FIBERWORKS 4.1/4.2 SILVER PLUS

How to Weave

on your

Computer Assisted Loom

For ARM, AVL,

Leclerc, Louet,

Macomber, Noble, Toika

falcot14.DTX - Drawdown

s,27
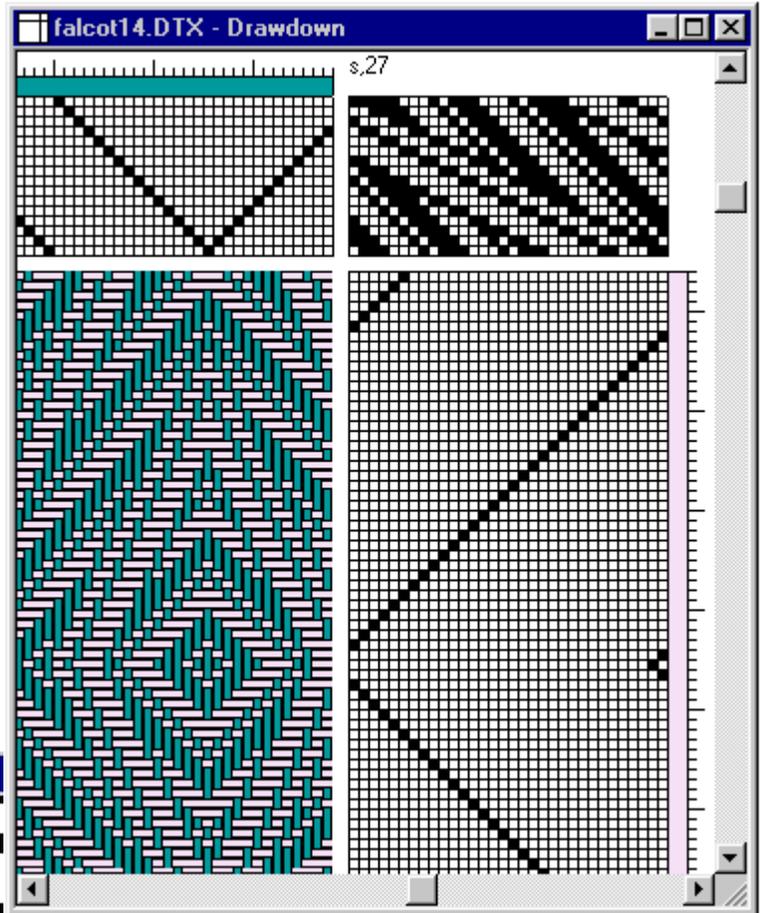
falcot14.DTX - loom attached

51:	-	-	3	4	-	-	7	-	-	10	11	-	13	14	15	-
50:	-	2	3	-	-	-	7	-	9	10	-	12	13	14	-	-
49:	1	-	3	-	-	6	-	-	9	-	11	12	13	-	-	-
48:	-	2	-	-	-	6	-	8	-	10	11	12	-	-	-	16
47:	1	2	-	-	5	-	-	8	9	10	11	-	-	-	15	-
46:	1	-	-	-	5	-	7	8	9	10	-	-	-	14	-	16
45:	1	-	-	4	-	-	7	8	9	-	-	-	13	-	15	16

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Validation of 4.1/4.2 Silver Plus

For installation of the PCW4.1/4.2 Silver Plus program, see the main Silver Manual

Validation dialog for activating loom functions

This validation dialog may appear when you choose **File>Weave** in a copy of Fiberworks that was previously validated as **Silver** rather than **Silver Plus**. It may also appear in Silver Plus if you select an **AVL** loom in **Loom Setup**, but your original validation did not include AVL.

It allows you to upgrade your current Silver version to Silver Plus or Silver Plus with AVL without having to reinstall the program.

If you installed and validated as Silver Plus or Silver Plus with AVL originally, you should not encounter this dialog.

Copy the program ID numbers from your computer screen. The numbers in the illustration above are just an example. This is **not** your program ID!

Follow the instructions on the dialog and email the program ID to us at:

info@fiberworks-pcw.com

In addition to the program ID, please identify yourself with name, program purchase registration number or invoice number or date of purchase, and indicate if you are validating regular Silver Plus or Silver Plus with AVL.

