

## **Configuration Editor**

Most aspects of the machine's configuration and initial behavior are defined using this View Item. Each major component of the machine is represented by tabs to the left of the panel.



Depending on the selected tab, the [New], [Load] and [Save] buttons will use the appropriate folder for the data being edited.

Click [New] to create a new data member for use with the machine

Click [Load] to open an existing data file

Click [Save] to save the data currently being edited

## Machine Tab

It is important to note that not all fields in this tab are used by every machine/hardware configuration



The image shows a screenshot of the 'Configuration Editor' software. The window title is 'Configuration Editor'. On the left side, there is a vertical menu with the following items: Machine, I/O, Axis, Axis Group, Interpreter, Interpreter Command, Fixture, User Settings, I/O Display, Tooling, and Spindle. The 'Machine' item is selected. The main area of the window is titled 'Machine Data' and contains several input fields:

- Machine Name : Main
- Description :
- Config Directory : C:\KMotion428
- Config DB Connection String :
- Feedback DB Connection String :
- IP4 (1) :
- Port (1) : 0
- IP4 (2) :
- Port (2) : 0
- IP4 (3) :
- Port (3) : 0
- Init Script :
- Validation Script :
- Home Cycle Script :

Machine Name

The name of the machine, used by some View Items and plugins

Description

An optional brief description can be entered here for use in some View Items and plugins

Config directory

Folder to look for externally configured device files

Config DB Connection String

Database connection string for use with SQL Machine Data Provider

Feed Back DB Connection String

Database connection string for logging machine actions and status reports

IP4(x) where x = 1 thru 3

IP v4 address placeholders for use with Ethernet enabled devices

Port(x) where x = thru 3

Port numbers for use with Ethernet enabled devices

Init Script

The script to run during initialization immediately after the configuration has been loaded

Validation Script

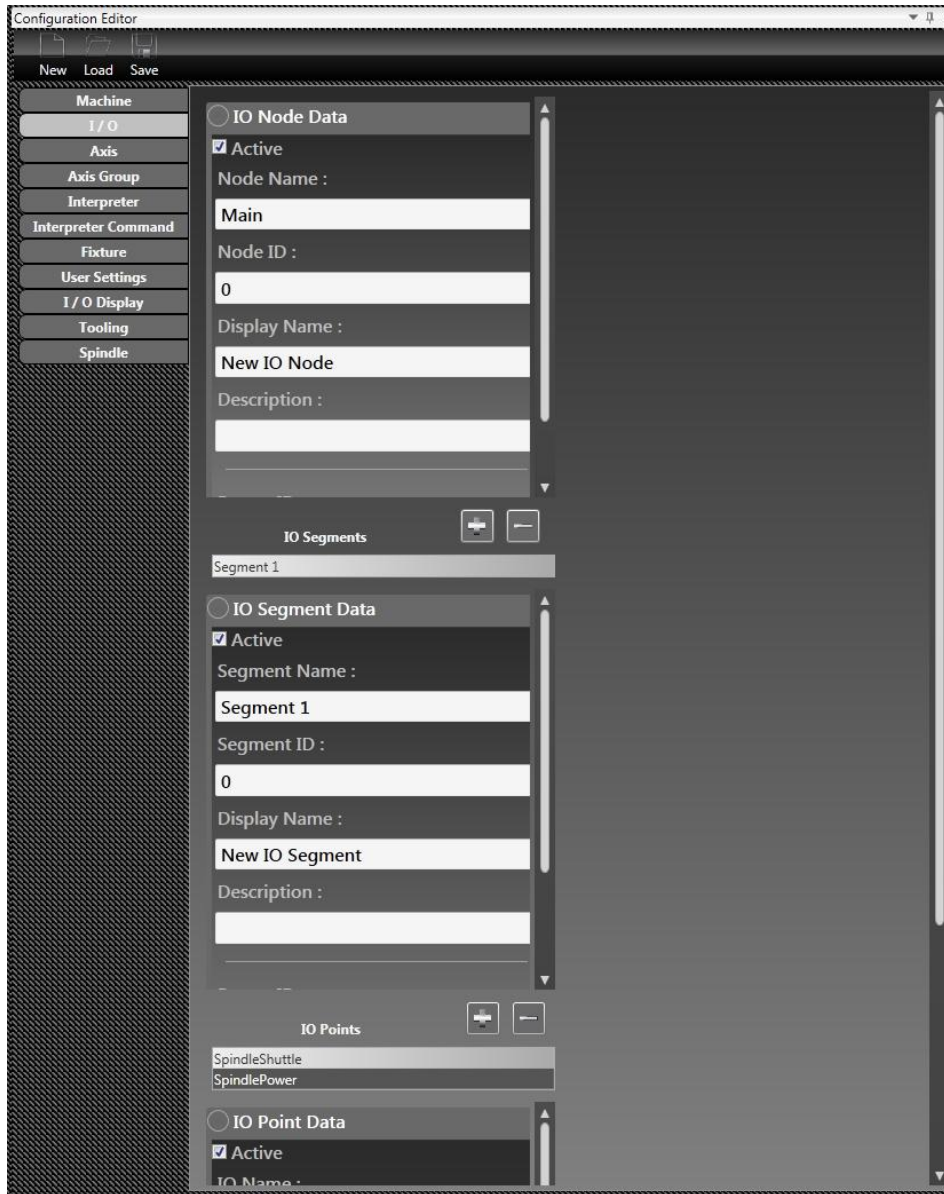
The script to run after the Init Script is executed to check everything loaded properly and to discover the machine's initial state

