

## Industry Announcement - Technical Data Sheet



# ALPOLIC® & ALPOLIC®/fr

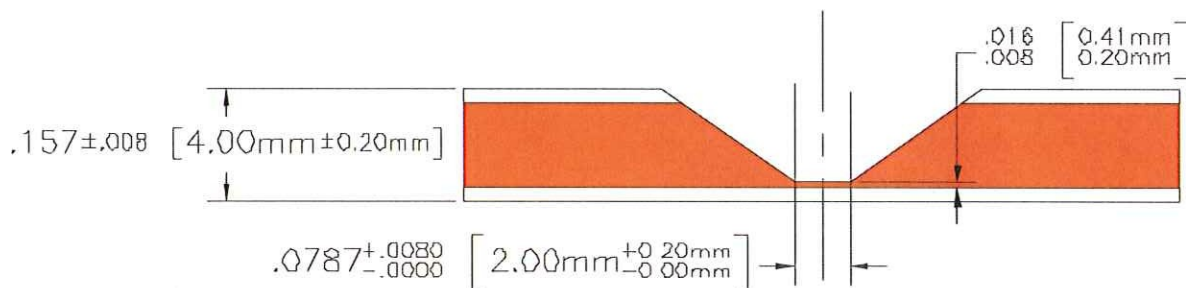
XYZ Automation and PanelBuilder continue to lead the market in processing Alpolic & Alpolic/fr composite material. In response to questions from the field in regards to the correct processing of Alpolic material we have attached the following technical document. Specifically, we would like to remind all of our customers about the importance of correct XYZ machine setup, tooling selection and machine maintenance. Please ensure all personnel responsible for your XYZ PanelBuilder system have been trained by an XYZ technician. They should read and fully understand this data sheet.

### V-Groove depth:

Correct processing of Alpolic composite material requires the V-groove depth to be set correctly. If the V-groove depth is:

- **Too shallow** - you will need greater force to fold the panel and the subsequent fold radius may be too large.
- **Too deep** - you risk machining through to the metal 'skin' (negating the material guarantee) and the subsequent fold radius will be too small, creating excessive stress on the paint coating and possible failures.

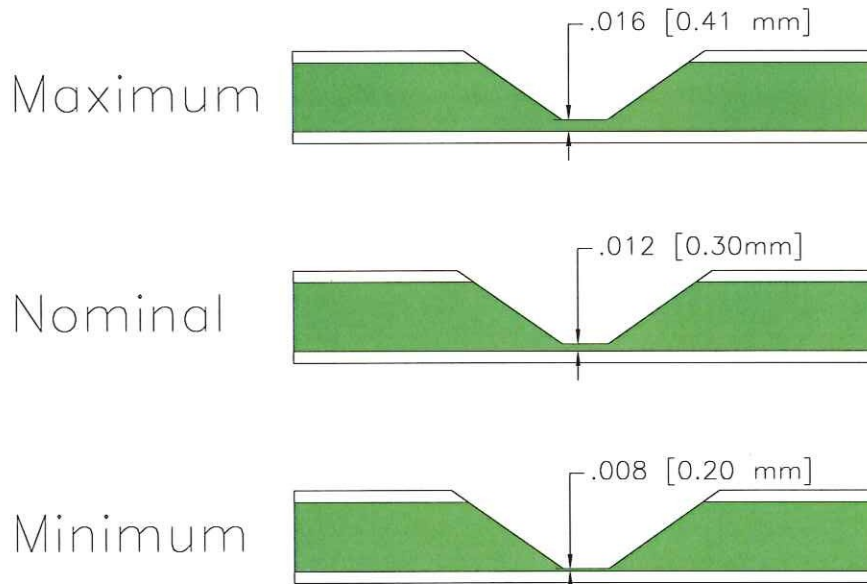
### V-Groove depth values



**Stock Amount (thickness of core material to be left)**

In order to allow for the material thickness tolerance, we advise all of our customers to ensure a stock amount of no less than 0.008inch (0.20 mm) and no more than 0.016inch (0.41 mm). We recommend that you leave a nominal stock amount of 0.012 inch (0.30 mm).

