This specification defines the functionality of the postprocessor your company will order. It is needed for the final acceptance and the customer must sign this document with an authorized signature.

Please return this document to us and give us additional information with further information for

* Scheme of machine with definition of axes to be programmed
* List of G- and M-codes
* Sample program with program header, program trailer, tool change and all relevant commands needed. Please comment special commands and cycles.

## Customer data:

Company: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Street: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Postal Code: \_\_\_\_\_\_\_\_\_ Location:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact 1: Mr. / Mrs.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Telephone 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E-Mail 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact 2: Mr. / Mrs.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Telephone 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E-Mail 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ / Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Unique Machine/-control/vendor names:

Machine: (e.g.: CTX420) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Manufacturer: (e.g.: DMG) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Controller: (e.g.: S840D) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Machining type:

Turning

Milling

Drilling

Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Configuration of axes**:

Linear axis (e.g. Z): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rotation axis (e.g. C): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Linear axis (e.g. X): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rotation axis (e.g. A): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Linear axis (e.g. Y): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rotation axis: (e.g. B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Coordinate axis for the spindle axis (e.g. Z)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Turning mode**

# Turrets, tool holders (channels)

## Turret 1:

Active Tools:

Yes

No

Number of controlled axis: \_\_\_\_

Name of axis:  X  Y  Z  A  B  C  S \_\_ \_\_

**Turret 2**:

Active Tools:

Yes

No

Number of controlled axis: \_\_\_\_

Name of axis:  X  Y  Z  A  B  C  S \_\_ \_\_

**Turret 3**:

Active Tools:

Yes

No

Number of controlled axis: \_\_\_\_

Name of axis:  X  Y  Z  A  B  C  S \_\_ \_\_

# For additional turrets, tool holders, copy above and fill out block Spindles:

## Spindle 1:

Number of controlled axis: \_\_\_\_

Name of axis:  X  Y  Z  A  B  C  S \_\_ \_\_

**Spindle 2**:

Number of controlled axis: \_\_\_\_

Name of axis:  X  Y  Z  A  B  C  S \_\_ \_\_

**Spindle 3**:

Number of controlled axis: \_\_\_\_

Name of axis:  X  Y  Z  A  B  C  S \_\_ \_\_   
  
**For additional spindles, copy above and fill out block**

The axes naming for turrets, tool holder, spindles need to be accurately defined, e.g. X1, Y2, Z2, S3, etc.)

# 

## Additional Axis (stationary support, tailstock, …)

## Additional axis 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of axis: :  X  Y  Z  A  B  C \_\_ \_\_

M / G function \_\_\_\_\_\_\_\_\_

## Additional axis 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of axis: :  X  Y  Z  A  B  C \_\_ \_\_

M / G function \_\_\_\_\_\_\_\_\_

## Additional axis 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of axis: :  X  Y  Z  A  B  C \_\_ \_\_

M / G function \_\_\_\_\_\_\_\_\_

## Additional axis 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of axis: :  X  Y  Z  A  B  C \_\_ \_\_

M / G function \_\_\_\_\_\_\_\_\_

## Active tools

## Axis direction 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of axis: :  X  Y  Z  A  B  C \_\_ \_\_

M / G function \_\_\_\_\_\_\_\_\_

## Axis direction 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of axis: :  X  Y  Z  A  B  C \_\_ \_\_

M / G function \_\_\_\_\_\_\_\_\_

# Milling mode

## Axis:

## Number of controlled axis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Description of axis:

Name of axis:  X  Y  Z  A  B  C \_\_ \_\_

**Horizontal / vertical head**:

Yes

No

**When horizontal / vertical head is used, is it switched automatically? (e.g. M54)**

Yes

No

**If “yes“, which code to output**:

Horizontal M: \_\_\_\_\_

Vertical M: \_\_\_\_\_

**If “no“, what is standard:**

Horizontal

Vertikal

**Axis mode**:

Positioning

Simultaneous

**When positioning, what Code is used?**

Cycle 19 / Cycle 800 / G7 / …: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**When simultaneous, what Code is used?**

Traori / M128 / …: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Is the code for rotation axis customized for your machine and tested through you or the machine manufacturer?**

Yes

No

**Rotation axes available?**

Yes

No

**When rotation axes are available, where are these axis mounted (head or table)?**

**What are the minimum/maximum limits?**

**(e.g. A is turning around Y within range of - 30° to + 45°)?**

A  Head  Table \_\_\_\_\_\_\_\_\_\_\_

B  Head  Table \_\_\_\_\_\_\_\_\_\_\_

C  Head  Table \_\_\_\_\_\_\_\_\_\_\_

Other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Polar coordinate output needed?**

