

Compu-Dobby 5 User's Manual



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INTRODUCTORY INFORMATION

INTRODUCTION

Before Getting Started:

Please read the entire manual before using the software.

About AVL

AVL Looms has been in the business of designing and building some of the world's finest handweaving looms since 1977.

Jim Ahrens had been building and designing looms for a number of years before Jon Violette, the "V" in AVL, approached Ahrens about a partnership in 1977. Violette, an industrial management professional, had discovered Ahrens' work through his sister who ran the Pacific Basin School of Textiles in Berkeley, where Ahrens was a volunteer advisor.

The two men worked together in the Bay Area for three years until Violette moved Ahrens and Violette Looms to Chico, where it officially became known as AVL Looms Inc., and has operated ever since.

In 1982, Violette was instrumental in the development of the first computerized dobbie, then called the "Apple Dobby". He retired from active life in the company in 1987.

Once known for our production looms, AVL has broadened its line considerably and we now offer customers a full spectrum of fine weaving equipment, ranging from our small Home Looms, to our Industrial Dobby Looms, Rug Looms, and Jacquards.

The Compu-Dobby 5 Design Concept

The guiding concept behind the Compu-Dobby 5 is ease of use with precise, repeatable control. The loom is designed to be easy to thread, easy to setup and easy to weave on.

LOOM FEATURES

Compu-Dobby[®]

A first for handweaving looms, the Compu-Dobby 5 enables computer control of pattern *and* key loom functions, including warp tension and pick spacing.

Pattern control is a state of the art system that eliminates the multi-treadle dance of traditional looms and the tedious pegging of mechanical dobby looms. Much like the legacy cartridge systems from the Compu-Dobby I and II, the Compu-Dobby 5 stores entire weaving files (WIFs) onboard with three significant advantages over all other systems:

- Ultra-fast pick writing. The system can achieve weaving speeds in excess of 100 picks per minute.
- Hundreds of weaving files may be stored for later use.
- Eliminates latency timing issues inherent in computer communications systems. Latencies can cause slower weaving and even missed picks.

As a web enabled device, this loom connects to your computer or tablet via WiFi or USB and controls the loom from your favorite browser. AVLDrive version 5 is an easy to use, intuitive interface run from within the Compu-Dobby 5. As a direct result, there is no software to install for the loom, nor limitation on the controlling device, except for a minimum screen resolution (1024 x 768 pixels). AVLDrive is compatible with all major browsers, including Safari, Chrome, Edge, Firefox and Opera. The current version of the browser should be used.

Warp Beams and Automatic Warp Tension System

A first in our industry, some looms offer digital control of warp tension using a small electrical motor and drive system connected via spring and brake cable to the warp beam. The motor is controlled by the Compu-Dobby & AVLDrive. Easily change the warp tension at any time during weaving by a click of the mouse or a touch of the finger on the touchscreen. This system allows very fine, repeatable control with a range from locked beam to free turning for winding on the warp.

Note:

If you have a Compu-Dobby 5 on a loom with an automatic warp tension system and automatic cloth advance, see the section starting on page 54 for complete details on using these features.

Automatic cloth advance is an AVL-only feature on hand weaving looms. Earlier mechanical versions of these systems are well known for providing fine control over pick advance spacing. This feature utilizes digital controls via an electric motor driven worm and gear attached directly to the cloth beam. Much like the digital warp tension controls, set the picks per inch in AVLDrive and start weaving. Easily change the advance setting or manually

advance the cloth at any time during weaving by a click of the mouse or a touch of the finger on the touchscreen. This system allows very fine, repeatable control with a range from hundreds of picks per inch (or centimeter) to gross movements needed when starting a new warp.

CONNECTING TO THE LOOM

ATTENTION:

Please read through this entire section before powering on your loom.

CONNECTION TYPES

In order to connect to the loom, your device must either have a USB port or the ability to connect to the internet. There are three ways to connect a device to the loom:

Connection Type	Description
USB	USB cable from your device to the loom. Only devices with USB ports can connect this way.
LAN (Local Area Network)	Through a router. Only devices with WiFi can connect this way.
LoomDirect	Connection to the loom's local WiFi network (not through a router). Only devices with WiFi can connect this way.

The software interface (AVLDrive) is web browser based so you do not need to download anything. Simply open your standard web browser (Chrome, Safari, Firefox, etc.) and type in the loom's address.

When the loom is started, it will try to connect to the router (LAN) it is normally connected to first. If it cannot find the router, it will start LoomDirect. The USB connection is always available.

LOOM MODES

The loom is designed to be controlled through the AVLDrive software, so there is no "power" button anywhere on the loom.

We recommend the use of a good surge protector between the outlet and UPS on the Compu-Dobby 5, especially in regions subject to lightning strikes and other extreme electrical anomaly incidences. In areas prone to brown/black out or power grid fluctuations, we recommend a 800W, 1000VA UPS for Compu-Dobby 5 equipped loom.

Standby Mode:

When you plug the loom in it enters Standby Mode. The loom is designed to be left plugged in and in Standby Mode at all times. In standby power mode, the loom consumes very little power, and maintains the network connection to the router or LoomDirect WiFi.

Note:

Avoid pulling the power cord while the loom is in standby power mode. Please use the Shutdown menu option to completely power down the loom prior to pulling the power cord from the electrical socket.

Weaving Mode:

Weaving mode is when the loom and all its digital controls have been powered on through AVLDrive. You will hear the warp tension motors set into place and other digital features come to life.

WARNING:

Do not pull or cut power to the loom while in Weaving mode.

Shutdown Mode:

This mode allows you to shut down the loom properly so that power can be removed. It can be initiated from Weaving Mode or Standby Mode through AVLDrive. Shutting down the loom through AVLDrive is the proper way to stop all power to the loom. Once the loom has been shutdown the power cord can be unplugged.

If the loom has been Shutdown through the software, but is still plugged in, simply unplugging it and plugging it back in will initiate Standby Mode.

POWERING ON THE LOOM

When powering on the loom for the first time, you will need to use either a USB connection or connect via LoomDirect. In order to connect via a router (LAN), you will have to setup the Network information on the loom using one of the other connection types first. Once setup you can then connect via router each time you come to the loom. However, if Wifi connections are ever lost you can always revert to USB or LoomDirect.

- 1) Connect the loom to power via the provided power cable. All lights but the "Error" light will light up as shown in the images below.



- 2) Wait for the loom to bootup. This may take up to several minutes. Once ready the loom will show just the "Power" and "Network" lights. The network light may be Green or Red.



LED Lights

The loom uses a lighted interface for communication with the weaver.

Light Name	Description
POWER	Orange light means "power" to the loom in standby mode. Red light means "power" to the loom in weaving mode.
NETWORK	Different colors indicate the network status. Blinking Red: searching for a router. Red: connected to a router Green: LoomDirect is available (not searching for a router).
COM	Green light shows the loom is connected to a device. No light means there is no device connected.
ERROR	Red light will shine when an error has occurred.
SHED	Red light will shine when shed open. Green light will shine when shed closed. If the dobbie is in between states (shed

	null), it will be unlit.
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SETTING UP COMMUNICATION

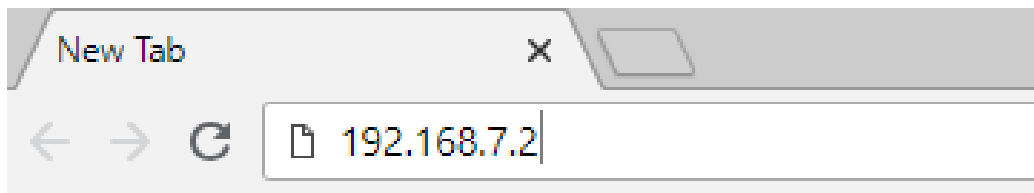
Connecting via USB

When using a USB, a cable is attached from your device to the loom. If you are not using the USB connection, remove the cable from the device.

- 1) Plug the normal USB plug into your device and plug the other end into the Compu-Dobby.
- 2) Open an Internet browser program on your device (Chrome, Internet Explorer, Microsoft Edge, Firefox, Opera, etc.).
- 3) In the Address Bar, type in 192.168.6.2 when using a Mac or 192.168.7.2 when using a Windows PC and press Enter to open AVLDrive. This is the IP address for the loom when connecting via USB. You can also use the Loom Name URL once it has been setup.

Note:

Any time you're connected via USB you can use the IP address or the loom name to open AVLDrive. If the loom name is entered, and a USB cable is connected to the loom and the device, the loom will default to using the USB cable, even if a network connection is setup.



- 4) When the device is connected, the COM Light will come on. The COM light indicates only that a device is connected.



Connecting via LoomDirect

LoomDirect means the loom is generating its own WiFi network and will show up as an available network on your device. The great part about this feature is that you don't need to be actively connected to the internet to wirelessly connect to the loom. However, your computer must still have the capability to connect to the internet.

The loom's protocol is to first search for a router to connect to. If it does not find one, it will automatically switch to LoomDirect and create its own network.

Note:

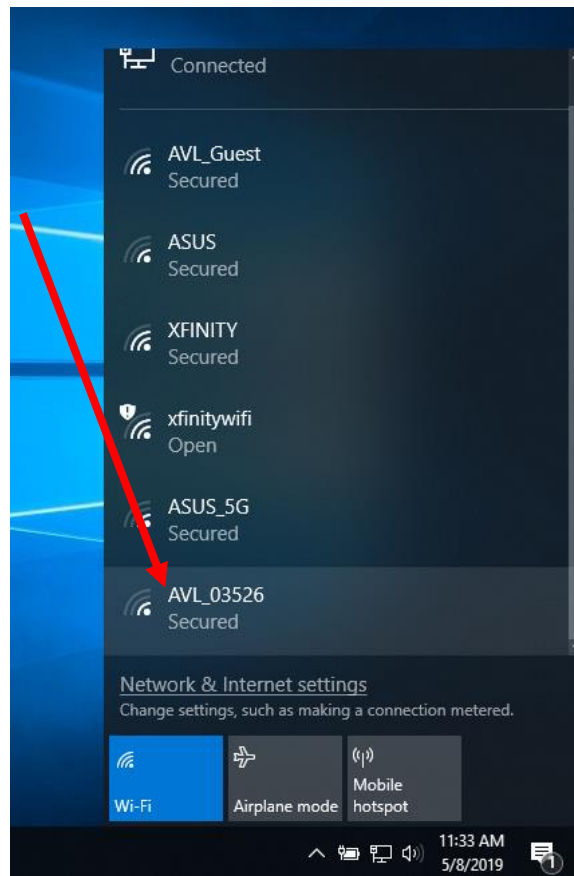
If no router (LAN) connection is established your loom will automatically switch to LoomDirect.

- 1) Wait for the loom to switch to LoomDirect and the private network to show up on your device. This should occur quickly.
- 2) When the Network light shines green, the loom is now putting off its own network that can be found from your device.
- 3) The network will be AVL_[loom_serial_number] where loom_serial_number is the serial number for your loom.

Note:

The loom serial number is shown on a plate affixed to the front of the castle on your loom.

- 4) Connect your device (laptop, tablet, phone) to this WiFi network.



- 5) The password for the network will be CompuDobby5.
- 6) Open your browser and type in 192.168.16.2, or the name of the loom if you've named it.

Note:

If the loom name is entered, and a USB cable is connected to the loom and the device, the loom will default to using the USB cable, even if a network connection is setup.

- 7) When the device is connected, the COM Light will come on. The COM light indicates only that a device is connected.
- 8) Once you establish the LoomDirect connection you won't have to go through this process again. You can shut down your loom and you'll be able to turn the loom on and connect to AVLDrive automatically.

Note:

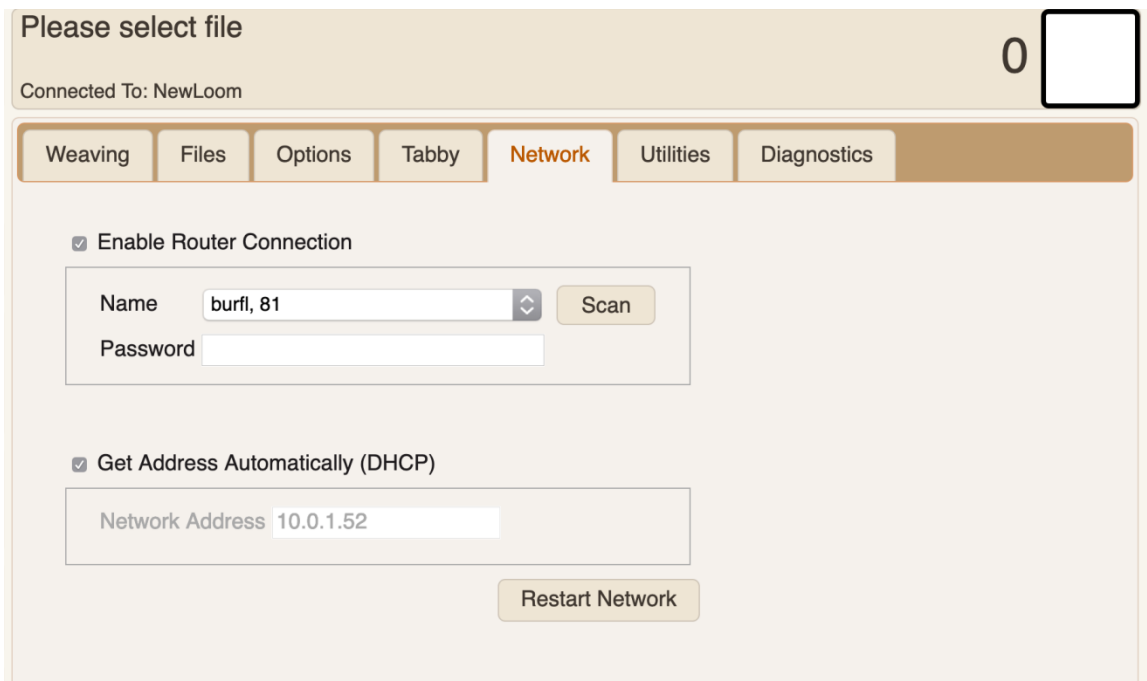
If you switch to a new device, you will need to connect to LoomDirect on the new device and enter the Network ID and password.

Setting up Network settings to connect via router

For this connection, you will connect using your router at your location. The router allows you to access the internet wirelessly on your device. Both your computer and the loom will be connected to the same network. In order to use this connection type, you must have access to the internet.

If you don't have internet, you can still connect via WiFi with LoomDirect connection covered in its own section.

- 1) Connect your device to the loom via USB or LoomDirect.
- 2) Go to Network tab in AVLDrive.
- 3) Click Enable Router Connection.



Please select file 0

Connected To: NewLoom

Enable Router Connection

Name

Password

Get Address Automatically (DHCP)

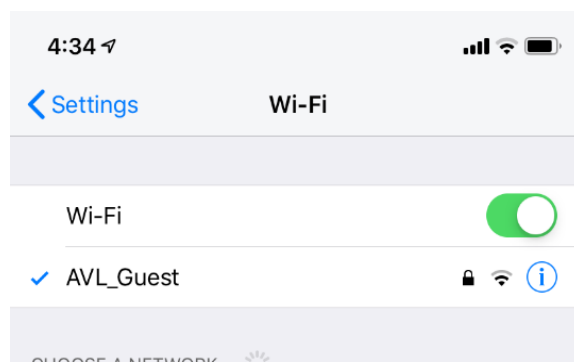
Network Address

- 4) Select your network from the dropdown list and enter the password for your router.
- 5) Click the Restart Network button.
- 6) Unplug the USB or disconnect from LoomDirect. The COM light will go off, indicating that no device is connected. You will also note that the Network light will change. Wait for the network light to be solid red again before continuing.

