Appli-K™ Cutter
and
Easy Stitch™

User Guide

Text Revision 1, PN 106119
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OVERVIEW

The two basic components of the Ioline Appli-K™ System are described in this guide: (1) the Appli-K™ Fabric Cutter and (2) the Easy Stitch™ automatic digitizing software. Although usually operated as an integrated system, the Appli-K™ Fabric Cutter can cut designs created with other software, and the Easy Stitch™ software can create sew disks without using the Appli-K™ Cutter.

The Appli-K™ Cutter, plugged into your Windows® or Mac computer, cuts the outline of designs created by embroidery or graphic design software. The software included with the Cutter uses the placement stitch in Tajima, Melco expanded, or Toyota sew disks to cut fabric into pieces that will be exactly covered by the stitches. The Appli-K Cutter and software will also cut materials using *outline* files created by CorelDraw, AutoCAD or FlexiSIGN. These cut pieces can then be fused or manually sewn onto athletic uniforms, sweatshirts, etc. For use with a Mac, see the *Using Mac Computers* section. For use with a Barudan, see the *Barudan Embroidery Machine* section.

The Easy Stitch™ automatic digitizing software, installed on your Windows® computer, converts *outline* files created by CorelDraw, AutoCAD or FlexiSIGN into *sew disks* in Tajima, Melco expanded, or Toyota embroidery machine format. You will not need other embroidery software unless you need to add embroidery to the appliqué stitches created by Easy Stitch™. Shops that already have embroidery software have found that it is *faster* to create stitches with Easy Stitch™, and that employees with no digitizing experience can usually be trained in less than an hour. If you purchased Easy Stitch™ by itself, skip the Cutter sections and go directly to the *Easy Stitch* chapter.

Important: Before installation, follow the ***Preparation*** instructions to make sure you have everything you will need. After preparing, *follow the installation instructions step by step* to ensure proper operation. For unresolved questions, contact IOLINE Customer Support at 425-398-8282, or email to techsupport@ioline.com.

SAFETY AND PRECAUTIONS

Please read these safety guidelines before beginning operation of the Appli-K™ Cutter. The cutter uses a very sharp blade when cutting. The parts can move quickly. Always observe the following safety precautions:

- Keep your body away from the front of the Appli-K™. The tray moves freely in this space while the cutter is in operation.
- Do not try to repair the machine without factory authorization. Only qualified service personnel should attempt any disassembly or access to internal components. If external mechanical adjustments are necessary, turn off the cutter and disconnect it from all power sources (both the computer and the wall outlet).
- Be careful with hair, jewelry, or loose clothing near the machine. They can become caught in the mechanical parts.
- Never move the carrier (the part that carries the blade), or the tray, by hand. Use the **Arrow** keys and let the machine do it.
- Keep hands away from the carrier when the cutter is in operation. The carrier will automatically move to its right end position when the power is turned on.
- Be careful when lifting the Appli-K. Lift with your hands under the ***gray end covers*** only.
- Use caution when changing a blade in the blade holder. See the ***Install a Blade*** section of this User Guide for the recommended procedure.
- Be careful when handling the blades. They are sharp and could cause an injury if mishandled. Although the blades are made of an extremely hard material, they are brittle and can break if dropped or mishandled.

CUTTER INSTALLATION

Preparation

Before installing the Appli-K™ cutter hardware and software, follow the instructions below to ensure that your computer is ready. Since an internal modem is now standard in most computers, set up in a way that will conflict with the port used by the Appli-K, the instructions in step 2 below are especially important.

1) You will need a computer with the following:
Windows 95, 98, or NT. For the Mac, see ***Using Mac computers***.
486 CPU 100 MHz minimum; Pentium 75 MHz acceptable; *a faster CPU highly recommended*
32 MB minimum memory
10 MB free disk space for the Ioline software
One unassigned serial port
One parallel port (The Ioline security key can share this port with other devices.)

2) NOTE: Before installing the Appli-K™, you must first determine if your computer has a serial port available ***that will not conflict with another device***. In Win95, go to the Control Panel, double click on the Modems icon, then click on Properties. If there is no modem found, skip to step 3. Note whether the Modem is on COM2 or COM3. Now go back to the Control Panel and double click on the mouse icon, then click on the General tab. Is there a serial mouse? ***If no serial mouse is found, skip to step 3.*** If a modem installed on COM2, and a serial mouse (or other serial device) is assigned to COM1, you have a conflict that *must be resolved before you can install the Appli-K*. Follow the instructions in ***Resolving serial port conflicts,*** page 10.

3) Check the back of your computer to see if there are any serial port connectors with nothing plugged into them. *Serial* port connectors can be distinguished from the *other* connectors as follows: they contain a total of either 9 or 25 **male** pins, arranged in two rows. If your PC does not have an available serial port, you will need to install an inexpensive Serial Port card in your PC before proceeding with the installation. *NOTE: After adding the serial port card,* follow the instructions in ***Enabling a serial port***.

4) If you use your embroidery software to create stitch files for **Barudan** embroidery machines (and these files contain outlines you will cut with the Appli-K) see the special instructions in ***Barudin embroidery machines***.

Connect the Appli-K™ Cutter

1) Carefully inspect the shipping box for damage, and report any damage to the carrier.

2) To avoid serious damage to the machine, follow lifting instructions on the Unpacking Instructions sheet when moving the Appli-K™, i.e. lift with your hands under the ***gray end covers*** only. Using two people, lift the Appli-K™ carefully onto the table you plan to use. Make sure that there is at least 17" clearance behind the body of the Appli-K™, so that the Tray (the moving cutting surface) will not be obstructed in operation. Keep in mind that the supplied cable to connect the Appli-K™ to your PC is 15 feet long. **TIP**: If you need extra distance, you may use a *serial* cable up to 25 feet long, but it must be a *straight through connection* 25 pin to 25 pin standard RS232 serial cable.

3) Locate the ***accessory kit*** inside the shipping box. It may be taped to the side of the box, or underneath a cardboard insert.

4) Connect one side of the computer cable to the Appli-K™ and the other to an available serial (COM) port on your PC. (On many PCs the serial port connector is labeled with the symbol **IOIO** beside it.) If the computer has a Serial Port with a 9-pin (DB-9) connector, use the 25 pin to 9 pin cable adapter supplied.

5) Slide the *removable* tray out from its shipping position (on top of the *permanent* tray) and set it aside for use in ***Installing a blade***.

6) *Remove the 4 screws and 4 nuts* preventing the permanent tray from moving during shipment.

7) Plug the Appli-K's power cord into a surge protector power strip. While keeping your hands away from the tray and mechanism, turn on the power to the cutter. The power switch is on the back of the cutter, beside the power cord.

8) Press the Start/Stop button on the Control Panel once and the Start/Stop light will turn Green.

Install Software

Two kinds of Ioline software will be installed. The Bridge software is used to send designs to the cutter and, if desired, to multiply the design to fill the sheet of material available. The Control Center will be used only to send special calibration settings to the cutter, or for diagnostic testing.

1) Locate the Ioline Bridge key, a black device about the same size as a small match box, shipped in the accessory kit.
2) Plug the Ioline Bridge *key* into the ***parallel*** port on the computer, which has 25 *female* pins. Do not plug the key into the serial port, which has 25 *male* pins. If some other device is already plugged in, unplug it, then insert the Ioline key *between* that device and the computer port. The Ioline Bridge key is designed to have other parallel devices plugged into it, such as a parallel port Zip drive or printer.
3) Locate the Ioline software media: the Control Center, plus the Bridge (or the *Bridge with Easy stitch™* if ordered.)
4) Start Microsoft Windows and insert the Ioline Bridge media into the drive. If you purchased the *Bridge with Easy Stitch*, insert this media **instead of** the media labeled *Bridg*e.
5) Win95: Click on ***Start***, then select ***Run***.
   Type: **A:SETUP** (Substitute the correct letter if the drive is not A) then click ***OK.***
6) The "Software license agreement" screen appears. If your Windows system software is not installed in the standard location c:\windows, edit this box. If you agree to the license terms, click on the 'I agree' box.
7) When the message "process is finished" appears, click the X in the upper right corner of the INSTVXD window.
8) Install the Control Center. Insert the Ioline Control Center media into the drive.
   Click on ***Start***, then select ***Run***.
   Type: **`A:SETUP`**, (or other drive letter, if appropriate) then click ***OK.***
   The dialog box asks you if the default installation directory is OK.
   Change the directory name to **`C:\WSCC`**, then click on ***Continue***.
9) After completion, remove the media and ***restart the computer***.
10) Make sure the Start/Stop light on the cutter is Green, and then double-click on the Ioline Control Center icon. A window titled 'The Appli-K Control Center' will pop-up.

[***NOTE***: *If you get a window titled 'Control Center Setup' showing a Plotters List, the software was unable to communicate with the Appli-K™. First,* ***make sure the green light was on*** *when you started the Control Center. Also, make sure the COM port selected (COM1 to COM4) is the one the Appli-K™ Cutter is connected to. Next, refer to* ***Preparation*** *step 2 to determine if you have a port conflict. If that procedure does not show a conflict, you may have a hardware problem such as a faulty cable or COM port.* ***See Communications port testing*** *for assistance before continuing the installation.*]

One of the four ports from COM1 to COM4 is marked with a black dot. This is the COM port the Control Center found the Appli-K™ Cutter connected to. *Note this COM port number* for use in ***Testing the Appli-K System***.
Now close the Control Center.

Load Material

1) Turn the Start/Stop light to Red by pressing the Start/Stop button; the cutter is now off-line and the purple Arrow keys can be used to position the blade holder. The Up and Down arrows move the Table back and forth respectively, while the Left and Right arrows move the blade holder. (The light must be red for this to work). Press the Up Arrow key to move the Table out, for easier access.
2) Remove the paper cover sheet from the adhesive sheet on the removable tray.
   NOTE: *Keep this cover sheet clean so that you can re-apply it after you are done cutting for the day. This cover sheet keeps dust, fibers and air away from the adhesive surface when not in use, extending the life of the adhesive sheet.*
3) Put the material you wish to cut on the adhesive surface and press it down, a little at a time, starting at one end and pushing out any bubbles as you gently smooth it out with our hand.
   CAUTION*: Ensure that material to be cut does not extend beyond the edge of the tray where it could become caught in the mechanism that moves the tray. Do NOT cut regular paper, cardboard, or any materials with many loose fibers on the bottom side - such materials will permanently stick to the adhesive surface, reducing the life of the adhesive sheet.*
4) Place the removable tray on the Table (the permanent tray), then tighten the thumb screws.

