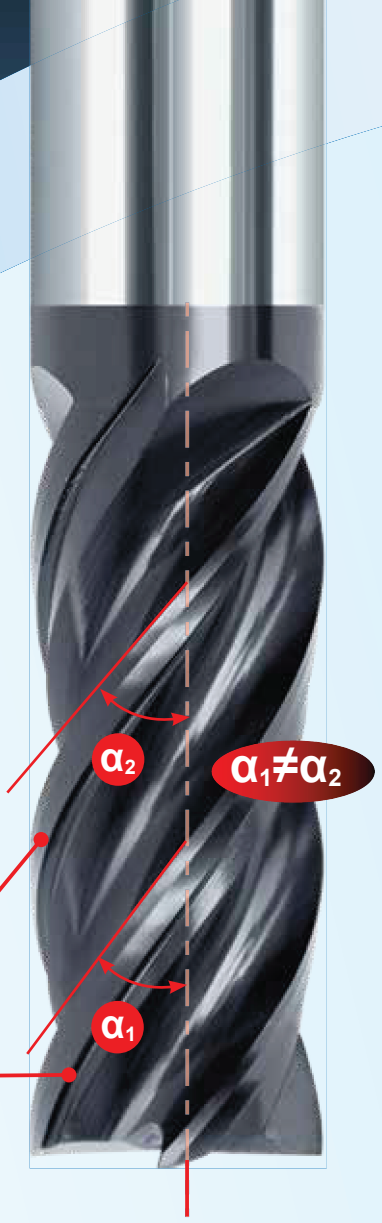
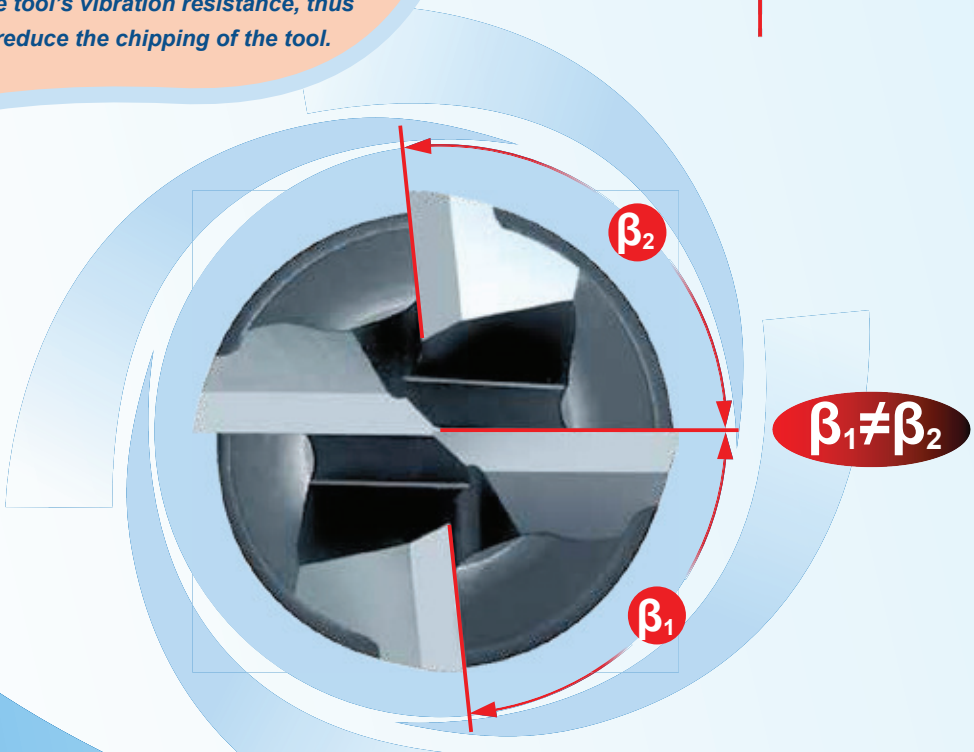
# VSM-4E
# VSM-4R
# VSM-4EFP
# VSM-4RFP

- *Ideal choice for difficult cutting materials such as stainless steel, heat-resistant alloys and titanium alloys, etc.*
- *Ideal surface finishing and long-lasting tool life.*

- *Enable diversity and versatility in machining methods.*

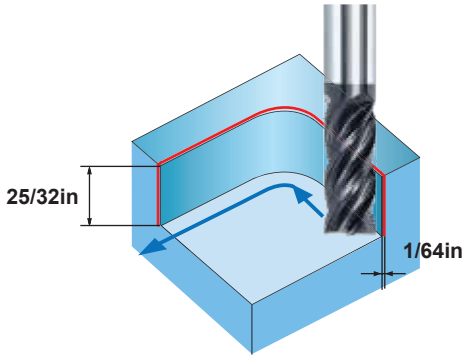
- *Unique helix design substantially increase tool's vibration resistance, thus effectively reduce the chipping of the tool.*



