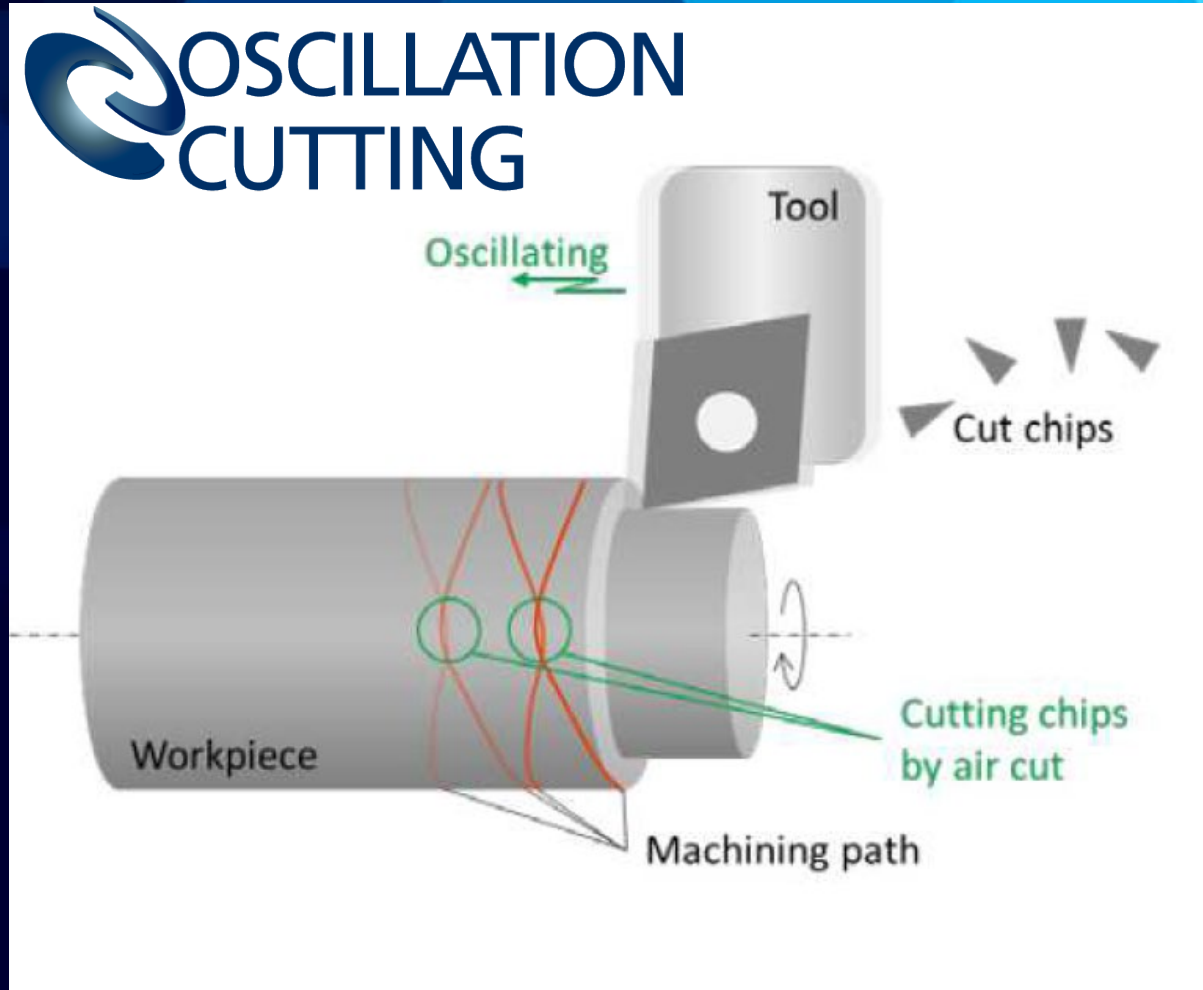




Servo Learning Oscillation Cutting



What is Oscillation Cutting?

