a special steel that has been sub-zero treated for vibration damping.



General view SC Seal Collets

Operating Instructions

The MAXIN is designed to operate for heavy milling applications with high rigidity. Following the operating instructions will ensure optimal results.

Before Use

- Clean the protective anti-rust oil from the MAXIN internal bore and SC collets with a soft cloth of cleaning paper. Solvent may be used to soften the anti-rust lubrication. The cutting tool should be treated in the same manner.
- When cleaning the MAXIN, do not immerse the tool into cleaning liquids such as gasoline, kerosene, etc. This may remove the internal grease lubrication, which will damage the clamping mechanism.
- Shank tolerance should not be lower than h7. For maximum clamping force, use cutting tool shank with tolerance of h5 or h6 and insert it to its full ground length into the MAXIN bore - 70 mm.
- To ensure maximum rigidity and stiffness in rough cutting conditions, tighten the clamping nut until reaching face contact with the chuck body.
- To ensure maximum runout accuracy, tighten the clamping nut until reaching face contact with the chuck body and release approximately 1° rotation.

Assembly and Disassembly of Shank Cutter with Wrench

- Tighten the nut with the spanner wrench until clamping is achieved.
- Loosen the nut with the spanner wrench to remove the cutting tool.

Instructions for Proper Use

To avoid damage to the MAXIN mechanism, never tighten the clamping nut unless there is a shank inside the bore.

- After removing the cutting tool from the MAXIN, the clamping nut must be unscrewed one extra turn to prevent reduction of the clamping power and to ensure maximum gripping force.

Preset Screw

In order to adjust the projection length of the cutting tool you can use a preset screw inside the MAXIN internal bore part #9. This is supplied as an optional accessory.

Insertion of SC Collets and Shanks

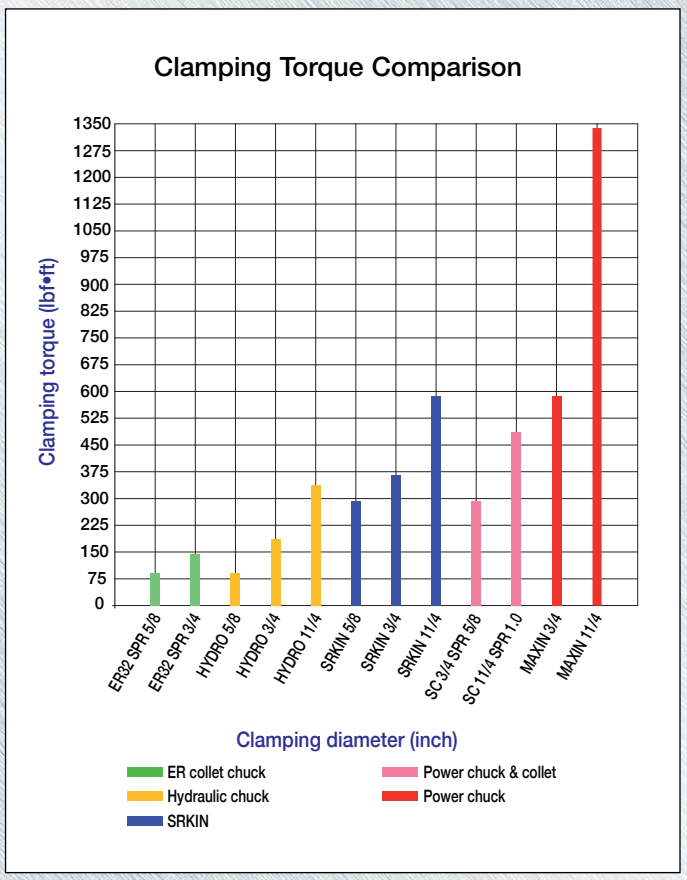
The cutting tool should be inserted into the collet before inserting it into the MAXIN chuck. Insert the collet into the MAXIN chuck until the collet reaches the front end of the chuck.

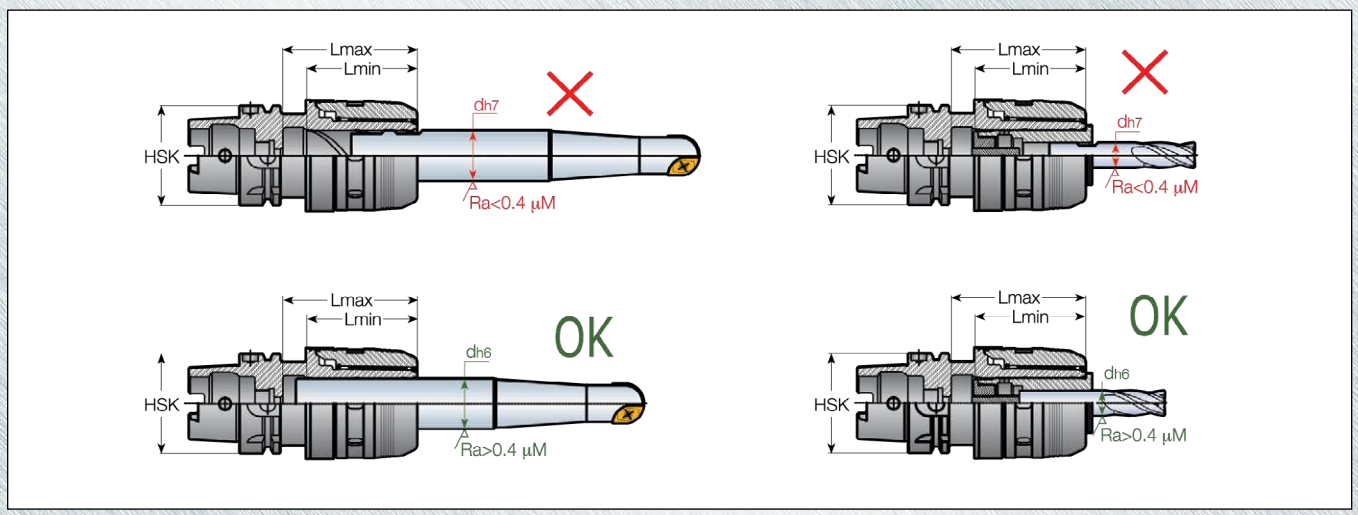
- For maximum rigidity and accuracy insert the shank cutters to the full ground area of the collet.

Preset Screw

In order to adjust the length of the cutting tool, use a preset screw inside the collet (optional). When using SC collet inside the MAXIN chuck, the runout accuracy may be affected.

- In case of cutting tool damage or crash during machining, the MAXIN chuck has to be inspected for cracks and that proper runout is maintained.





1. Do not use Weldon type shanks.
2. Insert shank at least Lmin into the chuck.
3. In order to maintain a firm grip, the shank's surface finish should have a roughness of at least N5.