



Licom Systems Ltd. Table of Contents

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NC Program Procedure AlphaCAM 1) Create the Process Planning 2) Select the relevant Post Processor 😕 3) Create/Import the required geometry. 4) Ensure Geometry is in Continuous Profile 5) Set Tool Directions 🔱 (Direction, Side and Start Point) 6) Select Tool 🟺 7) Select Machining Option : Rough or Finish **Profiling Cuts** for Pocketing for Area Clearance 3D Engrave Engraving Profile cuts. for Drilling Single tool drilling for Manual ToolPath ToolPath Point to Point creation. for Multi Drilling Drilling using a Multi Drill Head. for 8) OutPut Nc 🖧



Licom Systems Ltd. Training Supplement AlphaCAM / Xilog Interface

KilogPlus Help	Select XilogPlus plane	Upper Plane (Fa	NC Proa	ram Procedure Xilog In	divid	ual Parts			
Define Panel Select XilogPlus plane + Transport onto XilogPlus plane + Define 3D Plane	Transport onto XilogPlus plane → Define 3D Plane Tooling Management → Tool Management →	Right-hand Side Plane (Fac Left-hand Side Plane (Fac Front Plane (Fac Rear Plane (Fac	22 (2) (2) (2) (2) (2) (2) (2) (2) (2) (Bold Items are selected using the Xilog Menu 1) Create the Process Planning					
Tooling Management>Tool Management>	Transport onto XilogPlus plane → Define 3D Plane	Upper Plane (Fa Right-hand Side Plane (Fa	I) Create the						
Edit ToolPaths Roughing/Finishing Pocketing	Tooling Management > Tool Management >	Left-hand Side Plane (Fa Front Plane (Fa Rear Plane (Fa	$\begin{array}{c} \begin{array}{c} (2) \\ $	2) Select the relevant Post Processor 2		- 1117			
Boring Interpolation with Vector axis Cut with Blade	Tooling Management	Import Tooling Export Tooling Delete Tooling	4) Create/Im	3) From the Xilog Menu Set the Panel Details and the Tool List4) Create/Import the required geometry.					
XilogPlus PostProcessor Options	Roughing/Finishing Tool Management	Tooling Report Create New Tool	lf th Use	e geometry is required on the eda the Select XilogPlane menu optio	ge of tl on	ne panel.			
	Edit ToolPaths Roughing/Finishing	Edit Tool Select Tool	5) Ensure Ge	ometry is in Continuous Profile					
Define and position pane			6) Set Tool E	Directions 😗 (Direction, Side and	d Start	Point)			
DX (Length) 244(DY (Width) 1220 DZ (Height) 12	D BX (X Origin) D BY (Y Origin) BZ (Z Origin)	0	7) Select Too	"When working with a Xilog tools from the XilogPlus menu	contro u and N	ls it is Very Important to select the NOT the AlphaCAM Machine menu."			
			8) Select Ma	chining Option :	for	Drofiling Cuto			
	✓ Type of fixing	Preset	-	Pocketing	for	Area Clearance			
Repetitions 99	Tool List	DEF	•	3D Engrave	for	Engraving Profile cuts.			
				Boring	for	Drilling operations			
Confirm KCancel	Default	Save ? Help .		Interpolation With Vector Axis	for	Cutting round the edge of the part			
				Cut with Blade	for	Cutting with Saw			
			l e	Manual ToolPath for ToolF	Path Pc	oint to Point creation.			
			9) OutPut No						



XilogPlus Help	Select XilogPlus plane	Upper Plane	(Face 1)
Define Panel Select XilogPlus plane	Transport onto XilogPlus plane → Define 3D Plane	Right-hand Side Plane Left-hand Side Plane	(Face 2) (Face 3)
Transport onto XilogPlus plane 🕨 Define 3D Plane	Tooling Management > Tool Management >	Front Plane Rear Plane	(Face 4) (Face 5)
Tooling Management	Transport onto XilogPlus plane →	Upper Plane	(Face 1)
Tool Management	Define 3D Plane	Right-hand Side Plane	(Face 2)
Edit ToolPaths Roughing /Einishing	Tooling Management	Left-hand Side Plane Front Plane	(Face 3) (Face 4)
Pocketing		Rear Plane	(Face 5)
Boring	Tooling Management	Import Tooling	
Interpolation with Vector axis	Tool Management >	Export Tooling	
Cut with Blade	Edit ToolPaths	Delete Tooling Tooling Report	
XilogPlus PostProcessor	ł Roughing/Finishing	and a second second second	
Options	Tool Management +	Create New Tool	
12	Edit ToolPaths Roughing/Finishing	Edit Tool Select Tool	