Note:

The network light should remain **RED** during these steps, indicating that the Compu-Dobby is connecting to a router. If your network light turns **GREEN**, the Compu-Dobby has started LoomDirect. Check the password for your router and re-enter the password. If the loom still does not connect to the router, make sure that the router is working correctly.

- 7) Wait for the WiFi connection to the loom. It can take up to several minutes for the loom to connect to the router.
- 8) Connect your device (laptop, tablet, phone) to the same WiFi network you connected the loom to.



- 9) You can refresh your browser.
- 10) When the device is connected, the COM Light will come on. The COM light indicates only that a device is connected.
- 11) Once you establish the router connection you won't have to go through this process again. You can shut down your loom and you'll be able to turn the loom on and connect to AVLDrive without these steps.

Note:

If your router name or password changes, you will have to setup the network using the **USB** or **LoomDirect**.

LOST CONNECTION

If the loom loses its connection to the router while in standby power mode, follow these steps to reconnect.

- 1) In the software, go to the Utilities tab.
- 2) Click Shutdown.

- 3) Once the loom has completed the shutdown sequence and the LEDs have turned off, remove power from the loom.
- 4) Plug the loom back in.
- 5) The loom will perform a normal boot up and then reconnect to the router.

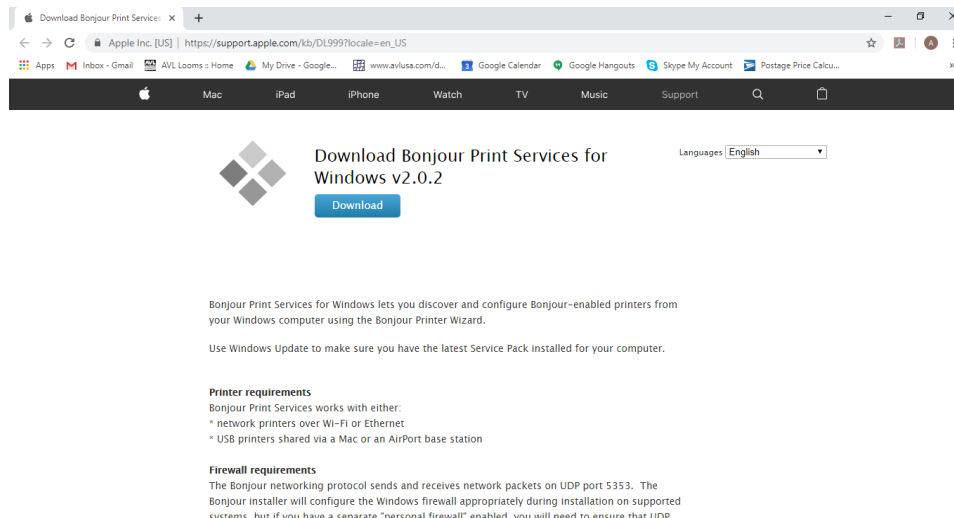
NAMING YOUR LOOM

Install Bonjour Print Services for Windows

If you have a Windows computer, you will have to install Bonjour Print Services in order to use a loom name. This software is a default part of a Mac computer. There is no similar software for Android. If are using an Android device or you prefer not to install the software on your Windows computer, you can continue to use the IP address to access AVLDrive.

Bonjour Print Services for Windows lets you access AVLDrive via your web browser using your "loom name" as the URL. Example: `http://[loom name].local`. This service needs to be downloaded and installed on your computer.

- 1) Go to https://support.apple.com/kb/DL999?locale=en_US.

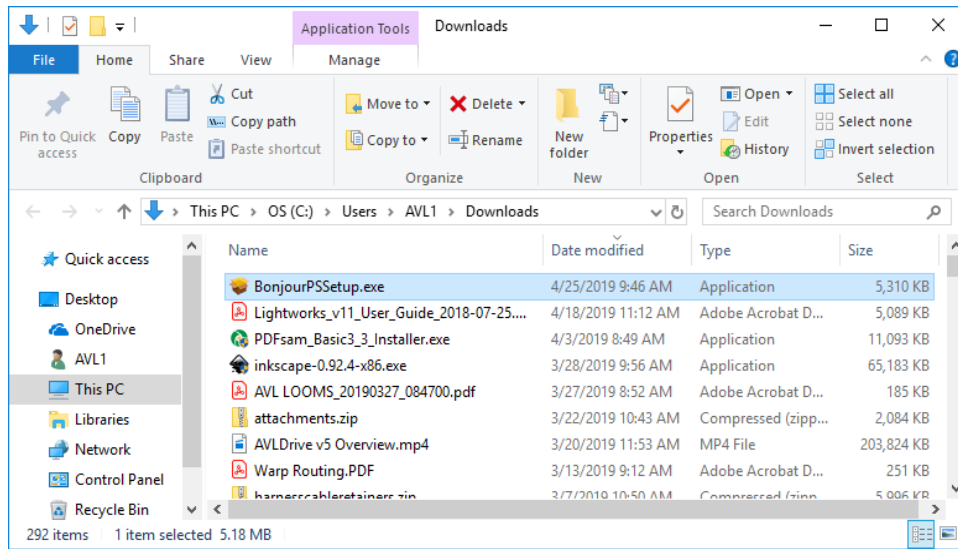


- 2) Click the Download button. The file will be downloaded to a location on your computer. For Windows computers, this will most often be the Download folder.

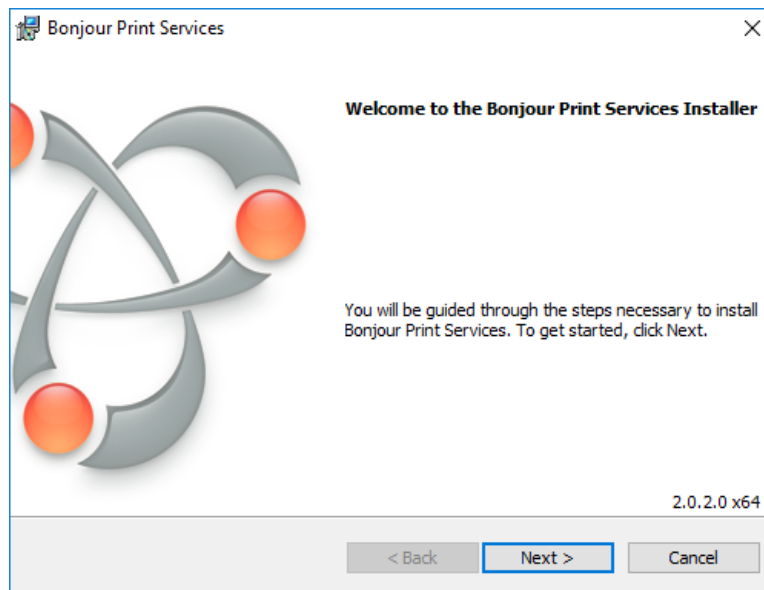
Note:

Depending on your browser, you will see a notice that the file is being downloaded at either the top or bottom of the screen. Once the download is complete, you may be able to click on the notification to open and install the software.

- 3) Navigate to the correct folder.



- 4) Open the downloaded file to initiate the install wizard.



Add Loom Name

Naming your loom is an important step that will make it easy to access your loom via WiFi from any device.

This creates a URL that you type in to the address bar on a web browser. It will be easy to remember, unlike the IP address. Your loom name can be changed at any time.

The LOOM URL will be `http:// + [loom name] + .local`

Example:

Loom name = myloom

Loom URL = `http://myloom.local`

Note:

The name must be a solid piece of text with no spaces. If a space is added to the name, the URL will only be the letters before the space even though the “Loom Name” shows the complete name with the space.

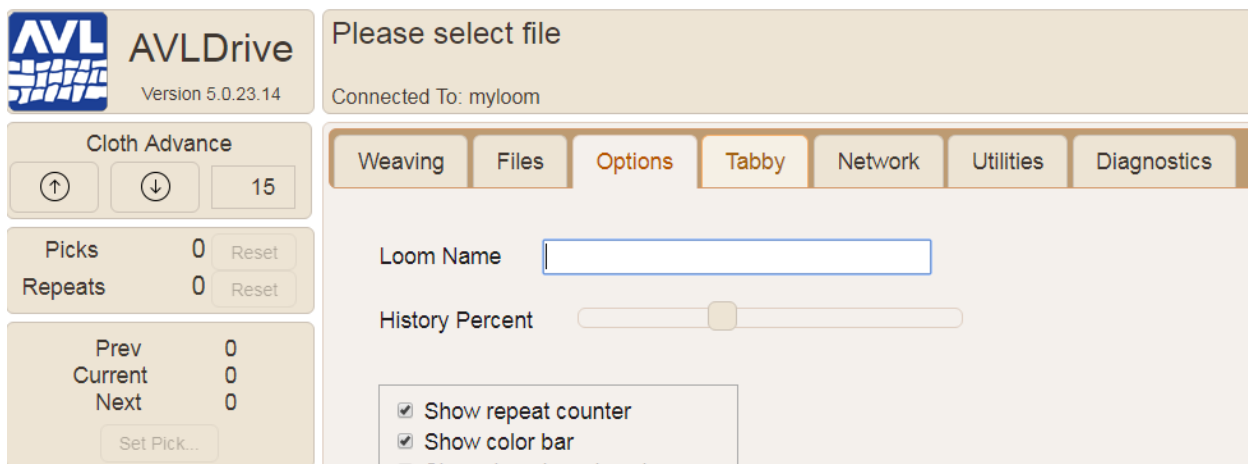
GOOD EXAMPLES: myloom, my_loom, my-loom

BAD EXAMPLES: my loom (loom would only show up as “my”)

Note:

If you ever forget the name of your loom you can always connect with the IP address.

- 1) Once you have AVLDrive open, select the “Options” tab.



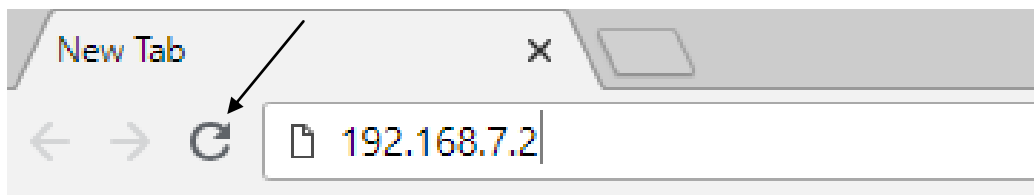
- 2) In the box for Loom Name, enter the name you'd like to use for your loom. If the box is not blank, delete the existing name and enter the new text of your choice.

- 3) Click the enter button on your keyboard, or simply clicking anywhere on the page.
- 4) Refresh or exit your browser. **The COM light will turn off and then back on pretty quickly.** In the Options Tab you'll see the loom name has been changed. You will also see the Connected To: field under Please select file has changed.
- 5) Type the new URL into your browser with your new Loom Name as shown in the beginning of this section: http:// + [loom name] + .local
- 6) Click Enter on the keyboard.
- 7) AVLDrive will refresh and the COM Light will light up once communication is established with the loom. You can now use this URL to access AVLDrive via USB, router, and LoomDirect.

LOSS OF COMMUNICATION

If the loom and the software does not seem to be communicating correctly, reload the AVLDrive page.

- 1) Reload the AVLDrive page by pressing Ctrl+R(Windows) or Cmd+R(Mac). You can also click the reload icon on your browser.



LOGOUT USER

Normally when using a computer, the connection between the computer and the loom will be automatically terminated. When using a tablet, this may need to be done manually. See page 69 for instructions on how to deal with a busy message.

REBOOT THE LOOM

- 1) Enter “/reboot” after the URL or IP address in your web browser. The loom will reboot as if it had been shutdown and restarted.

SHUTDOWN THE LOOM

If you will be removing the loom from a power source, you should shutdown the loom using the commands in the software first. This is similar to shutting down a computer so that it restarts correctly.

- 1) In the software, go to the Utilities tab.
- 2) Click Shutdown.
- 3) Once the loom has completed the shutdown sequence, you can remove power from the loom.

USING WEAVEPOINT

Weavepoint 8.0.2.0 and above offers direct access to AVLDrive for your loom with Compu-Dobby 5. The loom control function in Weavepoint will open the software, and upload the pattern you have open in Weavepoint.

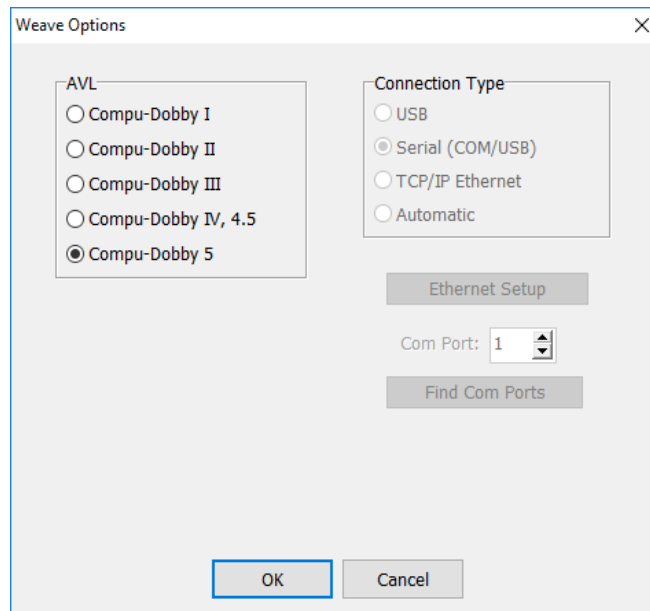
Note:

Weavepoint is a Windows-based program. If you want to activate AVLDrive directly from Weavepoint, you will need to use a Windows-based device.

AVLDrive only works with WIF files. When a file is opened in AVLDrive using WeavePoint, the file has been exported from WeavePoint as a WIF and imported to AVLDrive. The WIF file will then be available on the File tab in AVLDrive for future use.

Set Weave Options in WeavePoint

- 1) Select Options on the Weave menu to open the Weave Options dialogue box.



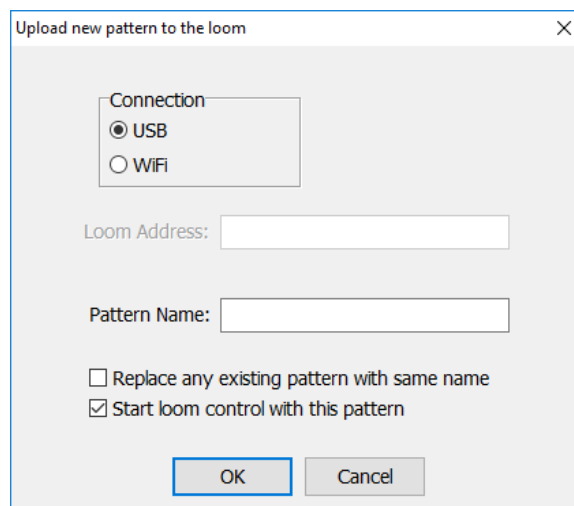
- 2) Select Compu-Dobby 5.

Note:

Choosing Compu-Dobby 5 will launch AVLDriver with the pattern you have open. If this is selected, there will be no other options you can choose in Weave Options window.

Connect to Loom

- 1) Have the pattern you want to weave with open. You can use WeavePoint files or WIF files.
- 2) Select Loom Control on the Weave menu.

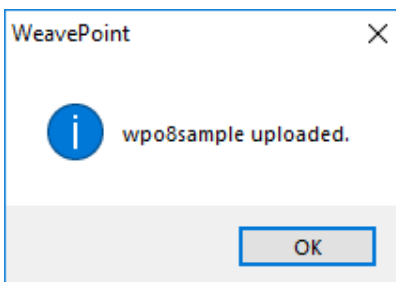


- 3) Select USB if your loom is connected with a USB cable. If you are connecting to your loom wirelessly, choose WiFi.
- 4) If WiFi is chosen, you must enter the Loom Address so that the connection will be made correctly.