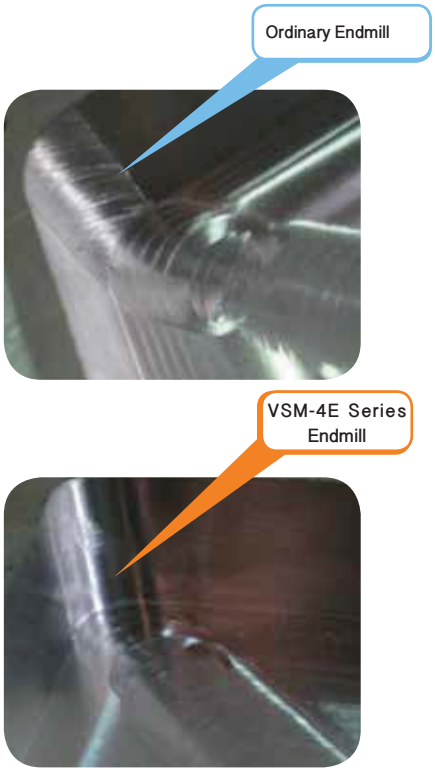



## • VSM-4E Endmills Finish Workpiece Corners with High Efficiency

| | |
|---|---|
| Tool Type | VSM-4E-3/8" |
| Workpiece Material | SUS304 |
| Rotating Speed | 6400 RPM |
| Feed Rate | 64 IPM (.0025/ tooth) |
| Cooling Method | Water-Soluble Coolant |

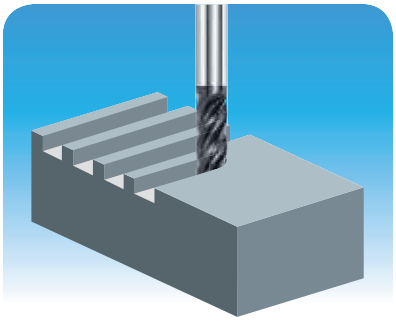



Note: VSM-4E Endmills can effectively suppress vibration and improve the surface quality of the corners of workpiece.




## • VSM-4E-1/2" Slot Milling of Stainless Steel

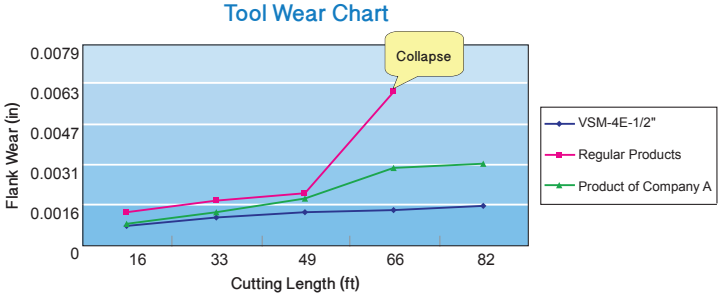
| | |
|---|---|
| Machine Tool | MIKRON UCP1000 |
| Tool Holder | HSK63-A |
| Workpiece Material | 1Cr18Ni9Ti |
| Cutting Speed | 3150 RPM |
| Feed Rate/ Tooth | 0.002/ tooth |
| Axial Cutting Depth | 1/4" |
| Radial Cutting Depth | 1/2" |
| Cooling Method | Water Cooling |
| Milling Style | Slot Milling |
| Overhang | 1-3/8" |



Note: • Compare with similar products, VSM Endmills have better wear resistance and longer tool life.

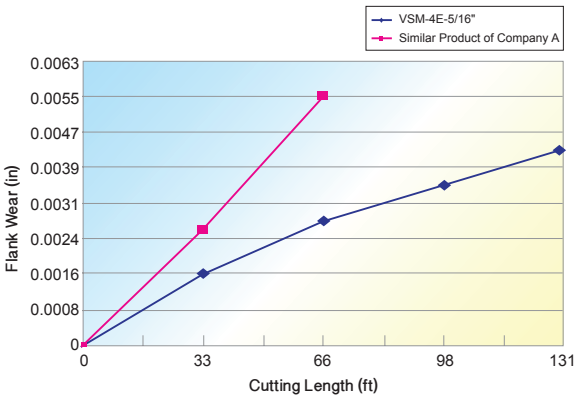
• Compare with ordinary endmills, VSM series have a much better chipping resistance.

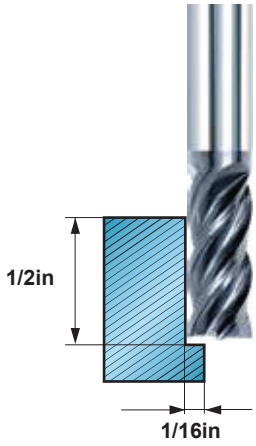
Tool Wear Chart



## • VSM-4E-5/16" Side Milling Machining Life Expectancy

| | |
|---|---|
| Tool Type | VSM-4E-5/16" |
| Workpiece Material | SUS304 |
| Rotating Speed | 4000 RPM |
| Feed Rate | 38 IPM (.0025/ tooth) |
| Cooling Method | Water-Soluble Coolant |



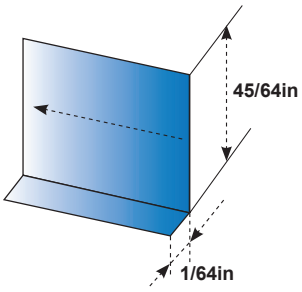

### Flank Wear Condition

VSM-4E-5/16"

Similar Product of Company A

## • VSM-4E-1/2" Surface Roughness of Stainless Steel Side Machining Comparison

| | | | |
|---|---|---|---|
| Workpiece Material | 1Cr18Ni9Ti | Radial Cutting Depth | 0.0118" |
| Cutting Speed | 262 SFM | Cooling Method | Water Cooling |
| Feed Rate/ Tooth | 0.003/ tooth | Milling Style | Side Milling |
| Axial Cutting Depth | .7" | Overhang | 1-1/2" |




Note: • Compare to similar products of other manufacturers, VSM series have the most ideal surface quality after machining.

• Due to the damping effect, the VSM series have less surface roughness.

Parallel Feeding Roughness Value Comparison Chart (Side)