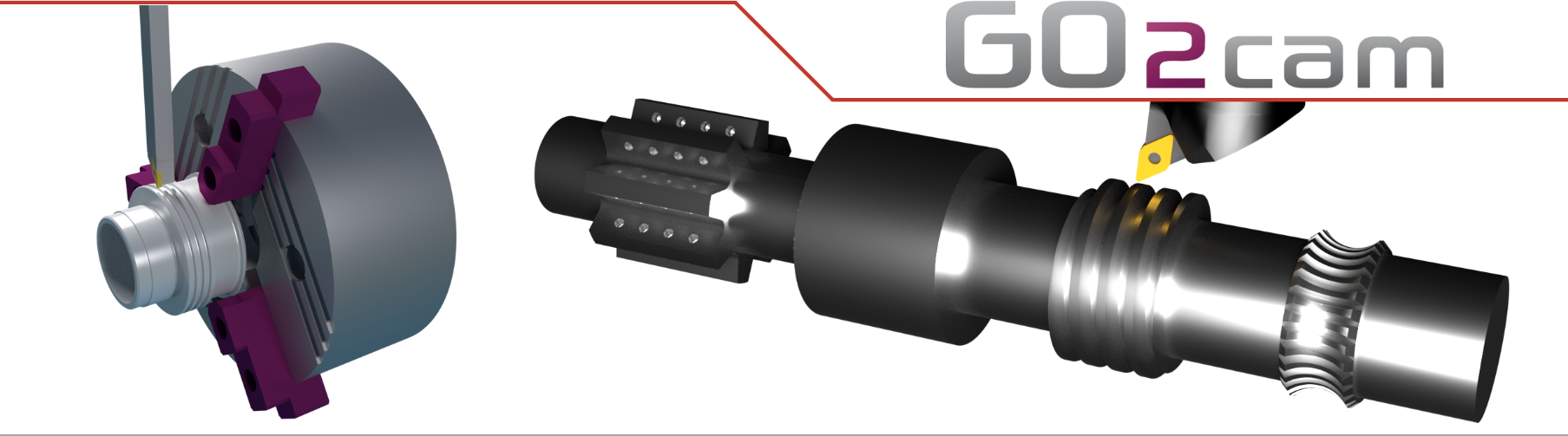
T01

GO2cam V6.10

Tutorial

T01 – Pawn



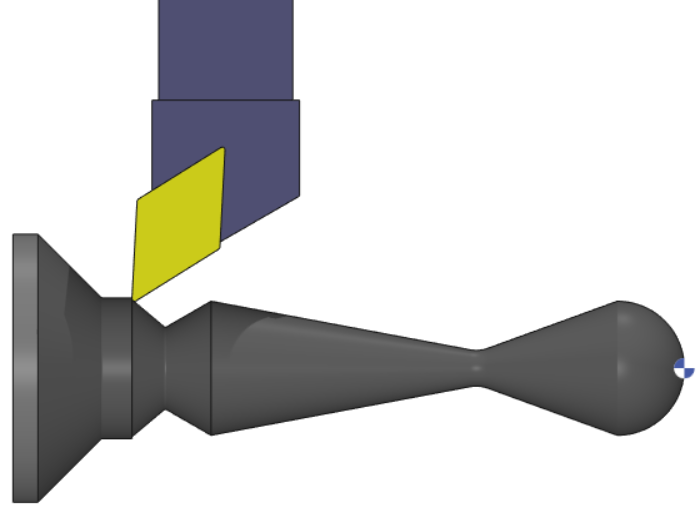
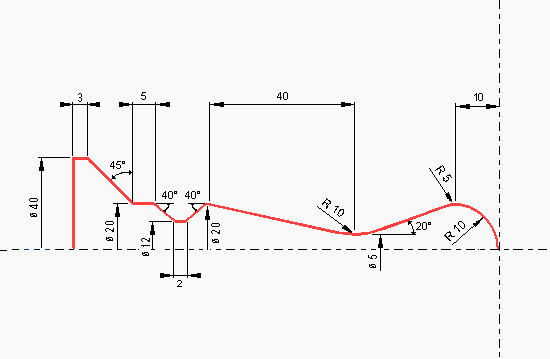
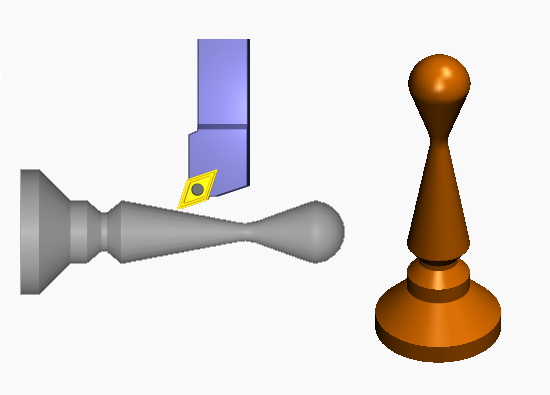
T01 - Pawn

**Introduction**

Welcome to this chess pawn creation tutorial.