Note:

You may use either the IP Address or the Loom Name for the Compu-Dobby 5.

- 5) If you have a pattern open in WeavePoint, the pattern name will display here.
- 6) Select Replace any existing pattern with same name if you want to overwrite a pattern already on the loom with the same name.
- 7) If Start loom control with this pattern is checked, the pattern will open in the loom control so that it is ready for you to weave with.
- 8) Click OK. A message that the pattern was uploaded will appear.



- 9) Click OK. The pattern will open in AVLDrive in the Weaving tab.

WEAVING WITH THE COMPU- DOBBY 5

No matter how you are connecting to the loom, the loom software will appear in your browser. Depending on the browser you are using, the software may appear subtly different from the pictures in this manual, however the functionality will be the same.

Note:

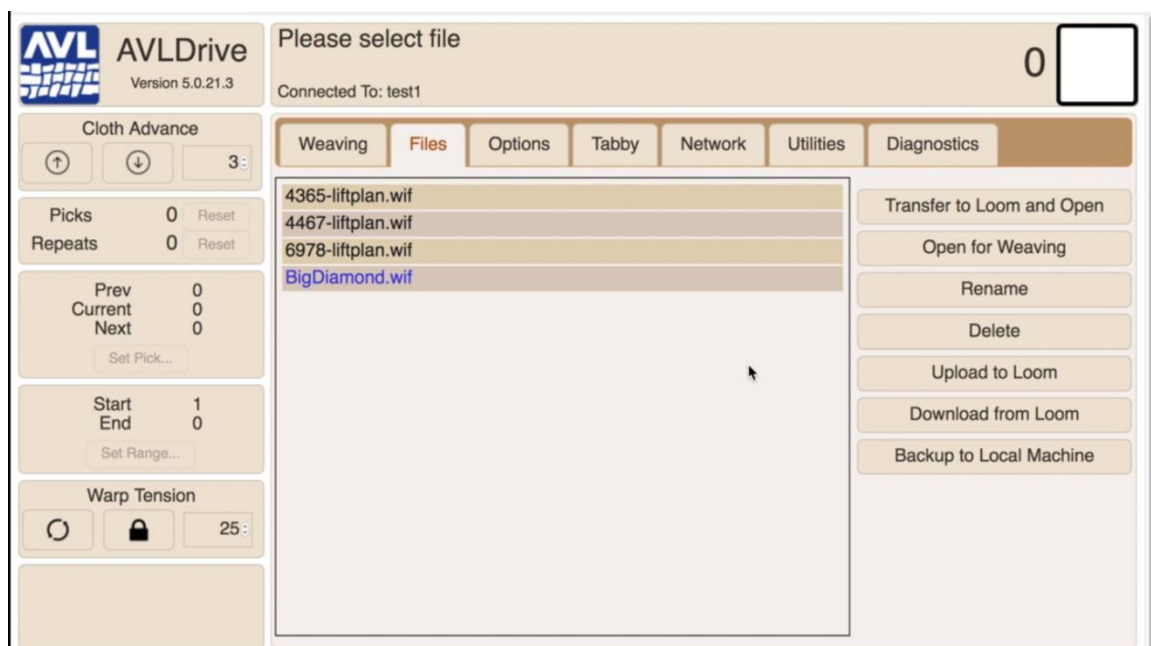
A section in this manual covers the additional functionality available for K-series looms. See page 56. The Cloth Advance and Warp Tension sections shown in the software below are only available on the K-series loom.

When you power on the loom using the software, the loom will go through a solenoid self-test. Once the self-test is complete, you will be able to continue using the software.

The software allows you to make changes to the loom as you weave, including the pick to be woven. If the shed is closed, the changes will be made immediately as the button is pressed in the software. If the shed is not closed, the changes will be reflected in the Next field and will be made when the shed is returned to the closed state.

OPEN A FILE FOR WEAVING

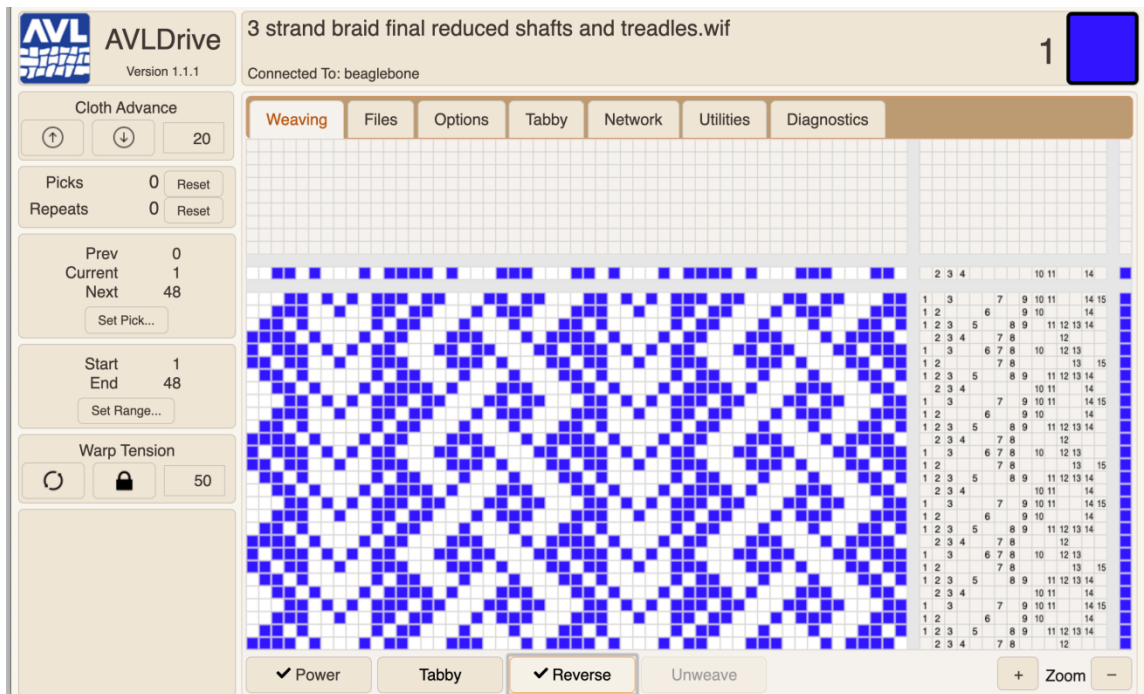
- 1) Connect to the loom as described previously. The software defaults to the File tab. For complete information on the Files tab, including how to import files, see page 38.



- 2) Click a file from the list to select it.
- 3) Click Open for Weaving. The Weaving tab will open with your selected file as shown in the next screenshot.

Note:

You can also double-click a file to open it for weaving.



Power

When you power on the loom using the software, the loom will go through a solenoid self-test. Once the self-test is complete, you will be able to continue using the software.

Note:

If you open a file for weaving (see page 24) when the loom is powered off, the loom will automatically power on.

The Power button is used to turn weaving mode on/off. It is not used to completely Shutdown the loom. Shutting down the loom is done through the utilities tab and is only needed when preparing the loom to be unplugged from power.

- 1) Click Power to boot up the loom.

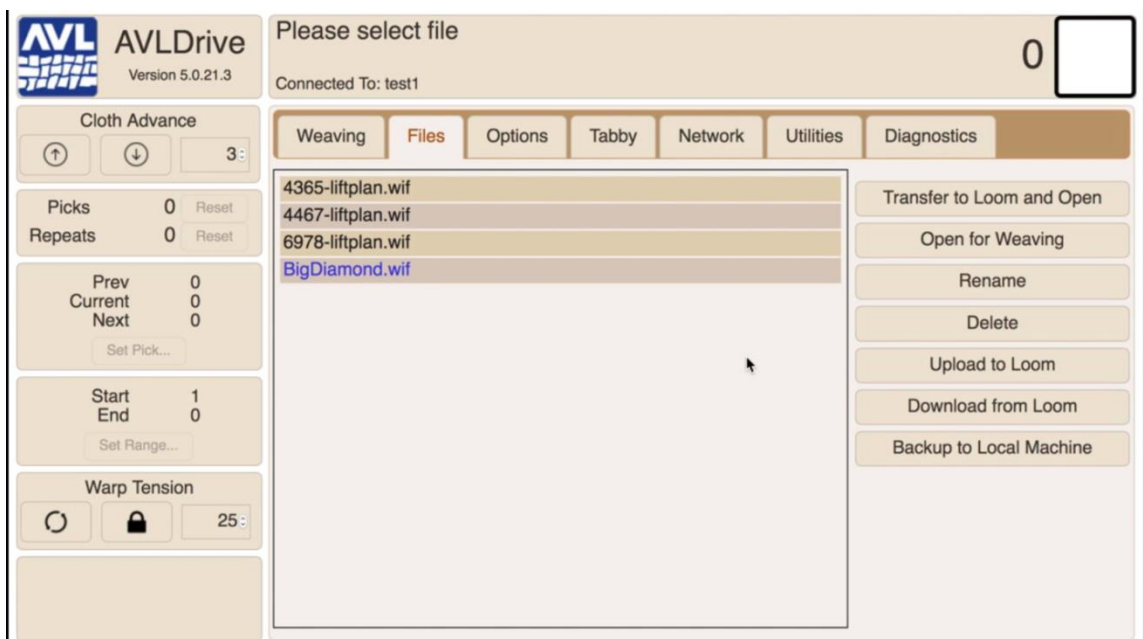
- 2) The loom will begin a self-test. At the same time, the button will have a checkmark and the Power light on the interface will turn briefly yellow, then red.



- 3) Once the loom has completed its self-test, you will be able to commence weaving.

RESUME A WEAVING SESSION

- 1) Connect to the loom as described previously. The software defaults to the File tab. For complete information on the Files tab, including how to import files, see page 38.



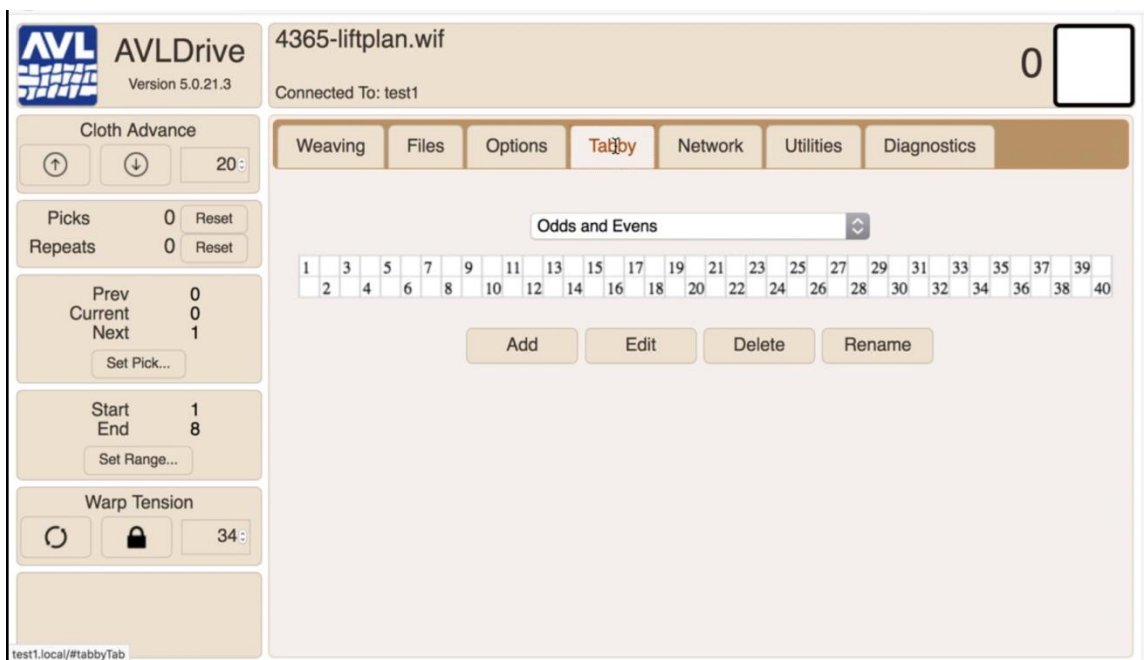
- 2) Click the file that was last being used to resume the session.
- 3) Click Open for Weaving.

- 4) The resume weaving dialog appears. Click OK to continue weaving.

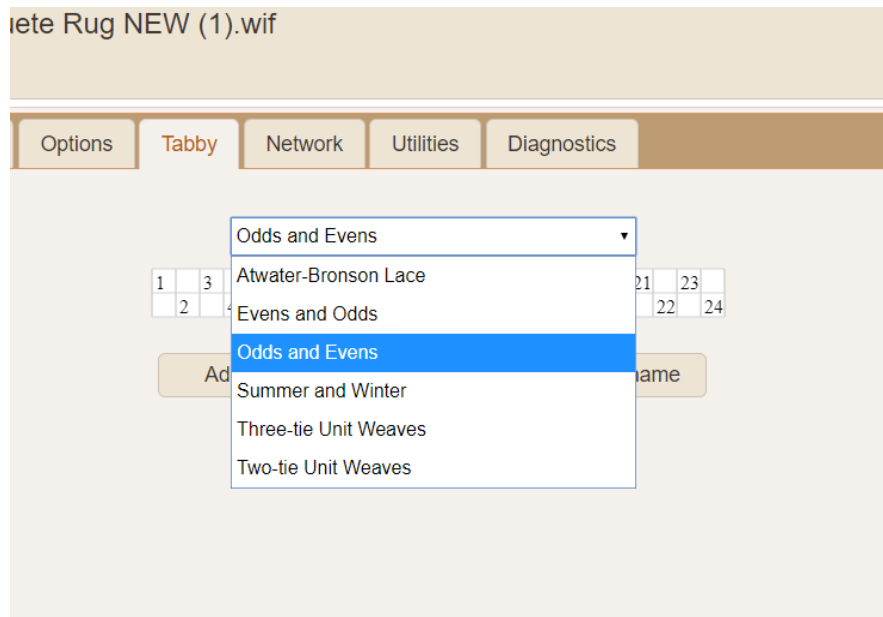
TABBY

You may want to weave a tabby (plain weave) header before beginning your main pattern. The tabby tab allows you to choose the pattern that will create plain weave with the threading you are using. Once you have chosen the correct tabby on the Tabby tab, you will be able to switch to it at any point by clicking the Tabby button on the Weaving tab. For information on how to setup new tabbies, please see page 47. When selected, the tabby will begin with pick A. The tabby defaults include both "Odds and Evens" and "Evens and Odds." Choose the best option depending on the last pick before the tabby section.

- 1) Open the Tabby Tab by clicking on the name. The tabby will only show the number of shafts available on your loom. The following example was taken on a 40 shaft loom.



- 2) From the drop-down menu, choose the tabby to use with your threading. Several defaults are available.



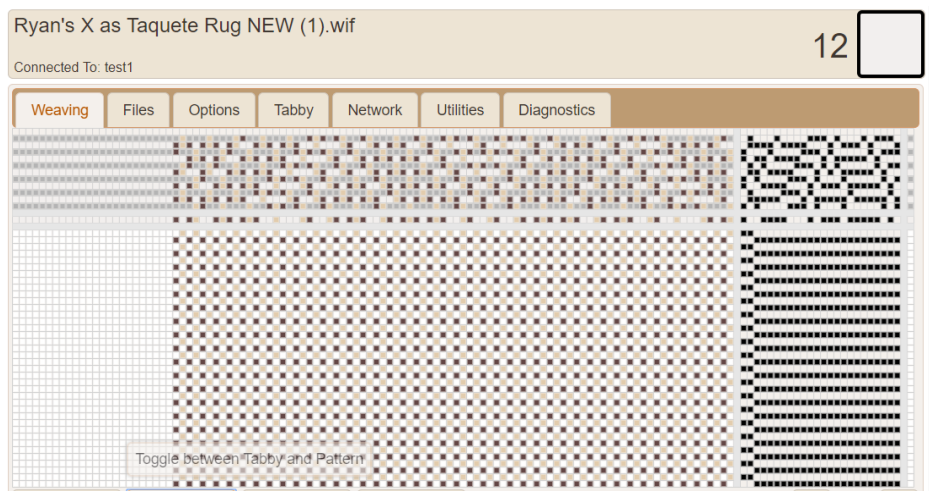
3) Return to the weaving tab.



