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Siemens Digital Industries Software

User Documentation

for

Post Configurator Postprocessor

Combine Rotary

Summary

This document will help user to understand how to use the combine rotary layer to combine and omit consecutive rotary move outputs when possible.

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Table of Contents

1 Introduction

This document explains the functionality enabled by the Combine Rotary layer.

1.1 What is it

This combine rotary layer enable the users to combine consecutive rotary moves (rapid move motion type) into a single move when there is no change in X, Y and Z. The layer includes tcl and psl files. Post writer can import this layer by PC layer manager to any machining postprocessors.
This layer only works for NX1899 and later versions.

About Layer manager, please reference NX help

- https://docs.plm.automation.siemens.com/tdoc/nx/1899/nx_help#uid:xid1128418:index_mfgpostconfig:xid1487919:xid1446295

2 Function

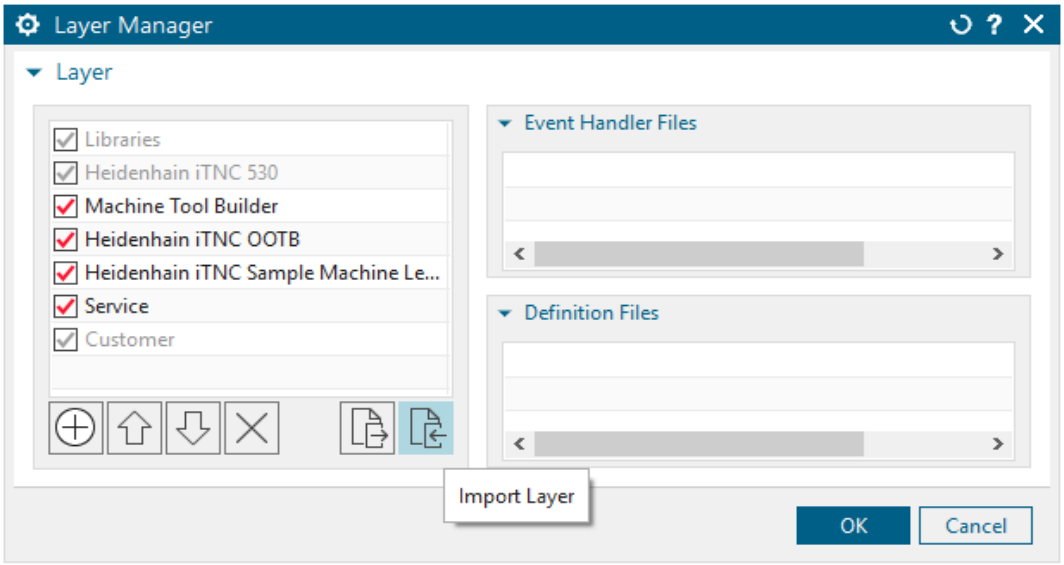
Once this layer is imported and turned on, the postprocessor will combine consecutive rotary moves (rapid move motion type) into a single move when there is no change in X, Y and Z. The combining of blocks will be terminated when the rotary axis being combined reverses its direction or the total angle of the combined rotary move would have exceeded 180 degrees.

Users will also have the option to output rotary angles at the equator (0, +/-180, +/-360). In that case, this move will be forced output and combining will be interrupted.