NC Program Procedure Xilog Nested Parts

Bold Items are selected using the Xilog Menu

Parts with side machining cannot be nested. Parts MUST NOT be created on a Panel

1) Create the Process Planning

2) Select the relevant Post Processor 😕

3) Create/Import the required geometry.Ensure Geometry is in Continuous Profile

4) Set Tool Directions (Direction, Side and Start Point)

5) Select Tool "When working with a Xilog controls it is Very Important to select the tools from the XilogPlus menu and NOT the AlphaCAM Machine menu."

6) Select Machining Option :

	Rough or Finish	for	Profiling Cuts
	Pocketing	for	Area Clearance
Ÿ	3D Engrave	for	Engraving Profile cuts.
	Boring	for	Drilling operations
	Cut with Blade	for	Cutting with Saw



Manual ToolPath for ToolPath Point to Point creation.

7) Save each Part Item "DO NOT SAVE PARTS With a MATERIAL DEFINED"

Repeat Steps 1 to 8 for each part to be nested.

8) Create Sheet(s)

9) Nest Components 🚨 (From Drawing or Nest List)

10) OutPut Nesting.



AlphaCAM & XilogPlus.

When using a XilogPlus controlled machine tool certain options are MANDATORY.

- 1) Tools should be defined at the Machine and imported into AlphaCAM.
- 2) Tools MUST only be selected using the XilogPlus menu.
- 3) Individual Parts MUST be created on a Panel.

The panel should be created using the XilogPlus Menu.

- 4) Parts for NESTING Must Not be created on a panel.
- 5) Machining Options can be applied using either the XilogPlus Menu or the AlphaCAM Machine menu.

AlphaCAM / XilogPlus Dialog

To Change or Enter values in the XilogPlus dialog options you have to 🖱 click in the field to activate it. When a field is activated the associated graphic view is changed to give a pictorial representation of the option. Once the value is entered or selected you have to press Enter - or Tabus to confirm the entry.

Select Tool

When working with a XilogPlus control tools MUST be selected via the XilogPlus menu.

:/LICOMDAT/RLTOOLS/DEF/	~	1	Tool Type	Cylindrical Router		
001-FLAT BIT		2	Tool ID [1-96/E1-E96]	E5		T
002-FLAT BIT		3	Opposite Tool in X	E5		T
E001-12MM DIAMOND	-	4	Opposite Tool in Y	E5	1 8	A
E002-12MM LONG SPIRAL		5	Spindle Number	1		
E003-4MM SPRIAL		6	Hood Position	Lowered Position		1
E004-50MM SKIMMING CUTTER		7	Tool Length	103		Spherical
E006-6MM SPIRAL		8	Working Length	35		Toroidal
E007-4MM DIAMOND		9	Maximum Diameter	16.1		Toroldar
E008-4MM GROOVER	*	10	Working Diameter	16.1		
	1		e 17 1 1 1	R	×	
[CTRL+ENTER] = Edit - [INS] = N	New - [D	EL] = Rem	nove - [CTRL+C] = Copy.			
2 Edit Copy		😭 Ne	w 🕅 Delet	e		







