



Instruction – Cut Catching Live Toolholder Programming Sequence for Part Catching Operation

To ensure the correct operation of the **NGT Cut Catching Live Toolholder**, the CNC program must include a dedicated machining sequence that synchronizes the parting operation with the toolholder's mechanical catching mechanism.

The sequence below is provided as a programming example and should be adapted to the specific CNC machine, controller, spindle speed, workpiece geometry, and machining conditions.

Recommended Programming Sequence

Position the cut-off tool at the programmed parting location.

Activate external coolant.

Perform the parting operation until approximately **Ø3 mm** remaining material.

Start the live tool in the **clockwise direction**. This action raises the internal catching arm.

Apply a short dwell time (approximately **2 seconds**) to allow the catching mechanism to reach its fully open position.

Stop the live tool rotation.

Reduce the main spindle speed.

Complete the final cut to **X0**, separating the component from the bar.

Retract the cut-off tool from the workpiece.

Stop the main spindle.

Move the machine to the unloading position (user-defined X and Z coordinates).

Rotate the live tool in the **counter-clockwise direction** to lower the catching arm and release the finished component.

Apply a dwell time (approximately **3 seconds**) to ensure complete part release.

Stop the live tool.

Retract the axes to a safe tool change position.



Important Notes

The unloading position (**X** and **Z**) must be defined by the machine programmer according to the machine layout and the selected unloading method.

The spindle speeds and feed rates shown in the example are for reference only and must be optimized according to the workpiece material and cutting conditions.

Dwell times may require adjustment depending on the machine dynamics.

The live tool rotation direction is essential:

Clockwise rotation → Opens (raises) the catching arm.

Counter-clockwise rotation → Closes (lowers) the catching arm and releases the part.

Before production, verify the complete sequence in single-block mode to ensure collision-free operation.

The sample G-code is intended as a programming reference and may require adaptation to different CNC controllers (Fanuc, Siemens, Mitsubishi, Okuma, etc.) **Programming**

Example CNC Programming Sequence

```
T11                                ; (Parting Tool)

G0 G90 X21 Z-10                    ; Position the tool
M108                               ; Activate external coolant
G1 F0.05 X3                        ; Part off until Ø3 mm remaining
S1=40 M1=4                         ; Rotate the live tool clockwise
                                   ; Raise the part-catching arm
G4 F2                              ; Dwell 2 seconds
M1=5                               ; Stop live tool rotation
S4=500 M109                       ; Reduce main spindle speed
G1 F0.03 X0                        ; Complete the cut at X0
G0 G90 X30                         ; Retract the parting tool
M5                                 ; Stop the main spindle
G0 X? Z?                          ; Move to the unloading position
                                   ; Define X and Z coordinates
according to the machine layout
S1=30 M1=3                        ; Rotate the live tool counter-
clockwise                         ; Lower the catching arm and
release the part
G4 F3.1                           ; Dwell to ensure complete part
release
M1=5                               ; Stop live tool rotation
G0 G90 X150 Z200                  ; Retract to the tool change
position
M30                               ; End of program
```

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