

IsoNs – Next Step  
System Utility

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**PROMAX**

Motion  
&  
Control

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Rev. 2.0.1

## 1 CreateMask.exe

This utility is used to create a guided data input masks for the ISO file.

An input mask facilitates the 'inclusion of data on the parameters of an ISO file.

IsoNs can use a parametric programming of the ISO file. This makes it much more versatile functionality of the part program and much easier to 's introduction of the basic parameters.

A MASK OF INPUT FILE presents the parameters of the ISO in a conversational form of driving the 'all users' data entry accurately and easily while minimizing entry errors.

An input mask is presented as follows:

ISO CODE NUOVA0	
Descrizione	Valore
AXIS FEED	10
TOTAL CICLE	10
Type	Continuous

The data input is driven with values limited to the minimum and maximum.

The values can also be represented in the form that is in place to enumerate a number is represented in a description that makes programming easier to understand the values

The manager writes masks with values of the variables selected by the browser.

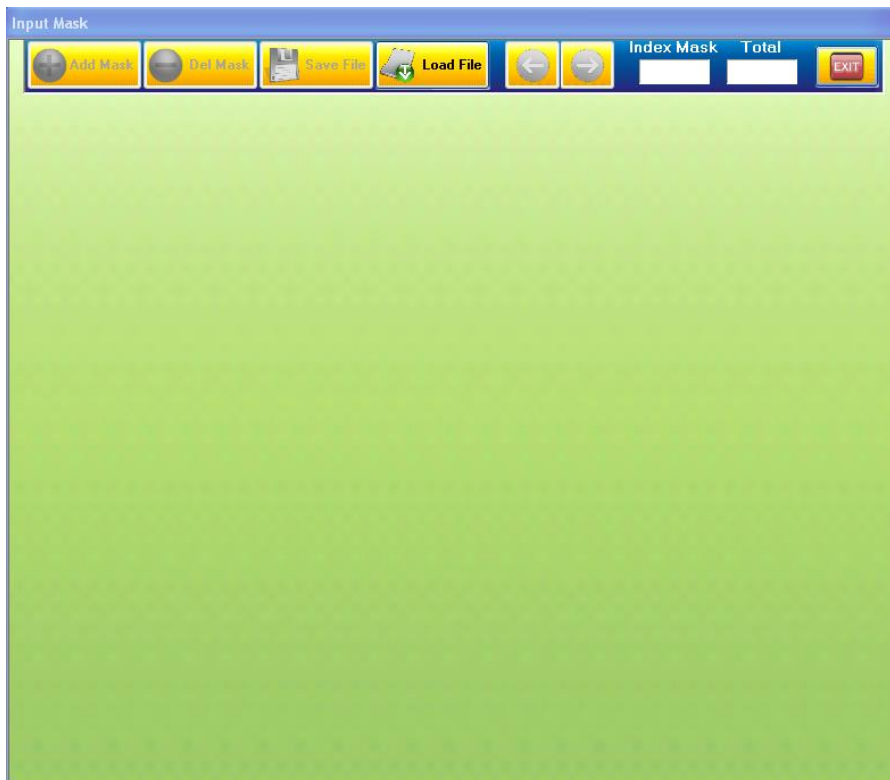
These variables are then handled by the part program in order to parameterize the ISO CYCLE.

### 1.1 CREATE A MASK

To create a mask so you should run the program led CreateMask.exe.

This is possible both operator interface IsoNs:

**Menù → utility → Gestione Maschere di Input**



## 1.2 Load Associate Iso File

First you must select an ISO file by association of the mask. The file must be prepared to use variables that mask controls.

Press the LOAD FILE.



If the selected file already contains a previous input mask, the system alerts the removal of this or not. If yes, the mask is completely removed from the file, otherwise it is loaded before the mask for a possible modification.

After this you can add, remove or add variables to the mask and delete masks.

## 1.3 Insert new Variable in the MASK

To add a variable (of course after you load the ISO file), you must press the button **ADD NEW VARIABLE** . This inserts a new field in the list that can be filled with the right values:

Var Name	Description	V Min	V Max	V Def	N Dec
\$VAR1	Variable 1	0	100	10	0
\$VAR2	Variable 2	0	100	10	3

### 1.3.1 Insert the variable Name

The name is added simply by double clicking on the NAME field VAR and entering the variable name, preceded by the \$ character (this is still inserted automatically if not present), which is managed by the part program.

It is a good idea to use the mnemonic names that represent the 'use of the variable in the part. The application CreateMask when saving data always carries out a conversion of the variable characters in UPPER CASE.

**The following characters are excluded from the variable name**

. : ; , - \ | ! " £ \$ % & / ( ) = ? ^ < > + @ \* SPACE ' ,

### 1.3.2 Insert variable description

Always with the same mode of insertion of the name, you can enter a description of the variable.

The description defines in more detail the function assumes that the variable inside of the part program.

**The following characters are excluded from the variable description**

,

### 1.3.3 Insert minimum value

You must enter the minimum value that the variable can take.

In the event that a user enters a value less than this, it will automatically enter the **MINIMUM VALUE**.

Use as a decimal separator **DOT (.)**.

### 1.3.4 Insert maximum value

You must enter the maximum value that the variable can take.

In the event that a user enters a value greater than this, it will automatically enter the **MAXIMUM VALUE**.

Use as a decimal separator **DOT (.)**.

### 1.3.5 Insert default value

Default value. This is the initial value

Use as a decimal separator **DOT (.)**.