We will send back the Validation code by email as soon as possible, often the same day.

Enter the validation code into the 4 white boxes, without leading zeros, and without leading or trailing spaces. You can navigate from box to box with the Tab key, or by mouse.

Use the activate button to complete the validation process. Until you validate you can't access the weaving features described in this manual

Validation for AVL includes all other looms.

If you have different looms connected to different computers, each computer generates a **unique** Program ID (even if they were all installed from the same CD) and each needs its own validation code. There are no extra charges for a reasonable number of replacement codes.
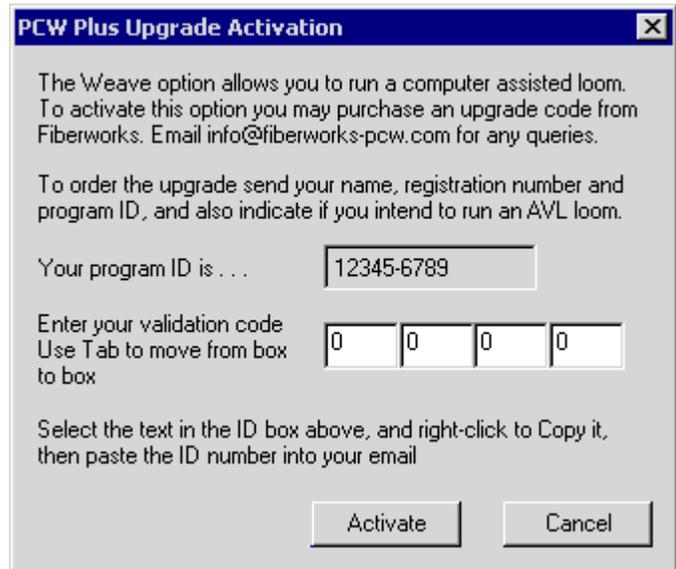
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Designing to Weave

Before opening the weaving window, create a design or open an existing file in the normal drawdown window. Shown below is a variation of maltese.dtx, one of the sample designs included with the 4.1 Silver Plus program.
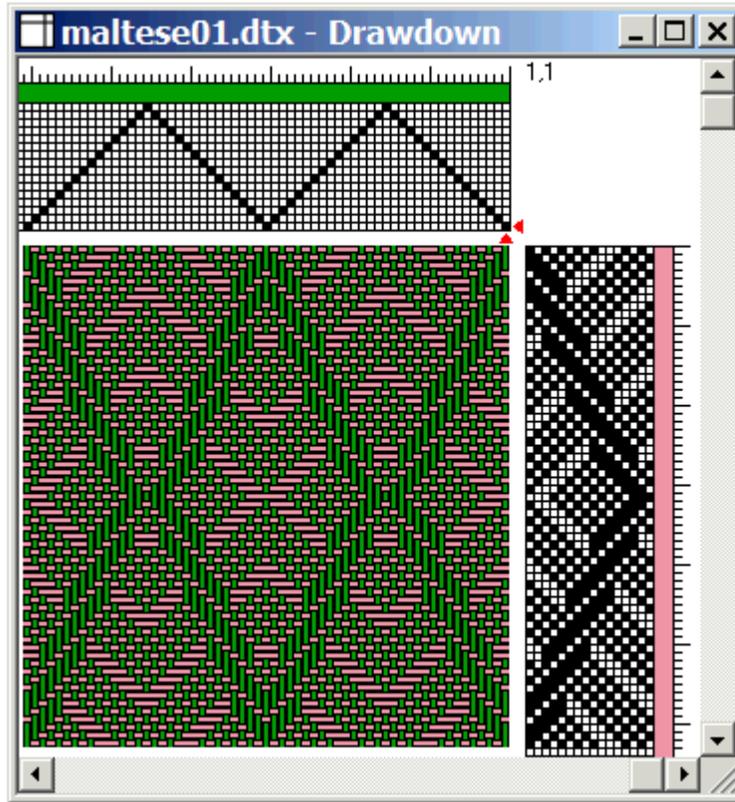
The design may have a conventional tieup and treadling or it can be a liftplan as shown.

Number of shafts should not exceed the capacity of your loom.

