

# Probing PL+S Siemens NX Edition

*TTL's post processor specific probing module for NX CAM*

## Benefits

*Process control defined in NX CAM and integrated into NC programs.*

*Set-up from CAD model features.*

*Spindle probes and tool setting cycles.*

*Confidence in safe movements.*

*Increased component quality.*

*Reduced set-up time.*

*Maximise productivity.*

*Understanding process capability.*

## Features

*Use of 3D CAD models of probes for visualisation and simulation.*

*Calibrate tool length and diameter.*

*Calibrate on sphere and ring gauge.*

*Cut-Measure-Cut and macro logic.*

*Probe point surface and model driven.*

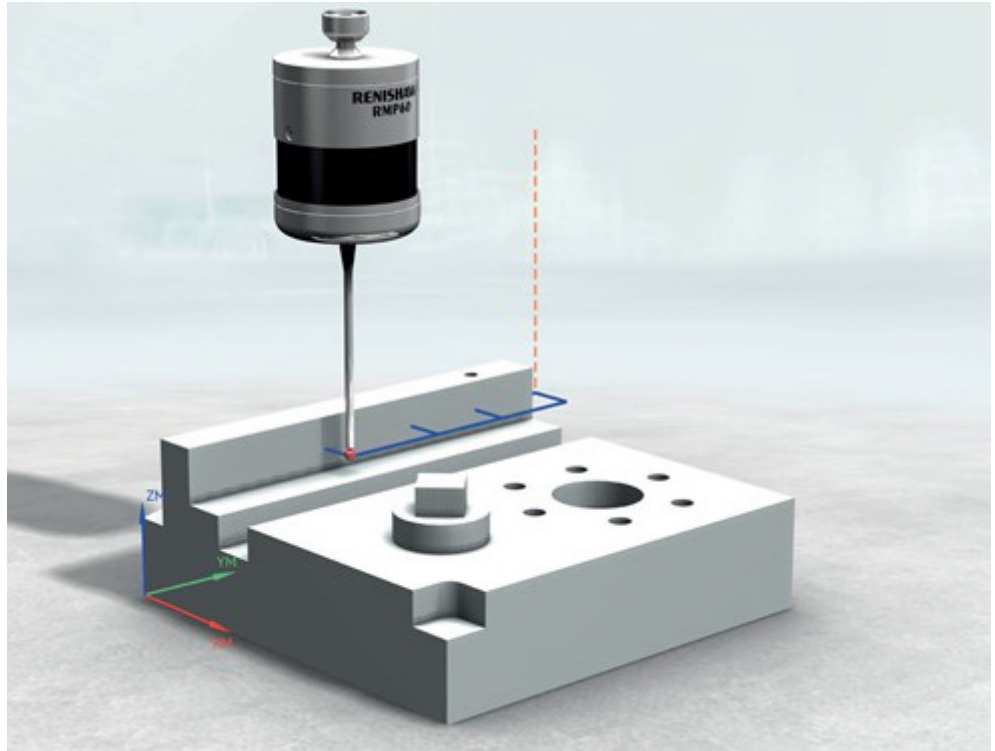
*Multi-axis alignment.*

*Probe bore or boss, corner, etc.*

*Go/No Go, D-Print.*

## NX versions

*NX 11 upwards*



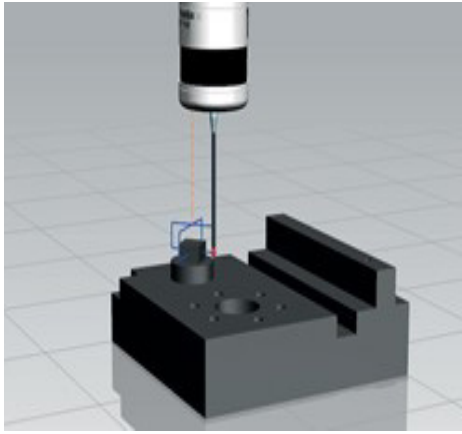
## Overview

*Probing PL+S Siemens NX Edition allows your engineers to plan, visualise and simulate NX CAM driven process control.*

*Use your existing machine tool 'Macro Probing' software for planning tool setting, part set-up and inspection strategies as well as process control.*

## Integrations available include:

- » *Renishaw Inspection/Inspection +*
- » *Siemens Macro cycles*
- » *BLUM Macro cycles*
- » *Marposs Macro cycles*
- » *M&H Macro cycles*
- » *Heidenhain Macro cycles*
- » *MSP NC Perfect Part*



## Probing PL+S is supplied in 2 bespoke components:

### Component 1

This is an NX template part which provides the specific macro software probing menu interface within NX.

It can be considered an extension of the existing NX probing menu options.

### Component 2

Custom TTL probing routines integrated into the machine post processor.

# Measurement Process Control

## Set-up

### Machine setting

- Plan alignment of rotary axes in-dexer's and fixturing elements used to position and hold components.
- Plan position of any indexer's centre of rotation, including reference points on fixtures.

### Part setting

- Set component identification to ensure or select the correct NC program.
- Set position of datum feature's to establish a work/part co-ordinate system (WCS/PCS).
- Set actual billet/component size to determine stock condition and roughing cut sequence.
- Set orientation of a component relative to machine axes- update co-ordinate system.

### Tool setting

- Measure length to establish a tool offset, also check that the length is within a specified tolerance.
- Measure diameter when spinning to establish actual rotating tool size offset.

## In-process

### In-cycle monitoring

- Plan for metal cutting to adapt to machining process variations, such as component distortion, tool deflection and thermal effects.
- Plan co-ordinate system, parameter and offset updates using a logical NX CAM integrated program flow, responding to actual process conditions.

### Broken tool detection

- Confirm presence of a tool.
- Confirm correct tool position and ensure tool pull-out has not occurred.
- Confirm a broken and/or chipped tool, define appropriate action.

## Reporting

### Process logging

- Capture manual or automated changes to process parameters, offsets or co-ordinate systems.
- Capture interventions to the process which may have influenced the outcome.

### Process verification

- Create inspection reports from NX CAM of the metal-cutting process, including critical features.
- Create confidence in the stability of the NX CAM machining process.

### Process reporting

- Confirm a documented report of component conformance.
- Confirm a historical tracking of critical feature dimensions, machine condition monitoring and scheduled for maintenance purposes.