### 1.3.6 Insert number of decimal

The number defines how many decimal DECIMAL VARIABLE MAY BE ENTERED IN.  
A value of zero is taken to an integer variable.

## 1.4 Insert new variable from compile list

You can choose the variable from the list of variables that are in the part program.  
This facilitates the 'introduction of new variables, proposing that only those using the part program.  
Select from ComboBox the desired variable and then press the **Add From List**.



See Insert The New variable in the Mask

## 1.5 Remove variable

To remove a variable from the list, simply select the variable to be removed (click with the mouse over the variable name or any other field until it turns blue), then press the button **DELETE VARIABLE**.



## 1.6 Move Up Down the Variable

You can move the position of a variable so that it is represented in the BROWSER input in a given sequence.  
Select the variable and press the UP and DOWN until it reaches the desired position.



## 1.7 Insert ENUMERATIVE Value

A variable is enumerated to better represent the input of numeric values  
 In fact, instead of these are offered a choice that leaves no doubt as to erroneous interpretations.  
 example

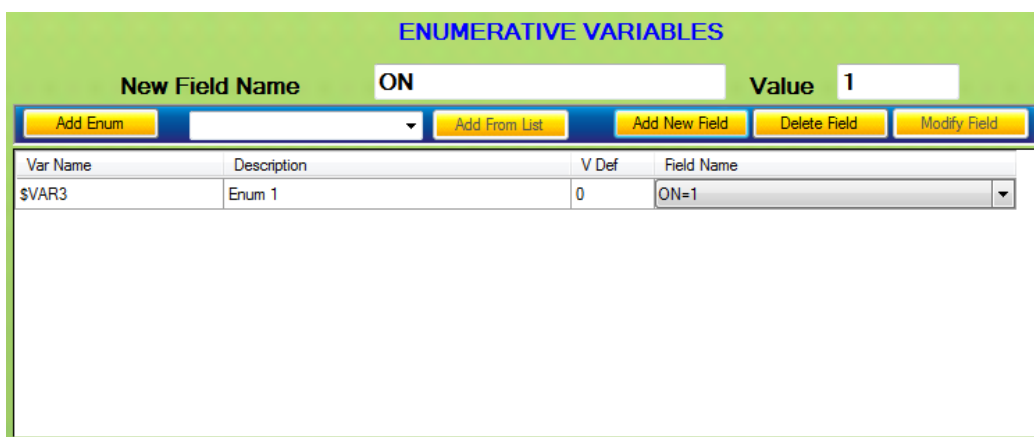
If the part program we define a kind of cycle that consists of a working RIGHT, LEFT and CENTER, this obviously must be conditioned to the state of a variable that takes on three specific values

**\$CYCLE=0**      **working Right**  
**\$CYCLE =1**      **working Left**  
**\$CYCLE =2**      **working Center**

If we were to enter these values using a normal variable, it would be difficult to remember that 0 and right, 1 left and center 2. It remains much easier to choose to operator the three possibilities:

**Right**  
**Left**  
**Center**

This can be done through enumerable variables.



### 1.7.1 Add enumerative

The first thing to do is to add a variable that refers to the enumerated values. You can enter the same procedure with the variable name and description. It is also possible to insert the variable name from the list with the procedure **ADD NEW VARIABLE** In this case refer to the ComboBox and the button on the enumerable variables.

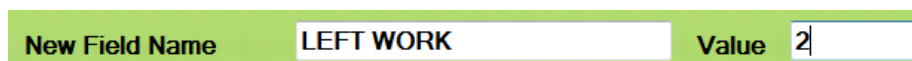
The entered variable is added to the list of variables securely, that no modification is not allowed on this list, but only moving up and down.

### 1.7.2 Add new enumerative fields

After adding the variable that refers to the enumerated values, you must add the fields that define the actual value of the variable according to the selected choice.

Be careful to select the correct variable (click with the mouse on the name of the variable)

Enter in the TextBox **NEW FIELD NAME** description you want to give value and value in the TextBox, the **VALUE** must have the variable when you select this choice.



Then press the **ADD NEW FIELD** button to insert the field in the final list.

This is represented in its ComboBox variable in the following way:



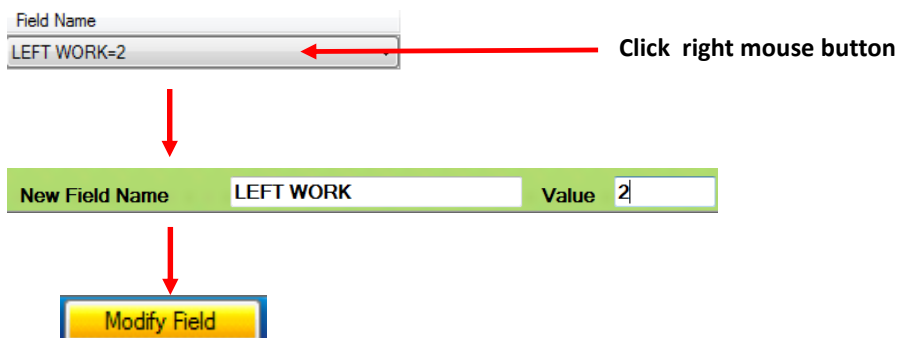
Continue for all the values to be inserted.

The ComboBox will represent the enumerated list of all possible values for the variable.