Rough or Finish

1 Compensation	NO	- ^	Carl and the second sec
2 Distance from finished (mm)	0		
3 Pass around edges	Constant radius		The second se
4 Radius of pass around edges (mm)	0		a second s
5 "D" return upstroke Z dimension	20		
6 Machining Z dimension	0		The second se
7 Number of passes	1		1
8 Type of passes	Equal		
9 Bidirectional	No		4
0 Height of first cut (mm)	0		🔮 Tool
1 Height of last cut (mm)	0		103 - 4MM SPRIAL, L=80.55, D=4.5, Max. V=8, Ma 18000
2 Tool speed of rotation (rpm) 3 Feed speed (mm/min)	15000 0	•	- and a start of the
4 Tool machining speed (mm/min)	5		
5 Lead-in into profile mode	None		
6 Lead-out of profile mode	None		
7 Line length: Tool Radius x			and the second se
8 Arc Radius: Tool Radius x			and the second se
9 Approach angle (*)			
0 Overlap (mm)			
1 Sloping lead-in			
2 Sloping lead-out			🕈 Tool
3 Hood Position	Lowered Position		103 - 4MM SPRIAL, L=80.55, D=4.5, Max. V=8, Ma 18000
4 Enable machining	Yes		and a start and
Tool	Tool Path	1	Open

To Change or Enter values in the XilogPlus dialog options you have to \Box click in the field to activate it. When a field is activated the associated graphic view is changed to give a pictorial representation of the option. Once the value is entered or selected you have to press Enter \blacksquare or Tab^t to confirm the entry.





Pocketing

1 Ts	ype of pocketing	1-Concentric	
2 Fi	nal pass around islands	Complete	
3 St	tart cut	Centre	
4 Di	istance from finished (mm)	0	
5 "D)" return upstroke Z dimension	20	• •
6 M	achining Z dimension	0	
7 Ni	umber of passes	1	
8 Ty	vpe of passes	Equal	
9 He	eight of first cut (mm)	0	
10 He	eight of last cut (mm)	0	
11 To	ool speed of rotation (rpm)	15000	1 2 3
12 Fe	eed speed (mm/min)	0	
13 To	ool machining speed (mm/min)	5	
14 Cu	ut width (mm)	2.25	🔮 Tool
15 Ho	ood Position	Lowered Position	103 - 4MM SPRIAL, L=80.55, D=4.5, Max. V=8, Max 18000
16 Er	nable machining	Yes	
4	╈ Tool	🛱 Tool Path	Gopen

To Change or Enter values in the XilogPlus dialog options you have to \bigcirc click in the field to activate it. When a field is activated the associated graphic view is changed to give a pictorial representation of the option. Once the value is entered or selected you have to press Enter \leftarrow or Tab^t to confirm the entry.



Drilling / Boring

murap	Holes			
Op No.	2			Tool: DRILL - 10M
-				Change Tool
Type	6 D II		-	C D :
• Drilling	Pecking	5	l apping	Boring
Which Holes				
 All Selecte 	ed Holes	C	All Selected 0	rosses
Holes to M	1atch Drill Diameter			
C All Holes of	of Given Diameter		Diameter	0
NC Code				
Canned C	ycle 🔿 Sub	proutine	C Glo	bal / Linear
	[_	I	
	UK	_	Cancel	
rilling				5
	Z Levels (or Distar	nce from Pl	ane)	
	S	afe Rapid	Level 50	
	Banid Do	wn To (B-E	Nane) 5	
	(hopid bio	an io (i i		
		Materia	ITop U	
		Bottom of	Hole -20	
	Traverse At			
	Safe Rapid	C	R-Plane	
	Hole Depth			
	G Dell Te	6	Chauddar	
	Se Dill Hp		Shoulder	
	OK		Cancel	
rilling .	Tool: DRII	1 - 10	18484	
Tooling	TOOL DIG	. L - IX		
To	ol Number 33	-	Offset Num	per 33
	Diameter 10	_	Spindle Spe	ed 5000
	F 1 1000	_		
	Feed 1200			
Coolant				
None	C Mist	C Floo	н Ст	hrough Tool

1	Type of boring	Normal 💌	
2	Select Holes	Manual	
3	Diameter (mm)	0	
4	"D" return upstroke Z dimension	20	
5	End of hole Z dimension	0	1 2 3
6	Pass depth (mm)	0	
7	Tool speed of rotation (rpm)	15000	
8	Tool machining speed (mm/min)	0	
9	Hood Position	Lowered Position	Care and a second
10	Enable machining	Yes	🖨 Tool
			103 - 4000 SPKIAL, L=80.55, D=4,5, Max. V=8, Max. S 18000
	Tool	😽 Tool Path	🚔 Open

To Change or Enter values in the XilogPlus dialog options you have to \bigcirc click in the field to activate it. When a field is activated the associated graphic view is changed to give a pictorial representation of the option. Once the value is entered or selected you have to press Enter -1 or Tab^t to confirm the entry.



