Article - CS155466

How to limit axis rotation in a FIL driven postprocessor in GPost of Creo Parametric

Created: 18-Dec-2013 | Modified: 01-Sep-2015 | Last Seen: 12-Oct-2018

Applies To

- Creo Parametric 1.0 to 3.0
- GPOST 6.4

Description

- How to limit axis rotation in a FIL driven postprocessor in GPost of Creo Parametric
- How to set different ranges for axis values in a flexible way, using the same postprocessor
- Machine with nutator sometimes has more than one axis combination - how to force one of them by disallowing the other?

Cause

- Originally automatic repositioning only was implemented for standard nutator machines with C axis and B nutator using the machine type **5-axis Dual Rotary Head or Nutator**.
- The GPOST functionality has been expanded by an updated executable ptcpostm.exe that allows to switch to repositioning for B axis with A axis nutator
- With machine type **5-axis Rotary Table / Rotary Head** for machines with one rotary head and a nutator table (45 degree table), automatic repositioning does not seem to work

Resolution

- Allow repositioning in the postprocessor settings for Axis Limit checking:
  - In the **Option File Generator** go to **Machine Tool Type > Type, Specs, & Axes**
  - Under tab **Axes** switch **Axis Limit checking** to **Use automatic repositioning**

- GPOST will try to find axis position combinations that are within the limits
- Note that machines with nutator, may need some additional steps, depending on their kinematics:
    - See article CS216905 (https://support.ptc.com/appserver/cs/view/solution.jsp?n=CS216905) : Adapting GPOST postprocessors for 5-axis machines with a nutator for repositioning

Instead of using limits that are hard coded in the postprocessor, they can be made more flexible by driving them with CL commands:

- Define axis limitation in the FIL programming adding a limit command, for example for B-axis:

```
CIMFIL/AT,LIMIT,BAXIS
  BMN=POSTF(7,5)
  BMX=POSTF(7,6)
  DMY=POSTF(2,3,596,BMN)
  DMY=POSTF(2,3,602,BMX)
CIMFIL/OFF
```

    - The macro simply applies the arguments of the command to the lower and upper limit of an axis during runtime:
        - The DBLCOM variables 592-597 define the lower limits of XYZABC
        - The DBLCOM variables 598-603 define the upper limits of XYZABC
    - Setting the range for an axis, can now be done by adding the command to the CLDATA file (before the initial tool location)

```
LIMIT/<axis>,<lower limit>,<upper limit>
```

- Example for an allowed range between 0 and +180:

```
LIMIT/BAXIS,0,180
```