### 1.7.3 Changing a field name or field value

To change a parameter of a field entered, proceed as follows:

- 1) Select the field to edit from the ComboBox
- 2) Press the right mouse button on the ComboBox (this point the field is reported on the relatively **NEW FIELD NAME** and TextBox NAME **VALUE** (at this stage the combo box should not be selected, but must represent the name of the field to edit)
- 3) Change the desired parameter
- 4) Press the Edit Field to permanently accept the change.



### 1.7.4 Delete a Field

To delete a variable field of enumerative, select from the list the field and then press the button **DELETE FIELD**.

## 1.8 ADDING OR CHANGING THE NAME OF THE MASK

The mask must have a name so that it can be represented in the selection table. This is because they can co-exist with more masks to fire groups of data entry.

**Mask Name**  
↓

ISO CODE	MASK1
Descrizione	Valore
TEST VAR1	10
TEST VAR2	10
TEST ENUM 1	LEFT WORK

Enter the Form Name field the name you want.

Mask Name	MASK1
-----------	-------

## 1.9 INSERT NEW MASK



To insert a new mask press **Add Mask** button

Inserts a new form with all the empty parameters. Proceed to enter values as described above.

## 1.10 Delete a Mask



Press the button **Del Mask** to clear the currently mask visible

## 1.11 Scroll Mask



Press the following buttons to mask scrolls

## 1.12 Save Mask



Press button **Save File** to save a mask on disk

Before saving the values of a check is done.

In the event there are errors of data entry is not made the save.



## 2 GestConfigIsoNs.exe

This utility is used to manage the configuration file IsoNs. The configuration file can be adapted to the type of machine.

The configuration is password protected to prevent incorrect handling by unauthorized personnel. However, the code can, however, even without the password to open the configuration read-only parameters.

### 2.1 Configuration Management

To activate the configuration management should run the program GestConfigIsoNs.exe.

This is possible both operator interface IsoNs:

*Menù → utility → Configuratore IsoNs*

Or by running the program directly **GestConfigIsoNs.exe** located in the folder where you installed in:  
**IsoNs\ utility\GestConfigIsoNs**



### 2.2 Load a CFG file

Press following button to load a configuration file

### 2.3 Load the current CFG file

Load Default button allows you to automatically load the current configuration is using IsoNs. This assumes you have installed on your PC IsoNs.

### 2.4 Save a CFG file

With the **Save Cfg** button you can save the configuration file to taste. This is useful for storing the various machine configurations. The button is enabled only if you entered the code correct password.

## 2.5 Save the current CFG file



The **Save Default** button saves the current configuration to be used by IsoNs. The button is enabled only if you entered the code correct password. This assumes you have installed on your PC IsoNs. The new configuration will be enabled to start a new IsoNs.

## 2.6 New CFG



New CFG file.

## 2.7 Add a New Interface



The **Add CN** button allows to add a new interface for an additional CNC controlled. In this case, additional CN must be at different IP addresses or on different COM.

## 2.8 Remove a CNC Interface



This button remove the actual selected interface

## 2.9 Selected CNC Interface



Using the USER buttons CN selects that interface. Nela case where only one interface, these buttons are not visible. The interface is highlighted by the red color of the button

## 2.10 Enable Password

To use the buttons to save your configuration, you must have been typing the password correctly. The code is inserted in red field (or green when enabled, the password) .



Press the button **KEY** for enable the Password. If It is correct all buttons are enabled

## 2.11 Change Password



Insert the new Passowrd and press following button

### WARNING

Must remember the code inserted.  
In case this is lost, please contact support.

## 2.12 CPU/Communication

This table allows you to enter all the parameters related to the type of CPU in use of the NC and communication between PC and NC.

### 2.12.1 CPU Type

Allows selection of the type used in CN.  
Depending on the type of selected NC are enabled or not some parameters related to communication

CPU Type	
CPU	Address Fixed
NG35	1051648
Process Number	0

### 2.12.1.1 CPU

List the types of CPUs available for the NC IsoNs  
 Select the correct Type  
 The field **Address Fixed** is automatically updated

### 2.12.1.2 Address Fixed

**Not Change this**

### 2.12.1.3 Process Number

This field is enabled only if selected a CNC with MULTI PROCESS management.  
 Select the PROCESS NUMBER desired for the CNC used.

### WARNING!!!

If is used **ONE PROCESS**, you **MUST INSERT ZERO**

## 2.12.2 Ethernet Parameters

Allows to configure the ethernet parameters of PC  
 This is only enabled for cpu type NG35 or NGMEVO

Set the checkbox field for enable ethernet communication from PC to NC

## ETHERNET

### 2.12.2.1 IP

IP Address of NC NG35  
 IsoNs uses a static IP for communications  
 The default IP is **10.0.0.80**  
 For change this, you must modify the VTB project  
 The static IP to PC must to be different from NG35, but concorde with SUBNET MASK

**Example NG35 IP=10.0.0.80**

**PC IP use following**

### 2.12.2.2 PORT

**TCP/IP PORT – Not change this**

### 2.12.2.3 TIME OUT

Identify the Time Out for the connection of Ethernet. If a response is not received in time selected, interrupts communications IsoNs generate an error.  
 Time Out is expressed in milliseconds. Its default value is 5 sec which is a good compromise for all applications. If you use an Ethernet connection between your PC and no other component NG35, the timeout can be reduced.  
 Lower or raise the TIMEOUT does not mean changing the communication speed of the system.

