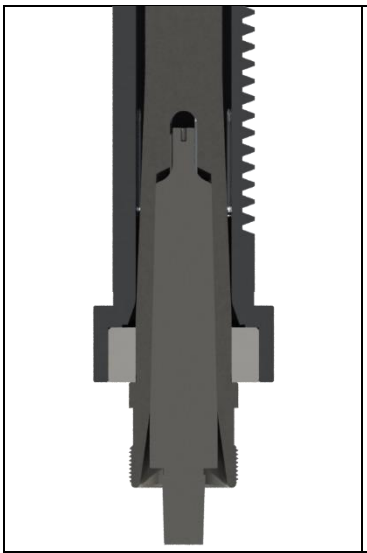
# NOVA Vulcan – New Spindle Explained

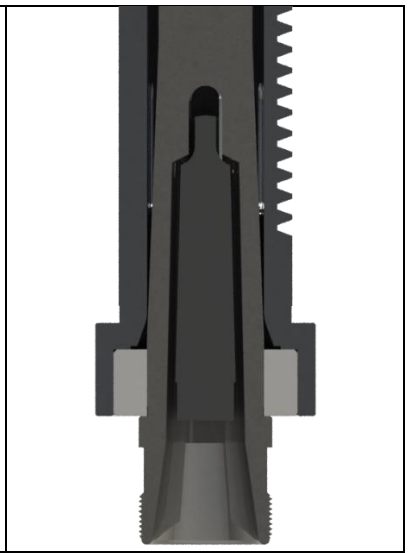
The new Vulcan spindle combines a Morse Taper #3 (MT3) and ER32 Collet system.

This new spindle will allow you to use a very wide range of tools. Any tool with MT3 can be mounted directly onto the spindle which enables the Vulcan to accommodate very large and heavy milling/ drilling work.

The ER32 collet system is able to accommodate smaller tool bits which does not have a MT3.

When a MT3 tool is fitted in the spindle



When any MT2 tool is fitted into the spindle

These images compare the size differences between the MT3 tool/ Vulcan drill chuck arbour and any MT2 tool when fitted into the Vulcan spindle. Due to the size difference between the Morse Tapers, **an adapter is needed to use a tool with MT2.**

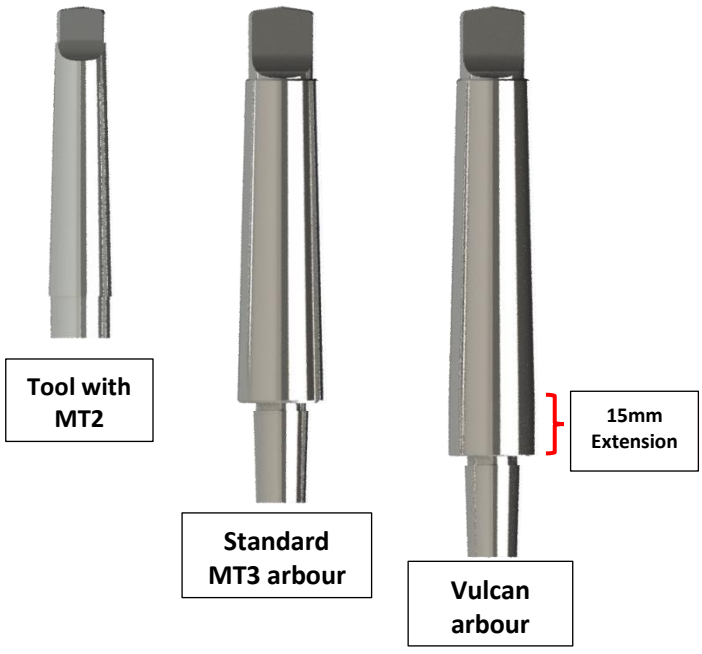



Image on the side compares the drill chuck arbour for the Vulcan against the standard MT3 arbour and MT2.

As seen from the image, Vulcan arbour is slightly longer than the standard off shelf MT3 arbours.

The Vulcan arbour has a 15mm extension section below the Morse Taper in order to compensate the additional length on the spindle due to the ER32 collet taper.

Basic taper on the Vulcan spindle is:

**MT3 – JT33**

## Important Note:

Due to the 15mm extension section on the Vulcan arbour, **standard off shelf MT3-JT33 arbour will not be compatible with the NOVA Vulcan spindle**.