### V-Groove depth values

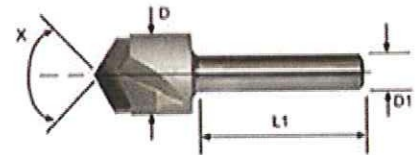


### **Stock Amount (thickness of core material to be left)**

There is a tendency to reduce the stock amount further; leaving less core material which allows for easier folding and a tighter radius will be achieved. However you risk exposing the metal skin and causing excessive stress to the paint coating and possible failures. When these failures occur based on cutting to deep the warranty of the product will not be covered by your supplier.

### **V-Groove tool geometry:**

XYZ Automation supplies 'proven' tooling for processing Alpolic composite materials, however some customers are purchasing tooling from other suppliers. Please be aware that the geometry of the V-Groove tool includes a 2mm flat area on the bottom of the tool. Without the flat area the bend radius will be too small, causing excessive stresses in the paint coating and possible failures.



Micrometer



Depth Gauge

### **Quality Control:**

Many customers set the V-Groove tool depth by 'eye' rather than take accurate measurements. You must have a Micrometer and a Depth Gauge in order to inspect material thickness and the V-Groove depth respectively. You must inspect the V-Groove regularly in order to make any fine adjustment to the nose rider system.

**Failure to maintain the V-Groove depth and subsequent fold quality may result in failure of the paint coating.**

### **MDF Sacrificial Boards:**

The MDF sacrificial boards must be flat. After placing a new sheet of sacrificial MDF on your machine XYZ Automation recommends that you skim both sides of the board to ensure a flat surface is produced. You should use a 50mm diameter skim tool (available from XYZ Automation) After skimming is complete you should vacuum the MDF boards thoroughly. XYZ Automation recommends that ½” to ¾” thick MDF is used for sacrificial board be used.

The MDF sacrificial boards must not be allowed to deteriorate excessively. Regular inspection, cleaning, skimming and replacements are required in order to maintain accuracy and consistency of cut.

### **Routine Maintenance:**

Routine maintenance of your XYZ CNC Router is a significant process in your total quality control procedure. You must maintain your XYZ CNC Router according to the maintenance schedule (Section 8) in the manual which was supplied with your machine. An annual machine service by a trained XYZ technician must form part of your routine maintenance and quality control schedules.

**If your XYZ machine has not been serviced in the last year please contact XYZ Automation, for a quotation.**

In direct response to recent questions from the field, a detailed set of procedures for your XYZ CNC Router has been attached.



## Daily Check List

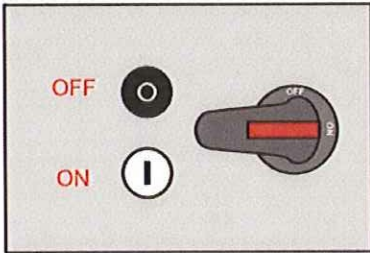
### STEP 1

FOLLOW MACHINE STARTUP PROCEDURE



## XYZ Router Table Startup Procedure

In order to properly boot up your XYZ router table it is recommended that the following guidelines are performed on a daily basis, or whenever the table has been OFF for a longer period of time (one day or more).

- make sure the E-stops are pulled out, before switching the table ON
- connect air supply to the table
- turn the handle on the Electrical Box to ON

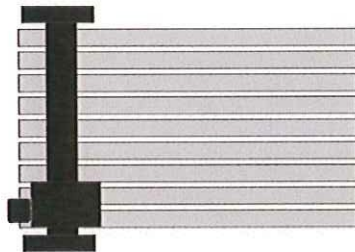



Electrical Box: located on the back of the table

- push the ON button
- Sub Console display will now read "Seek X Y Origin", toggle  between Yes or No & press Enter 

(by selecting YES the machine will travel to its true 0,0 origin or the home position)

X Y Z axes initialize  
& the table locates its  
true 0,0 origin.



- Next the display will read "Warm up Spindles?" Toggle  between Yes or No & press Enter 

(by selecting YES the spindle will run at 9000 RPM for 10 minutes. This warms up the bearings inside the spindle(s), and the table remains immobile during the warmup)Note:



Note: During warmup the spindle(s) RPM reaches 9000, so be aware and keep away if you do not have a pressure foot/guard attached.

**STEP 2**

Clean pressure foot and check that it is working correctly for the removal of swarf. Check the condition of the donut to be sure that it is in good working condition. Remove all vacuum hoses and make sure that they are clean plus check manifold for obstacles that can effect the collection of the chips.