### 2.12.2.4 FAST ETHERNET

Enabling the FAST ETHERNET communications, is possible obtain the maximum performance about the Gcode BLOCK transfer rate. (First you must verify, if the VTB application, can support it):

VTB Sample 2 Ms → 500 BLk/Sec  
 VTB Sample 1 Ms → 1000 BLk/Sec  
 VTB Sample 500 Us → 1450 BLk/Sec

### 2.12.3 RS232 Parameters

Allows selection of parameters for the RS232 communication port of the PC

This section is enabled on all CPUs. It is, however, for the Obsolete NG35 NC. As the communication capabilities of ETHERNET are most efficient and secure.

Set the checkbox field for enable RS232 communication from PC to NC



#### 2.12.3.1 COM

PC RS232 COM

#### 2.12.3.2 BAUD

PC Baud Rate

Default 115.200 Bps – Not change this

#### 2.12.3.3 TIME OUT

Identify the Time Out for connection to RS232. If a response is not received in time selected, interrupts communications IsoNs generate an error.

Time Out is expressed in milliseconds. Its default value is 500 msec which is a good compromise for all applications. Lower or raise the TIMEOUT does not mean changing the communication speed of the system.

### 2.12.4 Timer Scanner

Select the time of the timer for low-priority queries between PC and NC.

These are for example the reading of the axes positions, of the status, etc

The default value is 100 msec, and guarantees a good time to request information. Lowering the value, you get better performance on response times to the display of dimensions and axes to other variables, but as a result increases the load of low-priority communications.

We recommend keeping this value at the default or higher.

## 2.13 Axes

This table allows you to configure the number of axes in the managed application. The number of axes must be selected according to the NC in use.

IsoNs manages up to 9 axes for each process.

### 2.13.1 Axes Number

Select the number of axes and the various parameters associated with these.

Select from ComboBox the desired number of axes.

The axes are known as default that can not be changed

Axis Number				Sequence
4				
X	<input type="checkbox"/> Rotative 360 Dgr	<input checked="" type="checkbox"/> Homing Enable		2
Y	<input type="checkbox"/> Rotative 360 Dgr	<input checked="" type="checkbox"/> Homing Enable		3
Z	<input type="checkbox"/> Rotative 360 Dgr	<input checked="" type="checkbox"/> Homing Enable		1
A	<input checked="" type="checkbox"/> Rotative 360 Dgr	<input checked="" type="checkbox"/> Homing Enable		4
B	<input type="checkbox"/> Rotative 360 Dgr	<input type="checkbox"/> Homing Enable		5
C	<input type="checkbox"/> Rotative 360 Dgr	<input type="checkbox"/> Homing Enable		6
U	<input type="checkbox"/> Rotative 360 Dgr	<input type="checkbox"/> Homing Enable		7
V	<input type="checkbox"/> Rotative 360 Dgr	<input type="checkbox"/> Homing Enable		8
W	<input type="checkbox"/> Rotative 360 Dgr	<input type="checkbox"/> Homing Enable		9

#### 2.13.1.1 Axis Name

Select from ComboBox The Axis Name

X

#### 2.13.1.2 Rotative 360 Dgr

Indicate rotative axes module 360 degrees.

#### 2.13.1.3 Homing Enable

Enabled this field if the axis makes the Homing

Homing Enable

#### 2.13.1.4 Sequence

Select a value for the automatic sequence of homing axis

1 First

2 Second

3 Third

etc.

There can be no two sequences with the same value.

### 2.13.2 Time Out Enable

Time Out for command ENABLE AXIS

If the driver does not respond within the time specified, an error is generated

Time Out Enable

5000 (Msec)

### 2.13.3 Time Out Homing

Time Out for Homing Axis

If the driver fails to complete the search for ZERO AXIS within the time specified, an error is generated.

## 2.14 Compiler

Manages all options for compiler ISO file.

It is advisable to leave the default parameters as described below.

Only occasionally specifications can be changed.

### 2.14.1 Number M Variable reserved

Allows you to enter the number of variables reserved for internal data exchange with M functions to the NC.

The compiler reserves a memory area indicated by the number

The variables are then managed as \$ \_PARAM\_1 , \$ \_PARAM\_2 , \$ \_PARAM\_3 etc..

The maximum value is still 10.

### 2.14.2 Compiler Options

#### 2.14.2.1 Insert END OF BLOCK

Enabling this option automatically inserts a code block end ISO.

The end block is the number of line running, so it is recommended to enable this option.

This option can be disabled for a very fast file management

#### WARNING

Disabling this option makes unavailable some functions such as:

**REPOS FROM LINE or MARKER**

**RETRACE**

**BREAK POINT**

**STEP MODE**

#### 2.14.2.2 Optimize G code

Enabling this option is made of an optimization code G0-G1-G2-G3. Since this mode is entered only if changed. (default disabled)

**It is important to enable this function only when using ISO file without ELSE IF END\_IF cycles, because cycles can fool the compiler conditional on the correct assignment of the G codes optimized.**

### 2.14.2.3 Enable RUN with error offset tool

This option allows you to enable or disable the execution of part program if it contains errors on compensation OFFSET TOOL.

IsoNs usually displays errors on the 3D PREVIEW, if the option is enabled, however, allows the processing of the file or the file can not be processed until the errors are not corrected.

### 2.14.2.4 Enable Debug Program

Allows you to enable / disable the DEBUG part program. In practice we allow the insertion of breakpoints and watch variables.

It is normal for this option is enabled only for use by trained personnel.