Yes

No

**Cylindrical mode needed**

Yes

No

**For 5-axis machines only: Are the axis orthogonal (perpendicular)?**

Yes

No

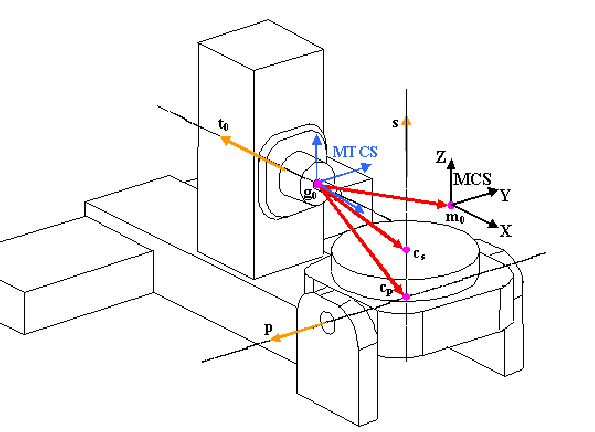
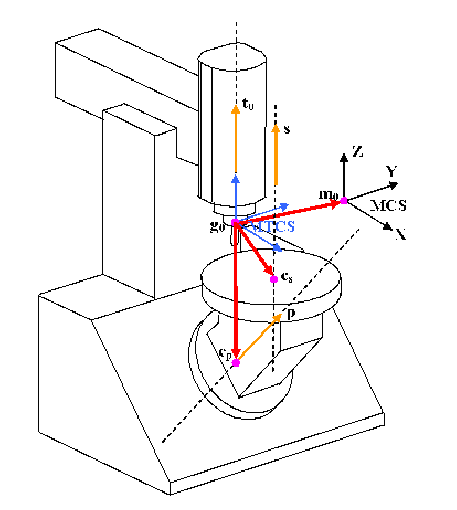
**Distance of turning axis to center, if needed:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Kinematics:**

Please insert machine kinematics view/scheme, e.g. :



## Working planes:

G17 (+XY)

–G17 (-XY)

G18 (XZ)

–G18 (-XZ)

G19 (YZ)

–G19 (-YZ)

## Tool change:

Automatic Code (e.g. M6): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Manual Code (e.g. M66): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Tool preselection:

Yes Code: (e.g. M66): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

No

## Pallet change/loading robot:

No   
 Yes code output only (e.g. M60): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Yes separate list/file output needed – attach list/file with description

**Drilling mode**

## Used standard drilling cycles:

Drilling

Drilling with delay

Breakchip drilling

Peck drilling

Tapping

Reaming

Other drilling cycle (please name and describe, sample output)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Description of working area:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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## The scope of features and functions correspond with the possibilities of the NX-CAM Programming system.

**NX standard-postprocessors include the following functionalities:**

Linear and rotational movements (rapid and with feeds/speeds) and 5 axes positioning

Simultaneous movements

Tool change

Retract moves

## G - functions:

Delay (e.g. G04)

Toolpath offset (e.g. G41,G42)

Standard drilling cycles (e.g. G81)

Origin definition (e.g. G54–G59)

Positioning absolute or incremental (e.g. G90/G91)

## M - functions:

Programmed stop (e.g. M00)

Spindle direction, Spindle stop (e.g. M03,M04,M05)

Toolchange (e.g. M06 T1)

Coolant code normal or through tool (e.g. M07,M08)

Axis clamp or unclamp as M-function

## Requirements for other NON NX standard functionalities:

## On Machine Probing:

Yes

No

If yes, please select option and attach sample program

Option UDE

Programming through positioning moves and cycle definition with menue  
input (UserDefinedEvent). No tool path simulation

Option UserCycle  
 Programming through cycle operations with cycle parameter  
 input and tool path simulation

Option Renishaw Productivity+  
 Programming through the integrated module  
 Productivity Plus from Renishaw  
 Special Renishaw cycles with tool path simulation  
 Option Blum Probing Cycles (BL9700)  
 Programming through Pt2Pt and UDE output, no tool path simulation  
  With machine simulation

Other probing cycle programming/output  
 Please attach separate specification and meaningful program sample

## Tool calibration:

Yes

No

If yes, please select option and attach sample program

Blum cycles  
 Programming through positioning moves and cycle definition with menue

input (UserDefinedEvent). No tool path simulation

Other cycleprogramming/-output  
 Please attach separate specification or meaningful program sample

## Angled heads

Yes

No

If yes, please select option and attach sample program

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Simultaneous Turning 3-Axis:**

Yes

No

If yes, please select option and attach sample program..  
Customer please check function on machine.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Subprogramming:

Yes

No

When “yes”, please attach a demo program.

## User- and special cycles:

Yes

No

When “yes”, please attach a sample program output

With cycle description

**Additional output of processing time table:**

Yes

No

If Yes, what requirements?  
 Availability of according machine parameters?  
 (Rapid feed values, M-Code times, etc.)

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Output of additional lists:

Yes (e.g. list of origins, toollist …)

No

When “yes”, which lists are needed? Attach sample list

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please attach a sample

## Other requirements:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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## NX Version:

NX7

NX8

NX9

NX10

NX11

NX12

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Operating System:

Windows XP (32 bit)

Windows XP (64 bit)

Windows 7 (32 bit)

Windows 7 (64 bit)

Windows 8/8.1 (64 bit)

Windows 10 (64 bit)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_