**STEP 3**

Clean vacuum bed area and check the condition of the sacrificial sheet to determine if it needs to be replaced. Replacing the sacrificial sheet will effect how well the parts are held down when cutting, once the sheet is cleaned a visual inspection can quickly determine if it should be replaced.

**STEP 4**

Check and clean all rack and pinions in the 'X' and 'Y' axis plus check and clean the lead screw in the 'Z' axis. All axes should be free of any obstacles and move freely. Greasing of all moving parts will help in the smooth running of the machine.

**STEP 5**

The sacrificial board should be skimmed to produce a flat working surface, the number of times that this process is required can be greatly effected by how deep into the sheet cutting occurs.

**STEP 6**

Once machine has been cleaned and checked, setup and run first job stopping to check that the cut depth falls within the required specification. If depths are outside of these specifications make the corrections necessary before continuing. Cutting to the aluminum skin will put the panel out of the spec. and produces failures.

**STEP 7**

To maintain the best cutting condition the cutting tools should be checked daily. The quality of the edge of the parts coming off the machine is the best indicator of when tooling should be replaced.

## **Weekly Check List**

### **STEP 1**

FOLLOW DAILY CHECK LIST PROCEDURE

### **STEP 2**

Check and clean the filter in pump for material hold down and the blower for chip collection, if these filters are not kept clean it will effect how well the material is held to the bed and the blower's ability to collect chips.

### **STEP 3**

Check all cables and connection between the computer and machine.

### **STEP 4**

With the spindle unplugged check that the spindle bearings are spinning free and smooth. Check and clean collets and cover-nuts to ensure proper holding of tooling when cutting.

### **STEP 5**

Clean and grease all bearing, rack and the lead screw.

## **Monthly Check List**

### **STEP 1**

FOLLOW WEEKLY CHECK LIST PROCEDURE

### **STEP 2**

With the machine turned off clean inside of electronics box. Check that the fan is spinning freely once box has been cleaned and the machine powered back up.

### **STEP 3**

With the machine power off check and clean the inverter paying attention to the fan, once the machine is powered back up check that the fan is spinning freely.

### **STEP 4**

With the spindle unplugged check that the spindle bearings are spinning free and smooth. Check and clean collets and cover-nuts to ensure proper holding of tooling when cutting.

### **STEP 5**

Clean and grease all bearing, rack and the lead screw. Also check all belts for tension and wear.



## **Tool Selection-Description and Part Number**

### **V Groove**

(1) H-V- Custom-F-H-V110(110 degree V Bit c/w 2mm flat insert)  
Insert-Custom/F110 (Replacement insert 110 degree with 2mm flat) HA-50AL (Arbour)

(2) H-V- Custom-F-H-V130(130 degree V bit c/w 3mm flat insert)  
Insert-Custom/F130 (Replacement insert 130 degree with 3mm flat) HA-50AL (Arbour)

(3) H-V- Custom-F-H-V150 (150 degree V bit c/w 3mm flat insert)  
Insert-Custom/F150 (Replacement insert 150 degree with 3mm flat) HA-50AL (Arbour)

### **Profile Tooling**

(4) 63-618 (3/16 inch carbide bit with ¼ inch shank for thru cuts)

### **Collets**

(5) 20263 (RD32 ¼ inch collet)

(6) 20262 (RD32 ½ inch collet)

### **Resurfacing Tools**

(7) 107RL8-38 (1½ inch diameter)

(8) 107RL8-51 (2 inch diameter)

(9) 91-104 (2 ½ inch diameter with inserts)  
91-104 (Replacement inserts)

### **Titanium/Stainless Steel ACM applications**

Please contact Alpolic at 1 800-422-7270 Ext. 1 for processing recommendations.

Please note that misting coolant is required when processing stainless or titanium ACM. For recommendation on coolant please contact AXYZ or your material supplier.

All above tooling is available for immediate delivery.

Please call:

Burlington ON (800) 361-3408 ext 236

Vancouver BC (888) 430-4006

Montreal QC (800) 682-3852

Cincinnati OH (800) 527-9670

Atlanta GA (678) 381-2300

### **Service and support**

We have five locations that provide service support and replacement parts, support for your PanelBuilder software can also be found at these locations. If you have any questions regarding the operation and maintenance of your AXYZ CNC Router, or you wish to purchase tooling, please contact your local AXYZ Automation support office.