4) Click Tabby to switch to the pre-defined tabby. The pattern showing on the weaving tab will change to plain weave and the button will have a checkmark. The tabby will begin with pick A, which is the top pick shown on the Tabby tab.

Note:

If the pattern that is showing is not plain weave, you may have chosen the wrong tabby. Return to the tabby tab and change the tabby.



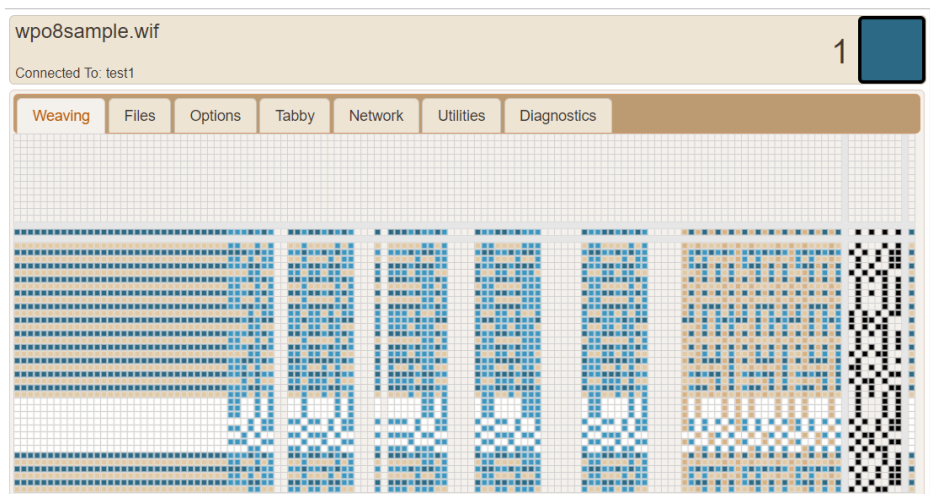
- 5) To return to the pattern, click the Tabby button.

REVERSE

The Reverse feature flips the pattern upside down and keeps you weaving forward. This is NOT used to unweave or to go backwards in your pattern.

This could be used to provide symmetry in a pattern, for example, keeping the ends of a scarf the same when it is worn.

- 1) Click Reverse to reverse the weaving pattern. This allows you to automatically reverse the weaving order of the WIF.



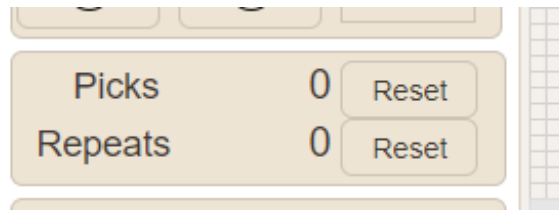
- 2) The button will have a checkmark. Click the button again to return to the original pattern.

SET THE RANGE

The default range for the WIF is from the first to last pick. If you do not want to weave the whole pattern, enter the range of picks you want to use. Once you reach the end of the range, the range will repeat.

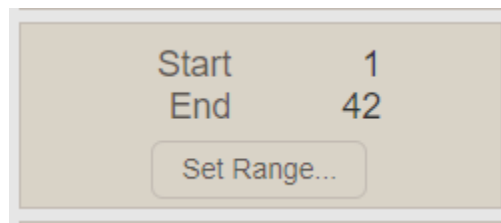
Note:

The Repeats section, under Picks, will indicate the number of times the range has been repeated. In the example below, when the 42nd pick is beaten, Repeats will show 1, when the 84th pick is beaten, Repeats will show 2.

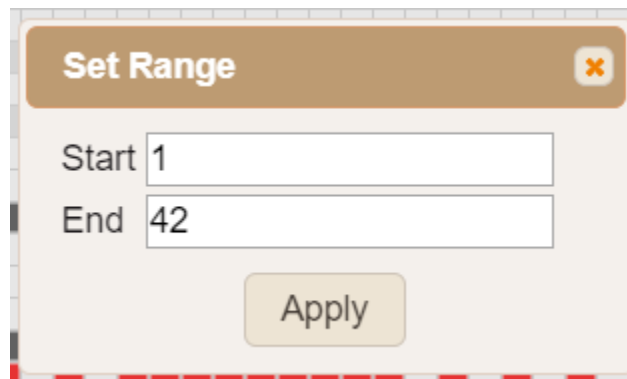


Use this feature to experiment with different looks from the same WIF file. You could also choose a small section from a longer pattern to help create a set of differing sized items, for example, a table runner and napkins.

- 1) In the Set Range Area, click Set Range.

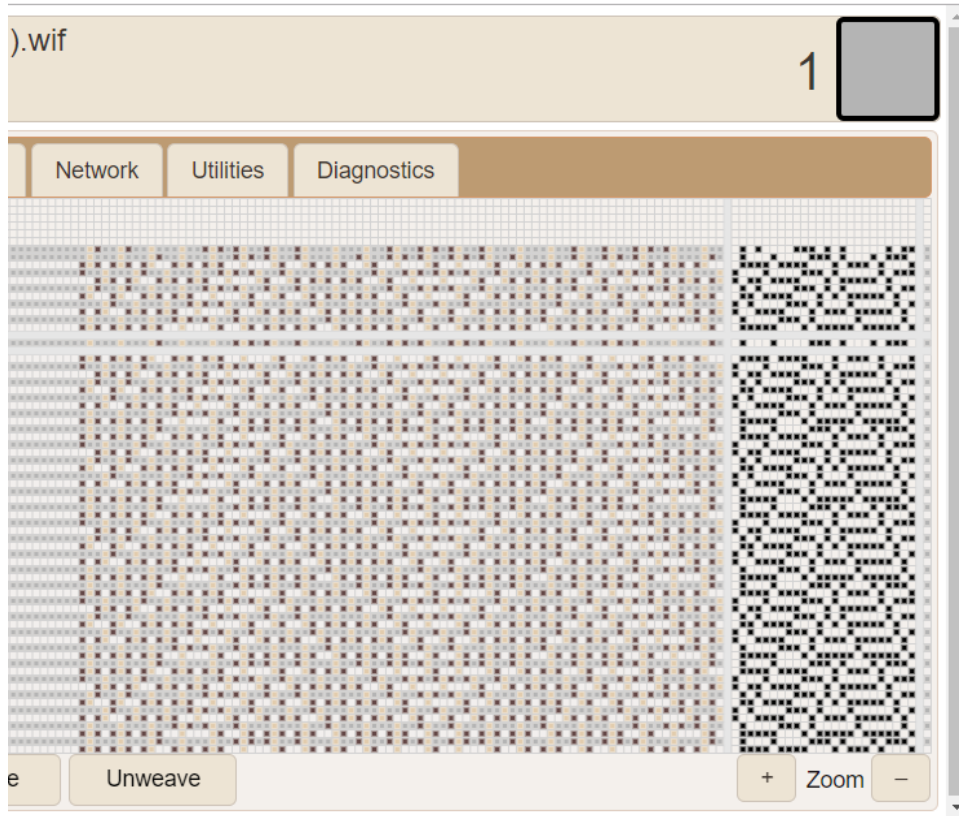
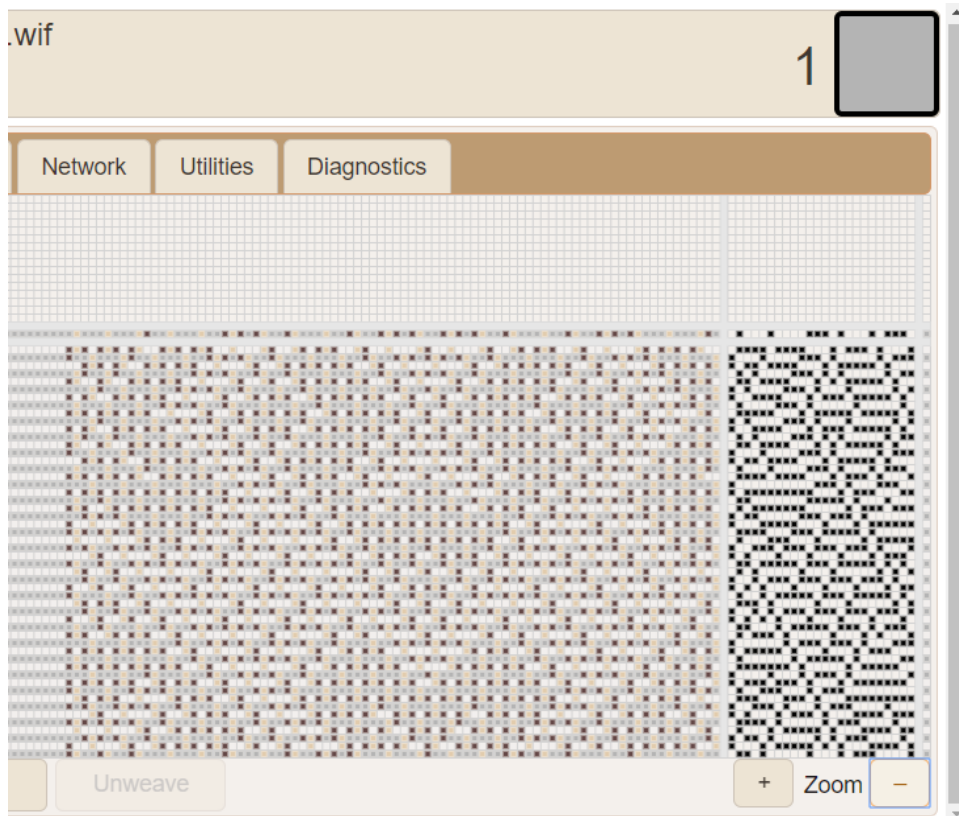


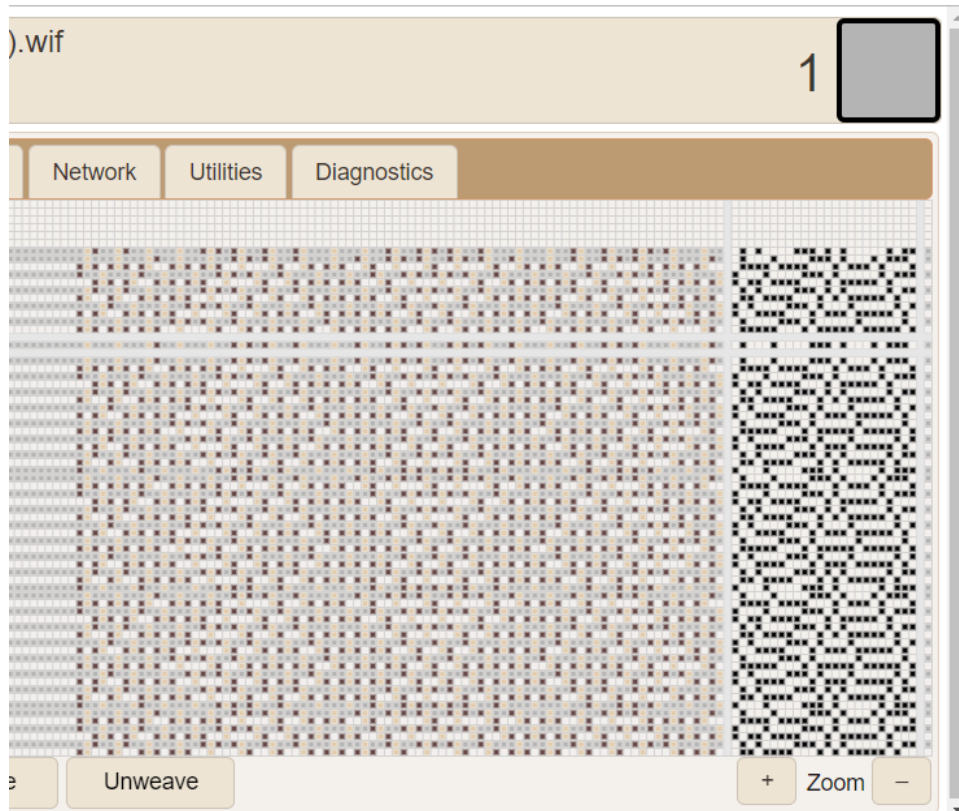
- 2) The Set Range window appears.



- 3) Enter the Start and End Picks. Click Apply.

The following examples show the full pattern, then 1-10 and then 1-15 were set as the range for the same WIF file. Each pattern appears slightly different.





UNWEAVE

Note:

Anytime you move the weaving backwards, you should loosen the tension on the cloth storage beam, or unwind some of the cloth. This will release the tension on your finished cloth so that nothing will be damaged.

The Unweave button is used when you need to remove some of your weft threads. When you press down the treadle, the shed will open the picks in the reverse order that you wove. Once you have unwoven the desired amount, adjust the tension on your loom by rewinding any loose warp and adjusting the woven cloth so that the fell line is in the correct position.

- 1) Unwind some of your woven cloth, or otherwise release the tension on the cloth storage beam.
- 2) Click Unweave.



- 3) The button will now have a checkmark.
- 4) When the loom is treadled, each shed that has been woven will open in reverse order so that you can remove the weft threads.
- 5) Unweave the cloth until you are satisfied.
- 6) Click the Unweave button to return to normal functionality.
- 7) Wind any loose warp back on the warp beam. Adjust the fell line as needed.
- 8) Adjust the tension on the loom as needed.
- 9) Resume normal weaving.

ADJUST THE PICK

You can change the pick to be woven by using the right or left arrow keys on the keyboard, or by entering the exact pick number to weave. If the shed is closed, the solenoids will fire to adjust the pick. The display will be adjusted to show the changes. Changing the pick with the arrow keys is the fastest way to step through the design.

When a range is set, the pick will “wrap around” when the value would stray outside the bounds set by the range.

When opening the last file you used, most versions of the Compu-Dobby 5 software will ask you if you want to resume where you left off at your last weaving session. If you have an older version, it may not save your last pick. In this case, enter the pick you want to start this weaving session with.

You can also use this feature to start at a different pick than the one you left off at for design purposes.

Note:

Check the current pick to see what will be opened when you treadle. If the current pick is zero, treadle once to advance to the correct pick.

Change the Pick

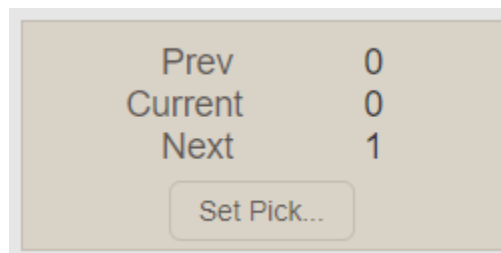
Note:

Change the pick with the right or left arrow keys while the shed is closed to quickly step through the design.

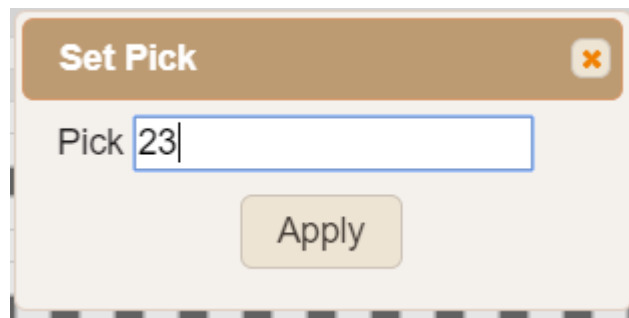
- 1) Press the right arrow on the keyboard to increase the pick by one. Press the left arrow on the keyboard to decrease the pick by one.

