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# **Okuma America Corporation**

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## **THINC-API Release Notes For Machining Center**

**Document No.: S5015-003-11**

THINC-API	Version: S5015-003-11
Release Notes For Machining Center	Date: 04/30/2009

## Revision History

Date	Version	Description	Author
5/09/2007	S5015-003-00	Public release for Machining Center THINC-API Release 1.0.0.0	LHuynh
5/11/2007	S5015-003-01	Revise Public release for Machining Center THINC-API Release 1.0.0.0:  <ul style="list-style-type: none"> <li>- Remove section 3.0 Compatible and put in Installation Manual document</li> <li>- Remove section 4.0 Upgrades and put in THINC-API Help file.</li> <li>- Revise section 6.1 and 6.2</li> <li>- Use <a href="mailto:api@okuma.com">api@okuma.com</a> email instead of p100issues@okuma.com</li> </ul>	LHuynh
5/21/2007	S5015-003-02	Revise General defect – Cannot support 0.1 Micron option. Revise 4.1 section	LHuynh
06/04/2007	S5015-003-03	Public release for Machining Center THINC-API Release 1.1.0.0	LHuynh
10/19/2007	S5015-003-04	Public release for Machining Center THINC-API Release 1.3.0.0	LHuynh
2/22/2008	S5015-003-05	Public release for Machining Center THINC-API Release 1.6.0.0	LHuynh
04/11/2008	S5015-003-06	Public release for Machining Center THINC-API Release 1.6.0.0	LHuynh
06/27/2008	S5015-003-07	Public release for Machining Center THINC-API Release 1.6.3.0	LHuynh
07/25/2008	S5015-003-08	Public release for Machining Center THINC-API Release 1.6.4.0	LHuynh
10/27/2008	S5015-003-09	Public release for Machining Center THINC-API Release 1.7.00	LHuynh
12/18/2008	S5015-003-010	Public release for Machining Center THINC-API Release 1.8.0.0	LHuynh
04/30/2009	S5015-003-011	Public release for Machining Center THINC-API Release 1.9.1.0	LHuynh

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# Release Notes For Machining Center

## 1. Introduction

### 1.1 Disclaimer of Warranty

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### 1.2 Purpose

The purpose of the **Release Notes** document is to communicate major new features and changes in this release of the THINC-API for Machining Center libraries. It also documents known problems and workarounds.

### 1.3 Scope

This document describes Release 1.9.1.0 of THINC-API.

### 1.4 Definitions, Acronyms, and Abbreviations

GAC – Global Assembly Cache Windows folder located in 'C:\WINDOWS\assembly'

### 1.5 References

None

## 2. About This Release

Public Release 1.9.1.0 of the THINC-API library for Machining Center supports the following:

From this release, THINC API libraries will check dependency libraries during installation and at run-time. THINC API will fail to install or load if version of dependency libraries cannot support current version of THINC API.

Version of Okuma.CMDATAPI.dll in Public Release 1.9.1.0 is 1.7.0.1

Version of Okuma.CMCMDAPI.dll in Public Release 1.9.1.0 is 1.7.0.0

Version of APINotifierService.exe in Public Release 1.9.1.0 is 1.9.0.0

Version of Okuma.Flexnet.dll in Public Release 1.9.1.0 is 1.2.0.0

**The following functions of Okuma.CMDATAPI.dll library will be only available based on the version of NC control software:**

