Okuma America Corporation

THINC-API
Release Notes for Lathe

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Revision History

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6/04/2007	S5015-008-01	Public release for Lathe THINC-API version 1.1.0.0	Lhuynh
08/15/2007	S5015-008-02	Public release for Lathe THINC-API version 1.2.0.0	Lhuynh
2/22/2008	S5015-008-03	Public Release 1.6.0.0 for Lathe THINC-API	Lhuynh
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Release Notes for Lathe

1. Introduction

1.1 Disclaimer of Warranty

Okuma America Corporation makes no representations or warranties, either expressed or implied, by or with respect to anything in this document, and shall not be liable for any implied warranties of merchantability or fitness for a particular purpose or for any indirect, special or consequential damages.

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 Lathe libraries. It also documents known problems and workarounds.

1.3 Scope

This document describes Public Release 1.10.0.0 of THINC-API for Lathe.

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 1.10.0.0 of the THINC-API library for Lathe 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.CLDATAPI.dll in Public Release 1.10.0.0 is 1.10.0.0

Version of Okuma.CLCMDAPI.dll in Public Release 1.10.0.0 is 1.6.0.0

Version of APINotifierService.exe in Public Release 1.10.0.0 is 1.10.0.0

Version of Okuma.Flexnet.dll in Public Release 1.10.0.0 is 1.2.0.0

Version of Okuma.Apilog.dll in Public Release 1.10.0.0 is 1.1.0.0

The following functions of Okuma.CLDATAPI.dll library will be only available in OSP-P200 control machines:

Classes	Interfaces
CMachine	OnOffStateEnum GetNCStatus(NCStatusEnum enNCStatus)
CMachine	CCurrentAlarm* GetCurrentAlarm()

The following functions of Okuma.CLCMDAPI.dll library will be only available in OSP-P200 control machines:

Classes	Interfaces
CATC	Sub RegisterToolPot(ByVal intPotNo As Integer, ByVal intToolNo As Integer, ByVal enSettingToolKind As SettingToolKindEnum, ByVal enSettingToolSize As SettingToolSizeEnum, ByVal enReturnMagazine As ReturnMagazineEnum)
CATC	Sub SetNextTool(ByVal intToolNo As Integer, ByVal enSettingToolKind As SettingToolKindEnum, ByVal enSettingToolSize As SettingToolSizeEnum, ByVal enReturnMagazine As ReturnMagazineEnum)
CATC	Sub SetToolInStation(ByVal intToolNo As Integer, ByVal enSettingToolKind As SettingToolKindEnum, ByVal enSettingToolSize As SettingToolSizeEnum, ByVal enReturnMagazine As ReturnMagazineEnum, ByVal enTurretStation As TurretStationEnum)
CATC	Sub UnRegisterToolPot(ByVal intPotNo As Integer)
CProgram	CancelMainProgram()
CProgram	SelectMainProgramRSide(ByVal strMainProgramFileName As String, Optional ByVal strSubProgramFileName As String = "", Optional ByVal strSystemSubtituteProgramFileName As String = "", Optional ByVal strProgramName As String = "")
CProgram	SelectMainProgramLSide(ByVal strMainProgramFileName As String, Optional ByVal strSubProgramFileName As String = "", Optional ByVal strSystemSubtituteProgramFileName As String = "", Optional ByVal strProgramName As String = "")
CTools	CalcualteToolOffset(ByVal intToolNo As Integer, ByVal enAxisIndex As OffsetAxisIndexEnum, ByVal enSubSystem As SubSystemEnum, ByVal dblValue As Double)
CTools	AddConstantToolOffset(ByVal intOffsetNo As Integer, ByVal enAxisIndex As OffsetAxisIndexEnum, ByVal enSubSystem As SubSystemEnum, ByVal enCuttingPosition As CuttingPositionEnum)
CTools	AddConstantNoseRadiusCompensation(ByVal intOffsetNo As Integer, ByVal enAxisIndex As OffsetAxisIndex2Enum, ByVal enSubSystem As SubSystemEnum, ByVal enCuttingPosition As CuttingPositionEnum)
CTools	AddConstantToolWear(ByVal intOffsetNo As Integer, ByVal enAxisIndex As OffsetAxisIndex2Enum, ByVal enSubSystem As SubSystemEnum, ByVal enCuttingPosition As CuttingPositionEnum)
CTools	SubtractConstantToolOffset(ByVal intOffsetNo As Integer, ByVal enAxisIndex As OffsetAxisIndexEnum, ByVal enSubSystem As SubSystemEnum, ByVal enCuttingPosition As CuttingPositionEnum)
CTools	SubtractConstantNoseRadiusCompensation(ByVal intOffsetNo As Integer, ByVal enAxisIndex As OffsetAxisIndex2Enum, ByVal enSubSystem As SubSystemEnum, ByVal enCuttingPosition As CuttingPositionEnum)
CTools	SubtractConstantToolWear(ByVal intOffsetNo As Integer, ByVal enAxisIndex As OffsetAxisIndex2Enum, ByVal enSubSystem As SubSystemEnum, ByVal enCuttingPosition As CuttingPositionEnum)
CProgram	SelectScheduleProgramLSide(ByVal strScheduleProgramFileName As String)
CProgram	SelectScheduleProgramRSide(ByVal strScheduleProgramFileName As String)

3. New Features

The new classes/functions available in Public Release 1.10.0.0 are:

3.1 Data API

Classes	Interfaces
Cspec	Boolean IsValidSystem(ByVal enSubSystem As SubSystemEnum)
Cspec	Boolean GetPLCSpecCode(Int32 intPLCSpecCodeIndex, Int32 intBit)
Cspec	Boolean GetPLCSpecCode2(Int32 intPLCSpecCodeIndex, Int32 intBit)

3.2 Change

3.2.1 Data API

By default, all objects will be created and initialized with sub system NC-AL if applicable. For MacMan classes, all objects will created and initialized with SubSystem_1 if applicable.