Set the Pick

- 1) In the Pick area, click Set Pick.



- 2) The Set Pick window appears.

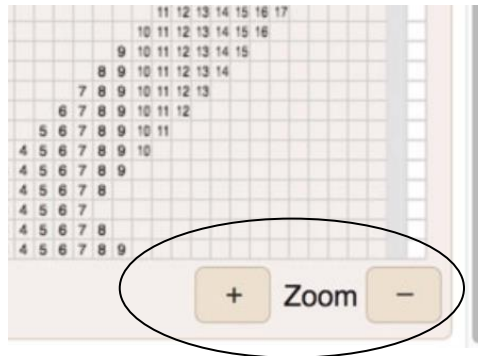


- 3) Enter the pick you want to start with and click Apply.

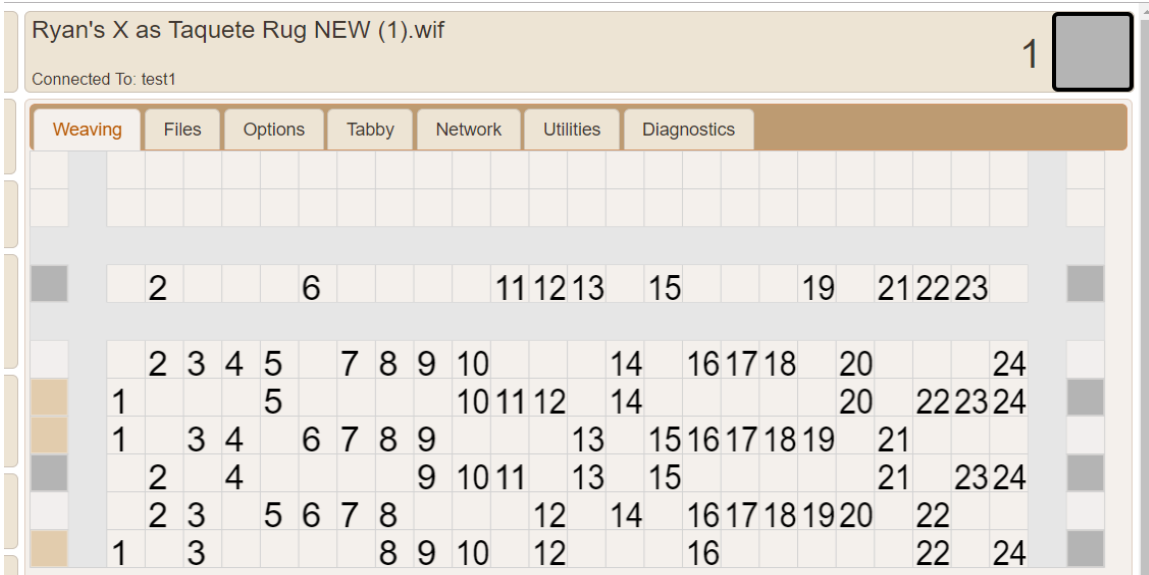
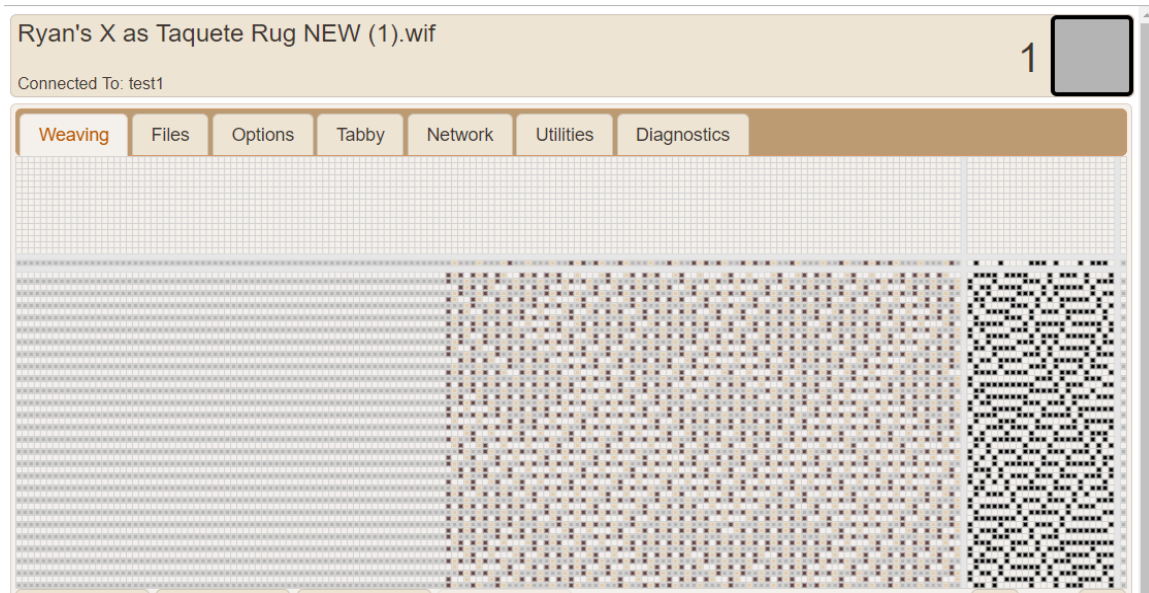
ZOOM IN ON THE WIF

You can zoom in on the WIF in order to see it in more detail. You can zoom out on the WIF in order to see more of it.

- 1) Click the + or – zoom buttons until you have adjusted the view of the WIF file to what you want.

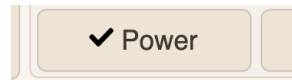


The following examples show a weaving tab that is zoomed out, and then one that shows it zoomed in.



POWER OFF

- 1) When you are done weaving, click Power to return the loom to its normal standby state. If you are going to turn off power to the loom, shutdown the loom through the software.



OTHER TABS

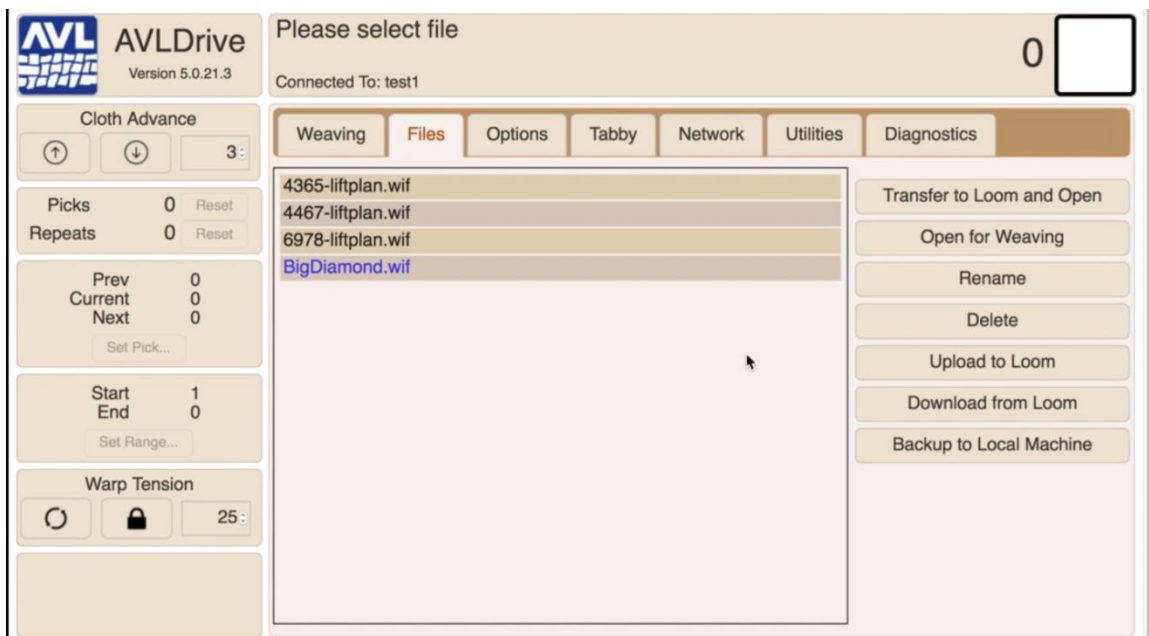
FILE TAB

Files are stored on the loom. The files must be in the WIF format. The file tab allows you to open your weaving files or to transfer weaving files to the loom. It is the default tab that appears when you open the software.

If you are using Weavepoint, you can use the loom control feature to open Weavepoint files directly in AVLDrive. With any other software, you must export your weaving files to the WIF format. With the Compu-Dobby 5, files are stored directly on the loom. From the files tab, you can open WIF files that have been stored on the loom. You can also upload files from your computer to the loom for use.

Note:

If no file is selected, only Transfer to Loom and Open, Upload to Loom, and Backup to Local Machine will be available.



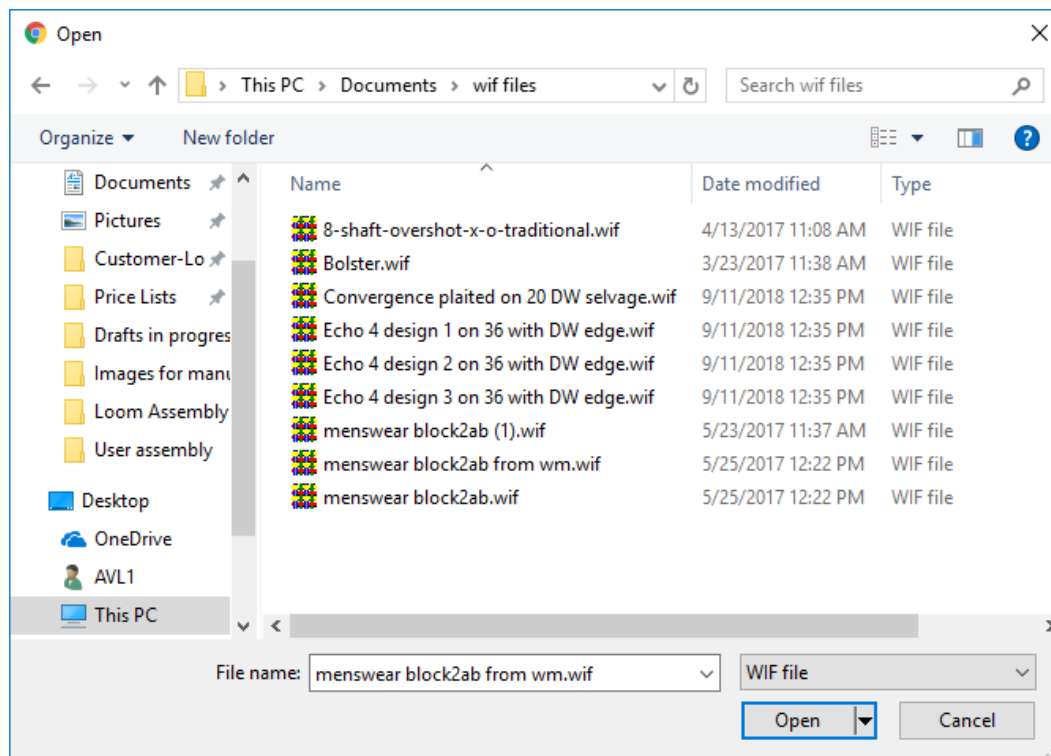
Button	What it does
Transfer to Loom and Open	Transfer a file from local storage to the loom and open it. Complete instructions follow.
Open for Weaving	Opens the selected file for weaving. You can also double-click a file to open it for weaving.
Rename	Rename a file. For example if you have several files with similar names, you might rename the file you are actively using so that it is easy to find.

Delete	Delete a file from the loom. While there are no limits on how many files can be stored, deleting files that are not being used can make it easier to find the files you want in the list.
Upload to Loom	Transfer a file to the loom without opening it. Complete instructions follow.
Download from Loom	For future use.
Backup to Local Machine	For future use.

Transfer to Loom and Open

This option allows you to find WIF files on your computer and transfer them to the loom storage system for use. The file will be transferred to and also opened in the Weaving tab for use.

- 1) Click **Transfer to Loom and Open**. The standard open file window for your device will appear. This screenshot is from a Windows computer.



- 2) Navigate to the folder where you have stored the WIF file you want to use.
- 3) Choose the desired WIF file from the folder by clicking on it.

- 4) Click Open.
- 5) The WIF file will open in the Weaving Tab in AVLDrive.

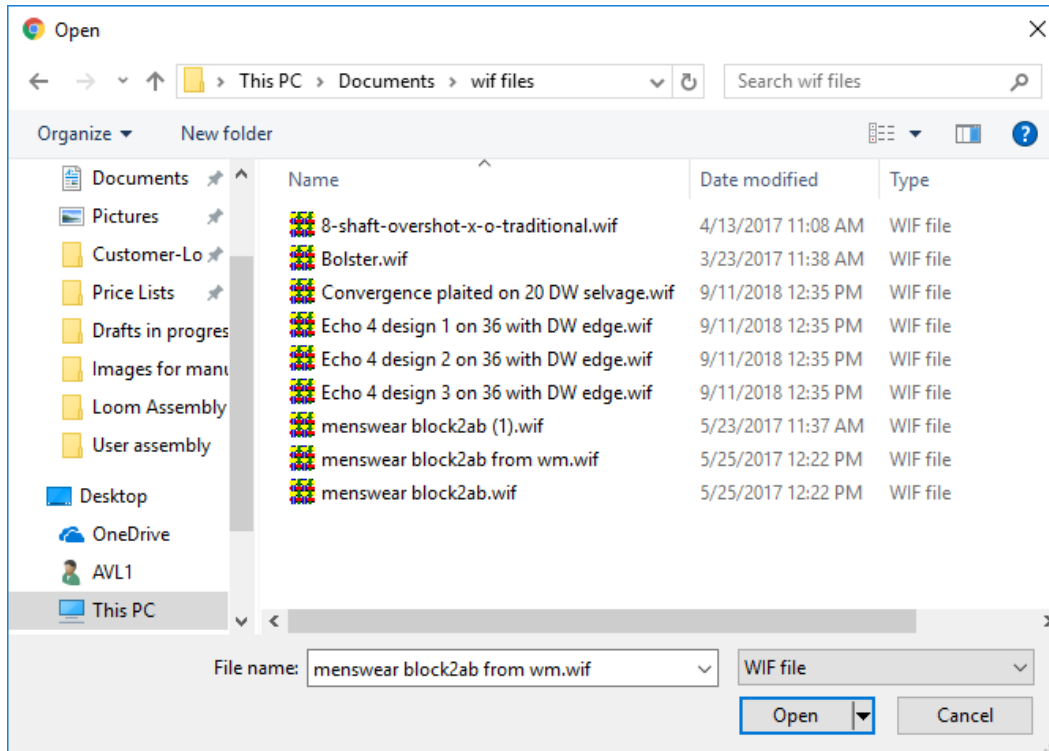
Note:

This process will upload the file to the loom, so the next time you want to use this WIF, you can choose it from the File tab.

Upload to Loom

This option will transfer the WIF file to the loom for use in the future, but it will not be opened in the Weaving tab.

- 1) Click **Upload to Loom**. The standard open file window for your device will appear. This screenshot is from a Windows computer.