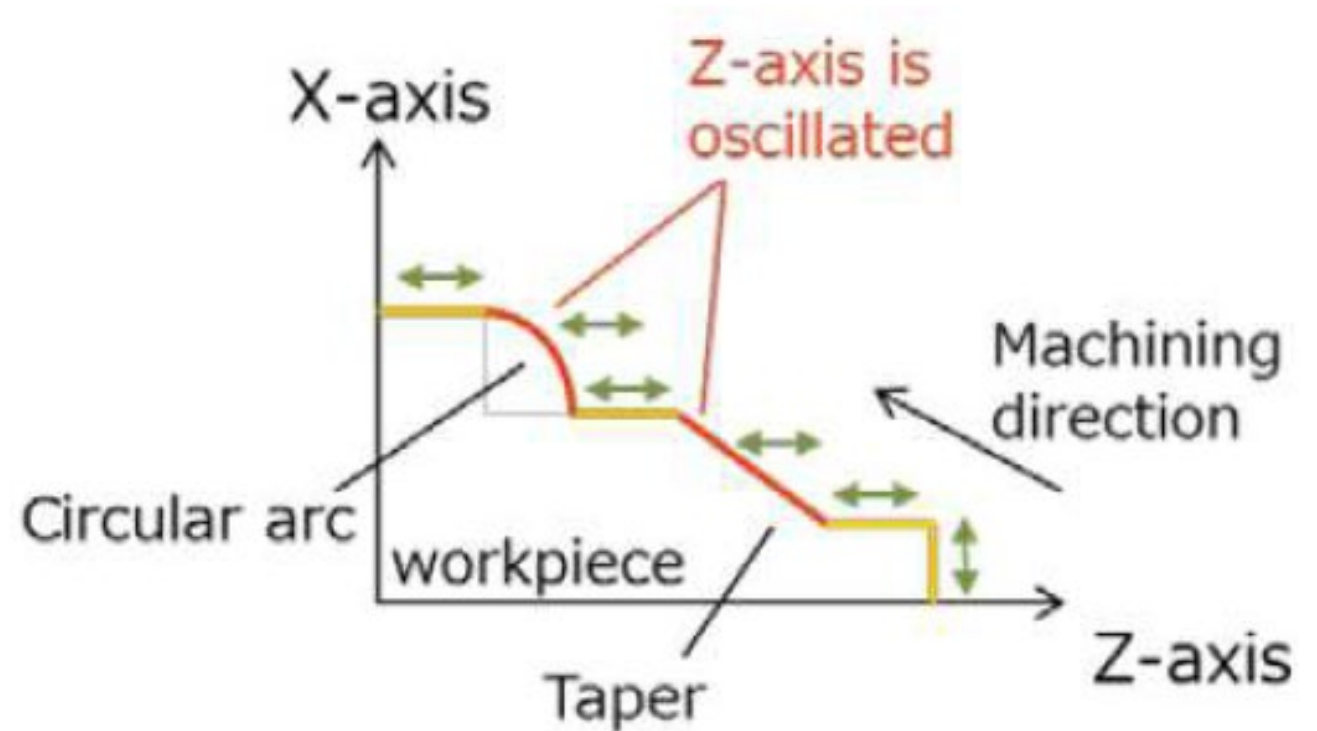
- Oscillation Cutting is a technological breakthrough that oscillates a servo axis to help break chips in tough to cut materials, reduces heat in the cut, while not diminishing tool life.
- This function oscillates the specified axis, and cutting is performed by synchronizing the oscillation of the specified axis with the rotation of the main spindle.
- Interruption in the cut breaks material into small chips.
- This function can be used for turning, drilling, boring, grooving, or cutoff operations.

Benefits of Servo Learning Oscillation Cutting

- Productivity is increased by significantly reducing operator interruption to remove hanging or bird nesting chips
- Creates the ultimate solution for materials that are normally difficult to break chips
- Capable on multiple axes (X1 and Z1)
- Conventional programming can be used (Simple on/off function for oscillation)
- Oscillation settings can be adjusted within the program for machining many types of features with multiple tools

Various Oscillation Capable Machining Operations

- OD turning
- Drilling
- Boring
- Grooving
- Grooving
- Cutoff
- Circular Interpolation
- Linear interpolation