Home Cycle Script

This script will be executed during a Global Homing request

## I/O Tab

See the section “IO concepts in Machine Manager” for an explanation of the relationships between IO Nodes, IO Segments and IO Points



## **IO Node Data**

### Active

This flag determines whether or not this IO Node should be loaded during initialization

### Node Name

The short name of this IO Node, used by scripting

### Node ID

The Network Index of this IO Node, used by scripting

### Description

An optional brief description can be entered here for use in some View Items and plugins

### Display Name

The displayed name of this IO Node, used by some View Items and plugins

### Parent ID

This is typically the device/controller the IO is connected to

## **IO Segment Data**

### +/- Buttons (Add / Remove)

Use these buttons to add and remove IO Segments from the current IO Node

### Active

This flag determines whether or not this IO Segment should be loaded during initialization

### Segment Name

The short name of this IO Segment, used by scripting

### Segment ID

The Network Index of this IO Segment, used by scripting

### Description

An optional brief description can be entered here for use in some View Items and plugins

### Display Name

The displayed name of this IO Segment, used by some View Items and plugins

### Parent ID

This is the Node ID from the parent Node

### IO Type

You can set the default IO Type here, as IO Points are added to the segment they will use this type until they are manually changed

## **IO Point Data**

### *+/- Buttons (Add / Remove)*

Use these buttons to add and remove IO Points from the currently selected IO Segment

### *Active*

This flag determines whether or not this IO Point should be loaded during initialization

### *Point Name*

The short name of this IO Point, used by scripting

### *Point ID*

The Network Index of this IO Point, used by scripting

### *Description*

An optional brief description can be entered here for use in some View Items and plugins

### *Display Name*

The displayed name of this IO Point, used by some View Items and plugins

### *Parent ID*

This is the Segment ID from the parent Segment

### *IO Type*

This is the type of IO the IO Point can be used to control

### *Is Inverted*

This is a useful flag for flipping the polarity of the IO in software

### *Buffer Time*

Amount of time in milliseconds to de-bounce the value of this IO Point

### *On Dwell Time*

Amount of time in milliseconds to wait before returning program control when turning on or checking for on

### *Off Dwell Time*

Amount of time in milliseconds to wait before returning program control when turning off or checking for off

### *Init Script*

The script to run during initialization immediately after the IO Point has been created

### *Validation Script*

The script to run after the Init Script is executed

### *Value Changed Script*

This script is fired off every time the IO Point's value has changed

## Axis Tab

It is important to note that not all fields in this tab are used by every machine/hardware configuration

The image shows a screenshot of the 'Configuration Editor' software. The interface is dark-themed. On the left side, there is a vertical sidebar with a list of configuration tabs: Machine, I/O, Axis, Axis Group, Interpreter, Interpreter Command, Fixture, User Settings, I/O Display, Tooling, and Spindle. The 'Axis' tab is currently selected and highlighted. Above the sidebar, there are menu options: 'New', 'Load', and 'Save'. The main area of the window displays the 'Axis Data' configuration form. At the top of this form is a radio button labeled 'Axis Data'. Below it are two checkboxes: 'Active' (which is checked) and 'Initialized Externally' (which is unchecked). The form contains several text input fields with labels: 'Axis Name :', 'Axis ID :', 'Description :', 'Parent ID :', 'Min Velocity :', 'Min Accel :', 'Min Decel :', 'Rapid Velocity :', and 'Jog Velocity :'. The 'Axis ID' field contains the value '-1', and the 'Parent ID' field contains '0'. All other input fields are empty. A vertical scrollbar is visible on the right side of the configuration form.