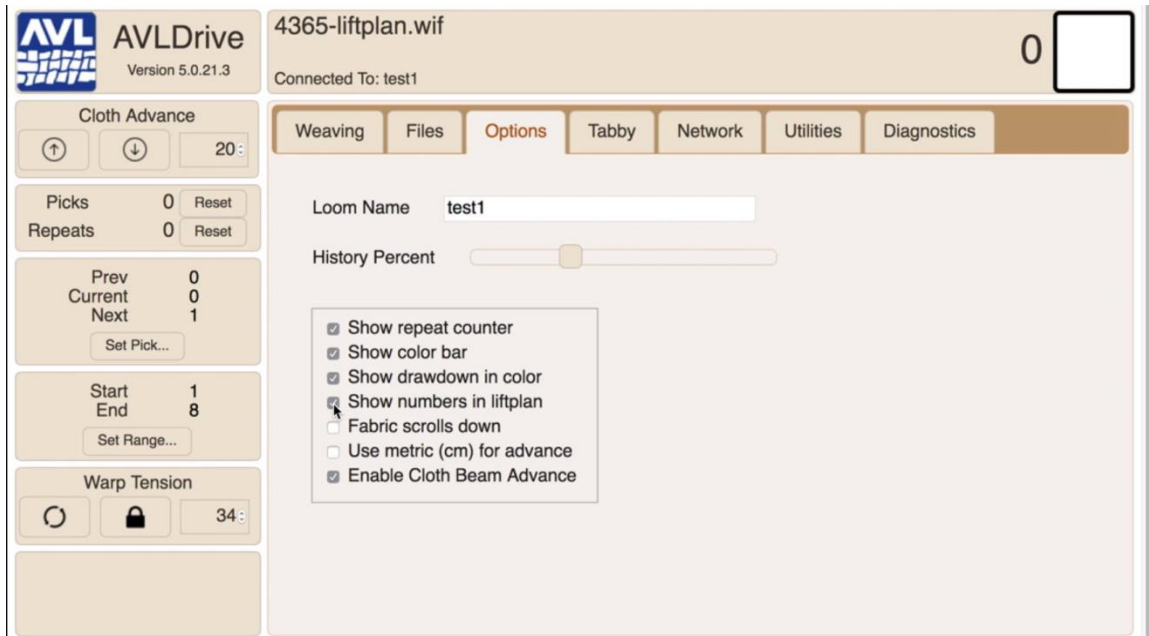


- 2) Navigate to the folder where you have stored the WIF file you want to use.
- 3) Choose the desired WIF file from the folder by clicking on it.
- 4) Click Open.
- 5) The WIF file will appear in the list of files in the Files tab.

OPTIONS TAB

This tab allows you to set several options for your loom.

- 1) To activate an option, check the box.
- 2) To turn off an option, uncheck the box.



Note:

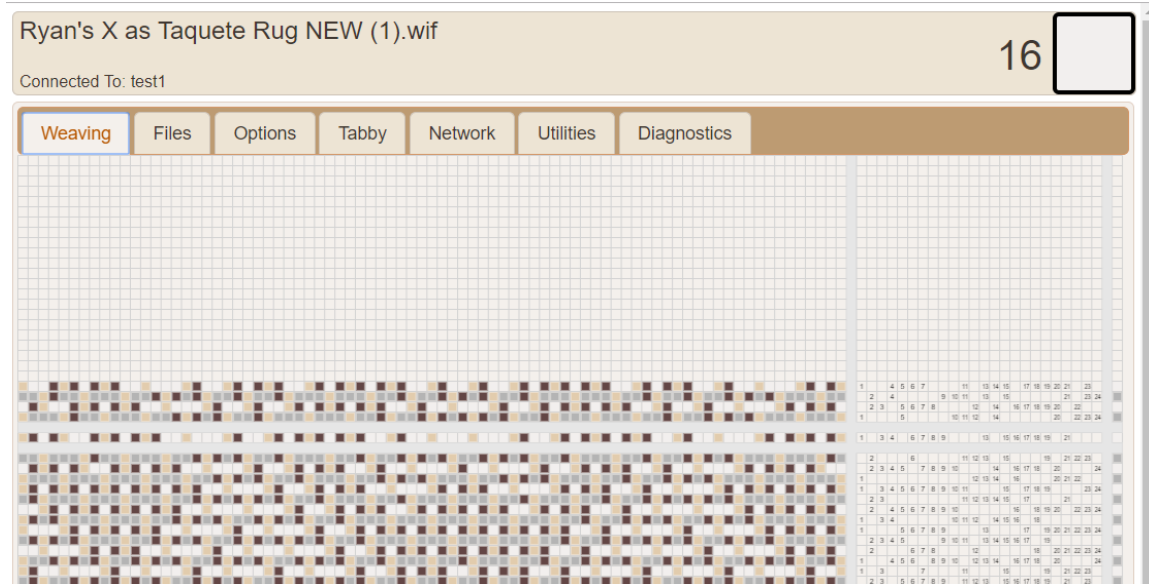
Use metric (cm) for advance and Enable Cloth Beam Advance will only be available if your loom supports the automatic cloth beam advance. As of the publication of this manual, only the K-series loom supports Cloth Beam Advance.

Loom Name

The name of your loom. Changing the name will change the address you need to type to access your loom. See page 15 for complete instructions.

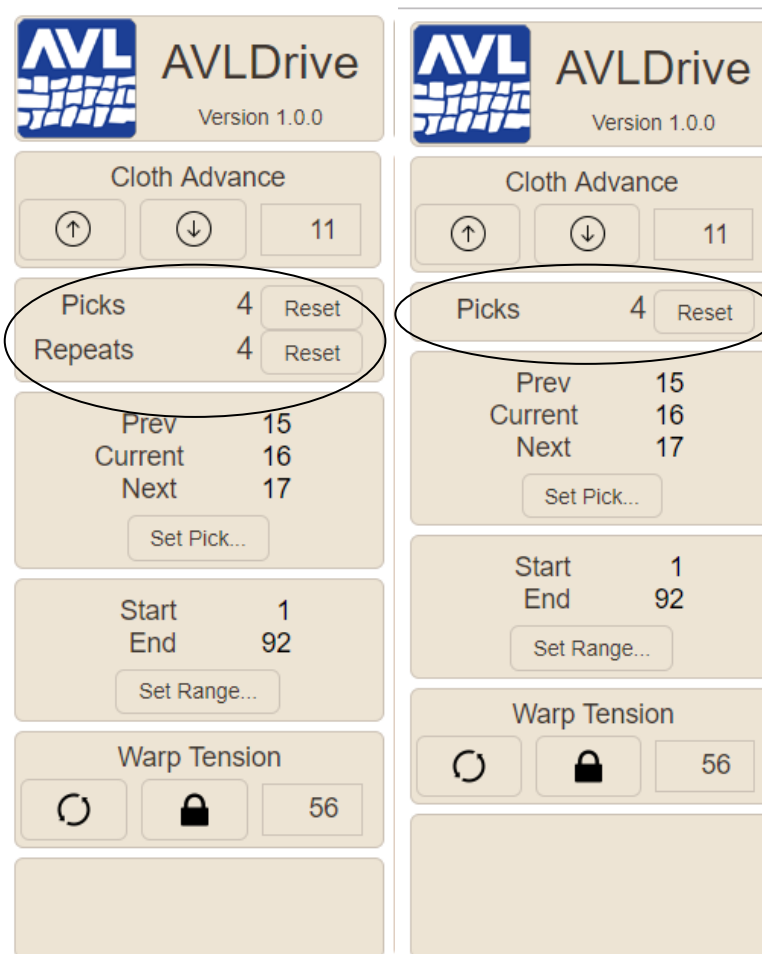
History Percent

Move the percentage bar to indicate how much of the screen should be devoted to history. The following examples show a screen with more history and less history.



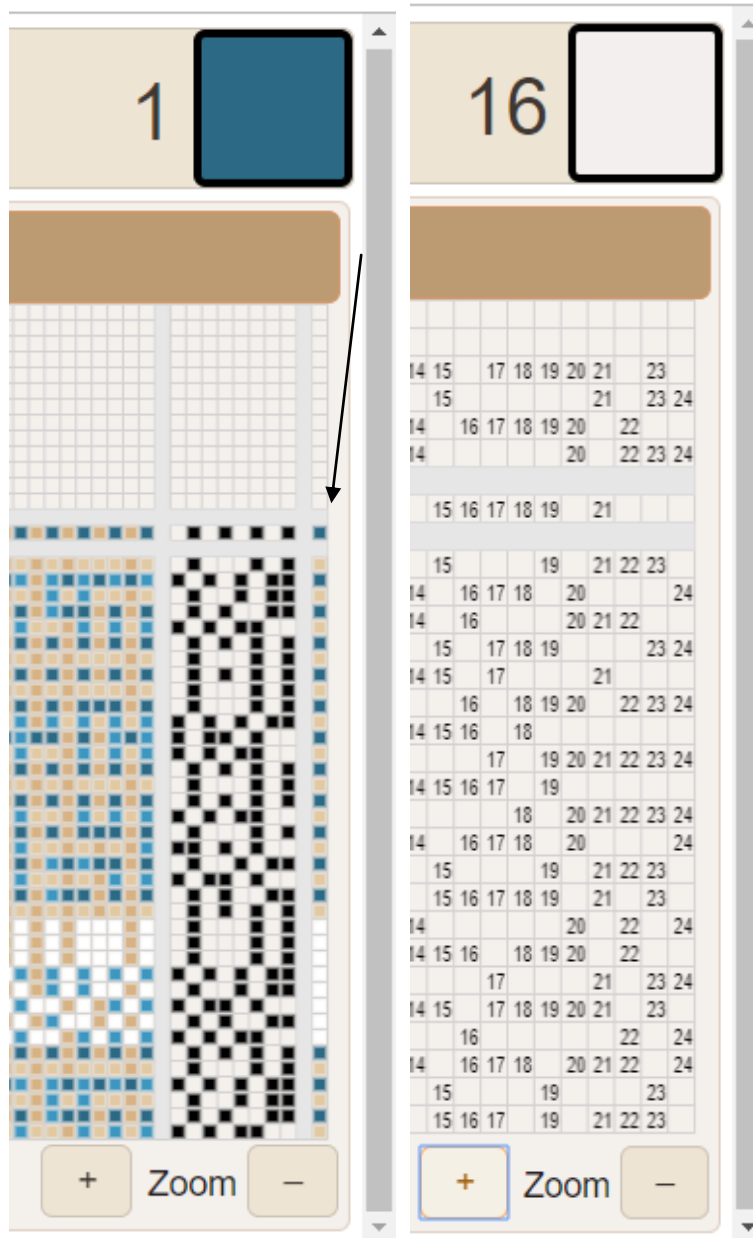
Show repeat counter

This option shows the repeat number in the software. The Repeats number will indicate the number of times the range has been repeated. If the repeat includes picks 1-8, when the 8th pick is beaten, Repeats will show 1, when the 16th pick is beaten, Repeats will show 2. The following examples show the screen with the repeat counter on and with it off.



Show color bar

The color bar to the right of the draft will appear. The following examples show the color bar on and the color bar off.



Show drawdown in color

Allows you to view the WIF in color. This can be helpful when the design has the same color warp and weft. The following examples show the WIF in color and the WIF with the color option turned off.

Ryan's X as Taquete Rug NEW (1).wif 9

Connected To: test1

Weaving
Files
Options
Tabby
Network
Utilities
Diagnostics

2	4			9	10	11		13	15			21	23	24				
2	3	5	6	7	8			12	14	16	17	18	19	20	22	24		
1	3			8	9	10		12		16				22	23	24		
1	4	5	6	7			11	13	14	15	17	18	19	20	21	23		
2			7	8	9		11			17					23			
2	3	4	5	6			10	12	13	14	15	16	18	19	20	21	22	24
2			7	8	9					17					23			

Ryan's X as Taquete Rug NEW (1).wif 16

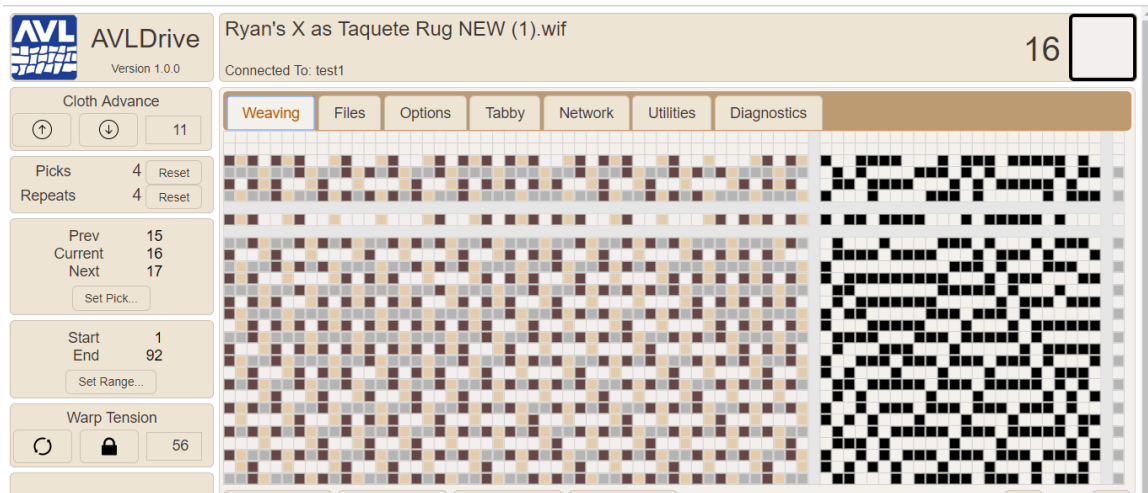
Connected To: test1

Weaving
Files
Options
Tabby
Network
Utilities
Diagnostics

1	4	5	6	7			11	13	14	15	17	18	19	20	21	23	
2	4			9	10	11		13	15			21	23	24			
2	3	5	6	7	8			12	14	16	17	18	19	20	22	23	24
1		5			10	11	12	14			20	22	23	24			
1	3	4	6	7	8	9			13	15	16	17	18	19	21		
2		6			11	12	13	15		19	21	22	23				
2	3	4	5	7	8	9	10		14	16	17	18	20		24		
1	3	4	5	6	7	8	9	10	11		15	17	18	19		23	24
2	3	4	5	6	7	8	9	10		11	12	13	14	15	17		21
2	3	4	5	6	7	8	9	10		16	18	19	20	22	23	24	
1	3	4			10	11	12	14	15	16	18						
1		5	6	7	8	9		13	17	19	20	21	22	23	24		
2	3	4	5		9	10	11	13	14	15	16	17	19				
2		6	7	8			12		18	20	21	22	23	24			
1	4	5	6	8	9	10		12	13	14	16	17	18	20	24		
1	3		7				11		15		19	21	22	23			
2	3	5	6	7	8	9		11	12	13	15	16	17	18	19	21	23
2		4			10				14		20	22	23	24			
1	4	6	7	8	10	11	12	14	15	16	18	19	20	22			
1	3	5		9			13		17		21	23	24				
2	5	7	8	9	10	11	13	14	15	17	18	19	20	21	23		
2	3	4	6				12		16		22	24					
1	4	6	8	9	10		12	13	14	16	17	18	20	21	23	24	
1	3	5	7				11		15		19	23					
2	3		7	9	10	11	12	13	15	16	17	19	21	22	23		

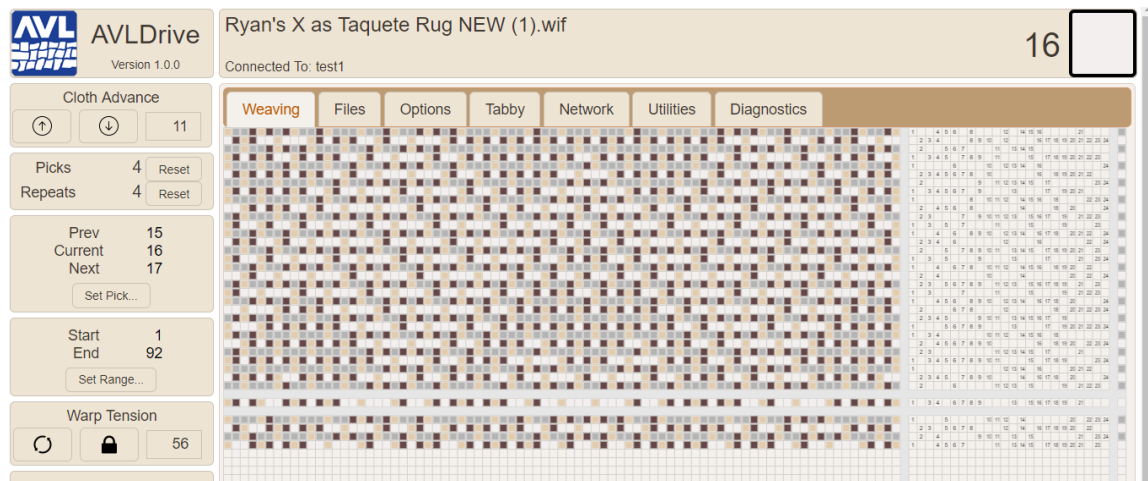
Show numbers in liftplan

When you are zoomed in far enough on the WIF, you will be able to see the harness numbers. The following example shows the WIF if you turn this option off. This is also what will appear if the file is zoomed too far out to show legible numbers. The examples for the color drawdown on the previous page show harness numbers.