Chips from Servo Learning Oscillation Cutting

With Oscillation Cutting



Chips are broken into small pieces and effectively escape the cutting area

Without Oscillation Cutting

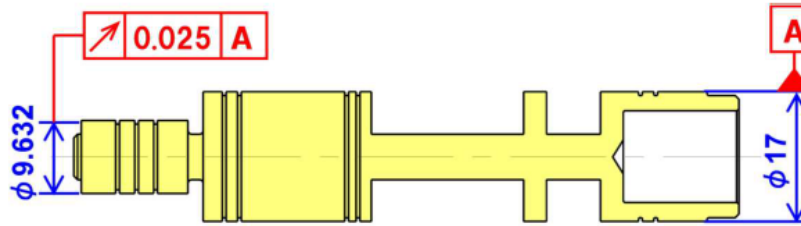


Chips do not break and interfere with workpiece and cutting operations

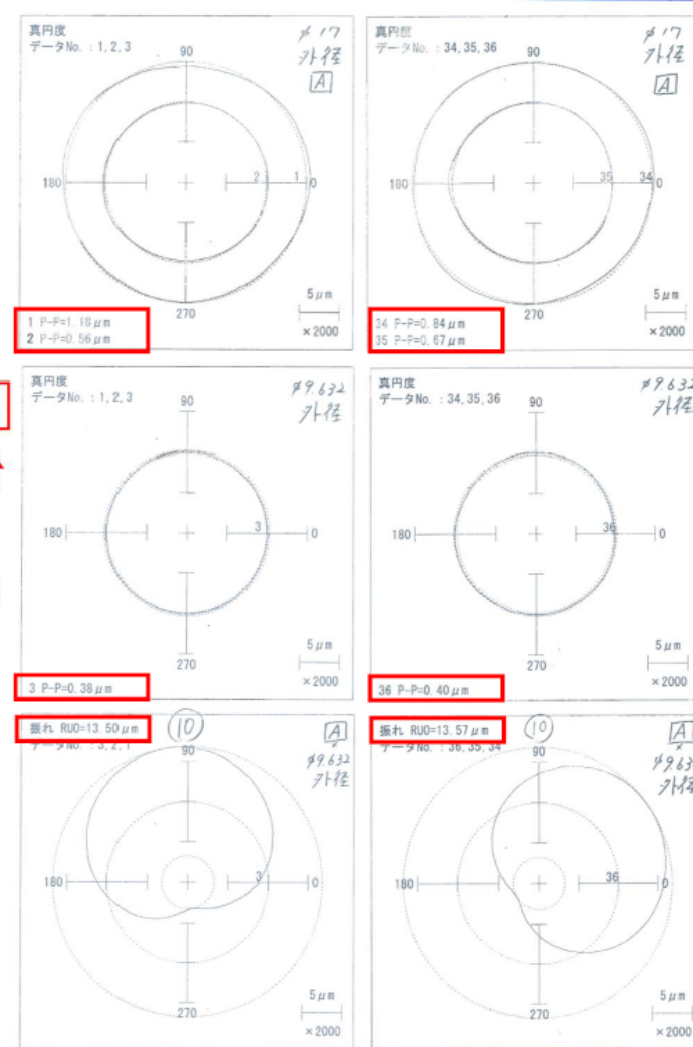
Part Features Minimally Effected by Oscillation Cutting Function



Geometric tolerance comparison between regular cutting and oscillation cutting



No difference in roundness and runout between regular cutting and oscillation cutting



Regular cutting

Oscillation cutting

How is Servo Learning Oscillation Cutting Programmed?

- Oscillation cutting is performed by specifying the dedicated G code (G8.5P2). It is valid until cancelled with G8.5P0
- Oscillation data is calculated based on the main spindle speed and the feed rate of the specified axis
- Oscillations per revolution and depth of oscillations are specified easily within the program
- Servo Learning feature ensures that the oscillation code that is programmed is exactly what is executed
- This eliminates any “tweaking” of the program to break chips properly

Machine Compatibility

- Current machines that Servo Learning Oscillation Cutting is available for:
 - S205/6-II
 - B0325B-III, B0326-III, B0386-III (SN 21136BA & later), SS327-5AX
 - B0126/206-III (SN 22637BA & later)
- Coming Soon
 - B0125/205-III (needs 0i-TF PLUS control)
 - BW129Z/209Z
 - B0325V-III (currently Z1 axis only) (needs 0i-TF PLUS control)

Retrofits for Servo Learning Oscillation are not possible due to Fanuc hardware limitations

Required Parts

- Servo Learning Oscillation is strictly software
- No hardware is needed for this function
- Tsugami machines are specifically built to perform oscillation cutting functions from the factory



For more information on Servo Learning Oscillation Cutting, please contact your local Rem Sales Regional Sales Manger or visit us at www.remsales.com