Active

This flag determines whether or not this Axis should be loaded during initialization

Initialized Externally

When this is true the internal initialization of this axis will be skipped

Axis Name

The short name of this Axis, used by scripting

Axis ID

The Network Index of this Axis, used by scripting

Description

An optional brief description can be entered here for use in some View Items and plugins

Display Name

The displayed name of this Axis, used by some View Items and plugins

Parent ID

This is typically the device/controller the Axis is connected to

Min Velocity

This is the minimum allowed commanded velocity value

Min Accel

This is the minimum allowed commanded acceleration value

Min Decel

This is the minimum allowed commanded deceleration value

Rapid Velocity

This is the default value for rapid commands

Jog Velocity

This is the base velocity used for jogging commands

Max Velocity

This is the maximum allowed commanded velocity value

Max Accel

This is the maximum allowed commanded acceleration value

Max Decel

This is the maximum allowed commanded deceleration value

Origin

This the value to move to after a home routine



Safety Plane

This is the location to move during traverse operation or for clearance

Is Inverted

This will reverse the axis count/step direction during commanded motion

Stopping Time

This is the maximum allowed time for the axis to stop

Settling Time

This is the maximum time allowed to achieve the final commanded position

EStop Time

Maximum allowed time for an axis to halt during an EStop condition

Software Neg Limit

Smallest allowed axis position

Software Pos Limit

Largest allowed axis position

Collision Neg Limit

Distance until a collision is encountered in the negative direction

Collision Pos Limit

Distance until a collision is encountered in the positive direction

Collision Neg Tolerance

Threshold from a negative collision to take action

Collision Pos Tolerance

Threshold from a positive collision to take action

Counts per Rev

The amount of encoder counts or stepper steps to complete one revolution

Counts per Unit

The amount of encoder counts or stepper steps to travel on base unit

Gain Proportional

[P] parameter in the PID loop

Gain Integral

[I] parameter in the PID loop

Gain Derivative

[D] parameter in the PID loop

Gain Accel FF

Acceleration Feed Forward

Gain Friction FF

Friction Feed Forward

Gain Position FF

Position Feed Forward

Gain Velocity FF

Velocity Feed Forward

Jerk

Jerk value for control loop

Home Jerk

Jerk value for control loop during home routines

Int Max Moving

Integrator maximum value during commanded motion

Int Max Rest

Integrator maximum value while holding position

Output Limit

Maximum output value

Output Limit High

Maximum high frequency limit

Output Limit Low

Maximum low frequency limit

Homing Sequence

Order of homing sequence to use

Homing Type

Type of homing sequence to use

Homing Direction

Direction vector the home sensor is

Home Again Slower

Triggers second home routine at a slower rate

Home IO

Point of IO to use for the home sensor

Home Sensor State

State of the home sensor when tripped

Encoder IO

Point of IO to use for encoder channel

Sensor offset

Distance to move away from home sensor if initially on and for secondary sequence

Init Script

The script to run during initialization immediately after the Axis has been created

Validation Script

The script to run after the Init Script is executed

Home Cycle Script

This script is used for the home routine

## Axis Group Tab

It is important to note that not all fields in this tab are used by every machine/hardware configuration

The image shows a screenshot of the 'Configuration Editor' software interface. On the left side, there is a vertical menu with several tabs: Machine, I/O, Axis, Axis Group (which is currently selected and highlighted), Interpreter, Interpreter Command, Fixture, User Settings, I/O Display, Tooling, and Spindle. The main area of the window is titled 'Axis Group Data' and contains several configuration options:

- Axis Group Data
- Active
- Initialized Externally
- Axis Group Name : [Text Input Field]
- Axis Group ID : [Text Input Field containing '-1']
- Description : [Text Input Field]
- Vector Velocity : [Text Input Field containing '0']
- Vector Accel : [Text Input Field containing '0']
- Vector Decel : [Text Input Field containing '0']
- Init Script : [Text Input Field]
- Validation Script : [Text Input Field]

### Active

This flag determines whether or not this axis group should be loaded during initialization