There are two specialist options on the xilog menu which is achieved using the Rough or Finish option from the AlphaCAM Machine menu.

Interpolation with a Vector Axis

1 D rapid approa	ch dimension (mm)	20	
2 "Z" machining de	pth (mm)	0	Column Start I was a
3 "H" machining h	ight from bottom (mm)	0	M
4 Tool speed of rot	ation (rpm)	15000	A THE A DE A
5 Feed speed (mm.	min)	0	1 LANGE CELEGA
6 Tool machining s	peed (mm/min)	5	and the second design of the second se
7 Hood Position		Lowered Position	
8 Enable machining	i -	Yes	
			Tool 103 - 4MM SPRIAL, L=80.55, D=4.5, Max. V=8, Max. S 18000
			A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PROPERTY AND A REAL PRO
쓭 Tool	Geometries	Tool Path	Open

Cut With Saw

1 Compensation		Outside plane 👻		100000
2 "D" rapid approach d	imension (mm)	20	The second se	1
3 "Z" machining depth	(mm)	0	1	1
4 Cut extensions : R.Ut	x	0		
5 Tool speed of rotation	ı (rpm)	15000		
6 Feed speed (mm/min)		0		
7 Tool machining speed	t (mm/min)	5	1	2 3
8 Hood Position		Lowered Position	-	\sim
9 Enable machining		Yes	CIAL OCK	-
			₩ 1001 103 - 4MM SPRIAL, L=80,55, 18000	D=4.5, Max. V=8, Max.
# Tool	Geometries	🙀 Tool Path	Open	Save
ਊ Tool	Geometries	🙀 Tool Path	Open	Save



Work Planes

When creating geometry on work planes ie panel edges, or manipulation of geometries from one face to another the **Select XilogPlus Plane** or **Transfer onto XilogPlus Plane** options should be used.

Select XilogPlus plane	Þ	Upper Plane	(Face 1)
Transport onto XilogPlus plane	Ð	Right-hand Side Plane	(Face 2)
Define 3D Plane		Left-hand Side Plane	(Face 3)
Tooling Management	10	Front Plane	(Face 4)
Tool Management	Ļ	Rear Plane	(Face 5)
Transport onto XilogPlus plane	•	Upper Plane	(Face 1)
Define 3D Plane		Right-hand Side Plane	(Face 2)
Tooling Monogoment		Left-hand Side Plane	(Face 3)
Tool Management		Front Plane	(Face 4)
roormanagement	30	Rear Plane	(Face 5)

C:\LICOMDAT\RLTOOLS\DEF\	~	1 Tool Type	Shaped Router	~	
2005-12MM LONG DIAMOND 2006-6MM SPIRAL		2 Tool ID [1-96/E1-E96]	E10		1
	-	3 Opposite Tool in X	E10		8
E002-4MM DIAMOND	-	4 Opposite Tool in Y	E10		T
E009-3.2 SPIRAL		5 Spindle Number	1		
E010-ENGRAVER	-	6 Hood Position	Lowered Position		(m) 2 2
E011-20MM DIS		7 Tool Length	80		Spherical
E013-ENGRAVER 2	35	8 Working Length	10		1 Transidat
E031-12MM VECTORHEAD COD.293623650	14D	9 Maximum Diameter	14		
E032-6MM VECTORHEAD COD.2936236504		10 Working Diameter	1		
	> -			~	

Engraving

Engraving is done using the **3D Engraving** option from the AlphaCAM Machine menu. You should however select an Engraving Tool using the XilogPlus menu. The tool **MUST** be of type **SHAPED TOOL.**



Preset panel options

🔿 Mechanical Hold-down

X Cancel

Open .