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Class	Interfaces
CTools2	Int32 GetMaxTools()
CTools2	Int32 GetToolNo(Int32 intPotNo)
CTools2	Int32 GetMaxPots()
CTools2	String* GetGroupNo(Int32 intPotNo)
CTools2	Int32 GetSerialNo(Int32 intPotNo)
CTools2	String* GetToolName(Int32 intPotNo)
CTools2	String* GetToolKind(Int32 intPotNo)
CTools2	Boolean IsToolInUse(Int32 intPotNo) void SetToolInUse(Int32 intPotNo, Boolean blnValue)
CTools2	Boolean IsStandardTool(Int32 intPotNo) void SetStandardTool(Int32 intPotNo, Boolean blnValue)
CTools2	Boolean IsAdjustmentTool(Int32 intPotNo) void SetAdjustmentTool(Int32 intPotNo, Boolean blnValue)
CTools2	CarrierStatusEnum GetCarrierStatus(Int32 intPotNo) ;
CTools2	ToolLifeModeEnum GetMode(Int32 intPotNo) void SetMode(Int32 intPotNo, ToolLifeModeEnum enValue)
CTools2	ToolLifeStatusEnum GetStatus(Int32 intPotNo)
CTools2	Int32 GetToolLife(Int32 intPotNo) void SetToolLife(Int32 intPotNo, Int32 intValue)
CTools2	Int32 GetToolLifeRemaining(Int32 intPotNo) void SetToolLifeRemaining(Int32 intPotNo, Int32 intValue)
CTools2	Int32 GetToolLifeRemainingTimeSecond(Int32 intPotNo)
CTools2	Double GetToolLengthOffset1(Int32 intPotNo) ArrayList* GetToolLengthOffset1(Int32 intFromPotIndex, Int32 intToPotIndex) void SetToolLengthOffset1(Int32 intPotNo, Double dblValue) void AddToolLengthOffset1(Int32 intPotNo, Double dblValue) void CalToolLengthOffset1(Int32 intPotNo, Double dblValue)
CTools2	Double GetToolLengthOffset2(Int32 intPotNo) ArrayList* GetToolLengthOffset2(Int32 intFromPotIndex, Int32 intToPotIndex) void SetToolLengthOffset2(Int32 intPotNo, Double dblValue) void AddToolLengthOffset2(Int32 intPotNo, Double dblValue) void CalToolLengthOffset2(Int32 intPotNo, Double dblValue)
CTools2	Double GetToolLengthOffset3(Int32 intPotNo) ArrayList* GetToolLengthOffset3(Int32 intFromPotIndex, Int32 intToPotIndex) void SetToolLengthOffset3(Int32 intPotNo, Double dblValue) void AddToolLengthOffset3(Int32 intPotNo, Double dblValue) void CalToolLengthOffset3(Int32 intPotNo, Double dblValue)
CTools2	Double GetCutterRCompOffset1(Int32 intPotNo) void SetCutterRCompOffset1(Int32 intPotNo, Double dblValue) void AddCutterRCompOffset1(Int32 intPotNo, Double dblValue) ArrayList* GetCutterRCompOffset1(Int32 intFromPotIndex, Int32 intToPotIndex)

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CTools2	Double GetCutterRCompOffset2(Int32 intPotNo) void SetCutterRCompOffset2(Int32 intPotNo, Double dblValue) void AddCutterRCompOffset2(Int32 intPotNo, Double dblValue) ArrayList* GetCutterRCompOffset2(Int32 intFromPotIndex, Int32 intToPotIndex)
CTools2	Double GetCutterRCompOffset3(Int32 intPotNo) void SetCutterRCompOffset4(Int32 intPotNo, Double dblValue) void AddCutterRCompOffset3(Int32 intPotNo, Double dblValue) ArrayList* GetCutterRCompOffset3(Int32 intFromPotIndex, Int32 intToPotIndex)
CTools2	Double GetToolLengthWearOffset(Int32 intPotNo) void SetToolLengthWearOffset(Int32 intPotNo, Double dblValue) void AddToolLengthWearOffset(Int32 intPotNo, Double dblValue) ArrayList* GetToolLengthWearOffset(Int32 intFromPotIndex, Int32 intToPotIndex)
CTools2	Double GetCutterRCompWearOffset(Int32 intPotNo) void SetCutterRCompWearOffset(Int32 intPotNo, Double dblValue) void AddCutterRCompWearOffset(Int32 intPotNo, Double dblValue) ArrayList* GetCutterRCompWearOffset(Int32 intFromPotIndex, Int32 intToPotIndex)
CTools2	ToolTypeEnum GetToolType(Int32 intPotNo) void SetToolType(Int32 intPotNo, ToolTypeEnum enValue) ArrayList* GetToolType(Int32 intFromPotIndex, Int32 intToPotIndex)
CTools2	Double GetToolAngle(Int32 intPotNo) void SetToolAngle(Int32 intPotNo, Double dblValue) void AddToolAngle(Int32 intPotNo, Double dblValue) ArrayList* GetToolAngle(Int32 intFromPotIndex, Int32 intToPotIndex)
CTools2	Double GetToolDiameter(Int32 intPotNo) void SetToolDiameter(Int32 intPotNo, Double dblValue) void AddToolDiameter(Int32 intPotNo, Double dblValue) ArrayList* GetToolDiameter(Int32 intFromPotIndex, Int32 intToPotIndex)
CTools2	Double GetToolNoseDiameter(Int32 intPotNo) void SetToolNoseDiameter(Int32 intPotNo, Double dblValue) void AddToolNoseDiameter(Int32 intPotNo, Double dblValue) ArrayList* GetToolNoseDiameter(Int32 intFromPotIndex, Int32 intToPotIndex)

The following functions of Okuma.CMCMDAPI.dll library will be only available based on the version of NC control software:

