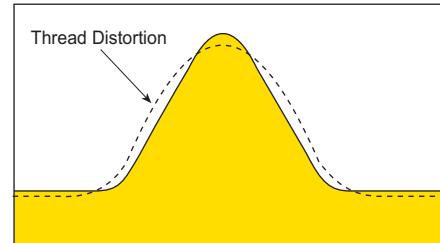


### Tip 1

#### What is thread profile distortion in Thread Milling?

**Thread distortion** is defined as the difference between the theoretical profile of the desired thread and the actual profile generated by the tool in the Thread Milling system.

- The characteristic of distortion is a small curve instead of the straight profile flank and a slight change in profile height
- The profile distortion (shown in the picture) is very small and can be observed only by measurement equipment



- The profile distortion is a natural result of the thread milling tool traveling in a helical interpolated path

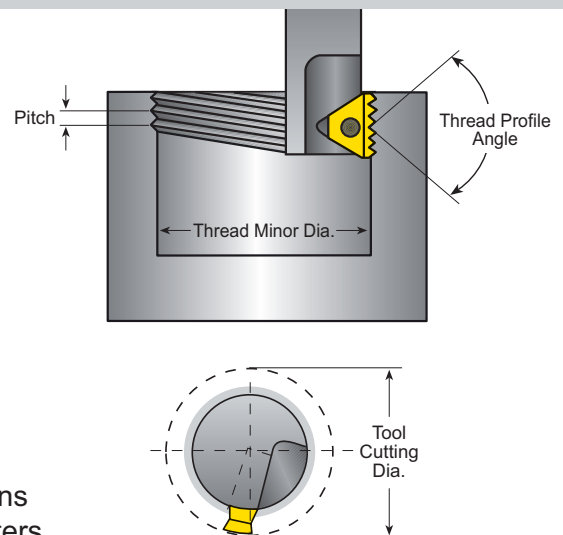
### Tip 2

#### What parameters influence thread profile distortion?

| Parameter             | Parameter Change | Increasing the parameter will... | Decreasing the parameter will... |
|-----------------------|------------------|----------------------------------|----------------------------------|
| Thread Minor Diameter |                  | ↓                                | ↑                                |
| Tool Cutting Diameter |                  | ↑                                | ↓                                |
| Pitch                 |                  | ↑                                | ↓                                |
| Thread Profile Angle  |                  | ↓                                | ↑                                |

↑ Increase distortion    ↓ Decrease distortion

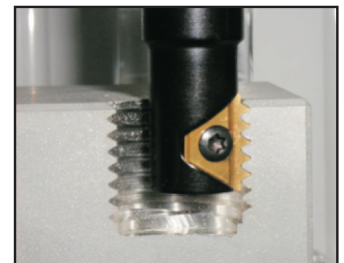
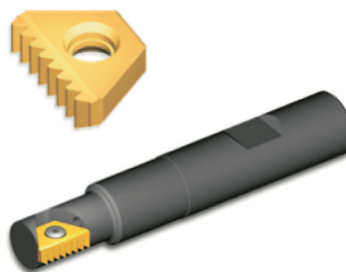
Higher distortion occurs in **Internal Coarse** pitch applications as it involves large pitches on relatively small thread diameters



### Tip 3

#### How can you avoid profile distortion in coarse pitch applications?

- Use the correct Thread Milling tool for each application. Specially-designed tools for coarse pitch minimize the effect
- Avoid any guessing by selecting the correct tool recommended by the Vargus TM Gen software, or the coarse pitch tool tables that appear in the VARDEX catalog



For tool selection and cutting data in Thread Turning applications use our **TT Gen**.  
 For the best Thread Milling CNC Programming, use **VARDEX TM Gen** software utilities.  
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