This tutorial has the objective to help the user:

* Learn how to use the turning environment in GO2cam
* Understand the uses and capabilities of GO2cam in turning.
* Get used to the user interface and the mouse actions by practicing on a simple example.

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**Extra files**

In the Basic Training Pack, you can find:

* the pdf file of this tutorial

The tutorials are additional resources to GO2cam's online help. You can access the online help by selecting the Help menu in GO2cam or by pressing F1.

1. **Process for the Design :**

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| 1. Choice of the Turning environment in the homepage :  * Left-click on the Turning icon the most on the right   Note: the icons represent the type of product. If your licence do not include it, the product icon is greyed.  The software opens in design mode by default.   * Left-click on Shaft * Left-click on Shaft Creation |  |
| 1. Sketch of the part :  * Left-click on the Shaft Creation * Left-click to check that the  is activated in order to choose the direction of the first element * Choice of the starting point: Left-click directly on the origin of the reference plane like shown in the image.   GO2cam proposes alternate lengths and diameters.  This choice is shown by an orange line linked to the motion of the cursor.   * Type in 20and press the Enter key. |  |
| 1. Length:   You can enter positive or negative values of length depending on the direction of the + sign defined by  or .   * The button should be in the position of , if it is not, Left-click on the button to change the direction. * Type in 10, Enter key. |  |
| 1. Creation of a cone A=20°, Ø=5 :  * Left-click on * Choose the mode of creation of the cone clicking on until it becomes  so that you define the cone by its angle and diameter. * Type in 20 for the angle, Press the Enter key, Type in 5 for the Diameter, Press the Enter key * Left-click on |  |
| 1. Creation of a cone L=40, Ø=20:  * Change the mode of creation of the cone clicking on until it turns to , so that you can define the cone by its length and diameter. * Type in 40 for the length and 20 for the Diameter * Left-click on |  |
| 1. Creation of a cone A=40°, Ø=12:  * Change the mode of creation of the cone clicking on until it turns to, so that you define the cone by its angle and diameter * Type 40 for the angle and 12 for the Diameter * Left-click on * Left-click on  to frame all geometric elements on the screen. |  |
| 1. Length :  * Left-click on * Type 2 and press Enter | Chart, line chart  Description automatically generated |
| 1. Creation of a cone A=40°, Ø=20:  * Left-click on * Type 40 for the angle and 20 for the Diameter * Left-click on |  |
| 1. Length:  * Left-click on * Type 5 and press **Enter** | Chart, line chart  Description automatically generated |
| 1. Creation of a cone A=45°, Ø=40 :  * Left-click on * Type 45 for the angle and 40 for the Diameter * Left-click on |  |
| 1. Length Z=3 :  * Left-click on * Type 3, Enter * Left-click on | Chart, line chart  Description automatically generated |
| 1. Diameter Ø=0 :   To finish the part, we can click on existing elements as guide:   * Left-click on the horizontal axis * Click to verify |  |
| 1. Finishing Design :  * Left-click on Zoom , then left-click on the screen twice to select the zone you want to magnify like shown on the picture * Press the Esc key to end the Zoom function * Left-click on the Fillets function   To create a fillet you can either click directly on the corner where the fillet is or click on the 2 elements whose intersection is the fillet.   * Type in 10 for the Radius and press Enter * Left-click on the 2 corners where are located the fillets   For the 5 mm fillet, it is advised to click on the 2 elements one after another. The order of selection is not important.   * Type in 5 and [ Enter key * Left-click on an element (image A) * Left-click on the other element (image B) * Esc key to exit the Fillet function * Left-click on   The part is finished |  |

1. **Process for the Machining:**

Targets:

* Application of cycles for turning and grooving :
* Selection of geometry for machining
* Simple cycle parameters definition
* Selection of tool
* Use machining tree: modifying a cycle
* Tool path simulation

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| 1. Turning :  * Left-click on the **Turning** menu   The stock is automatically created in relation to the profile.  **Note :** It is a cylindrical stock defined with a constant 5 mm overflow around the profile.  We are going to modify the stock manually.   * In the Zmaxi field, type 2 to increase the stock length by 2mm from the origin * Then enter the value of **-110** for the **Zmini** * Left-click on validate |  |