### 2.14.2.5 Enable Thread MODE for compile block

Allows you to enable / disable a thread when it is used to fill the part program block. If enabled the compilation of the block is performed by a separate thread that handles the CPU is not committing IsoNs.

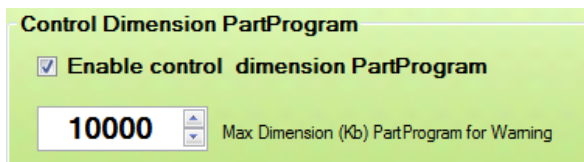
### 2.14.2.6 Nr Line for Block compiler

Indicates the number of lines that are compiled when used to build blocks.

The number should not be particularly high, the recommended values from **1000 to 10000**.

## 2.14.3 Control dimension PartProgram

warnings of Part Program large size



### 2.14.3.1 Enable control dimension PartProgram

Enables or disables warnings on the control part program size.

In the case of enabling a warning is issued if the part program exceeds the specified size.

The warning is issued only if you use the Classic view of the part program that is active with L editor. When files exceed a certain size > 10 Mb (depending on PC memory) the classic editor occupies a lot of resources, so it is advisable to work in the part program **FastVisua**.

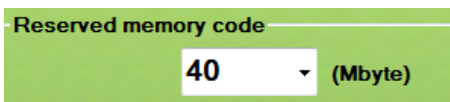
## 2.14.4 Reserved memory code

Reserve the memory area on PC management ISO code compiled.

Increase this value only if you are unable to work a few ISO files.

### WARNING

The memory area is related to the compiled code and thus makes no reference to the size of the part program. The compiled code is binary and therefore is optimized with respect to the ASCII code of the part program.

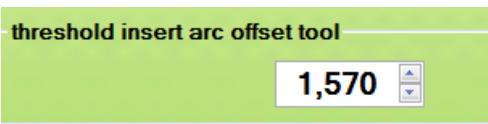


## 2.14.5 Threshold insert arc offset tool

It allows you to vary the value added during the ARCS compensation tool.

The value is expressed in radians.

The default threshold is 1.570 radians.



## 2.15 Interface

Allows to configured the interface parameters

### 2.15.1 Value Axis visualization

It defines how they should be displayed axis values.

Value Axis visualization	
3	Number of Decimal
3	Number of unit
123.123	

#### 2.15.1.1 Number of decimal

Indicates the number of decimal places displayed

#### 2.15.1.2 Number of unit

Indicates the number of units places displayed

### 2.15.2 Visualizzazione Feed assi

It defines how they should be displayed FEED values.

Value Feed visualization	
3	Number of Decimal
3	Number of unit
123.123	

#### 2.15.2.1 Number of decimal

Indicates the number of decimal places displayed

#### 2.15.2.2 Number of unit

Indicates the number of units places displayed

### 2.15.3 Visualizzazione Speed assi

It defines how they should be displayed SPEED spinlde values.

Value Speed visualization	
3	Number of Decimal
3	Number of unit
123.123	

#### 2.15.3.1 Number of decimal

Indicates the number of decimal places displayed

#### 2.15.3.2 Number of unit

Indicates the number of units places displayed

### 2.15.4 Visua zero not significant

It defines how they are displayed the values of shares with or without leading zeros

<input checked="" type="checkbox"/> Visua zero not significant	000.123
<input type="checkbox"/> Visua zero not significant	.123



## 2.16 General

General parameters

### 2.16.1 Number of user var

The variables USER, are exchanged between NC and PC, and vice versa. These are variables that can be used for general purpose information exchange (eg, counter, etc..).

These variables enable the component, then the events IsoNs. Variables are not normally traded, as if it needed only increase the load on the communication.

Then enable only the number of variables interessate. Il maximum number of variables managed user is 10.

### 2.16.2 Number of Input to event

IsoNs can handle up to a maximum of 10 digital inputs that enable the component events.

This allows you to enable its input to generate an event on changing state.

#### 2.16.2.1 Nr Input

Indicates how many inputs are enabled to generate events. Up to 10 inputs

Enter a value of 0 if you do not have input enabled.

#### 2.16.2.2 Digital Input

Defines digital input enabled to generate the event (choose between 1 and 256).

The digital input is then referred to the NC.

### 2.16.3 Work plane dimension

Defines the three-dimensional area of the plane of the machine.

This allows for the PREVIEW SIMULATION of a reference between the workpiece and the work plan of the machine.

IsoNs warns if the working out of the work plan.

### 2.16.4 Offset piano di lavoro

Defines the OFFSET of the work plan with respect to the origin machine. The shift is only fit for the three axes X, Y, Z  
 If you work with negative values, enter negative values in OFFSET eg:  
 If size plane Z = 3000 and Z negative for shares, insert OFFSET Z =- 3000 (if you do not want to give no offset). In this way the plan is considered a negative

**Work plane offset**

0	X (mm)
0	Y (mm)
30	Z (mm)

### 2.16.5 OVERRIDE resolution

Not change this

**Override resolution**

1024

## 2.17 Machine Parameters

It manages all the configuration parameters of the NC machine in use.  
 The machine parameters depend on the type of CN and the type of axes connected to the NC.