Install a Blade

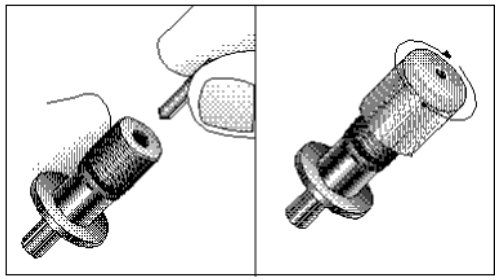


Figure 1 – Blade Holder and Foot

1) Find the Blade Holder, which is shipped in the accessory kit. Remove the Foot by turning it counter-clockwise. Carefully remove a new blade from its box, remove the wax covering, and gently insert the blade into the blade holder.
***CAUTION**: Do NOT use a hard surface to push the blade into its socket, or you may damage the blade tip*. Push the blade in using a plastic object.

While inserting the blade, a slight resistance will be felt. Push the blade past this resistance until it is fully seated in the blade holder! Screw the Foot *(Figure 1)* clock-wise onto the blade holder as far as it will turn, but do not tighten. *Unscrew the foot about 1 1/4 turns*. The tip of the blade should now be flush with the foot.

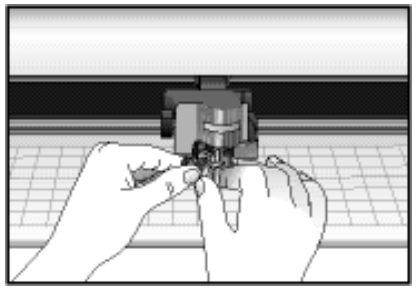


Figure 2 – Installing Blade holder in Carrier

Slide the blade holder's flange into the slot of the Carrier, and tighten the thumb screw. Set the Speed dial half way, then push and hold the Down arrow button to bring the Table all the way forward.
***NOTE**: Do NOT move the Table by hand while the cutter is turned on, as this can jam the mechanism — indicated by a blinking red light. If this does occur, press any key on the control panel to reset the Appli-K.*

Adjust the Cutting Depth

This adjustment is one of the most important things you will learn about using the Appli-K Cutter, and is must reading for new personnel. *Proper depth adjustment is the key to long blade life and long adhesive sheet life*. Cutting too deeply into the adhesive sheet will severely reduce the life of blades and adhesive sheets. *Always adjust the cutting depth when you change to a different type of material.* To save setup time: extra blade holders may be purchased, then pre-adjusted and color coded for each type of material.

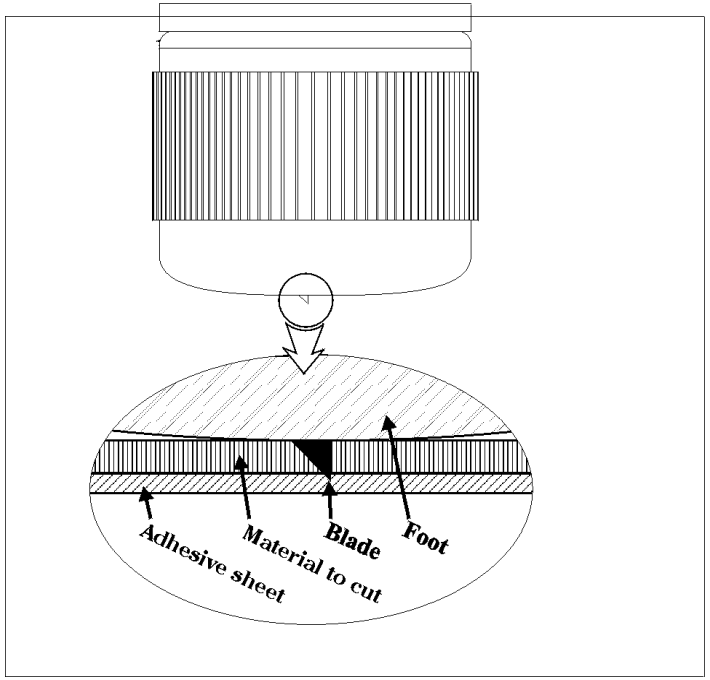


Figure 3 – Blade depth

1) After inserting a new blade, screw the Foot clock-wise onto the blade holder as far as it will turn, but not tightened. *Unscrew the foot about 1 1/4 turns*.to make the foot flush with the tip of the blade.
2) Push the start/stop button until the red light is on. Using the four Arrow controls, position the blade holder so it is near the 0,0 point on the tray rulers.

3) Set the Force knob to the "twelve o-clock" position for twill, cotton, and most other materials. For tough, thick materials such as felt and leather, set the force to maximum (turn dial clock-wise all the way.) Set Speed to half-way on the dial.
4) Turn the Foot *clockwise* 1/8 turn, as viewed from the *bottom* of the blade holder. Press the 'Test Cut' button to perform a small (1" x 1") test cut on the material. Remove the cut pieces with a weeding tool or exacto blade. Initially, the cut pieces should **not** easily separate from the remainder of the material.
5) Repeat step 4 until the cut pieces are easily separated, without "tearing." (Each 1/8 turn clockwise increases depth 1/8 mm.) As soon as the pieces can be easily seperated, immediately proceed to step 6.
6) The cutting depth is now set for maximum blade life. However, when cutting an entire tray full of designs, if some pieces do not separate cleanly, increase the depth by turning the foot *clockwise* another 1/16 turn (as viewed from the bottom of the blade holder.) The ideal depth will yield a clean cut yet only **lightly** score the adhesive sheet.

Adjust the Force

As indicated in section 5 above, the Force knob was set to the "twelve o-clock" position for twill, cotton, and most other materials. For tough, thick materials such as felt, the force was set to maximum (force dial turned clock-wise all the way.) ***NOTE:*** *If you are cutting a large batch of the same material, from time to time you may need to increase the Force setting slightly to compensate for blade wear. This is normal.*

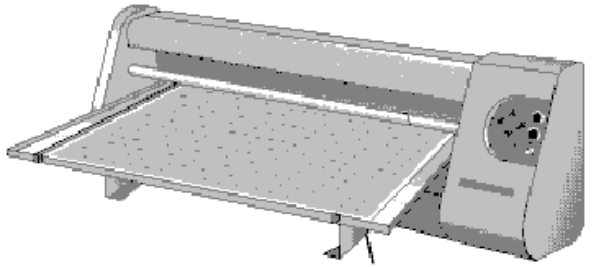
Adjust the Speed

The Speed dial can be set to maximum for most appliqué materials if the cutting depth and force have been set properly. If straight line cuts over 3" do not produce a clean cut but shorter cuts look good, reduce the Speed setting. For materials that are very difficult to cut, such as metallic twill, reduce the Speed setting.

Test the Appli-K™ System

Follow these steps to finish the setup and verify that everything is correctly installed. These steps will also demonstrate basic operation. A test will be perfomed using a sample file created with CorelDraw. A second test will be described for cutting with a sew disk (if available).

1) Start the Ioline Bridge software (or Easy Stitch™) by double clicking on the sun icon. If you get the error message "Hardlock EYE not found" follow the instructions shown for that message in ***Software Error messages***.
2) Click on the box "HPGL (.PLT)"
3) Double Click on the name of the example file, FABRICS.PLT.
4) If you installed the Appli-K™ on a serial port other than COM2, Click on the "COM port setup" box and enter the port number, then Click on *Done*.
5) Click on the "Design Setup" box. Under "Duplicate design", you can select "Maximum copies". The Bridge will automatically calculate the maximum number of rows and columns of your design that will fit on the material size entered in the "Material Dimensions" dialogue box. If your designs are a shape that can be nested even ***closer*** together, enter a negative number for the "Horizontal margin" or "Vertical margin." For example, enter -.2 (inches) in place of the default 0 inches spacing. If the pattern or "grain" of the appliqué material allows rotation, select "Rotate design 90 degrees", select "Done", then count to see if this results in more pieces being cut (i.e. less material waste).



NOTE: As shown in the illustration above, the "lower-left corner of your design" shown *in the Ioline Bridge* screen is interpreted by the Appli-K™ Cutter as if you are viewing your design from a vantage point on the *right hand side of the tray*. The 0,0 points of the rulers on the tray are used to indicate this lower left corner of the design.

6) Press the stop/start button on the Appli-K™ until the light on its control panel is red; use the Arrow controls to position the blade holder where you

want the “lower-left corner of your design” on your material; then push the ‘Start point’ button. This will turn the light to Green, indicating that the Appli-K™ is ‘on-line’, ready to be sent designs from your PC.

7) Click on the “Send to Appli-K” box in the Ioline Bridge.
8) After the design is cut, press the stop/start button on the Appli-K™ until the light on its control panel is red; then use the Down Arrow key to move the tray all the way out.
9) Remove all pieces. When you cut an entire sheet full of desgins, remove the “negative” image from the tray first, to simplify removing all the cut pieces. (Whenever you finish cutting for the day, remove all material from the adhesive sheet and cover it with the original protective cover.)

Note: This test design was made in CorelDraw. CorelDraw is commonly used to create outlines of fonts and designs for cutting with the Appli-K™ cutter and Easy Stitch™. It can also be used for scanning images and tracing the outlines of these images. See the ***CorelDraw*** chapter for a complete guide to these operations.

Cut from a Sew Disk

The Bridge software reads sew disks created in Tajima, Melco expanded, Toyota, or Barudan .DAT format. The Bridge looks at a design, selects the running stitch that describes the placement stitch for the appliqué (if any), and instructs the Appli-K™ to cut along this outline. To see how this works, proceed as follows:

1) Insert a disk with an embroidery design file in drive A, then select drive A in the opening screen of the Bridge.
2) Click on the box “Tajima (.DST)”, or the box describing the format of your design files.
3) Select the name of a design file.
4) Click on the “Load Import File” box. After a moment, the design usually appears on the screen (but it’s OK if it doesn’t.)
5) Click on the “Design Setup” box.
6) The program defaults to displaying color layer 0, which usually contains the placement stitch for the appliqué.
   If the design contains more than one piece of appliqué, click the box ***display all colors***, then, by trial and error, un-check all color layers *except* the layer you want to cut.
7) To cut this design, continue with the instructions in ***Test the Appli-K System***, steps 6 through 9.

SPECIAL CASES

Using Other Design Software

This section describes special steps required when certain software programs are used to create designs for the Appli-K Cutter.

Dalco Stock Stitch software

Dalco does not provide a running stitch for the inside polygon of the letters A,B,D,P,Q and R because they are not needed for the placement of letters supplied by Dalco. A special procedure needs to be performed in the Stock Stitch program to create these polygons so that they will be cut by the Appli-K.

To output the inside polygons:

1) After creating your design, use the “selection arrow” to select the letters by dragging a box around them.
2) Click on the stitch icon.
3) Select “custom” stitch type.
4) Click on “outline internals” (placing a check in the box).
5) Click on the “apply” button.
6) Click on “File”, “Export” then name and save your file.