Fabric scrolls down

If selected the fabric will scroll down on the screen as you weave, if not, the fabric will scroll up. The following example shows this option turned on. The other screenshots in this manual show the fabric scrolling up.



TABBY TAB

This tab allows you to set up or use a tabby (plain weave). Several defaults are included. If your threading requires a tabby pattern that is not included, you can add a new tabby. You can also edit, delete, or rename existing tabbies.

- 1) With the AVLDrive software open, click Tabby.



- 2) To select a tabby, choose it from the drop-down menu. The tabby that appears in the tab is the one that will be selected when the Tabby button is clicked on the Weaving tab.

Add a Tabby

Once you have added a new tabby, you will need to edit so that the correct harnesses rise on each lift.

- 1) Click Add.



- 2) Enter the name of the Tabby.
- 3) Click OK.

Edit a Tabby

- 1) Choose the Tabby from the drop-down list.
- 2) Click Edit. The background color of the tabby will change.



- 3) Click the harnesses that should rise on each lift. The top line is pick A and the bottom line is pick B. Pick A is the starting pick when Tabby is chosen on the weaving tab.
- 4) When you are done, click Edit again.

Delete a Tabby

Note:

The Default tabby cannot be deleted.

- 1) Choose the Tabby from the drop-down list.
- 2) Click Delete.



- 3) Click OK at the confirmation window.

Rename a Tabby

Note:

The Default tabby cannot be renamed.

- 1) Choose a Tabby from the drop-down list.
- 2) Click Rename.



- 3) Enter the new name in the window and click OK.

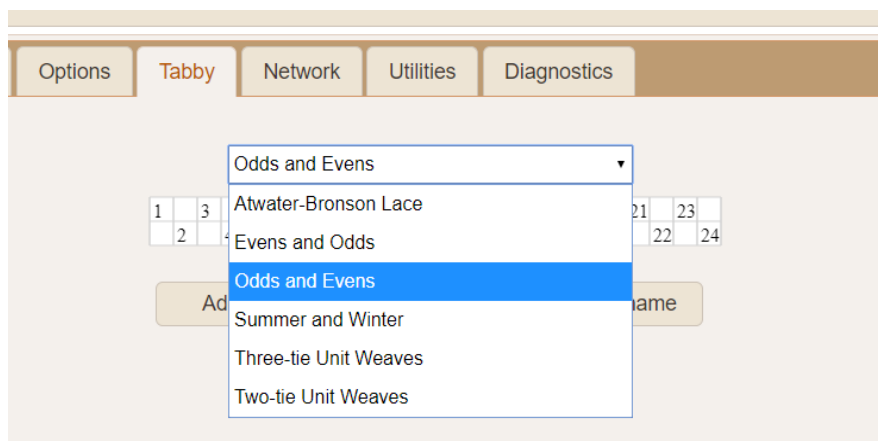
Use a Tabby

When you change the tabby in the drop-down menu, you change the tabby that will be used by the loom when you click Tabby on the Weaving tab.

- 1) Open the Tabby Tab by clicking on the name. The tabby will only show the number of shafts available on your loom.



- 2) From the drop-down menu, choose the tabby to use with your threading. Several defaults are available.



UTILITIES

This tab allows you to perform several operations for your loom.



Button	What it does
Check for update	Checks to see if there are updates for the loom software. The loom must be connected to the internet.
Fetch configuration	Gets configuration information for your software. The loom must be connected to the internet. Only click this when told to by AVL personnel.
Show Log	Displays a log of software events. This window can be selected and copied to send to AVL for diagnostics if necessary. If the loom is connected to the internet, the information can be sent by email automatically. You can also copy the log and paste the information into an email.
Shutdown	Shuts down the loom safely so that it can be removed from power.

DIAGNOSTICS

This tab allows you to view information about your solenoids. If this information is needed, you will be directed to view it by AVL personnel.

The screenshot shows the AVLDrive software interface. At the top, the title bar reads "4365-liftplan.wif" and "Connected To: test1". The main navigation bar includes tabs for "Weaving", "Files", "Options", "Tabby", "Network", "Utilities", and "Diagnostics". The "Diagnostics" tab is selected. On the left side, there are several control panels:

- Cloth Advance:** Includes up/down arrows and a value of 20.
- Picks:** Shows 0 Picks and 0 Repeats, each with a "Reset" button.
- Prev/Current/Next:** Shows 0 for Prev and Current, and 1 for Next. Includes a "Set Pick..." button.
- Start/End:** Shows 1 for Start and 8 for End. Includes a "Set Range..." button.
- Warp Tension:** Includes a refresh icon, a lock icon, and a value of 34.

The main content area displays a table titled "Dobby" with the following data:

Solenoid	5V	12V
1	4.55	11.895
2	4.558	11.832
3	4.633	11.844
4	4.55	11.895
5	4.558	11.832
6	4.633	11.844
7	4.55	11.895
8	4.558	11.832
9	4.55	11.895
10	4.558	11.832
11	4.633	11.844
12	4.55	11.895
13	4.558	11.832

At the bottom left of the interface, the URL ".test1.local/#selftestTab" is visible.

ADDITIONAL FUNCTIONS: K- SERIES LOOM

WARP BEAMS AND AUTOMATIC WARP TENSION SYSTEM

A first in our industry, the K-series loom offers digital control of warp tension using a small electrical motor and drive system connected via spring and brake cable to the warp beam. The motor is controlled by the Compu-Dobby & AVLDrive. Easily change the warp tension at any time during weaving by a click of the mouse or a touch of the finger on the touchscreen. This system allows very fine, repeatable control with a range from locked beam to free turning for winding on the warp.

Automatic cloth advance is an AVL-only feature on hand weaving looms. Earlier mechanical versions of these systems are well known for providing fine control over pick advance spacing. This feature utilizes digital controls via an electric motor driven worm and gear attached directly to the cloth beam. Much like the digital warp tension controls, set the picks per inch in AVLDrive and start weaving. Easily change the advance setting or manually advance the cloth at any time during weaving by a click of the mouse or a touch of the finger on the touchscreen. This system allows very fine, repeatable control with a range from hundreds of picks per inch (or centimeter) to gross movements needed when starting a new warp.

LOOM SELF-TESTS

When you power on the loom using the software, the K-series loom will go through a series of self-tests: The solenoid self-test, the warp tension motor initialization, and (if the loom has two warp beams) the second warp tension motor initialization. A notification will appear in the software letting you know that the tension system is calibrating. It will be removed when the calibration is complete. If you have one warp tension motor, the process will take about 90 seconds. If you have two, it will be about 180 seconds. Once the self-tests are complete, you will be able to continue using the software.

WARPING THE LOOM

Looms with automatic warp tension motors are designed to allow you to wind on the warp without removing the tension cable. A button on the Weaving tab allows you to set the tension to the lowest setting.

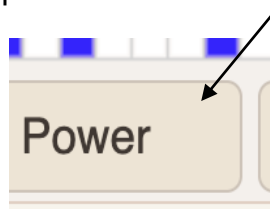
- 1) Connect to the loom as described previously. The software defaults to the File tab.

- 2) Open the Weaving tab. You do not need to have a weaving file open.

Note:

If you open a file for weaving (see page 24) when the loom is powered off, the loom will automatically power on.

- 3) Click Power to boot up the loom.



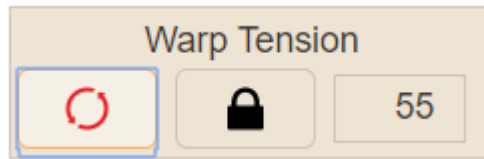
- 4) The loom will begin its self-tests. At the same time, the button will gain a checkmark and the Power light on the interface will turn briefly yellow, then red.



- 5) Click the free warp tension button.



- 6) The button will turn red to indicate it is activated. Click the button again to turn it off.



- 7) Wind the warp onto the warp beam. For more information, see the weaving section in your loom manual.
- 8) You can click Power to return the loom to standby when threading the heddles and reed. If you are going to turn off power to the loom, shutdown the loom through the software.

CONTROLLING THE CLOTH ADVANCE

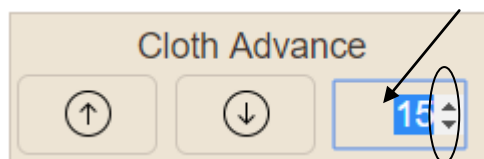
The cloth advance controls allow you to advance the warp without weaving, or reverse the warp. You can also set the picks per inch (PPI). The default PPI is 15.

Set the PPI

The default for the cloth advance is picks per inch, but you can change inches to centimeters in the options tab. See page 62 for instructions on changing to centimeters.

It's important to note that PPI can be affected by types of yarn and the sett, so please use the PPI as indicated in the Cloth Advance Box as a starting point, and understand that numbers may need to be adjusted to get the correct PPI on the cloth. However, once you have the PPI set, it will not change on the cloth until adjusted in the software.

- 1) In the software go to the Cloth Advance area and click in the PPI field.



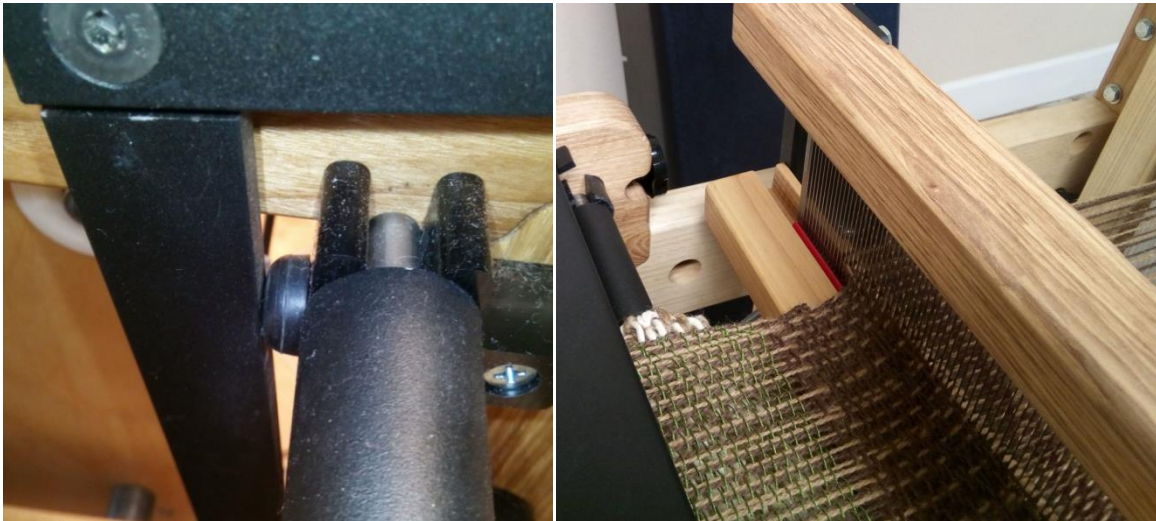
- 2) Use the small arrow keys to change the value, or click in the field and type in the value you want. You can enter fractional values when typing, for example "15.25".

Note:

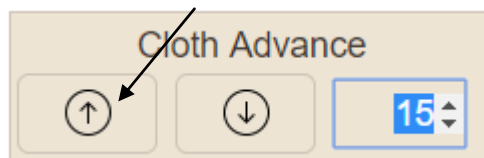
If you want to advance the warp quickly, for example when warping the loom, set the PPI to one.

Advance the Warp

Typically, you manually advance forward to bring the fell line to the correct weaving position after you have warped the loom. The correct position is when the beater arms hit the bumpers and the fell line is at the reed.



- 3) In the software go to the Cloth Advance area.



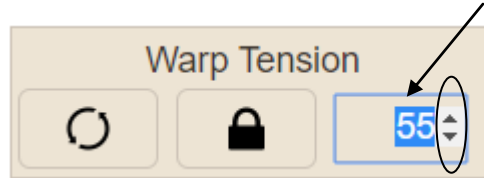
- 4) Use the up arrow to advance the warp. Click the arrow until the warp has advanced as far as you want it.

SET WARP TENSION

You can set the tension by entering a number in the field or by using the up and down arrows on the field. The default tension is set at 55.

When the loom is powered on for weaving, the warp tension motor will search for its reference home, then return to the tension setting left by the weaver in the previous weaving session.

- 1) In the software go to the Warp Tension field. Use the arrow keys to change the value, or click in the field and type in the value you want.



UNWEAVE

WARNING:

Anytime you move the weaving backwards, you must remove the pin in the cloth storage beam. This will release the tension on your finished cloth so that the loom will not be damaged.

The Unweave button is used when you need to remove some of your weft threads. When you press down the treadle, the shed will open the picks in the reverse order that you wove. The warp beam will move backwards when Unweave is selected. Once you have removed the weft back to the desired point, you can use the manual advance buttons in the cloth advance section of the Weaving tab to adjust your fell line back to the proper point if necessary.

- 1) Take the pin out of the cloth advance beam so that the cloth will unwind easily.



- 2) Click Unweave.

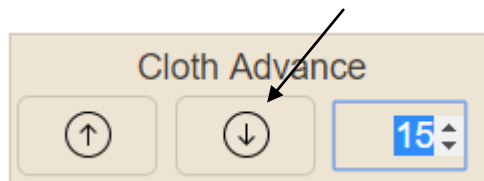


- 3) The button will now have a checkmark.
- 4) The Cloth Advance will be disabled until you click the Unweave button again.
- 5) When the loom is treadled, each shed that has been woven will open in reverse order so that you can remove the weft threads.
- 6) Unweave the cloth until you are satisfied.
- 7) Click the button to return to normal functionality.
- 8) Wind any loose warp back on the warp beam. Adjust the fell line as needed.
- 9) Place the pin back in the cloth advance beam.
- 10) Adjust the tension on the loom as necessary.
- 11) Resume normal weaving.

Reverse the Warp

Use this option to adjust the fell line if necessary.

- 1) Make sure the pin is out of the cloth advance beam so that the cloth will unwind easily
- 2) In the software go to the Cloth Advance area.



- 3) Use the down arrow to reverse the warp. Click the arrow until the warp has reversed as far as you want it. Use the beater to adjust the fell line.
- 4) Reset the tension. Depending on how far you have unwoven, you may need to rewind the warp onto the warp beam.
- 5) Return the pin to the cloth advance beam.