Anthening Head Configuration

Extractor bood

Customise windows

Mechanical Options

A PostProcessor options

Confirm

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10 Revision A

Import Tooling **Tooling Management** Export Tooling **Tool Management** . Delete Toolina Edit ToolPaths **Tooling Report** Roughing/Finishing **Tool Management Create New Tool Fdit Tool Edit ToolPaths** Select Tool Roughing/Finishing AlphaCAM-XilogPlus system options Preferences PGM converter nath A Preset Directories C:\LICOMDIR\VBMACROS\STARTUP\RLINK\ Preset panel dimensions

Import TLG Default

Export TLG Default

Output PGM Default

Output MIX Default

Xilog4/Parsifal path.

C:\PROGRAM FILES\SCM GROUP\XILOG PLUS\JOE

C:\PROGRAM FILES\SCM GROUP\XILOG PLUS\JOE

C:\PROGRAM FILES\SCM GROUP\XILOG PLUS\JOE

C:\PROGRAM FILES\SCM GROUP\XILOG PLUS\JOE

Definitions and Configuration.

Tooling Definitions.

When using the XilogPlus machine tool controller interface. All tooling definitions should be carried out at the machine and the tool def information then imported into alphaCAM.

Although there is an option to create a new tool for XilogPlus on the AlphaCAM computer it is preferable to created new tools on the Machine as this ensures compatiblity of information.

The exception to this is User Defined (Shaped) Tools, these have to be defined in AlphaCAM and exported to the Tlg file on the machine. If the Tlg file is not exported, when a new tool is added at the machine and the Tlg file is imported into AlphaCAM the engraving tool is overwritten and the geometry is lost.

Machine Configuration file

When off line programming, the XilogPlus CFG folder on the machine computer must be copied to the XilogPlus folder on the AlphaCAM computer.

The tooling.TLG and the *.PGM files are usually stored in the preset directory:-

Network Path to Machine\Program Files\SCMGroup\XilogPlus\Job

Some setups require the .PGM file to the local Drive and transferred to the machine later.

C:\Program Files\SCMGroup\XilogPlus\Job

Hood Settings

? Help ...

To activate Automatic Hood there must be "**E**=" in the program. This is set in the **XilogPlus** | **Options** | **Mechanical Options** and the **Extractor Hood** is set to **Hood with NC Positions** with a blank value (NOT 0)



Save ..



Post Processor Configuration

There are several settings that affect the program output. These are altered according to your requirements and machine seetings.

Unit of measurement:

Sets the unit of measurement for tool data during tooling importation and tooling exportation.

Profile/boring lead-in speed:

Sets the default feed speed for tool lead-in into the workpiece or for execution of boring, which will be proposed during tool path parameter definition.

Generating arc data ...

Sets the Post-process arc generation mode. Arcs can be generated by programming the I and J centre coordinates or by programming their radius. The Xiso language instructions that enable these two programming modes are XA2p and XAR2. When a workpiece is finished the arc generation mode that has been selected is no longer significant but the arc generation radius data (XAR2) makes the Xiso program easier to read and edit manually..

Moving axes at the end of a program

Preset Directories Preset panel dimensions Preset panel dimensions Preset panel options Qustomise windows PostProcessor options PostProcessor options PostProcessor options	Select unit of measurement: Lead-in speed into profiles/boring Generate arches whith: Center Move axes at end of program
	T Absolute coordinates X = 0 T Load first tool Y = 0

This option enables the Xiso XN instruction to be inserted automatically at the end of each Post-P generated program. This instruction is responsible for moving the main X,Y and Z machine axes to a given position by specifying the coordinates in relation to the machine origin without taking into account the specular areas (Absolute coordinates) or the coordinates in relation to the piece origin, taking into account the specular areas.

t also enables the first tool used in the program to be fitted onto the main spindle by activating the tool changeover while the machine is moving into the programmed position and the operator is unloading the finished piece and loading on a new one.

In this way when the workpiece program starts up, the machine will already have fitted the tool needed for the first machining stage.