Dalco custom designed files

For the same reason as explained above, you will need to use embroidery file editing software to *create a running stitch* on the inside polygons of the letters A,B,D,P,Q and R. (If you are using Melco EDS3 software and expanded format files, you need to first convert your files from expanded to condensed, or remove every other needle down point in the zig zag stitch, thus converting the zig zag into a running stitch.)

Adobe Illustrator and **Freehand**. Although these graphic design programs do not have any output format that is *directly* compatible with the Appli-K, CorelDraw can be used to import them, then export in the compatible HPGL (.PLT) format.

Wilcom EDS, Pulse Signature. If you have their appliqué option, these programs can send the cut line of appliqué *directly* to the Appli-K™ Cutter, or *indirectly* by saving HPGL .PLT files, or AutoCAD .DXF files, that can be read by the Ioline Bridge. For information on setting up and using these design packages with the Appli-K™, see your embroidery software vendor.

DXF format input. Programs with .dxf output capability include AutoCAD, Pulse, and most sign making software. The "AutoCAD .DXF" button, in the opening screen of the Bridge, allows reading outlines of designs in .DXF format. The correct scale, millimeters or inches, must be selected for the file being imported *before* import, using the "T" button next to the "AutoCAD .DXF" button. The .DXF files created by embroidery design programs require the millimeter setting. Note: The Bridge .DXF import capability supports vectors only.

Using Mac computers

The Appli-K™ Cutter should be connected to a Mac with the optional Mac cable, Ioline P/N105069.

MacSign Lite™, available from SofTeam, is compatible with the Appli-K™ Cutter. If you are currently using Punto embroidery design software, check with SofTeam to determine if an update is needed to your Punto software.

Almost all Mac sign making software is compatible with the Appli-K™ Cutter. Specify the Ioline Super 88 as the output device. Set the sheet size to 17.5 x 23.5. You may need to adjust the output scale slightly to obtain accurately cut pieces.

Although Adobe Illustrator does not support the Appli-K™ directly, Illustrator files can be imported into CorelDraw (or sign making software) and exported from there into HPGL .PLT format. These .PLT files can then be sent to the Appli-K.

The Ioline Control Center, which is supplied with the Appli-K™ at no charge, may on rare occasions be required for calibrating the Appli-K™ Cutter. Since the Control Center runs only under Windows, you may need to borrow a Windows PC in order to use the Control Center. After calibration settings have been adjusted with the Control Center, these settings are retained by the cutter. Ioline does not support using a Windows emulator on the Mac to run the Ioline Control Center or the Appli-K™ software.

Consider dedicating an inexpensive Windows computer to the Appli-K™. This would enable you to benefit from the Easy Stitch automated digitizing features in the Appli-K™ software.

Connecting Multiple Appli-K™ Cutters

Multiple Appli-K™ Cutters can be connected to one computer. This reduces the total setup time and increases throughput.

You can use a printer switch box to select which Appli-K™ cutter to send a design to. This enables you to cut either the same design on each cutter, or send different designs to each cutter. Either way, you will need to select one of the cutters each time you are about to cut a design, then *wait until the design finishes "drawing"* on the Appli-K™ software screen before switching the box to a different cutter.

NOTE: We suggest enlisting a computer technician to properly complete this wiring.

After successfully installing the Appli-K™ on one of the serial ports of your computer, remove the end of the cable connected to the Appli-K™ and connect it to the input of a printer switch box. Connect one or more Appli-K™ cutters to the output of this switch box, using a *straight through connection* 25 pin to 25 pin standard RS232 serial cable.

CUTTER OPERATION

Preparing materials to cut. Certain materials require some preparation prior to cutting. To prevent fraying, facilitate removal from the adhesive sheet, or prevent damage to delicate surfaces, proceed as follows:

Cotton, Wool, Nylon, *fluffy* Polyester, Silk, Satin, Foam, and *thin* Denim:
*These materials need a backing or coating added. (See the **Backing** section below.)*

Pressure sensitive coated materials with an *uncoated* release paper (Stahls' pressure sensitive twill, Steam-A-Seam) paper, and cardboard:
Spray any uncoated paper *very lightly* with pure silicone to facilitate removal from the adhesive sheet.

Cad Cut[RT] thermal film, Vinyl, simulated leather with a "bumpy" texture:
Mirror the image in the Bridge before cutting, then cut the material "wrong side up".

Scrim felt:
Scrim varies in thickness from batch to batch. When a batch exceeds 1/20 inch (1.27 mm) thickness, use a press or rollers to temporarily flatten just before cutting.

Fusible Twill, Metallic twill, Ultra suede, Reflectives, Naugahyde, smooth thin leather, .020 thick magnetic "refrigerator door" material:
No preparation required.

Customers are generally NOT successfully cutting: Chenille, Knits, Pile, Fleece, Flock, or or any material with a thickness greater than 1/20 inch (1.27 mm)

Adhesive sheets from Ioline are designed for their long life and are not available from any other vendor. *Initially, the adhesive is very sticky, but this stickiness quickly decreases after the first few uses. This is normal and does **not** indicate that the sheet needs to be replaced. Over time, varying greatly with the amount of loose fibers on the material being cut, the adhesive sheet will lose its ability to hold the material securely in place on the Table.*

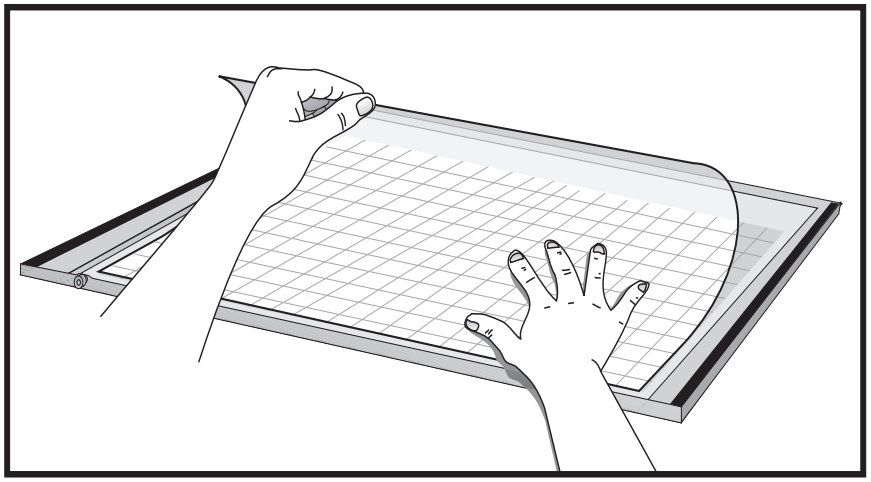
To maximize adhesive sheet life:

- With uncoated, fibrous materials, use a backing to preserve adhesive sheet life. (See ***Backing***, below.)
- Avoid leaving *any* material (except the protective cover provided) attached to the adhesive sheets overnight.
- Periodically clean the adhesive sheets by using clear shipping tape as a "lint remover."
- Adhesive sheets stored under 70 degrees F should be warmed to room temperature before use.
- When an adhesive sheet has lost its holding power, if fiber build-up is not excessive, you can extend its life slightly as follows: remove the tray, spray the sheet with an adhesive spray, turn over the adhesive sheet and place it back on the tray, then place the tray back on the Appli-K Cutter.

Adhesive spray. Caution: Do not spray adhesive sheets *while they are mounted in the Appli-K™*. The buildup of spray adhesive on the Appli-K™ Cutter will adversely affect its precision parts and *void the warranty*. If adhesive sheets are sprayed while the tray is *removed* from the Appli-K, this will slightly extend adhesive life, but the spray buildup will *shorten blade life.*

Changing Adhesive Sheets. To replace the adhesive sheet use the following procedure:

1. Turn off the power on your Appli-K™, then slowly pull the tray to the front of the machine until it stops.
2. Remove the removable tray (not the permanent tray) and set it on a table or flat working surface.
3. Lift up one of the front corners of the adhesive sheet, and slowly peel the sheet off with a smooth motion while holding the tray steady with the other hand.
4. Before a new sheet is applied, remove all adhesive and particles from the tray. Acetone or 99% alcohol are good solvents for adhesives.



5. Take a new adhesive sheet and remove the backing on one side. Place one edge of the sheet, adhesive side down, with the corners about 1/4 inch above and inside of the two small holes in the front of the tray. Smooth the sheet with one hand while holding the far end of the sheet with your other hand, as shown in the illustration above.

Silicone Spray. Most pressure sensitive coatings (on twill or backing) use a *release paper* to protect the adhesive. When placed on a *new* adhesive sheet, many brands of release papers will become impossible to remove. To avoid this condition, do **ONE** of the following:

- Spray the release paper *lightly* with pure silicone spray before placing it on the adhesive sheet.
- Only place release paper on *very used* adhesive sheets.
- Use a brand of backing that will not stick to new adhesive sheets. See ***Backing,*** immediately following**,** for recommendations.

Backing. If you cut material that tends to fray, or that leaves an excess of fibers on the adhesive sheet, a coating or backing should be applied. Most embroiderers use backing when quantities do not justify the cost of coating. There are 3 basic backing types: fusible webs, pressure sensitive, and fusable on one side/pressure sensitive on the other. Suggestions for using each type are discussed below. For vendor information, see our seperate publication **Fabric Sources**.

Fusible webs (Wonder Under™ or Heat'n Bond™ Lite). There are two ways to use these webs. Method (1), used by most of our customers, is the best way to prevent fraying: peel off paper; permanently bond the web to the applique material; cut on the Appli-K™; spray to attach it to the garment while sewing. Method (2) results in a stronger bond to the garment: "tack" the web to the applique first, using only 3 seconds of heat. Cut with release paper side down. The release paper is removed and the web is sticky enough to temporarily attach it to the garment. Permanently bond with 10 seconds heat. A heat press is the prefered tool for all bonding.

Pressure sensitive backings. With some brands, a protective release paper will still be attached to the pressure sensitive side at the time they are cut on the Appli-K™. If you use a brand with a *coated* release paper (Gudy Stick™) the release paper will be easy to remove from the Appli-K's adhesive sheet. For brands *without* a coating on the release paper (Steam-A-Seam™) wait until the Appli-K's adhesive sheet has been used a half dozen times - this will allow easy removal of cut pieces.