### Initialized Externally

When this is true the internal initialization of this axis group will be skipped

### Axis Group Name

The short name of this axis group, used by scripting

Axis Group ID

The Network Index of this axis group, used by scripting

Description

An optional brief description can be entered here for use in some View Items and plugins

Vector Velocity

Velocity to use for coordinated motion

Vector Accel

Acceleration to use for coordinated motion

Vector Decel

Deceleration to use for coordinated motion

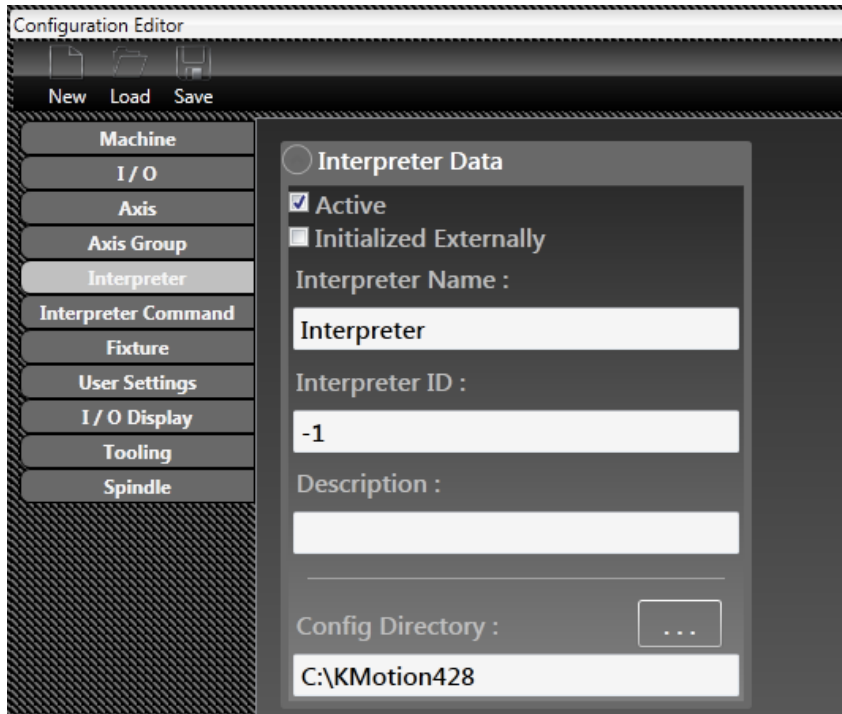
Init Script

The script to run during initialization immediately after the axis group has been created

Validation Script

The script to run after the Init Script is executed

## Interpreter Tab



### Active

This flag determines whether or not this axis group should be loaded during initialization

### Initialized Externally

When this is true the internal initialization of this axis group will be skipped

### Interpreter Name

The short name of this interpreter, used by scripting

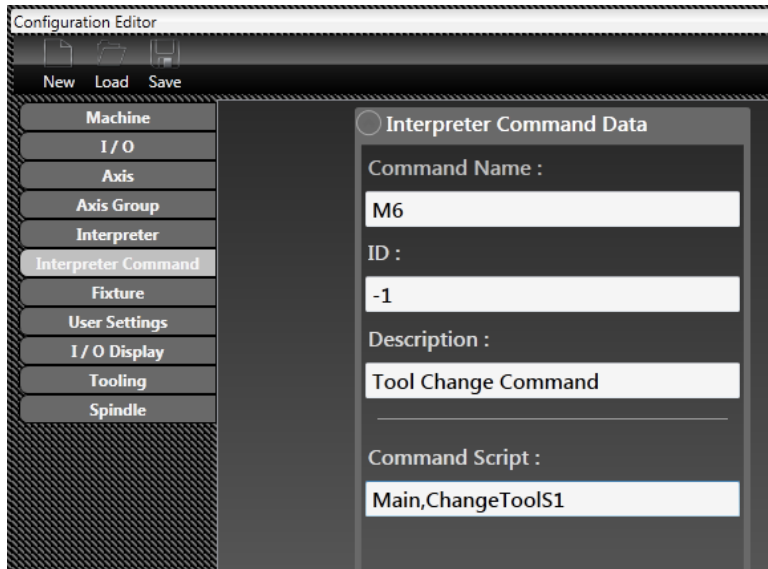
### Interpreter ID

The Network Index of this interpreter, used by scripting

### Description

An optional brief description can be entered here for use in some View Items and plugins