3 How to use it

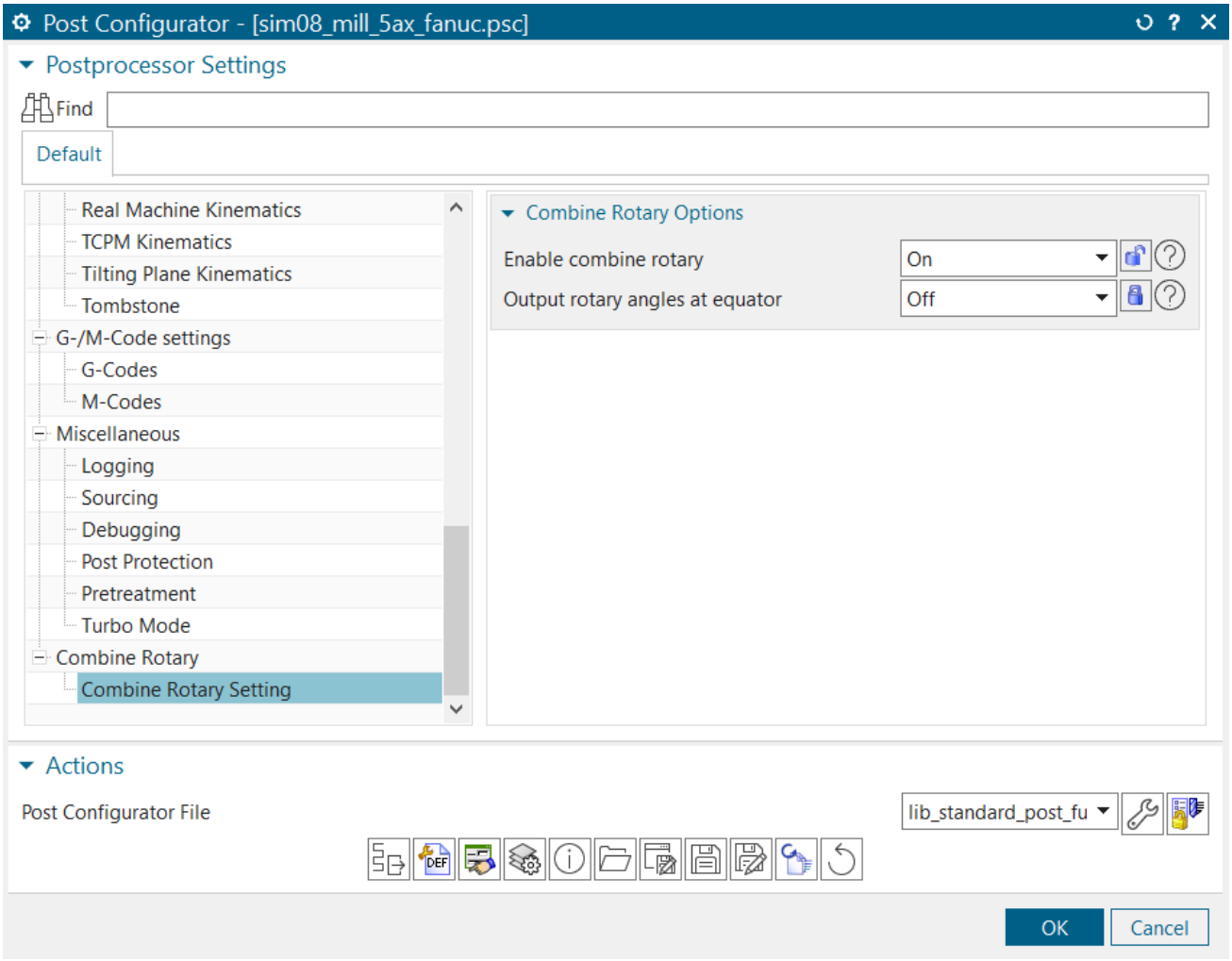
3.1 Import Layer

Click Import Layer button of Layer Manager, choose CombineRotary.psl file in browser.



3.2 Turn on switches

Turn on “Enable combine rotary” to enable this functionality. Turn on “Output rotary angles at equator” to force output at equator angles.



3.3 Sample NC codes

Before combining rotary:

```
N1 G0 G53 Z0.
N2 T01 M6
N3 G54
N4 G17 G0 G90 X0. Y45.347 A-90. C0. S2000 M3
N5 G43 Z85.347 H1
N6 G94 G81 G98 Z28.944 F200. R48.214
N7 G80
N8 G0 X0. Y45.347 Z85.347 C2.647
N9 C5.294
N10 C7.941
N11 C10.588
N12 C13.235
N13 C15.882
N14 C18.529
N15 C21.176
N16 C23.824
N17 C26.471
N18 C29.118
N19 C31.765
N20 C34.412
N21 C37.059
N22 C39.706
N23 C42.353
N24 C45.
N25 G81 Z28.944 F200. R48.214
N26 G80
N27 G0 X0. Y45.347 Z85.347 C47.647
N28 C50.294
N29 C52.941
N30 C55.588
N31 C58.235
N32 C60.882
N33 C63.529
N34 C66.176
N35 C68.824
N36 C71.471
N37 C74.118
N38 C76.765
N39 C79.412
N40 C82.059
N41 C84.706
N42 C87.353
N43 C90.
N44 G81 Z28.944 F200. R48.214

…
```

After combining rotary:

```
N1 G0 G53 Z0.
N2 T01 M6
N3 G54
N4 G17 G0 G90 X0. Y45.347 A-90. C0. S2000 M3
N5 G43 Z85.347 H1
N6 G94 G81 G98 Z28.944 F200. R48.214
N7 G80
N8 G0 X0. Y45.347 Z85.347 C45.
N9 G81 Z28.944 F200. R48.214
N10 G80
N11 G0 X0. Y45.347 Z85.347 C90.
N12 G81 Z28.944 F200. R48.214
…
```

Consecutive C-axis rotary moves are omitted and combined in between drilling motions.

4 Software Versions

This document has been created and maintained for below versions,

NX Version	Comment
NX1899	

5 Documentation History

When	Who	What
14-Jul-2020	XY	Initial version