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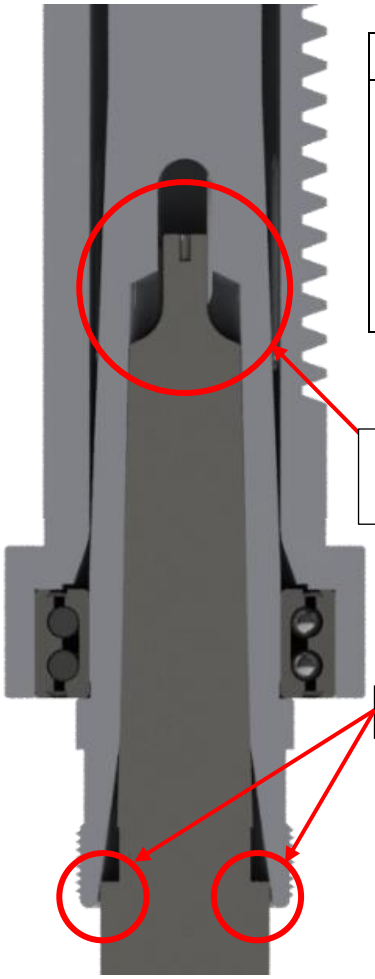
## Size limitations on tools

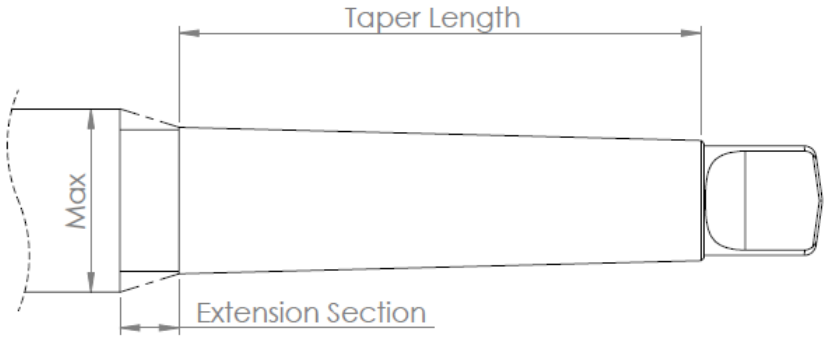



### Tools with Morse Taper #3

If the selected tool has a MT3 on the spindle mounting side and has an effective diameter bigger than 24mm, there may be a compatibility issue between the tool and spindle. In this case, the combined length of taper and extension section of the tool will be important.

As shown on the left-hand image, if the diameter of the tool is too big there is a possibility of the tool interference with the spindle. When there is an interference, the Morse Tapers will not engage properly which may cause the tool to fly out during use.

### Quickly get a rough indication of your tool compatibility



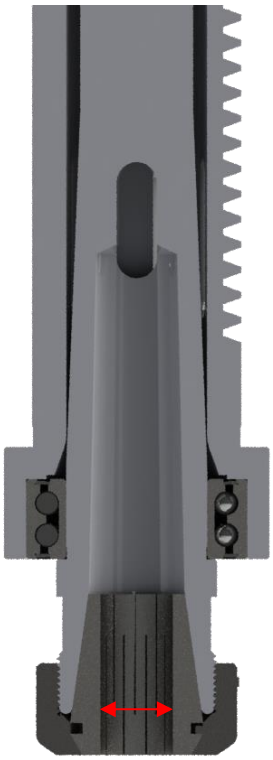

Below is a rough guide line to determine whether or not your tool will be compatible with the Vulcan spindle:

The maximum allowable tool diameter will depend on the length of the extension section. If the size of your tool falls within the following range it is most likely compatible with the Vulcan Spindle:

| | Extension Section (mm) | | | | | | |
|---|---|---|---|---|---|---|---|
| | **3** | **10** | **15** | **20** | **25** | **30** | **31+** |
| Max (mm) | 24 | 26 | 27 | 28 | 30 | 31 | AnySize |

**Note:** If the extension section diameter is greater than 24mm, most likely the tool is not compatible with the spindle.

**This will only give a quick indication, it is always the best to test your tool in the actual machine to ensure that it can be mounted safely.**



### Tools to fit the ER32 Collet

Image on the right-hand side shows the ER32 Collet installed into the Vulcan spindle.

The ER32 collet is capable of holding tools with diameters varying from 6mm to 22mm however the depth which the tool can be inserted into the spindle will vary according to its diameter. This is due to the Morse taper located above.

As a reference, when using the largest type of ER32 collets (7/8' range) with the maximum tool diameter, the tool can only be inserted approximately 76mm deep into the spindle (measured from front face of the collet)

**Note:**
If the tool diameter is smaller than 20mm (0.7874') it is able to get inserted all the way into the spindle (125mm (4.92') deep)