Two sided backing. (Thermal Lite, Vilene) The fusible coating on the front (textured) side is bonded to the applique material with an iron, or preferably, a heat press. The back side has a pressure sensitive coating, covered with release paper. The bonded applique material is placed with the release paper side against the Appli-K's adhesive sheet while cutting. Avoid placing the backing on a *brand new* adhsesive sheet because the strength of the new adhesive will make it too difficult to remove the backing. (Wait until the adhesive sheet has been used a dozen times.) Fuse n' Stick™ has a silicone coating on the release paper that prevents it from sticking. After the designs are cut, remove release paper and appliqué, *together*, from the tray. When you are ready to use the cut pieces, just peel away the release paper, place the appliqué, with the backing still attached, pressure sensitive side down onto the garment.

Ioline offers a special *one* sided backing (P/N 106227) that can be attached to a sheet of appliqué material with its *pressure sensitive* adhesive - a heat press is not required. The side opposite the adhesive is then placed on the adhesive sheet on the cutting tray of the Appli-K™. Avoid placing the backing on a *brand new* adhsesive sheet because the strength of the new adhesive will make it too difficult to remove the backing. (Wait until the adhesive sheet has been used a dozen times.) Because Ioline's backing is practically non-absorbent, only a light adhesive spray is needed to temporarily hold the cut piece (with the backing attached) in place while sewing. This very light spray is the key to preventing needle gumming.

KEYPAD CONTROLS

The keypad allows access to the main cutter functions.

Start/Stop

The **Start/Stop** key connects or disconnects communication between the computer and the cutter. If the **Start/Stop** key is pressed during cutting or plotting (**Stop** mode) the machine will stop when the current vector is finished. The **Arrow** keys are active when in **Stop** mode. When the **Start/Stop** key is pressed again, (**Start** mode) cutting will resume exactly where it stopped.

START	green light	**Arrow** keys inoperable, cutter *online* (ready to receive instructions).
STOP	red light	**Arrow** keys operable, cutter *offline* (not ready to receive instructions).

Arrow Keys

Pressing the **Arrow** keys moves the material back and forth or the carriage from side to side. The arrow keys will not work unless the cutter is in **Stop** mode (see **Start/Stop** above).

Speed

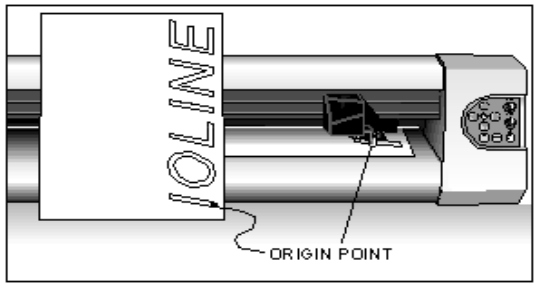
Use the **Speed** knob on the front panel of the cutter to adjust the speed. Turn the knob clockwise to increase the speed, or counterclockwise to decrease the speed.

Force

Adjust the force by using the Force knob on the front panel. Turn the Force knob clockwise to increase the force exerted on the pen or blade. See ***Adjust the cutting depth*** for the recommended settings.

Test Cut

This button will cut a test pattern to help determine the proper force and cutting depth. See ***Adjust the cutting depth*** for the recommended procedure. If the **Test Cut** key is pressed and held for three seconds the Appli-K will cut a 1.9 in. x 7.1 in. pattern.



Set Origin

The **Set Origin** key sets the initial origin or starting position for the design. It is best to set a new origin before cutting each design. If a new origin is not set before sending a design to the cutter, the cutter will begin at a point determined by the end of the previous design. The cutter will then treat the new shape as a continuation of the previously cut design. This will affect the repeat function. Refer to the **Repeat** section below. To set a new origin, make sure the cutter is in **Stop** mode with the red light on. Use the **Arrow** keys to move the blade holder to the intended origin of the cut, then press the **Set Origin** key. The cutter is then ready to cut the design.

Repeat. Pressing the **Repeat** key will generate one copy of the most recently created design. The cutter must be in **Stop** mode (red LED) to use the **Repeat** key. To start the cut in a new location, move the blade to a new position with the **Arrow** keys before pressing the **Repeat** key. Repeat will do the following:

1. Individual designs are repeatable until the **Set Origin** key is pressed and any new data is sent to the cutter.
2. If designs are sent to the Appli-K by the Bridge without setting an origin between them, they will be stored in memory continuously as if they were one continuous design. This allows the user to repeat multiple designs as a single group. Pressing **Repeat** will cut all designs sent since the last origin was set (as long as the buffer size is not exceeded, see below).
3. If the design(s) sent exceed the capacity of the buffer (1 megabyte) before an origin is set the repeat function is disabled. This feature allows the cutter to handle designs of limitless size. When the buffer has overflowed it no longer holds a complete file so repeat would produce unpredictable results.

Note: If an origin is not set between designs, two possible unintended

results can occur: if the combined design size does not exceed the buffer size, repeat will cause them all to be recut or, if the combined designs exceed the buffer size, repeat will be disabled.

Repeat Cut for a sheet full of designs. To repeatedly cut the same design in *exactly the same position* on each new sheet of material: after you have finished cutting each sheet, turn the power switch on the back of the Appli-K™ off, then on again. This will reset the start point to exactly the same point. Note: If you used special settings in the Control Center, these settings must *first be made permanent*, or they will be lost when power to the Appli-K is turned off.

Pausing Cutting

Cutting can be interrupted by pressing the **Start/Stop** key. The control panel LED will change from green to red. When cutting is interrupted, the carriage and material can be moved with the keypad **Arrow** keys. The current cutting position is saved in memory and will be reset when the **Start/Stop** key is pressed again (red LED changes to green).

Canceling a Cut

1. Press the **Start/Stop** key to place the cutter in **Stop** mode (red LED).
2. Cancel the cut from the Bridge (for other design software refer to the design software manual or consult the software dealer) or cancel the cut in the Control Center software by clicking the **Abort** button in the **Send File** window. Note: If this step is skipped the cut will continue when a new orgin is set.
3. Press the **Set Orgin** key to make the cutter delete the cut data it has already received but has not yet drawn.

Accessing Design files.

When the Bridge software is installed, the folder C:\EMBDATA is created on your hard disk. When first run, the Bridge looks in C:\EMBDATA for design files. This makes it easy find the sample file provided. However, most embroidery designs are stored on 3.5 inch diskettes. Once you have told the bridge to look for your design files on a diskette, it will remember to look at the diskette first. As an alternative, you can copy designs from diskettes to the C:\EMBDATA folder. Reading files from the hard disk is slightly faster than reading them from a diskette.

BRIDGE SOFTWARE SETTINGS

Once a design is selected and displayed in the Bridge, the buttons on the left side of the screen (the “Design Setup” button, for example) are used to access additional screens where buttons and information entry blocks are used to contol exactly how a design is displayed and cut.

Design Setup screen.

The“**First Color Only**” box. After this box and the **OK** button are clicked, the first color layer (zero) only is displayed, and the display of all other layers in the design are turned off.

The “**Show all colors**” box. If the applique outline is *not* on the first color layer, click on this box, then click on **OK.** This immediately displays all layers in the design.You can then turn off color layers individually by clicking their check mark(s). In some rare cases, you may need to turn off layer zero to get rid of an undesirable cut where a jump is located, leaving only color layer 1 on. Default = not checked.

Stitch Sequence. Boxes along the right side of the “Display Colors” area control the sequence in which layers are sewn by Easy Stitch. For example, on a *2 color design*, enter a 0 in the box to the right of “Color/Layer 1”, and enter a 1 in the box to the right of “Color/Layer 0”. This will result in layer 1, which is usually the background color, being sewn first.

The “**Show Color Node”** box, if checked, displays a small dot at the origin of the design, for reference only. Default = not checked.

The check box labeled “**Needle down after first stitch following jump(s**)” may be checked to get rid of an undesirable cut where a thread is located. Default setting = checked.

“**Remove extra pen up movement (jumps)”** If checked, when *multiple* jumps occur together, they are consolidated into a single jump. This helps clean an embroidery design of jump sequences that trigger automatic thread mers. Default setting = checked.

"**Remove segments less than .02 inches (.5 mm**)" When checked, stitches shorter than the value specified (such as tie down stitches in an embroidery file) will be ignored when cutting appliqué. For Easy Stitch only, un-check this box to prevent gaps in the design outline. For sew disks from other software, the length may be set to any value between 0 and .062 (0 and 1.5 mm). Entering a higher value such as .03 may get rid of extra cuts, but may round off sharp corners. Default setting = checked.

Rotate. Click any button to rotate the design the number of degrees selected.

Mirror. Click the Horizontal or Vertical button to mirror the design the appropriate direction. Designs to be cut from leather or heat transfer materials are usually mirrored.

Ruler Type. These check boxes allow a choice between **inches** or **centimeters** for the on screen ruler.

Design Margins. Values can be entered to change the margin placed between the design and the left and bottom edges of the screen, which become the bottom and right edges of the cutting tray. Double click on the box, enter the new value, then click elsewhere. To apply the new value, click on **OK**.

Duplicate design. To fill the available cutting area shown in "material dimensions" with nested copies of the design, click the "Maximum copies" button, then click on "OK". Hint: After maximizing, count the number of copies, change the rotation to 90 degrees (if the grain in the material allows), click on "OK", and compare the copy counts. Some designs can be moved closer together by entering a negative value in either the Horizontal or Vertical margin box in the "Margins between copies" area.

Material dimensions. This dimension is used to determine the maximum available for cutting. A warning will be given if a design exceeds these dimensions. The default values of 17.5 inches width and 23.5 inches height are the maximum size that can be cut by the Appli-K. When using a scrap piece of material, you can enter smaller values so that the "duplicate design" function can calculate the number of pieces that will fit.

Save Setup. All current user settings, including check box selections, are automatically saved whenever you exit the Bridge program. However, you can save all current settings for recall at any time by clicking on the "Save Setup" box in the lower right corner of the screen.

Recall Setup. Click on this button to recall all settings saved the last time you clicked the "Save Setup" button.

Default Setup. Click on this button to recall the settings originally provided by Ioline.

Zoom button. Clicking the "Zoom" button brings up the "select display option" dialogue box.

There are six levels of zoom. The screen display at **level 1** is shown ¼ actual size, and the screen display at **level 6** is 8 times actual size. Each increase in level doubles the display size.

The ruler marks on the edge of the screen are always shown at 1/16 inch spacing, regardless of the zoom setting. (1 mm spacing if the ruler is set to metric.)

EASY STITCH™

Easy Stitch™ is a feature in the Appli-K™ software that can *quickly* and *easily* create sew disks utilizing outlines exported from CorelDraw. It is an option that can be added to an existing Ioline Appli-K™ system, or purchased seperately.

INSTALLATION

If you installed Easy Stitch™ while installing your Appli-K™ Cutter, skip these installation instructions and proceed to the Test Drive instructions immediately following.