Name	Description	Group	Value	Address CN	Type
FEEDMAX	Max Interpolation Feed (mm/min)	General	30000	-1	NUMERICO
FEEDMIN	Min Interpolation Feed (mm/min)	General	2	-1	NUMERICO
FEEDDEF	Default Interpolation Feed (mm/min)	General	1000	-1	NUMERICO
FEEDRES	Feed Resolution	General	1000	-1	NUMERICO
SPEEDMAX	Speed Max (rpm)	General	18000	-1	NUMERICO
SPEEDMIN	Speed Min (rpm)	General	2000	-1	NUMERICO
SPEEDDEF	Speed Default	General	10000	-1	NUMERICO
WR_SPD9	Enable write speed user 9	General	1	-1	NUMERICO
RESQUOTE	Axis Value Resolution	General	1000	-1	NUMERICO
RFG	Reduction FEED G1-G2-G3	General	0	-1	NUMERICO
ACC_LAV	Interpolation Acceleration (count)	General	10	-1	NUMERICO
VMAXG0	Fedd Max (%) for G0	General	100	-1	NUMERICO
ACC_G0	Acceleration for G0	General	50	-1	NUMERICO
ACC_RAGGIO_MAX	Centrifugal Acceleration (value)	General	5	-1	NUMERICO
ENABLE_OW_G0	Enable Override for G0	General	1	-1	NUMERICO
VEL_GO_LINE_RETRACE	Feed Repos for Retrace (mm/min)	General	5000	-1	NUMERICO
VISUAREAL	Mode for Visualization Axis Value	General	-1	-1	NUMERICO
TIME_OUT_CMD	Time Out Commnd On CNC (Ms)	General	5000	-1	NUMERICO
TIME_OUT_M	Time Out M on CN (Ms)	General	15000	-1	NUMERICO

### 2.17.1 Machine parameters definition

The machine parameters are defined by the following properties:

<b>Name</b>	Defines name of the parameter (not to change the name to the default parameters)	
<b>Description</b>	Description of the functionality of the parameter	
<b>Group</b>	Group membership of the parameter	
	Default groups:	
	General	general parameters
	Asse X,Y ecc	Axes parameters
<b>Value</b>	Default value	
<b>Address Cn</b>	physical address in NC (-1 indicate internal to ISONS)	
<b>Type</b>	Parameter Type	
	Type:	
	<b>NUMERICO</b>	no transformation
	<b>VELOCITA</b>	indicate a FEED Axis (not used it)
	<b>ACC</b>	indicate a cceleration transorm in mm/sec2
	<b>ABSVEL</b>	indicate a FEED Axis (use it and not VELOCITA)

### 2.17.2 Add new parameter

This button allows insert a new parameter.

The parameters are added only if managed by the application

### 2.17.3 Remove the selected parameter

The parameter selected is removed by list

### 2.17.4 Move Up/Down

Move parameter UP or DOWN. **Insert default parameters**

### 2.17.5 Insert Axis General parameters

This button allows to insert the default parameters used by ISONS

**This parameters must to be present in all applications**

### 2.17.6 Insert Axis PID parameters

This button allows to insert the FILTER PID parameters

This parameters must to be insert if only the application use the analog drives +/- 10 V with encoder loop

### 2.17.7 Insert homing parameters

This button allows to insert the HOMING parameters

**This parameters must to be present in all applications**

### 2.17.8 Remove all parameters

Remove all parameters to actual list

### 2.17.9 Insert default parameters Single Axis

This button allows to insert default parameters only the single axis selected in the field ASSE.

following choses the parameter group to insert

**Par Gen** (general parameters)

**Par Pid** (Filter PID parameters)

**Par Rzero** (homing parameters)

### 2.17.10 Remove default parameters Single Axis

DEL PAR singolo asse

ASSE X ▾

This button allows to REMOVE default parameters only the single axis selected in the field **ASSE**. following choses the parameter group to remove

- Par Gen** (general parameters)
- Par Pid** (Filter PID parameters)
- Par Rzero** (homing parameters).

## 2.18 System Define

Manages DEFINE system IsoNs.

DEFINE A is a constant that can be used in the part program to better define a function.


Ex:

You can define an input or digital output with a name more appropriate to better represent the functionality

**\$(1) SENSOR\_INPUT**

**\$(01) COOLANT\_OUT**

The part program can be used in place of the variable definition.



Name	Variable	Description
SENSOR_INPUT	\$(11)	Allarm sensor
COOLANT_OUT	\$(01)	Coolant

### 2.18.1 Define Parameters

The DEFINE is defined according to the following properties:


- Name** DEFINE Name  
*These characters are excluded ( \ | " £ \$ % & / ( ) = ? ^ < > \* + - , ; : )*
- Variable** Defines the variable that references the DEFINE
- Description** Description

## 2.19 Heads

Manages the table of the machine tool heads.

This allows all the various resets used for the head including the acquisition sensor. The table is then drawn from the part program with the function **Hn** where **n** is the number of table to use.

Once you have activated the function **Hn** is automatically added to all the offset of the head in use.



Offset X	Offset Y	Offset Z	Offset A	Offset B	Offset C	Offset U	Offset V	Offset W	Sens X	Sens Y	Sens Z
1	2.231	3	4	5	6	7	8	9	10	11	12
10	20	30	40	50	60	70	80	90	100	11	12

### 2.19.1 Heads Parameters Definition

The HEADS is defined according to the following properties:

All values are expressed in units defined (typical micron)

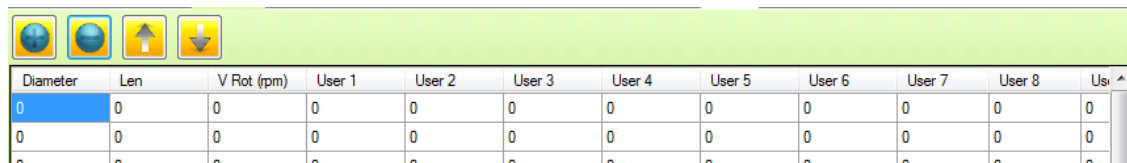
- Offset X,Y,Z ecc.** Relative distance from the axis of the machine zero
- Sens X,Y,Z ecc.** Relative distance of the **Acquisitions sensor** from the machine zero
- User 1,2,3,4,ecc.** User defined

## 2.20 Tools Table

Manages the machine tool table.