## Interpreter Command Tab



### Command Name

Name of the command for the interpreter to call, this can be an "M" code or a script name if it starts with @

### ID

Indexed ID of Command

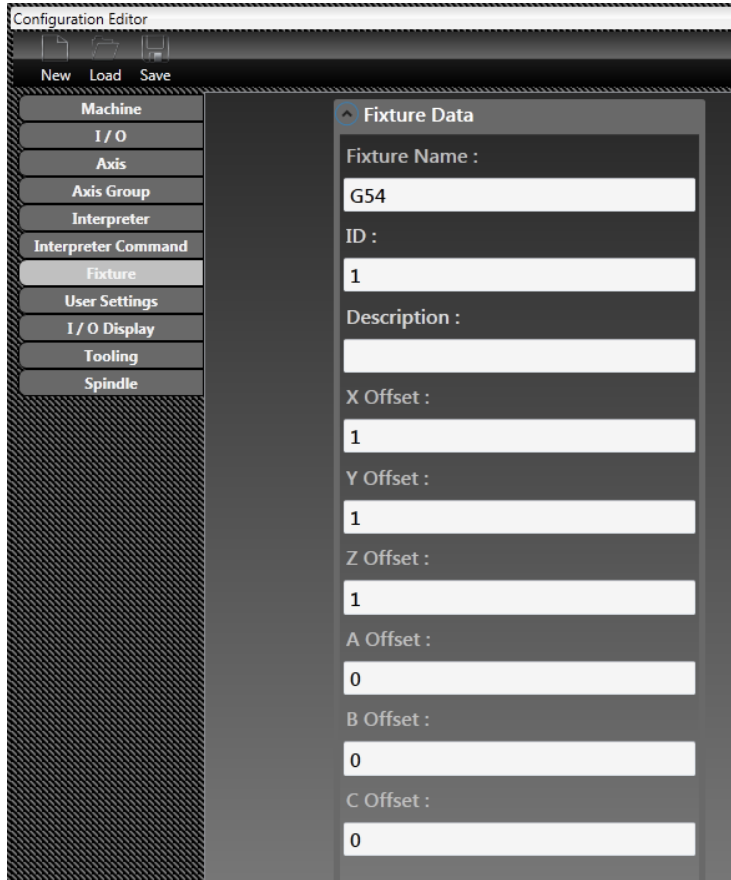
### Description

An optional brief description can be entered here for use in some View Items and plugins

### Command Script

This is the script to use when the command is interpreted

## Fixture Tab



The image shows a screenshot of a software interface titled "Configuration Editor". On the left side, there is a vertical menu with several options: Machine, I/O, Axis, Axis Group, Interpreter, Interpreter Command, Fixture, User Settings, I/O Display, Tooling, and Spindle. The "Fixture" option is currently selected. The main area of the window displays the "Fixture Data" configuration form. This form includes the following fields:

- Fixture Name : G54
- ID : 1
- Description :
- X Offset : 1
- Y Offset : 1
- Z Offset : 1
- A Offset : 0
- B Offset : 0
- C Offset : 0

### Fixture Name

Name for fixture used in Interpreter operations and custom procedures

### Fixture ID

Index for the fixture

### Description

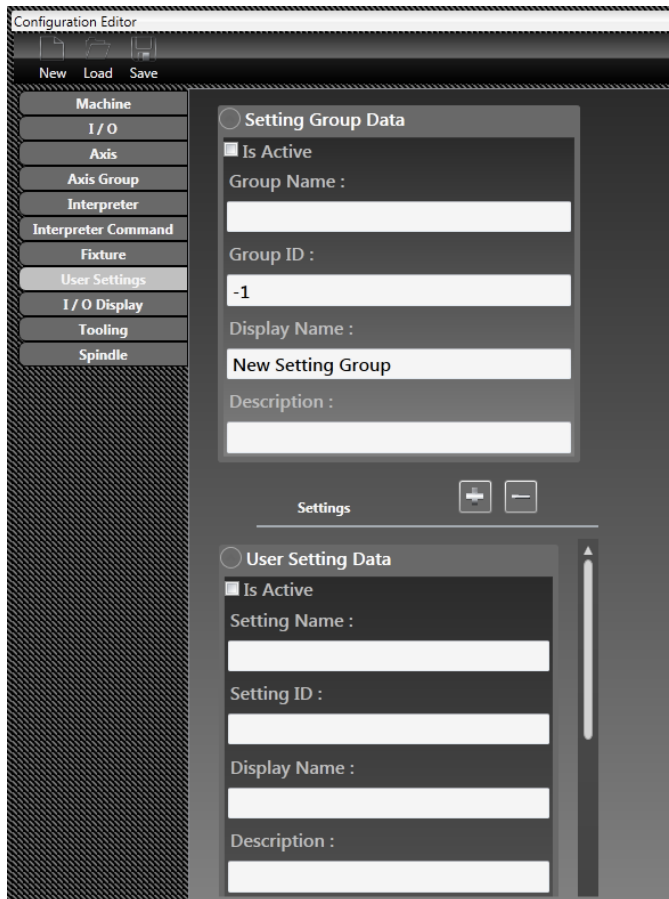
An optional brief description can be entered here for use in some View Items and plugins