There is no need to uninstall an older version whenever installing a newer version of Easy Stitch™. Install Easy Stitch as follows:

1) Locate the Ioline Bridge key, a black device about the same size as a small match box.
2) Plug the Ioline Bridge *key* into the ***parallel*** port on the computer, which has 25 *female* pins. Do not plug the key into the serial port, which has 25 *male* pins. If some other device is already plugged in, insert the Ioline key *between* that device and the computer port. The Ioline Bridge key is designed to have other parallel devices plugged into it, such as a parallel port Zip drive or printer.
3) Locate the Ioline software diskette titled *Bridge with Easy Stitch*.
4) Start Microsoft Windows and insert the Ioline Bridge diskette into the floppy drive.
5) Win95: Click on ***Start***, then select ***Run***.
   Type: **A:setup** (or other appropriate drive letter) then click ***OK*.**
6) The "Software license agreement" screen appears. If your Windows system software is not installed in the standard location c:\windows, edit this box. If you agree to the license terms, click on the 'I agree' box.
7) When the message "process is finished" appears, click on the X in the upper right corner of the INSTVXD window.
8) After completion, remove this diskette and ***restart the computer***.

TESTING EASY STITCH

For a quick introduction to Easy Stitch™, proceed as follows:

1) Start the Ioline Bridge software by double clicking on the I-Bridge sun icon.
2) Click on the box "HPGL (.PLT)"
3) Double Click on the name of the example file, FABRICS.PLT
4) Click on "Zoom" then click on 3, to make the display of the design larger.
5) Click on "Column Stitch."
6) Click on the "Placement stitch" button.
7) Click on the "Zig zag" button, then click on "Done," After a short pause, the digitized design appears.
8) To create a sew disk, place a diskette in drive A and Click on "Save."
9) Click on the embroidery machine type, such as "Tajima", and "Continue export."
10) Review the information presented, then click on "Continue."
11) Click on "Do not print" and "Continue." The Tajima file is saved on drive A.

CREATING STITCHES

After creating a the outline of a design, as described in the ***CorelDraw*** chapter, the design is imported into Easy Stitch™ and used to make a sew disk. The following selections allow control over the way stitches are automatically created.

After selecting a .PLT file and clicking the "**Load Import File**" box, Click on the **Column Stitch** box. This brings up the "Convert to embroidery" dialogue box with the following options:

Check box:	What this does:
• **Placement** stitching (outline)	If checked, a running stitch is created for placement of the appliqué in the hoop, followed by a color change.
• **Tack down** stitching	If checked, a running stitch is created. This can be used to tack down the appliqué, instead of (or in addition to) a zig zag stitch.

Indent: (0.6 mm default)	Determines the distance the tack down stitch is indented from the edge (outline) of the appliqué. HINT: The tack down may be used instead of the above placement stitch, with a 0.2mm indent to "hide" these stitches under the appliqué.
Stitch length for placement and tack down: (2 mm default)	Determines the maximum length of all **placement** *and* **tack down** running stitches created. Accepts values between 1 and 5 mm.All placement and tack down segments which exceed the entered length will be fragmented into smaller segments.
• **Zig zag** column stitching	If checked, a zig zag stitch is created, using the values below.
Width: (3 mm default)	Determines width of the zig zag stitch
Density: (3 default)	Density of the zig zag stitch. Limited to values between 1 and 10. For density conversion table, click Help button, go to page 4.
Overlap: (85% default)	The percentage of the width of the zig zag stitch that covers the appliqué. Usable range is between 50 and 95.
• Contour	If checked, makes zig zag stitches slightly less overlapped around curves and corners. In a few cases appearance is best if not checked. Default = checked
• **Satin** column stitching	If checked, a satin column stitch is created.
Width: (3.5 mm)	Determines the width of the satin stitch. Usually set slightly larger than the zig zag width.
Density: (17 default)	Density of the satin stitch (minimum *usable* density is 3)
Overlap: (75% default)	The percentage of the width of the satin stitch that covers the appliqué. Usable range is between 50 and 95.
• Add corner buffer points	If checked, the change in the angle of satin stitches (while going around corners) is restricted to a short distance from each corner. If *not* checked, the stitch angle is gradually changed over the entire distance from one corner to the next. Default = not checked.
• Short stitching in corners	If checked, spaces out needle down points on the inside of satin stitch corners. Default = not checked.
• Split sharp corners	If checked, produces a "miter" effect at the corners of satin stitches, which reduces pulling. Default = not checked.
• < 90 only	If checked, sharp corners are split only on corners of 90 degrees or more. Default = checked
• Lock stitch before jumps	Adds a lock stitch before each jump to a new stitch sequence. Default = checked.
• Close polygons (1.0 mm)	If checked, closes any gap in an outline polygon that is smaller than 1 mm. (Small, invisible gaps can cause irregularities in automatic stitching.) Default = checked.

Creating a sew disk

When you are satisfied with the stitched design, use the following selections to determine the exact way in which the final sew disk is created. You are also given the option of printing a copy of the design. If any adjustments to the design are needed, try changing the parameters described in ***Creating Stitches***, or use the built in ***Editor*** described below.

Click on "Design setup" then click on "Show all colors."
Click on the **Save File** button. This brings up the "Select export file type" dialogue box.
Click on the desired embroidery file format button, such as Tajima .DST (or other format).
This brings up the "Export to embroidery machine disk file" dialogue box:

Check box:	What this does:
• Automatic centering	If checked, the embroidery design is automatically centered in the embroi dery machine hoop. Default = checked.
• Move before changing color	If checked, the embroidery head will be moved to the start of the new color section *before* changing to a new color (needle). If not checked, the embroidery head will be moved *after* changing to a new color (needle). Default = checked.
• Extra stitch after jumps	If checked, a needle down will occur at the end of a jump if that jump is followed by a normal stitch. This ensures that the thread will connect to the material at the beginning of the normal stitch. Default = checked.
• Color/stop added to end	If checked, adds a color change/stop at the end of the stitch design created by the Bridge software. Default = not checked.

Select the desired Drive in the pull down drive selection box.
You can click anywhere on the file name and change the name as desired.
The Format buttons are for diskettes that have *not* been previously formatted.
Click on the "Continue Export" to continue.
The "Design Profile" section contains reference information for this design.
These numbers cannot be edited.
The "Print Specification" section can be used to select information to be printed on your windows printer.

Click on the "No Print" button to ignore printing and save time.
Click on the "Continue Export" button to save the embroidery design on the drive selected.

NOTE: Automatic stitch creation works properly only with vector outline .PLT files created with CorelDraw. Do not use automatic stitch creation with outline files created by any embroidery software, or .PLT files created by the Ioline Bridge *from* embroidery files - the *overlapping stitches* and *tie downs* in files of embroidery design origin would cause unacceptable results when automaticaly stitched.

EDITING

The built in editor may be used as an alternative to other embroidery design *editing* software. Functions provided include moving stitches, adding or deleting lock stitches, and changing jumps to trims or trims to jumps. (The editor can *not* be used to punch new stitches.)

To move a stitch with the editor:

1. Click 1 (mouse button 1) on the **Edit Design** button. The edit program screen appears.
2. Click 1 on **Zoom**, position cursor to area desired and click 1.
3. Select desired zoom level, such as 4.
4. Click on **Edit.**
5. Click 1 on top of a stitch, to select it
6. Hold mouse button **2** and drag the stitch end point to desired location.
7. Click 1 to fix end point in new location.
8. Click **Exit.**
9. Click **Close.**
10. Answer *save changes*? by clicking on Yes.

To add a lock stitch:

1. Click on the **Edit Design** button.
2. Zoom in if desired.
3. Click on **Edit**.
4. Place the cursor (arrow) over the stitch sequences *before* the point you want the lock stitch added and click mouse button 1.
5. Click the **Lock** button on the left side of the screen.
6. An option form appears. Click on the desired lock combination, then **OK**.
7. Click on **Exit**, **Close,** and **Yes** in "Save changes?"

To change a jump stitch to a trim (to invoke an automatic thread trimmer on your embroidery machine):

1. Click on the **Edit Design** button.
2. Zoom in if desired.
3. Click on **Edit**.
4. Click the >J and <J buttons till desired jump is highlighted. Verify this stitch type by looking at the Edit Position box in lower left corner of screen.
5. Click the **Change>Trim** button.
6. Optional: verify this change by clicking the **<** button once and checking the Edit Position box in the lower left corner of the screen.
7. Click on **Exit**, **Close,** and **Yes** in "Save changes?"

To change the sequence of stitching. To change the sequence that *layers* are sewn in, use the Stitch Sequence boxes in the Design Setup screen. These are described in the ***Bridge software settings*** section. For other sequence changes, use the editor to move the color change point. Color changes are indicated by a small highlighted circle in the design. In the example shown, the second color (tack down) is moved so that it is stitched before the initial first color (placement stitch). A similar process could be used, adding color changes, to cause all stitch types to be completed on one letter (or shape) before stitching a second letter.

1. Click on the **Edit Design** button.
2. Zoom in if desired.
3. Click on **Edit**.
4. Click on an area near the second color change, indicated by the circle. Single step forward or backward using the < and > buttons until the high lighted diamond is on top of the second color change. Verify by looking for "Color 1" in the **Edit Position** box in the lower left corner of the screen.
5. Click on the **Cut remainder** button.
6. Click on **Edit**
7. Click anywhere in the design area.
8. Move to the start of the design by repeatedly clicking the <J button. Single step to the first (jump) stitch using the < and > buttons.
9. Click on **Paste.**
10. Click on **Exit**, **Close,** and **Yes** in "Save changes?"

CORELDRAW™

CorelDraw is used to create outlines that can be: (1) cut with the Appli-K™ Cutter or (2) converted into sew disks by the Easy Stitch™ software. It can also be used for scanning, tracing, and for cleaning up embroidery files for more efficient cutting.

The following hints are presented as a courtesy. Support for CorelDraw™ should be obtained directly from the Corel Corporation or its dealers. (Ioline has no affiliation with Corel.) Although we have attempted to be accurate, we can not guarantee these procedures will work as expected. *If you are using Corel 3 and 6, we recommend you upgrade to 8. Otherwise, use the instructions for Corel 7.*

CAUTION: Make sure that the sewing field and hoop in your embroidery machine are large enough for the designs you create in CorelDraw.