This allows you to select the parameters of the tool through the table. The table is then drawn from the part program with the function **Tn** where **n** is the number of table.

Once you have activated the function **Tn** is automatically added to the parameters of the tool.



Diameter	Len	V Rot (rpm)	User 1	User 2	User 3	User 4	User 5	User 6	User 7	User 8	Usr
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

### 2.20.1 Tools Parameters Definition

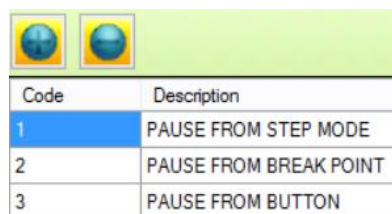
The Tools is defined according to the following properties:

All values are expressed in units defined (typical micron)

<b>Diameter</b>	<i>Tool Diameter</i>
<b>Len</b>	<i>Tool Length</i>
<b>Vrot (rpm)</b>	<i>Max rpm</i>
<b>User 1,2,3,4,etc.</b>	<i>User defined</i>

## 2.21 Pause Codes

Some codes are predefined PAUSE and therefore they must be always present in the table. You can add new codes that can be managed via PAUSE pauses forced with the G80 statement.



Code	Description
1	PAUSE FROM STEP MODE
2	PAUSE FROM BREAK POINT
3	PAUSE FROM BUTTON

### 2.21.1 Parameters Definition

<b>Code</b>	<i>Read Only defined the code</i>
<b>Description</b>	<i>Message when the pause is activated</i>

if you added a new code to activate it using the **G80 newcode** statement

## 2.22 Internal alarms

Defines the description of all the alarms internal IsoNs.

In this section you can not add or remove items from the table, because the management of new alarms should be done by the system.


You can change the description for a possible translation into a language

Code	Description
1	Timer not available
2	Variable not available
3	Variable Fixed not available
4	Digital OUT not available
5	Analog OUT not available
6	Time Out Home Axis
7	Machine Parameter not available
8	Rutum without Gosub
9	Digital INPUT not available
10	Analog INPUT not available
11	Encoder channel not available
12	Error SDO DOWN LOAD
13	Error SDO UP LOAD
14	M Parameter not available
15	M Function not available
16	Tabel Parameter not available
17	Tabel not available
18	Error Arc impossible
19	Error Axis not available

## 2.23 User Alarms

Defines the description of all alarms USER IsoNs.

These types of alarms are used in Part Program by statement **RUN\_ERROR n**, where **n** refers to the alarm number of the table you want to activate.



Code	Description
1	ALLARM DESCRIPTION .....
2	ALLARM DESCRIPTION .....

### 2.23.1 User Alarms parameters definition

**Code** *code used with RUN\_ERROR*

**Description** *Allarm message text*

## 2.24 NC Alarms

Defines all alarms inside the CN.

These depend on the applications.

Standard alarms are always present.

The standard alarm (eg, positive limit axis W) must not be removed from the table even if the axis is not present in the application. However, you can define new alarms in the queue to which they are owners of the application.

Code	Description	Type
19	SERVO/EMCY AXIS X	E
20	SERVO/EMCY AXIS Y	E
21	SERVO/EMCY AXIS Z	E
22	SERVO/EMCY AXIS A	E
23	SERVO/EMCY AXIS B	E
24	SERVO/EMCY AXIS C	E
25	SERVO/EMCY AXIS U	E
26	SERVO/EMCY AXIS V	E
27	SERVO/EMCY AXIS W	E
28	EMERGENCY	E
29	SENSOR ACQ	E
30	SHORT LINE	W
31	USER DEFINE 3	E
32	USER DEFINE 4	E
33	CONFIGURATION AXIS X	E
34	CONFIGURATION AXIS Y	E
35	CONFIGURATION AXIS Z	E
36	CONFIGURATION AXIS A	E
37	CONFIGURATION AXIS B	E

### 2.24.1 NC Alarm parameter definition

**Code** Alarm code

**Description** Alarm message

**Type** Indicates if the Alarm is managed how **ERROR** or **WARNING**

**E** → The Alarm is an **ERROR**. The PartProgram execution is interrupted

**W** → The Alarm is a **WARNING**. Only message is displayed and the partprogram continues the execution normally.

Only some parameters is possible changed **WARNING** and **ERROR** type.

**These alarms must to be managed by VTB application**

## 2.25 Default M

This table allows you to enable, disable or change the code to the M system default.

You can not add / remove default M.

You can only assign a different code.