### [axis] Offset - where axis = (X, Y, Z, A, B, C)

Distance to transform geometry for a given axis



## User Setting Tab



### Setting Group Data

#### Is Active

This flag determines whether or not this Setting Group should be loaded during initialization

#### Group Name

The short name of this Setting Group, used in scripting

#### Group ID

The display index (order) of the Setting Group

#### Display Name

The displayed name of this Setting Group, used by some View Items and plugins

#### Description

An optional brief description can be entered here for use in some View Items and plugins

## User Setting Data

### +/- Buttons (Add / Remove)

Use these buttons to add and remove User Settings from the currently selected Setting Group

### Active

This flag determines whether or not this User Setting should be loaded during initialization

### Setting Name

The short name of this User Setting, used by scripting

### Setting ID

The index of this User Setting, used by scripting

### Display Name

The displayed name of this User Setting, used by some View Items and plugins

### Description

An optional brief description can be entered here for use in some View Items and plugins

### Setting Type

Type of setting (Text, Integer, Decimal, Boolean, Command)

### Min Value

This is the minimum value to be used for the User Setting when it is of a quantitative value type

### Max Value

This is the maximum value to be used for the User Setting when it is of a quantitative value type

### Command Script

Script to execute when a command is issued or a value has changed

### Validation Script

Script to use when a value is changed

## I/O Display Tab

Configuration Editor

New Load Save

- Machine
- I/O
- Axis
- Axis Group
- Interpreter
- Interpreter Command
- Fixture
- User Settings
- I/O Display
- Tooling
- Spindle

IO Display Tab

Tab Name :

Description :

Index ID :

Groups

IO Display Group

Group Name :

Description :

Index ID :

Points

IO Display Point

IO Name :

## **IO Display Tab**

### Tab Name

The tab header name of this IO Tab

### Description

An optional brief description can be entered here for use in some View Items and plugins

### Index ID

The display index of this IO Tab

## **IO Display Group**

### +/- Buttons (Add / Remove)

Use these buttons to add and remove IO Groups from the currently selected IO Tab

### Group Name

The text of the IO Group's header

### Index ID

The display index of this group within the parent IO Tab

## **IO Display Point**

### +/- Buttons (Add / Remove)

Use these buttons to add and remove IO Points from the currently selected IO Group