Making text

1) Click on Layout, drag pointer down to Page Setup. The Page Setup screen appears.
   In the Size/Paper window, select Custom
   In the Width window, enter 17.5. In the Height window, enter 23.5. Click the OK box.
2) Click on the Text Tool. While holding down the left mouse button, drag the pointer to create a box for the text.
   *Note: This box must be **much** larger than the letters you will be entering.*
   Select the desired font. Enter the font size. (For a 3 inch letter, enter 300)
   Type in your text. If you can't see any text, make the box around it larger.
3) Click on the Pick tool (in CorelDraw 4 & 5: select the text by clicking on it.)
4) CorelDraw 4 & 5: Click on the Outline tool, then click on the Hairline symbol (two arrows pointing together.)
5) CorelDraw 4 & 5: Click on the Fill tool (the paint can icon), then click on No fill (the X icon.)

Making text (Continued)

6) Select File, Export. The export screen appears.
Enter the desired file name, then select the directory C:\EMBDATA
For "Save as type" select "HPGL Plotter file (.plt)"
Click Export (in CorelDraw 4 & 5: click OK)
No changes are required for the pen options
Click on the Page tab
For Plotter Origin, click on "Bottom Left"
"Plotter units" should be left at 1016 (*in CorelDraw 4 only, enter a scale of 103.2%)*
Click on OK

Welding script

1) Create text using a font such as Brush Script **BT**. (Brush Script is included in the fonts supplied by Corel. You can obtain a thicker but less slanted font, Scriptjet, from Stahls'™ for about $99.)

2) Select the text with the Pick Tool.

3) Select the Outline tool, then select Hairline (two arrows pointing to a line.)

4) Select the Fill tool, then select X (no fill.) (Steps 3 and 4 are not necessary in Corel 5 and up, they just make it easier to see what you're doing.)

5) Optional: Add a tail to the text. Using the Freehand tool, hold down left mouse button while drawing the tail. Then use the Shape Tool to move the points to the desired shape.

6) Version 6, 7 and 8 only: Select **Text** in the menu, then select "Convert to Artistic Text." Make sure that both "target object" and "other objects" are unchecked.

7) Version 5, 6 and 7 only: Select **Arrange** from the menu, then **Weld**

8) Version 6, 7 and 8 only: Click the **Weld To** box, move the large arrow on top of a character in the text and click. If you have a version 7 with the welding bug, you should get an update from Corel for $9.95 by calling 800.772.6735 and asking for build 467.

9) Optional: To make this a 2 color design, use the pick tool to select the text, then continue with the following section ***Two color designs*** step 5.

Two color designs

The steps shown below are for CorelDraw 7. Use these steps as a guide for obtaining the same result with other versions.

1) Create text with a suitable font (Helvetica, for example), the desired height, and separate the letters slightly with the Shape tool (or use Format, Font, Character spacing, Expanded) to allow space for the background color.

2) Use the pick tool to select the text.

3) Select the Outline tool, then select

4) Select the Fill tool, then select X (no fill.)Hairline (two arrows pointing to a line.)

5) From the menu, select **Text**, then **Convert to Artistic**

6) From the menu, select **Effects**, **Contour**

7) Change the offset to .25, steps to 1, click on "outside", click on "apply".

8) Save the Combined letters in a file for use by Easy Stitch. Use the same export selections as in ***Making Text*** step 6.

9) To cut, start the Bridge/Easy Stitch software. Then, for *each* color to be cut, turn off all other color layers and click "Send to Appli-K" button.

Editing stitch files for cutting

Stitch files are normally cut by using the Bridge to select the placement stitch in an embroidery sew disk. However, *when cutting large quantities*, you can improve cutting quality and speed by first using CorelDraw to edit these designs. This is accomplished as follows:

1) Import the stitch file (Tajima file, for example) into the Appli-K™ software
2) *Turn on the outline layer (placement stitch) only*
3) Save the design as an HPGL .PLT file.
4) Import this .PLT file into CorelDraw. Perform any of these steps:

- Remove the extra nodes (running stitches) between the end points of each line. This enables the cutter to make one continuous cut between the two end points, instead of a separate cut for each stitch.
- Remove tie downs. This saves time and improves quality by avoiding what would otherwise be interpreted by the cutter as many small cuts.
- Move needle down points so they are exactly in the corners. If the needle down points in stitches do not fall exactly on the corners, the corners may appear "rounded" or "beveled" when cut.
- Minimize the spacing between multiple patterns. For example, if you are cutting an A, V, or W, rotate every other letter in CorelDraw to eliminate material waste between the letters.
- For some designs, the edge of one shape can be shared by another shape. For example, when cutting diamonds or rectangles, create a *grid* which will cut the fabric into many copies of those shapes. The shared outlines will then be cut with *one* cut instead of *two*.

5) Export the edited design, *as described in **Making Text** step 6*, then import this file into the Appli-K™ software for cutting.

Scanning and Tracing designs

Overview: Original art (for example a line drawing, or a piece of cut applique material) must first be scanned to convert the art into an electronic file in a "bitmap" format, which is basically a group of tiny dots. This "bitmap" format must then **be** traced, to convert it into a vector file, before it can be used by the Ioline software. A vector file is a series of lines which are connected by nodes. Nodes are like the dots in a "connect the dots" game.

Scanning

1) Place the item to be scanned in the upper right corner of your scanner. Important: try to make straight lines in the design exactly parallel with the edges on the sides of the scanner glass. If you have a choice, make the original art as large as possible, for scanning.
2) Go to the Start menu in windows and click once on the name of your scanner application.
3) Under the File menu, select Import, and/or scroll to Twain. This will start the scanning tools and give you a preview of what is on the scanner glass.
4) Crop the design by placing dotted lines around it. Do not cut off the design, just eliminate any wasted space around the outside.
5) Select the graphic type, which will usually be Black and White.
6) Select the resolution, 600 DPI (Dots per inch) or higher.
7) Select the file format .EPS
8) Save your scan, using a name of your choice, and a 3 digit extension for the format, such as DESIGN.EPS

Tracing

There are several ways to convert a scanned "bitmap" image into a vector file. Instructions given below are for the Corel "OCR/Trace" utility program, which is included with CorelDraw versions 5 and above. (If you have an older version of CorelDraw, the "Automatic Trace" function could be used instead of OCR/Trace, or the "Bezier Tool" could be used to manually trace the bitmap image. The bitmap-to-vector conversion can also be done by a third party program called Eurovector.) For simplicity, we will describe only OCR/Trace:

1) Open CorelDraw OCR/Trace, go to "file", "open". Select the name of your scanned image, such as DESIGN.EPS
2) Go to the "Image" menu, select "Convert to black and white". Leave the "Threshold" at the default of 128. Click "OK".
3) Go to the "OCR/Trace" menu, and select "Trace Settings". A window pops up with the different available settings. Select "outline".
4) Pull down the "Preset" menu, select "Silhouette". Press "Close". (If your OCR/Trace program does not have "silhouette" as a preset, use these settings: Node Reduction: 100, Color Tolerance: 128, and Noise Reduction: 10.)
5) Go to the "OCR/Trace" menu, select "Perform trace by Outline".
6) Go to "View/Objects", select "wire frame".
7) Go to "File/Save", select "vector".
8) Under "Save In", select "A:\"
9) In "File Name", type "DESIGN".
10) In "Save as Type", select "HPGL", click "Save".
11) *Follow the export instructions* in ***Making Text***, Step 6.
12) Close Corel OCR/Trace, open the Ioline Bridge program, and select the above .HPGL file for import.

Note: Since the OCR/Trace program has traced a line around the individual pixels of the scanned image, the vectors may now have small "stair-steps". If you object to the appearance of these small stair steps in the final cut fabric, or if you will use this outline for automatic stitch generation, you will need to clean up the design by editing these nodes manually with CorelDraw, or (instead of using OCR/Trace) by tracing the bitmap image by hand using the Bezier tool in CorelDraw.

ROUTINE MAINTENANCE

Changing Blades. Whenever changing blades, blow dust out of the foot and blade holder *before* removing the old blade. Adjust as shown in ***Adjust the Cutting Depth.***

Cleaning and Lubricating. Monthly, vacuum dust from the entire machine. Monthly, clean the traverse rods (the two long chrome bars) with a cloth lightly dipped in a solvent such as alcohol, then lubricate with a light lubricant such as Tri-Lube™ or 3M Silicone lubricant.

Software updates. You can download the latest released version of the standard Ioline Bridge (not Easy Stitch) from our web site at www.ioline.com. (If you do not have Internet access, the update can be ordered from Ioline for a nominal shipping and handling charge.) Make an installation diskette from the downloaded file as follows:

1. Copy the downloaded file to **`C:\IOLINE`**
2. From the START menu, select RUN and type in: **`\IOLINE\BRIDGE`** (Substitute the downloaded file name for BRIDGE.)
3. In Winzip's "unzip to folder" window, type in: **`A:\`**
4. Place a *blank* formatted 1.44MB diskette into drive A:
5. Click on the UNZIP button. (An installation disk is created on the A drive.)
6. Use Start, Run, and type in: **`A:SETUP`**.
7. When the install program displays "**`C:\WINDOWS`**", click OK (Change the Windows directory only if you have a non-standard installation.)
8. Remove the diskette from drive A and label it with the new version number.
9. Restart the computer using START, SHUT DOWN, RESTART the computer.

Calibration

Over time, the Appli-K cutter may require calibration to compensate for normal wear and tear. Typically, the accuracy of a cut is within 0.2% overall. By using the calibration feature, the variance can be adjusted to within 0.05%.

Prepare the cutter:

1. Open the **Ioline Control Center** program. Put the cutter in **Start** mode (green LED).

2. Place the protective cover over the adhesive sheet. Tape a piece of paper on top of the protective cover. The paper should be approximately 18 inches wide and 24 inches long. The Appli-K will plot a box 16 inches (41cm) by 20 inches (50cm).

3. Install a fine tiped pen, preferably ball point, in the carriage. Reduce the force by turning the knob to about 20% of maximum force. Using the test cut button, make test plots until the pen draws a consistent line.

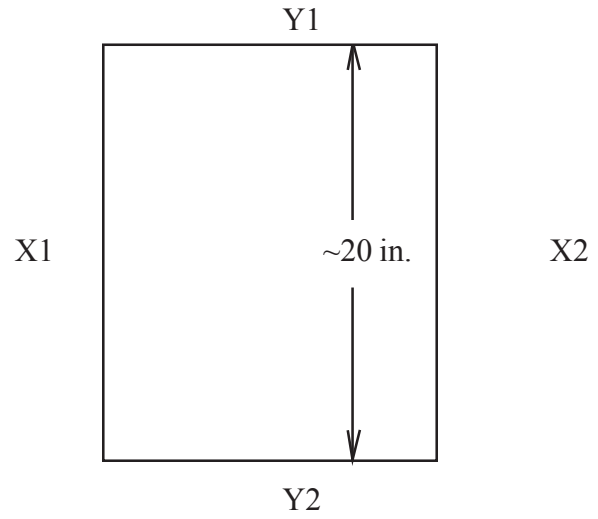
4. Move the tray and knife holder with the **Arrow** keys so that the pen is about one inch from both the right and front edge of the paper. Press the Start Point button.