Code	M Type
0	STOP
2	ERROR
-1	GOBLOCK
8	PAUSE
9	GOPAUSE
12	GORETRACE
1	GOSTART
-1	GOEND

### 2.25.1 Default M parameters Definition

<b>Code</b>	<i>M code to invoke by Part Program(ex M0)</i>
	<b>Code = -1</b> DISABLE THIS M
<b>M Type</b>	<i>Read Only defined the M type</i>
	STOP            M STOP
	ERROR    M ERROR
	GOBLOCK        M REPOS FROM LINE MARKER
	PAUSE            M PAUSE
	GOPAUSE        M REPOS FROM PAUSE
	GORETRACE      M REPOSE FROM RETRACE
	GOSTART        M START PROGRAM
	GOEND    M END PROGRAM



### 3 GestTabUt.exe

This utility is used to manage the configuration of the tool table so operator (simplified). In fact, the only parameters that can be changed are only DIAMETER LENGTH and SPEED ROTARY TOOL. You can not remove and add new tools to the table.

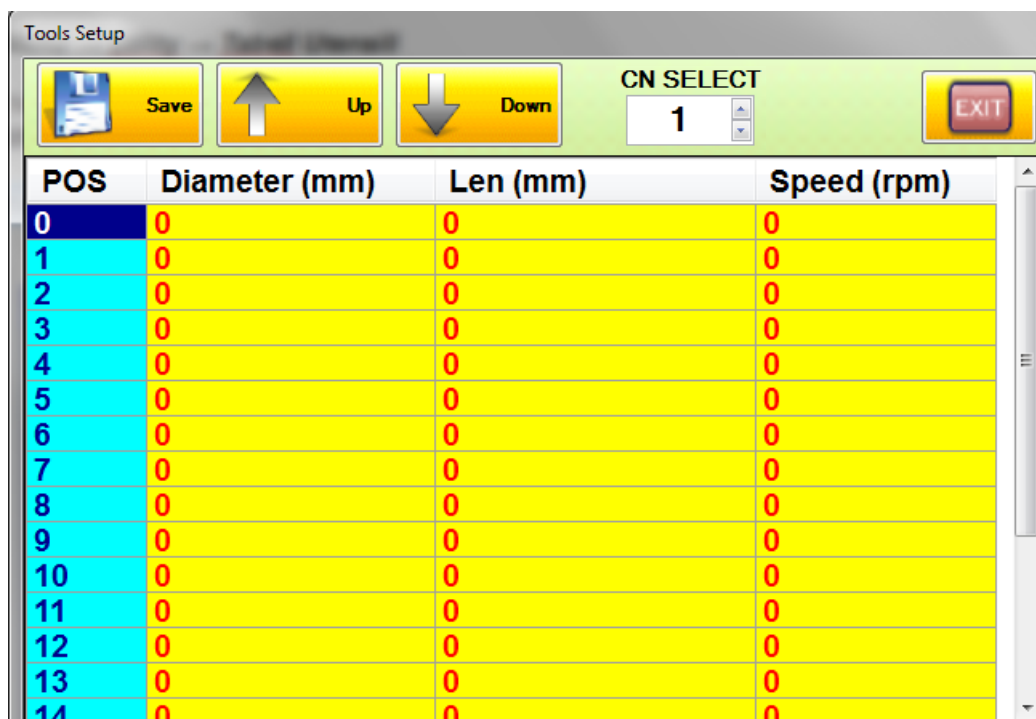
#### 3.1 Changing the tool parameters

To enable the management tools necessary to start the program parameters **GestTabut.exe**. This is possible both operator interface IsoNs:

**Menù → utility → Tabell Utensili**

Or launching the program directly **GestTabut.exe** located in the folder where you installed **IsoNs\utility\GestTabUt**

To start the program automatically loads the tool table saved.



POS	Diameter (mm)	Len (mm)	Speed (rpm)
0	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0

#### 3.2 Modify parameters

The parameters are changed by entering new values in the appropriate cell.

#### 3.3 Move Up/Down



The tool position can be moved into the table using the appropriate keys up or down. The tool then assumes the position shown in POS and will be loaded with statement **Tn**. Where **n** is tool position in the table

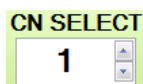
#### 3.4 Save configuration



This button saves the tool table in the file **IsoNs.cfg**

Saving refers only to the number of CN in **CN SELECT USE** visible in the field (if you have configured more than one CN) **If IsoNs is active, and is in STOP or PAUSE PROGRAM, the new configuration will be loaded automatically. Where is IsoNs RUN PROGRAM, the new configuration will be loaded to the first STOP or PAUSE.**

#### 3.5 Select NC Process



Through the field **CN SELECT**, displays the table of NC tool.

This field is visible only if you have set up more for the NC interfaces.

## 4 IsoNsTemi.exe

This utility allows you to customize the interface IsoNs backgrounds, colors and themes.

### 4.1 Customization interface

To start of the program is loaded the 'interface currently in use Ex:



#### 4.1.1 Theme choice

The theme is selected by the menù **"Themes List"**.

When is choice, is automatically displayed

#### 4.1.2 Windows BackColors

From menù **"Panel BackColors"** you can changed a panel Back Colors

#### 4.1.3 Buttons and Axes BackColors

From menù **"Buttons and Axes BackColors"** you can changed the label Axes Back Colors.

#### 4.1.4 Choice of Colors

From menù **"Generic Colors"** you can changed the generic label Colors.

#### 4.1.5 Config

From menù **"Config"**, you have the following options:

- Generate** Run. The actual configuration is saved in the IsoNs folder. This is available at new IsoNs
- Load** Load the configuration .TNS file saved in PC
- Save** Save the configuration file .TNS in the PC
- Save in Favorites** Save the actual configuration in the Favorites folder

#### 4.1.6 Favorites

From menù **"Favorites"** you can selected the favorites configuration.

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