Note:

If you cannot find the hole for the pin easily, move the cloth advance beam by using the beater until you see the hole. The cloth advance beam will not wind on cloth unless the pin is in the hole.

- 6) If there is any slack in the cloth you can tighten up by using the beater.

LOCK THE WARP BEAM

There is a button that allows you to lock the warp beam in place. When the warp beam is locked, the cloth advance is automatically disabled.

This feature could be used by weavers who want to be able to experiment with placing wefts while manually advancing the cloth and letting off warp.

If you need to treadle through your pattern for some reason, you can use this feature to avoid having the warp advance, however it is faster to turn off the cloth advance without locking the warp beam. See page 62.

Note:

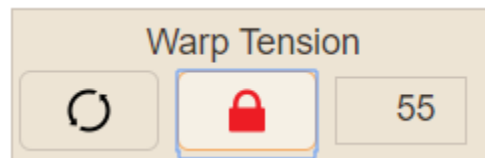
Change the pick with the right or left arrow keys while the shed is closed to

quickly step through the design. You do not need to lock the warp beam or turn off the cloth advance.

- 1) Open the software.
- 2) Click the Lock warp beam button.



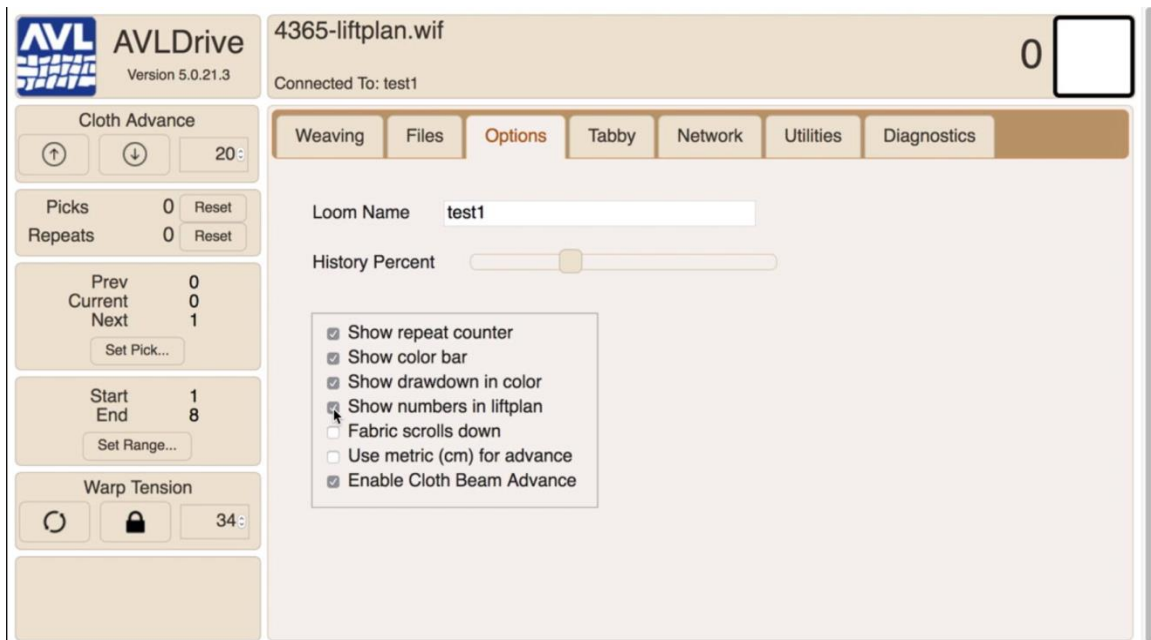
- 3) Click the button again to turn it off.



OPTIONS TAB

Most of these options are available for all Compu-Dobby 5 looms and are covered starting on page 41. The options discussed in this section are only available on the K-series loom.

- 1) To activate an option, check the box.
- 2) To turn off an option, uncheck the box.



Enable Cloth Beam Advance

This option allows you to turn on or off the cloth beam advance. The cloth beam advance is also turned off if the warp beam is locked. This can be used to halt the cloth advance when stepping through the design.

Use metric (cm) for advance

This option allows you to use the metric system for the cloth advance, if available. The default is imperial (inches).

TROUBLE- SHOOTING THE COMPU-DOBBY 5

SEND TROUBLESHOOTING INFORMATION TO AVL

If you are having problems with your loom, AVL may ask you to send the log file generated by the program to them in order to figure out the problem. In some cases, the log file may be so large that you have problems sending it. Follow these instructions to make the log file easier to handle. In order to use this option, you will need to be able to recreate the issue.

- 1) Enter “/reboot” after the URL or IP address in your web browser. The loom should reboot - this clears the log file.

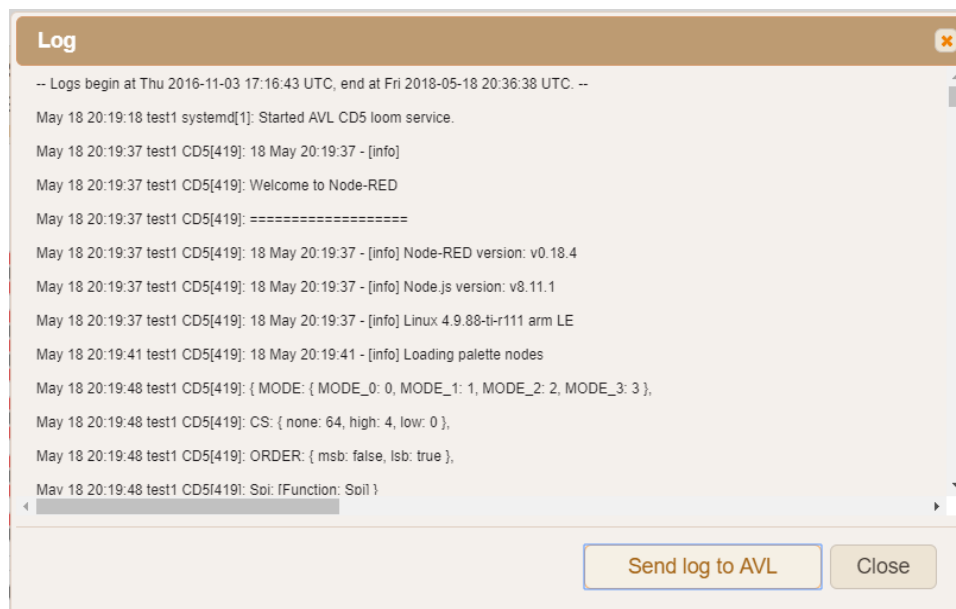
Note:

The option to reboot the loom was added in v.1.2.0. If your loom is on a previous version, you will need to shutdown the loom completely, then turn it back on.

- 2) Wait for the loom to reboot and for the network to reconnect. This may take a couple of minutes.
- 3) Reload AVLDrive. The reboot will cause the browser to disconnect.
- 4) Perform the actions in the software or on the loom that cause the problem. Repeat the actions a few times.
- 5) Start an email to AVL explaining the problem. In the email, explain what actions you take, what results and error messages you receive, and how many times the problem occurred.
- 6) Choose the Utilities tab.



7) Click Show Log.



8) Select all of the text in the log file.

9) Copy the log file and paste into the email. Send the email to sales@avlusa.com.

APPENDIX I – ADDITIONAL INFORMATION

USING A TABLET WITH COMPU-DOBBY 5

Sometimes it is difficult to find the right place to put a computer for weaving on your loom. It seems like it is either in the way, at risk of an errant fly shuttle, or too far out of your normal visual range. Putting it on a chair next to the loom is a bit too low and requires you to turn too so far that you have trouble keeping your rhythm.

One solution is to use a tablet. A tablet is a great way to weave with the Compu-Dobby 5. With the addition of a mounting arm it can be positioned so that it is at the correct height while not obstructing your view of the action of the loom. And it can be moved out of the way with just a push.

AVL does not recommend specific tablets or operating systems. There are many manufacturers and models to choose from; too many for us to monitor. With the operating systems in common use today, iPads are able to use the "loomName.local" style of address. However, the Android tablets do not support ".local" so the standard IP address will need to be used. See page 16 for more information about the loom name and IP addresses.

Choosing an arm

The first thing is to choose how you will attach the arm to the loom. Many arms attach with a clamp while some will need screw holes in the frame of the loom. A clamp is not usually as stable as a more permanent mounting and if you want to be able to move the tablet aside with a quick swipe of the hand, it may not be the best choice.

Another consideration is the capacity of the arm. If you are thinking of using a large tablet like the 13" iPad, many of the arms cannot support that size tablet. With the mechanical motion of the loom, you will need a fairly robust arm to keep it from drooping. So, check that both the size and the weight capacity of the arm are sufficient.

Choosing a tablet

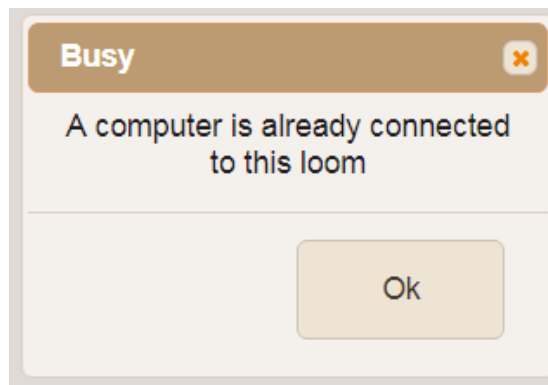
The tablet needs a minimum resolution of 1024 x 768 pixels. On the iPad Retina displays that translates to needing 2048 x 1536 pixels. We have followed industry standards while creating AVLDrive so the tablet needs a browser that is consistent with current standards.

A USB cable connection is not required. The loom will automatically connect to your router (if it has been configured to do so) or it will create its own private network. See page 11 and following for more information.

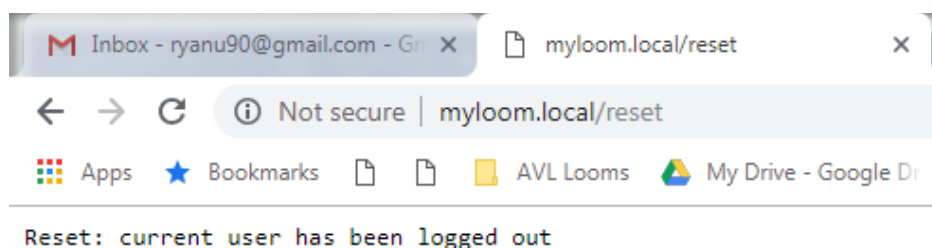
Reset the connection

Unlike computers many tablets are designed to be turned off and on without disturbing existing connections. In many cases, when you are finished with AVLDrive on a tablet you will need to reset the connection for the loom. This happens automatically with computers, but because of the difference in the way connections are handled by tablets, it becomes a manual step. If you forget, the next time you attempt to connect to the loom you will probably get a busy message, and you can send a logout message at that time.

- 1) When connecting to the loom, you receive the message below.



- 2) Enter “/logout” after the URL or IP address in your web browser.
- 3) Refresh your page.



- 4) Once you receive the notification that the “current user has been logged out”, simply reenter your normal URL or IP address.

COMPU-DOBBY 5 CONNECTION INFORMATION

The Compu-Dobby 5 uses a connection known as “http,” which your browser may indicate is unsafe. Since no personal information is passed over the connection, additional security is not required.

THE FINE PRINT

AVL CUSTOMER SERVICE

AVL offers free technical support to the original owner of all our looms. This means if you ever have a problem, you can call, fax, or e-mail us and we'll help you find a solution. Please take advantage of this service; your satisfaction is extremely important to us.

Customer Service Phone: (530) 893-4915

Fax: (530) 893-1372

E-Mail: sales@avlusa.com

AVL WARRANTIES

Limited Warranty: The benefits of this warranty accrue solely to the original purchaser of AVL Looms, Inc. products, as defined below.

Your warranty covers:

New Looms: AVL Looms, Inc., a California corporation ("AVL") warrants to the original purchaser of any AVL loom (each, a "Product") that the Product will be free from defects in materials and workmanship during the limited warranty period described herein. The limited warranty coverage begins (a) the day the Product is installed if installed by a professional from AVL, or (b) on the date of shipment from AVL to the original purchaser if the Product is not installed by AVL (the "Effective Date"). Except as set forth under the section entitled "What is Excluded?" below, AVL will, for a period of two (2) years from the Effective Date (the "Original Warranty Period"), repair or replace the defective part(s) of the Product with a repaired, renewed, or comparable part (whichever is deemed necessary or proper by AVL) if it becomes defective or inoperative or fails to perform according to AVL's specifications. Any repair during the Original Warranty Period will be carried out without charge to you for parts (except applicable taxes, if any). You will be responsible for all labor in connection with installation of the parts and service upon the Product, as well as the cost of shipping involved.

New Accessories, Loom Upgrade Parts, and Replacement Parts: Subject to the limitation contained in subsection (i) under the section entitled "What is Excluded?" below, AVL warrants to the original purchaser of any accessory, loom upgrade parts, or loom replacement parts (the "Additional Part") that are sold by AVL that such Additional Part will be free from defects in materials and workmanship for ninety (90) days from the date of purchase. In the event that any Additional Part is physically damaged or physically defective and if such defective Additional Part is returned to AVL within ninety (90) days of the date of purchase, AVL will provide a replacement Additional Part at no charge. The sole remedy for this warranty shall be limited to the replacement of the defective Additional Part. You are responsible for all shipping charges (including applicable taxes) incurred with returning the defective Additional Part.

All New Products and their components (including replacement Product and its components) are covered only for the Original Warranty Period. When the warranty on the original Product expires, the warranty on any replacement Product, or components also expires. After two (2) years from the Effective Date, you pay for any replacement or repair, including all parts, all labor and shipping charges (including applicable taxes).

Your warranty does not cover:

- 1.Labor charges for installation or set-up of the Product, as well as any labor charges required to install, disassemble, troubleshoot, or reassemble the Product.
- 2.Any taxes imposed on AVL for Product replacement or repair under this warranty.
- 3.Installation, performance of, or repair of: cabling, electrical, or accessory attachments used with the Product.
- 4.Product replacement or repair because of misuse, accident, repair by any party other than AVL, or other cause not within the control of AVL. Please note that removing any parts from the Product for any reason voids the warranty.
- 5.Incidental or consequential damages resulting from the Product.
- 6.A Product that has been modified or adapted to enable it to operate in any country other than the United States or any repair of Products damaged by these modifications.
- 7.Electrical and pneumatic components, each of which carries a one (1) year warranty from the Effective Date.
- 8.Jacquard components function beyond 98%. A Jacquard module is considered to be operating within specification if 98% of all hooks are operating as commanded.
- 9.Computing equipment, such as a Personal Digital Assistant or a Personal Computer, which are manufactured by a third party(ies) and which may be under warranty through the original manufacturer. AVL is not responsible for any warranty coverage that may be offered concerning these products and you must contact those manufacturers directly regarding any available warranty coverage.

The performance or functionality of any software that is sold either together or separate from the Product. The AVL warranty covers only defects in the Software Media, namely the CD-ROM media such as a broken CD-ROM or a defect in the CD-ROM that would prevent the CD-ROM from being read by your personal computer's CD-ROM drive. .

AVL Returns Policy

Any order that has left AVL in transit to the customer is considered fulfilled. Parts and accessories not covered under warranty must be returned to AVL within 60 days from the date of shipment from AVL. The purchase price of the item(s) is refundable less a 15% re-stocking fee based on the total purchase price. No refunds will be given on shipping or handling. The buyer is responsible to return the merchandise in "as new" condition at their expense. Any item received showing wear or damage is not eligible for return and will be promptly returned to the customer COD unless some other arrangement is made. Looms and custom-made items, special order items, parts made for pre-1998 looms, used and reconditioned items are not eligible for return.