Gather the Calibration Data:

1. Select Calibrate, Calibrate Plotter from the Control Center menu bar.

2. Select Calibration Plot to cut the factory stored calibration cut. The cutter will plot a large box (see illustration on next page.)

3. Precisely measure both X and Y axis lines: i.e. both the left and right sides, and both the top and bottom of the box. Better accuracy in measurement equals better calibration.



The Calibration Box and Measurements.

4. Take the average of the two vertical (X) values by adding them together and dividing by 2.
   Example:
   If X1 = 19.750 in. and X2 = 19.700 in.
   The sum is 39.450 in. (19.750 in. + 19.700 in. = 39.450 in.).
   The average is 19.725 in. (39.450 in. / 2 = 19.725 in.)
   The X calibration value is the average, 19.725 in.

5. Repeat this procedure for the horizontal (Y) values.

Enter the Calibration Data:

1. Enter the measured values in the boxes in the Calibration window. Make sure the cutter is in **Start** mode (green LED). Select the **Set Calibration** button.

2. The cutter will send the calibration values and the new **Calibration Setting** will be displayed in the boxes in the window.

3. Click on **Done** when finished.

TROUBLE SHOOTING

Software Error messages

Hardlock E-Y-E not found or **Activator is Missing**. Since the security keys have proven to be very reliable, it is best to look for problems in the following sequence, step by step:

1) Check that the Ioline Bridge key is plugged into the *parallel* port, not the *serial* port.The ***parallel*** port has 25 *female* pins. *Serial* ports may have 25 *male* pins.
2) Make sure that when you install the Bridge software you tell it the correct type of key:
   Systems purchased after September 1997 use a HARDLOCK™ key, which has a large white arrow on it.
   Systems purchased prior to September 1997 use an ACTIVATOR™ key, which has a black porcupine on it. See Installing software, step 6.
3) Check all parallel port, cable and key connections.
4) Change the *order* in which other security keys, if any, are plugged in.
5) Plug the key into a different parallel port, if available. The software looks for the key on ALL parallel ports.
6) Using ***Start/Settings/Control Panel/Add-Remove Programs***, look for "USB Supplement/OSR-2" If your computer has USB device support, remove it (or turn off). Shut down and re-start the computer.
7) With Control Panel, Change LPT1 from Enhanced mode to Normal.
8) The existing parallel port is probably too "noisy" - replace it or install an additional one.
9) Call Ioline Customer Service.

I-Bridge caused a general protection fault… or **I-Bridge executed an invalid instruction…** These messages may occur under unusual circumstances when installing for Windows 98. Contact Ioline customer service for assistance.

Sydex 'r' Barudan FMC disk reading program not found. Please contact your software distributor. See the ***Barudin embroidery machine*** instructions.

Segments not found. Occurs when a design has been exported from CorelDraw with an X selected for the outline (i.e. no outline). To correct, start CorelDraw, select the text/design with the Pick Tool, select the Outline Tool, then select the Hairline symbol (two arrows pointing to a line.) Then export as described in ***Making Text*** step 6.

Cutter Error Lights

Start/Stop **green light is blinking once.** The knife holder carriage is jammed. Turn off the cutter and clear away any debris or jammed material.

Start/Stop **red light is blinking once.** The table (tray) is jammed. Turn off the cutter and clear away any debris or jammed material.

Start/Stop **red light is blinking twice.** Buffer overflow or communication problem. Turn the cutter power off, and then on again. If this problem persists, perform the **Communications Port Testing** at the end of this section.

Start/Stop **light alternates between red and green**. A design was sent to the Appli-K™ Cutter with commands it does not recognize.

> If the design finishes cutting as expected, this warning can be ignored. Just push the stop start key until you have a steady red or green light.
>
> If the design did *not* finish cutting properly: *make sure the computer stops sending the design* to the Appli-K™. Next, hold the Start-Stop button down while turning power off and on again with the switch on the right rear of the Appli-K™ Cutter. This will clear the design from the memory in the Appli-K™. To prevent clearing of any special settings you may have sent to the Appli-K from the control center, be sure to designate them as "permanent."

Start/Stop **yellow light blinking**. Take note of how many times the light blinks and contact Ioline Customer Service immediately. Ioline contact information is available at the end of this manual.

Barudan embroidery machines

If your Barudan embroidery machine is capable of reading Tajima format embroidery disks, we highly recommend that you use the Tajima format. Otherwise, if you use your embroidery software to create stitch files for *Barudan* embroidery machines, and these files contain outlines you will cut with the Appli-K, use the procedure below to determine whether you need Sydex conversion software.

Determine the model number and serial number of your Barudan embroidery machines *and* embroidery design software. Call **Barudan** customer support for each of these products to determine which of the following 3 *embroidery machine* formats are used by both the embroidery machine *and* your software:

Barudan .DAT files in *DOS format*: you do *not* need Sydex. These files are compatible with Appli-K™ software. This embroidery software will likely produce Tajima files also, which are also compatible.

Barudan .FDR format: these files can not be converted by any known DOS or Windows software, so you will *not* need Sydex and will *not* be able to use these files with the Appli-K™ software.

Barudan .FMC format: you *will need the Sydex software* to convert these files to DOS format. You can order the Sydex software, titled "22Disks - Barudan only" for $50 from Sydex at 541-683-6033. You can complete the entire Appli-K™ setup procedure without Sydex, and add Sydex later, if required.

If you find that you need to use the Sydex 22 Disks software, we recommend the following installation procedure:

1. Place the Sydex installation disk in drive A:
2. Select Start/Run and enter:
   A:\22DINST.BAT C:\IOLINE
3. When you see the message "installation is complete" click on the X in the upper right corner of your screen.
4. Optional (This step is not necessary, but will simplify running the Sydex program.) Insert this statement in the first line of your autoexec.bat file:
   SET CPMDISK=BAR1
5. To run the Sydex program, start the Ioline Bridge, and click on the C button to the right of the Barudin button.
6. Insert the diskette containing your Barudin .FMC file in drive A (or drive B).
7. Select the "Copy from drive A" button (or drive B).
8. The file on the diskette will be converted and placed in the C:\BARFMC-I directory. Note: Any files previously placed in this directory will be erased by the Sydex program.
9. If the Sydex program asks for the format to be used, press enter, and press enter again when the Barudin format is displayed. (This step is omitted if you did optional step 4.)
10. If you get the message "Copy complete", click on the X in the upper right of your screen.
11. To select the file name, double click on the C:\ in the drive selection window, then double click on Barfmc-I to see the file name created in this folder. Click on this name to view the Barudin design in the Ioline Bridge.
12. Optional. You may want to save this design in a directory other than C:\BARFMC-I, for future use, so that it will not be erased when you convert another diskette.

Barudan FMC support

On the opening screen of the Bridge software, button "C" is available next to the Barudan file import button. This button is for use with the Sydex conversion software. When button C is clicked, the Sydex software will read Barudan FMC diskettes and convert them into Barudan DAT files, which can be read by the Ioline Bridge software.

Resolving serial port conflicts

These steps are only required if you found that a serial port is not available.
Note: These guidelines are for your convenience. If you do not feel qualified, get help from a computer technician.

Most new computers come with a modem assigned to the COM2 port, **AND** the COM2 on the system board is **disabled** and thus unavailable to the Appli-K. To resolve this (or other) serial port conflict, you will need to choose one of the following three procedures. We have found procedure "a" to be the most trouble free choice.

(Procedure a) Add an inexpensive serial card with a third COM port - this port will be used for the Appli-K. After adding the serial card, follow Addendum B, then re-start the computer, then continue with **Preparation**, step 4.

(Procedure b) Physically remove the modem **and** make COM2 available: (This is not possible if the modem is built into the system board such as in a Compaq.) After removing the modem, **enable the COM2 port in the system board Bios**. (The BIOS is usually accessed by hitting the Delete, ESC, or F1 key while the computer is powering up. Compaq computers do not allow access to the BIOS.) Then follow the instructions in ***Enabling a Serial Port***, then re-start the computer, then continue with **Preparation** Step 4.

(Procedure c) Replace the serial mouse (if there is one) with a PS2 mouse, then remove the serial mouse in the Windows device manager. This usually, but not always, frees COM1 for the Appli-K. (You can't use a PS2 mouse if your computer does not already have a PS2 port.) Then continue with **Preparation** step 4.

Enabling a serial port

These steps are only required if you need to use port that has been disabled. This can occur when an internal modem is installed. In Windows 95, use the following procedure to "enable" a communication port.

***IMPORTANT**: Follow procedure (b) above to enable the COM port in the system BIOS before continuing.*

1) Select Start, Settings, Control Panel
2) Double click on "Add new hardware"
3) Click on Next
4) Click on the No circle to select, then click on Next
5) Using the right down arrow, scroll down to Ports and click on Ports
6) Click on Next
7) Click on Communication Port if not already highlighted
8) Click on Next
9) Click on Next; Click on Finish
10) For the question "Do you want to shut down your computer now?" select No.
11) Double click on the System icon; click on the Device Manager tab
12) Double click on Ports
13) *If you removed a modem*, click on Communications Port (COM2), Click on Finish, and skip to **Preparation** step 4.
    If you did not remove a modem, Click on Communications Port (COM3) and continue/
14) Click on properties
15) Click on the Resources tab
16) In "Setting based on:" use the down arrow and click on Basic configuration 5. "No conflicts" should be showing in the "conflicting device" list. If a conflict is shown, select a higher Basic configuration number.
17) In the Resource settings box, double click on the blue box to the left of "interrupt request". If you get the message "this setting cannot be changed" repeat step 16 with a Basic configuration number higher than 5.
18) Click on the arrows next to the "value" box until you find a value (such as 05) that shows "No devices are conflicting." Then Click on the OK box.
19) Click on OK (In the Communications Port Properties window.)
20) To the question "Do you want to shut down your computer now?" select Yes, Re-start Windows, then continue with **Preparation** step 4.

Communications port testing

There are three communication diagnostic tests available in the Control Center. These tests are designed to help determine if a communication problem exists and to isolate where the problem is occurring.

A diagnostic module is required to run two of these tests. It will work on both the computer and cutter serial (COM) ports. It is available from Ioline or an authorized dealer.

Communication Test

This test will determine if communication is working between the computer and the cutter on the serial (COM) ports. This test is run from the Control Center, Test menu. The diagnostic module is not required to run this test.