### IO Name

The point of IO to use with this control

### Index ID

The display index of this IO Point within its parent IO Display Group

### Display Name

Text to use on the IO Display Point control

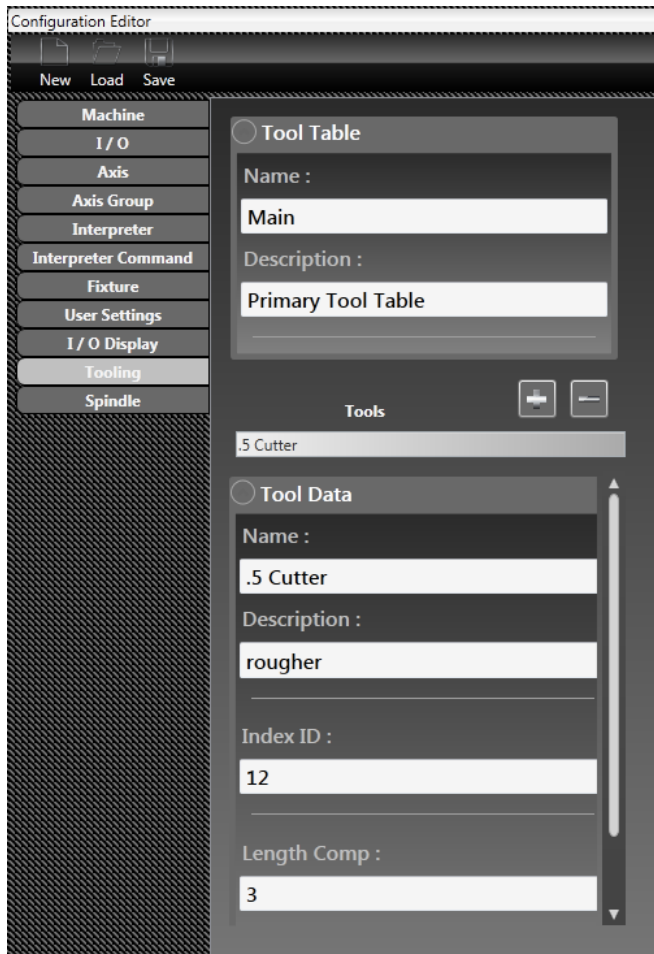
### Description

An optional brief description can be entered here for use in some View Items and plugins

### LED Color

Color to use with the IO Point Display

## Tooling Tab



### Tool Table

#### Name

Name of the Tool Table

#### Description

An optional brief description can be entered here for use in some View Items and plugins

### Tool Data

#### Name

Name of the Tool Table

Description

An optional brief description can be entered here for use in some View Items and plugins

Index ID

Tool Number

Length Comp

Tool length compensation value in base units

Diameter Comp

Too diameter compensation value in base units

## Spindle Tab

The image shows a screenshot of a software interface titled "Configuration Editor". On the left side, there is a vertical menu with several tabs: "Machine", "I/O", "Axis", "Axis Group", "Interpreter", "Interpreter Command", "Fixture", "User Settings", "I/O Display", "Tooling", and "Spindle". The "Spindle" tab is currently selected and highlighted. The main area of the window displays the "Spindle Data" configuration form. This form includes several input fields with labels and values:

- Spindle Name :** S1
- ID :** 1
- Description :** (empty field)
- X Offset :** 0
- Y Offset :** 0
- Z Offset :** 0
- A Offset :** 0
- B Offset :** 0
- C Offset :** 0
- X Vector :** 0
- Y Vector :** (partially visible, empty field)

### Spindle Name

The name for this spindle, used in scripting and Interpreter calls

### ID

The network index of this spindle

### Description

An optional brief description can be entered here for use in some View Items and plugins

X Offset

Distance along the x axis from the machine origin point

Y Offset

Distance along the x axis from the machine origin point

Z Offset

Distance along the x axis from the machine origin point

A Offset

Distance along the a axis from the machine origin point

B Offset

Distance along the b axis from the machine origin point

C Offset

Distance along the c axis from the machine origin point

X Vector

Direction vector's X component

Y Vector

Direction vector's Y component

Z Vector

Direction vector's Z component

Up IO

Point of IO to use for the Spindle's retract pneumatics

Dn IO

Point of IO to use for the Spindle's extend pneumatics

Power IO

Point of IO to use for the Spindle's power output

Cooler IO

Point of IO to use for the Spindle's cooler output (fan or solenoid)

DrawBar Pneu. IO

This is the point of IO used to extend the drawbar

DrawBar Extended IO

Point of IO used to determine whether the drawbar is extended

Tool Present IO

Point of IO used to determine whether or not a tool is loaded in the Spindle



Aux Output 1

Point of IO to use for the auxiliary 1 accessory

Aux Output 1 Name

Displayed name of the auxiliary 1 accessory

Aux Output 2

Point of IO to use for the auxiliary 2 accessory

Aux Output 2 Name

Displayed name of the auxiliary 2 accessory

Speed Output

Point of IO to use for adjusting the spindle speed

Speed Input

Point of IO to use for checking the spindle speed

Max RPM

This is the maximum allowed spindle speed

Min RPM

This is the minimum allowed spindle speed

Accel Time

Time in seconds to wait for the spindle to reach commanded speed

Decel Time

Time in seconds to wait for the spindle to come to a complete stop

Power On Script

This is the optional script to execute to turn on the spindle

Power Off Script

This is the optional script to execute to turn off the spindle

Update Speed Script

This is the optional script to execute for setting and getting the spindle speed

Warm Up Script

This is the script to use for warming up the spindle

Tool Change Script

When a tool change is requested, this is the script to use