3.2.1.1 CAxis class

Enumerations:

The following members are removed from the enumeration of AllAxisIndexEnum.

Member Name	Description
SPECIAL_Axis_2	Special Axis 2
SPECIAL_Axis_1	Special Axis 1

Functions:

AxisTypeEnum CAxis::GetAxisType (AllAxisIndexEnum enAxisIndex)
The ApplicationException is removed from function error handling.

GetActualPositionMachineCoord (AxisIndex6Enum enAxisIndex)
Axis parameter uses AxisIndex6Enum instead of AxisIndex1Enum due to some members of AxisIndex1Enum cannot be supported in this function.

3.2.1.2 CSpec class

Function:

String* CSpec::GetMachineSerialNumber()
This function is available on P100II and OSP-200 controls.

4. Known Bugs and Limitations

This section identifies known problems with Public Release 1.10.0.0 and describes any work-arounds.

4.1 Defect

4.2 General Defect

DATA-API library, Okuma.CLDATAPI.dll, cannot create directly under 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. The underlying library, LDATAPI.dll, cannot be loaded during call to CMachine::Init function when an MTAThread attribute is applied to the application.

Solution/Work-arounds: None

4.2.1 Data-API

4.2.1.1 MacMan.COperationHistory class

Function:

```
Int32 COperation* GetOperationHistory(Int32 intIndex) ;
ArrayList* GetOperationHistory(Int32 intFromIndex, Int32 intToIndex);
Int32 GetMaxCount() ;
Int32 GetCount() ;
```

Symptom: Failed to get correct data for Subsystem L and R side if MacMan screen is different than current setting of subsystem. It always gets the data from current MacMan screen.

Solution/Work around: None

4.2.1.2 CAxis class

Function:

```
Double GetActualPositionProgramCoord( AxisIndex1Enum enAxisIndex);
Double GetActualPositionMachineCoord( AxisIndex1Enum enAxisIndex);
Double GetDistanceToTargetPosition( AxisIndex1Enum enAxisIndex);
Double GetTargetPosition( AxisIndex1Enum enAxisIndex);
```

Symptom: Axis data for XI, ZI return -1 meanwhile NC displays *.***
Solution/Work around: None

Function:

```
Double GetActualPositionProgramCoord( AxisIndex1Enum enAxisIndex);
Double GetTargetPosition (AxisIndex1Enum enAxisIndex);
```

Symptom: The Z-axis position for sub system NC-AL and NC-AR does not return data correctly. It is based on the current selection of spindle in NC panel or command program G140/G141.
Solution/Work around: None

4.3 Defects Fixed in this Release

4.3.1 Data API

4.3.1.1 CAxis Class

Function:

enum AxisTypeEnum GetAxisType(enum AxisIndexEnum enValue)

Symptom: Failed to return axis type for C Axis when machine is in B turret mode.

4.3.1.2 CBallScrew class

Function:

Public Function GetInterval(ByVal *enAxisIndex* As AxisIndex3Enum) As Double

Symptom: The function return data in metric unit even it has been set Inch unit.

4.3.1.3 CChuck class

Function:

Public Sub CalGrippingFaceToProgramZeroDistance(ByVal *enValue* As ChuckIndexEnum, ByVal *dblValue* As Double)

Symptom: The function allows performing a calculation over max setting limit.
Valid setting range is -393.70078 to +393.70078 for inch unit.

4.3.1.4 COptionalParameter class

Public Sub SetNCOptionalParameterLongWord(ByVal *intLongWordIndex* As Integer, ByVal *intValue* As Integer)

Symptom: This function fails to set value that is greater than 32767.

Public Sub AddNCOptionalParameterLongWord(ByVal *intLongWordIndex* As Integer, ByVal *intValue* As Integer)

Symptom: This function fails to set value that is greater than 32767.

4.3.1.5 CProgram class

Function:

Boolean CProgram::CycleComplete(MachineSideEnum enMachineSide)

Symptom: This function fails get the status correctly based on machine side.
For single side machine, left side is the valid side instead of right side.

Boolean CProgram:: ScheduleProgramCycleComplete (MachineSideEnum enMachineSide)

Symptom: This function fails get the status correctly based on machine side.
For single side machine, left side is the valid side instead of right side.

4.3.1.6 CWorkpiece class

Public Sub CalZeroOffset(ByVal *enAxisIndex* As AxisIndex4Enum, ByVal *dblValue* As Double)

Symptom: This function allows performing over the max setting limit. The allowable setting limit is:

	Metric	Inch
0.1 micron option	-9999.9999 To 9999.9999	-393.70078 To 393.70078
Without 0.1 micron option	-99999.999 To 99999.999	-3937.0078 To 3937.0078

Public Sub CalZeroShift (ByVal *enAxisIndex* As AxisIndex4Enum, ByVal *dblValue* As Double)

Symptom: This function allows performing over the max setting limit. The allowable setting limit is:

	Metric	Inch
0.1 micron option	-9999.9999 To 9999.9999	-393.70078 To 393.70078
Without 0.1 micron option	-99999.999 To 99999.999	-3937.0078 To 3937.0078