1. Turn the cutter off. Connect the cutter to the computer with a serial cable, if not already connected as described in the *Connect the Appli-K Cutter* secion.
2. Start the Ioline Control Center. Select **Test, Communication Test** from the menu bar at the top of the window.
3. Turn on the cutter while holding down the **Test Cut** key on the keypad. Hold down the**Test Cut** key until the cutter beeps and the light flashes three times. The cutter is now in **Test Mode**.
4. To test the serial (COM) port, press the **Start/Stop** key on the cutter and verify that the handshake line (CTS) status displayed on the computer screen toggles **On/Off**. Leave the handshake line **On**.
5. Press the **Repeat** key to switch the cutter into **Echo** mode. The green light will come on.
6. Press a key on the computer and verify that the character transmitted equals the character received. If the characters match then the connection between the cutter and computer is working properly.
7. Select Exit after the communication test is complete.
8. Turn off the cutter at the end of the test. This will exit **Test Mode**.
9. The next two tests are not necessary if serial (COM) port testing is successful.

Testing the Cutter Serial Port

The diagnostic module is required for this test.

1. Connect the diagnostic module directly to the cutter COM port.
2. From the Control Center main menu, select **Test**, **Plotter Port Test**.
3. Turn on the cutter while holding down the **Test Cut** key on the keypad. Hold down the**Test Cut** key until the cutter beeps and the light flashes three times. The cutter is now in **Test Mode**.
4. Press any **Arrow** key on the keypad to transmit and receive characters. Verify that the cutter beeps.
5. Turn off the cutter at the end of the test. This will exit **Test Mode**. If this test fails, the cutter port is faulty.

Testing the Computer Serial Port

The diagnostic module is required for this test.

1. Connect the diagnostic module directly to the COM port on the computer. If the computer COM port has a nine pin connector, use a 9 pin to 25 pin adapter between the COM port and diagnostic module.
2. From the Control Center main menu, select **Test**, **Computer Port Test**.
3. Verify that the COM port selected is the correct one. If it is not, select the proper COM Port.
4. Verify the CTS handshake line is on.
5. Press any key on the computer keyboard and verify that the character transmitted equals the character received.
6. Select the **Exit** button at the end of the test. This will exit **Test Mode**. If this test fails, the computer port is faulty.

END NOTES

Getting Help

Ioline is committed to providing the highest quality service and support to its customers. If you need assistance with an Ioline product, a number of resources are available:

1. First, refer to this User Guide for answers to your specific questions.

2. Consult the support section of the Ioline web site: www.ioline.com.

3. For additional assistance, contact your local dealer or Ioline Customer Service. Contact information is listed on the last page of this section.

Any warranty servicing of this product **not** specifically described in this manual must be authorized in writing by Ioline Customer Service. You may obtain service by calling or faxing Ioline Customer Service. The technicians will help you determine the nature of the problem. If factory repair is necessary, you will receive a RMA (Return Material Authorization). Please gather the information indicated in the next column before contacting Ioline or your dealer.

1. Carefully package the cutter in its original container or equivalent. You may purchase shipping containers from Ioline by contact ing Ioline Customer Service. **Ioline is not responsible for any damage due to inadequate or improper packaging.**

2. Carefully wrap and secure all items in the shipping container to prevent damage. Seal the container and note the RMA near the address block.

3. Ship the container using FED-EX or another approved carrier. **COD SHIPMENTS ARE NOT ACCEPTED. You** will be contacted prior to the start of work with an estimate of repair cost. All repairs are warranted for 90 days.

Please gather the following information about your installation before contacting Ioline or a dealer for technical support.

Name: _____

Company Name: _____

Phone Number: _____ Fax: _____

Model: _____

Serial Number: _____

Date of Purchase: _____

Dealer: _____

Type of Material Used: _____

Type of Computer: _____

Type of design software: _____

New Software or Peripherals: _____

Service History (if any): _____

_____

_____

_____

_____

Note: Ioline Customer Service contact information is listed on the last page of this section.

The FCC Wants You to Know...

This equipment generates and uses radio frequency energy and, if not installed and used properly (in strict accordance with manufacturer instructions), it may cause interference to radio and television reception. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. If this equipment does cause interference to radio or television reception - which can be determined by turning the equipment off and on - you are encouraged to try to correct the problem by one or more of the following measures:

- Use only shielded interface cables.
- Reorient the receiving antenna.
- Relocate the host computer with respect to the receiver.
- Move the host computer away from the receiver.
- Plug the host computer into a different outlet so that the host computer and receiver are on different branch circuits.

If necessary, consult the dealer or an experienced radio/television technician for additional suggestions. The following booklet, prepared by the Federal Communications Commission, is a helpful reference:

How To Identify and Resolve Radio-TV Interference Problems:

The stock number is: 004-000-00345-4

This booklet is available from:

U.S. Government Printing Office
Washington, D.C. 20402

Your Comments Are Requested

Ioline Corporation is interested in comments on our documentation and products. Please send corrections or suggestions to:

IOLINE CORPORATION
14140 NE 200th Street
Woodinville, WA 98072 USA
Voice: (425) 398-8282
Fax: (425) 398-8383
www.ioline.com
ioline@ioline.com

Customer Service

Ioline Corporation is committed to providing quality service and support to our customers. If you need assistance with an Ioline product, contact your local dealer. You may also contact the:

Ioline Customer Service Department

(Monday through Friday: 7:00 A.M. - 5:00 P.M. U.S. Pacific Time)

Voice: (425) 398-8282
Fax: (425) 398-8383
techsupport@ioline.com
www.ioline.com

Ioline has many years of experience working with sewn goods industry professionals. Feel free to contact us if you have questions or to share information.

Limit of Liability Statement

It is the responsibility of the operator of the product to monitor the performance of the product and maintain it in proper working condition by following the instructions in this User Guide. It is the responsibility of the operator of the product to follow all safety precautions and warnings that are described in this User Guide. Ioline is not responsible for injuries that may occur as a result of unsafe operating procedures. Ioline is not responsible for substandard operational performance as a result of failure to maintain the product as described in this User Guide.

GLOSSARY

A

Arc - A segment of a circle, also called a curve.

Axis - The geometric guidelines used to place a coordinate. Used to determine pen or knife paths for signcutters.

B

Blade - Refers to the carbide steel cutting tool used by the cutter. They are designed to work with many different materials. This type of blade cannot be sharpened.

C

Contol Panel - Panel on the right side of the machine where primary plotter functions are accessible. Also called the *Keypad*.

Coordinate - A point that can be referenced by its position on the X or Y axes of a cutter. The use of line or arc segments to connect coordinates creates paths for knives to follow when cutting.

Cut Sheet - A single piece of material that is loaded into the cutter but is not pulled from a roll.

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Adjust the Cutting Depth

This adjustment is one of the most important things you will learn about using the Appli-K Cutter, and is must reading for new personnel. *Proper depth adjustment is the key to long blade life and long adhesive sheet life*. Cutting too deeply into the adhesive sheet will severely reduce the life of blades and adhesive sheets. *Always adjust the cutting depth when you change to a different type of material.* To save setup time: extra blade holders may be purchased, then pre-adjusted and color coded for each type of material.

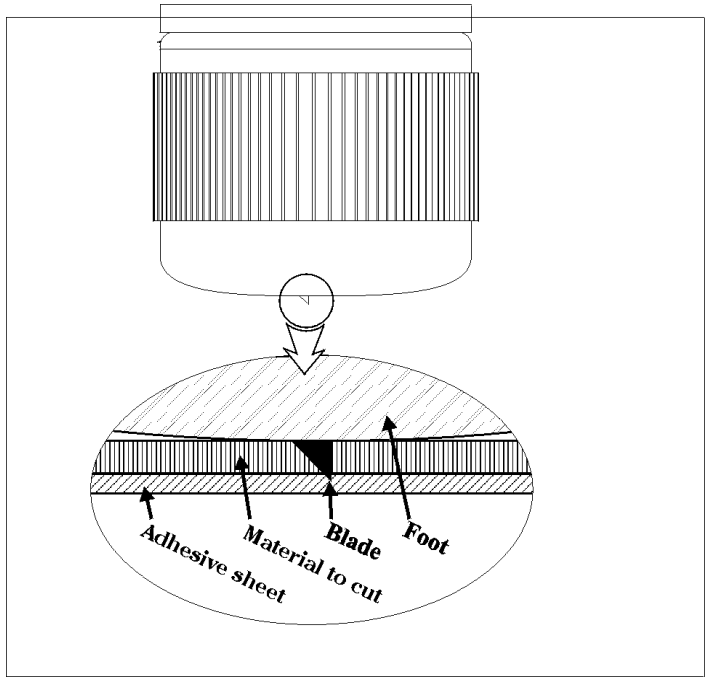

Figure 3 – Blade depth

1) Insert a new blade, screw the Foot clock-wise onto the blade holder as far as it will turn (but do not tightened) *then unscrew the foot about 1 1/4 turns*. The tip of the blade should now be flush with the foot. Install the blade holder in the carrier.
2) Push the start/stop button until the red light is on. Using the four Arrow controls, position the blade holder so it is near the 0,0 point on the tray rulers.
3) Set the Force knob to the "twelve o-clock" position for twill, cotton, and most other materials. For tough, thick materials such as felt and leather, set the force to maximum (turn dial clock-wise all the way.) Set Speed to halfway on the dial.
4) Turn the Foot *clockwise* 1/8 turn, as viewed from the *bottom* of the blade holder. Press the 'Test Cut' button to perform a small (1" x 1") test cut on the material. Remove the cut pieces with a weeding tool or exacto blade. Initially, the cut pieces should **not** easily separate from the remainder of the material.
5) Repeat step 4 until the cut pieces are easily separated, without "tearing." (Each 1/8 turn clockwise increases depth 1/8 mm.) As soon as the pieces can be easily seperated, immediately proceed to step 6.
6) The cutting depth is now set for maximum blade life. However, when cutting an entire tray full of designs, if some pieces do not separate cleanly, increase the depth by turning the foot *clockwise* another 1/16 turn (as viewed from the bottom of the blade holder.) The ideal depth will yield a clean cut yet only **lightly** score the adhesive sheet.

Adjust the Force

As indicated in section 5 above, the Force knob was set to the "twelve o-clock" position for twill, cotton, and most other materials. For tough, thick materials such as felt, the force was set to maximum (force dial turned clock-wise all the way.) ***NOTE:*** *If you are cutting a large batch of the same material, from time to time you may need to increase the Force setting slightly to compensate for blade wear. This is normal.*

Adjust the Speed

The Speed dial can be set to maximum for most appliqué materials if the cutting depth and force have been set properly. If straight line cuts over 3" do not produce a clean cut but shorter cuts look good, reduce the Speed setting. For materials that are very difficult to cut, such as metallic twill, reduce the Speed setting.