Ope 10 Roughing

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| 1. Geometry selection :      * Left-click on * Left-click on Geometry Selection * Left-click on the first arc, on the bottom (image A) * Left-click on the horizontal segment, on the left (image B) * Left-click on **Profil OK**   Note: the approach and return vectors are tangent to the elements shown.     * Left-click on **,** to change the value dynamically on the screen. Click on the screen when 180° is displayed. * Repeat the same action for the Return Vector, with the value of 90°. |  |
| 1. Tool selection :  * Left-click on , then on Turning Facing Cutter   Graphical user interface, text, application, email  Description automatically generated   * Left-click on * Select **ST\_Sandvik\_1212\_Right** and   **ST\_Sandvik\_1212\_Left.**   * Left-click on **Confirm** * After downloading and installing, select ST-SANDVIK-1212-LEFT under "User" * In the list of tool, select **MSSDJCL1212K07-S** * Tool light turns green | Graphical user interface, text, application, email  Description automatically generated  Logo  Description automatically generated |
| 1. Machining cycle selection :  * Left-click on  then on Roughing * In the list of techno, Left-click on **"Main Spindle - Outside"** |  |
| 1. Toolpath calculation :  * Left-click on **Cycle Calculation**   The toolpath is calculated and the evolutive stock is machined. | Chart, line chart  Description automatically generated |

Ope 20 Finishing

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| 1. Geometry selection :     **The menu is still active.**   * Left-click on * In the machining tree click on  to expand the roughing cycle details * Left-click on the ‘Profile’ drag and drop it on the screen   **Note: This operation allows the copy of the existing machining profile, thus avoiding the repetition of the same selection.** |  |
| 1. Tool selection :  * Left-click on tools  then on Turning Facing Cutter * Select **ST\_Sandvik\_1212\_Left** below user * In the list of tool, select **MS SDJCL1212K07-S** | Logo  Description automatically generated |
| 1. Machining cycle selection :  * Left-click on Cycles  then on **Finish**. * In the list of techno, Left-click on Main Spindle-outside. * In the Movement tab, set the Leadin Overlength/Vector to 1. |  |
| 1. Toolpath calculation :  * Left-click on Cycle Calculation |  |

Modification of a cycle

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| 1. Use of the machining tree:   The machining tree is a working tool that allows :   * Obtaining the step-by-step list of operations with all the useful information, * Modifying the operations (selected geometry, technology, tool) * Manipulating the cycles : copy, move in the list etc.   **Edit a cycle for modification**   * Note: The Roughing and Finishing cycles have machined the groove, as shown in the image. * We will modify a parameter of these cycles to automatically avoid this groove.   To obtain this result, we are going to modify one option in the cycles:   * Left-click on the button  located in front of the name of the Roughing operation to expand the cycle information. * Left-click twice on the line ‘Main Spindle-Outside’.   This strategy dialogue box gathers all the parameters useful to calculate the toolpath.   * The option **Undercut** is set to ‘**No**’, Left-click on ‘**Yes**’, * Graphical user interface, application    Description automatically generated with medium confidenceLeft-click twice in « **Undercut min width** » field, type in 15, and press the Enter key   Left-click on Execute, the machining will be updated.  Repeat the same for the Finish cycle.  This setting will only machine the first sub-pocket(>15 mm width) and the second sub-pocket will not be machined (the groove with <15 mm width) |  |

Ope 30 Grooving

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| 1. Start :  * Left-click on * Left-click on Zoom , then Left-click on the screen twice to select the area you want to see in details. |  |
| 1. Geometry selection :  * Left-click on * Left-click on the first flank of groove, on the top (image A), * Left-click on the second flank of groove, on the top (image B), * Left-click on **Profil OK**   No need to modify the approach and return vectors which are tangent to the elements shown. |  |
| * Tool selection : * Left-click on , Then select the Groove Cutter   Graphical user interface, text, application, email  Description automatically generated   * Left-click on * Select **ST\_Sandvik\_1212\_Right** and   **ST\_Sandvik\_1212\_Left.**   * Left-click on **Confirm** to download the tool data * After downloading and installing, select ST-SANDVIK-1212-LEFT in the tool’s library. * In the list of tool, select **MS LF123E11 1212B-S** | Graphical user interface, text, application, email  Description automatically generated  A picture containing diagram  Description automatically generated |
| 1. Machining cycle selection :  * Left-click on , then on **Direct** |  |
| 1. Toolpath calculation :  * Left-click on **Cycle Calculation** |  |

Simulation and NC blocks

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| 1. Simulation :      * Left-click on * Left-click on ****Simulation**** * Left-click onto reach the step by step mode**,** Then click on theor press the space key to go forward. * To simulate in continuous mode**, Left-click on** **.** * Left-click onor Esc to stop the simulation   **Note :** You can rotate the part by pressing and holding the left-click button and moving the mouse. |  |
| 1. NC Code:  * Left-click on * Among the proposed list, Left-click on post-processor « **T67\_Fanuc** » * Left-click on **Open** * Left-click on **Confirm**   The NC codes for the machining of this workpiece are generated. | |