Class	Interfaces
CATC2	Sub UnRegisterToolPot(ByVal intPotNo As Integer, Optional ByVal intToolNo As Integer = 0, Optional ByVal blnRandomATC As Boolean = False)

CATC2	RegisterToolPot(ByVal intToolNo As Integer, ByVal intPotNo As Integer, ByVal intGroupNo As Integer, ByVal intSerialNo As Integer, Optional ByVal blnDummyTool As Boolean = False, Optional ByVal strToolName As String = "")
CATC2	RegisterToolPot(ByVal intPotNo As Integer, ByVal intGroupNo As Integer, ByVal intSerialNo As Integer, Optional ByVal blnDummyTool As Boolean = False, Optional ByVal strToolName As String = "")
CATC2	SetToolCarrierStatus(ByVal intPotNo As Integer, ByVal enCarrierStatus As CarrierStatusEnum)
CATC2	SetToolKind(ByVal intPotNo As Integer, ByVal enToolKind As ToolKindEnum)
CATC2	SetToolLifeStatus(ByVal intPotNo As Integer, ByVal enToolLifeStatus As ToolLifeStatusEnum)

For questions about these functions, please consult with your Okuma representatives.

### 3. New Features

#### 3.1.1 DATA-API

None.

#### 3.1.2 Command API

None.

### 3.2 Change

#### 3.2.1 DATA-API

None

#### 3.2.2 Command API

##### 3.2.2.1 Class CATC

Old Function:

```
Public Sub New(Byval enATCtype as ATCTypeEnum)
```

```
Public Sub New(Byval enATCtype as ATCTypeEnum, ByVal strLoggingName As String)
```

New Function:

```
Public Sub New()
```

```
Public Sub New(ByVal strLoggingName As String)
```

The new interfaces allow the instance of this class to be created on the correct type of ATC configured on the machine without the need of specifying in the constructors.

### 4. Known Bugs and Limitations

This section identifies known and existing problems in Release 1.9.1.0 and describes any work-arounds.

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## 4.1 Defect

## 4.2 General Defect

DATA-API library, Okuma.CMDATAPI.dll, cannot create directly under VS2003 ASP.NET web application.

Solution/Work-arounds: Create and initialize DATA-API in a separate thread. All function calls must be called from objects created inside separated thread mentioned above.

DATA-API library can only support applications designed with single-threaded apartment of COM threading model.

Solution/Work-arounds: None

### 4.2.1 Data-API

#### 4.2.1.1 CAxis class

Function: AxisTypeEnum GetAxisType (AxisIndexEnum enValue)

Symptom: Failed to access machine data for YS axis. YS axis is available in NC-HMI.

Solution/Work around: None.

All functions having YS axis as input parameter are affected by GetAxisType function and fail to get/set NC data.

Function: String\* GetAxisName (AxisIndexEnum enValue)

Symptom: Failed to access machine data for YS axis. YS axis is available in NC-HMI.

Solution/Work around: None.

#### 4.2.1.2 CMOPTool class

Function: GetToolDataNumber(ByVal *intToolNo* As Integer, ByVal *intClassNo* As Integer) As Integer

Symptom: This function cannot get tool data number given tool number greater than 300.

Solution/Work around: None.

#### 4.2.1.3 CSpindle class

Function: Double SpindleStateEnum GetSpindleState()

Symptom: Function return incorrect state - When machine is in Manual mode, the spindle is set to ORIENTATION mode.

NC-HMI and THINC-API library returns the same state. Then, machine mode is changed to either AUTO or MDI, NC\_HMI still report the same state as before, but THINC-API library reports spindle in stop mode.

Solution/Work around: None

### 4.2.2 Command-API

#### 4.2.2.1 CMOPTool class

Function: Sub Edit (ByVal lngToolNo As Long, ByVal intClassNo As Integer)

Symptom: When there is no MOP Tool option available on machine, NC-HMI generates an exception as 'NC Hardware

Exception: 0709 Alarm P Hardware exception 810E 'HMIC if this command is executed.

Solution/Work around: Use DATA-API GetSpecCode functions in CSpec to check for available MOP Tool Option before executing this Command API function.

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### 4.3 Defects Fixed in this Release

#### 4.3.1 Command API

##### 4.3.1.1 Class CATC

Function: Sub SetActualTool(ByVal intToolNo As Integer, Optional ByVal enToolAttribute As ToolAttributeEnum = ToolAttributeEnum.None)

Symptom: If the machine is equipped with Fixed Address ATC Type, the command is created for Random Address ATC Type and allows to set a non-register tool number as the Actual Tool.

Solution/Work around:

The CATC class is created with the correct type of ATC configured on the machine will prevent this issue.