To proceed to the **Weave function** go to **File>Weave** in the main menu**.**

If the Weave item on the File menu is grayed out, check that there is a weaving design open in the drawdown window, with **at least one pick**. If it's still grayed out, you may need to validate the program to activate the weave functions. If the entire program has not been validated, Save and Print items in the File menu will also be greyed out. See your Fiberworks Silver manual for information on how to validate.

When you first enter the Weaving window, the title bar will say **no loom selected**. While the program is in this state, you can **simulate** loom action by **pressing the spacebar**. One press is equivalent to opening the shed, and a second press is equivalent to throwing the shuttle and closing the shed. The simulation will allow you to explore the weaving window functions before getting involved with the loom itself.

Weaving Window Layout:

The weaving window shows your design in three different views.

The **upper left panel** shows a **color** view of the cloth. The **upper right panel** shows a **structure** view of the same portion of your design, which may be a warp drawdown or a weft drawdown according to your preferences. In a warp drawdown, warp over weft is represented by black squares.

The pick order is **bottom up**, which is inverted from the drawdown design window, but will show the cloth the way it should appear as you weave.

The lower edge of these panels shows one pick **detached.** This represents the pick you are **about to weave**. Everything above this line is a **preview** of what you are about to weave

The bottom part of the window is occupied by the **lag chain**. Each row represents one pick, and lists the shafts that will be lifted. **Pick number** is in the leftmost column, and the rightmost column shows the **color** for that pick according to your weaving draft. Pick number 1 is highlit in light blue. This indicates that it is the **next pick** to be woven.


The bottom right corner of the main Fiberworks window frame contains **status information**. From left to right this is: **magnification** of the cloth views, the **number of picks woven**, the number of **warp ends visible** in the cloth views, and the weaving status, currently **STARTUP**.

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Press the spacebar. In the *No loom selected* state, this simulates the action of the loom. The first press changes the weaving status from STARTUP to **READY**. Press spacebar again; the second press changes the status to **OPEN**. On a real loom this means that the shed is open and you can throw the shuttle. Press a third time to close the shed; status becomes **READY**, the blue bar **advances** to pick 2, and the detached thread drops to the bottom of the cloth windows, indicating that it is now **beaten in** at the fell. Press the spacebar several more times.

| Woven = 5 | Ends 1-33 | READY |

| Woven = 6 | Ends 1-33 | OPEN |

As simulated weaving progresses, the blue bar marking the current pick moves **up**. By **current pick**, we mean the pick **about to be woven** in the shed **closed** state (status **READY**) and the pick being lifted in the shed **open** state. When the blue bar reaches the middle of the lag chain, the lag chain will start to scroll down so that the current pick remains centered.

The detached thread in the cloth panels also represents the current pick. When you close the shed, this drops down and adds to the fell, and the next thread detaches from the preview to become the current pick From the fell downwards represents a **history** of what has been woven already. Everything above the fell is a preview of what you are about to weave. When the current pick reaches the middle of the cloth panels, the cloth drawdowns scroll downwards as well so that the current pick remains centered.

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Changing the Size of the Weaving Window Panels

The relative size of the different panels in the weaving window can be easily changed by using the mouse. Rest the mouse cursor on the border. The cursor will change into a double headed arrow when you hit the exact boundary.
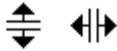
Drag the border in direction needed to resize the panel.

In the example on the right, the weaver has chosen to see more interlacement than structure drawdown, and more cloth than lag chain. You can make either the cloth color or structure panels disappear altogether. The lag chain can be reduced to just the current pick if you so choose.

If you decrease the width of the entire weaving window, the numbers of the shafts in the bottom, lag frame become smaller and more crowded.

At extremely small frame sizes, the highest numbers can no longer be displayed. This varies with resolution and font settings on the display controls for your monitor and video card and the number of shafts on your weaving design. When weaving with 32 or 40 shafts, you may have to use a maximized Fiberworks window and a maximized weaving window.

Liftplan and Lag Chain

The term **Lag** refers to the wooden or metal bars used to select shafts on a mechanical dobby loom. Pegs screwed into the bars determine which shafts are lifted on each pick. The **lag chain** is series of lags linked together in sequence. In Fiberworks, the **lag chain** represents the sequence of picks which determine the weaving. There's a subtle difference from the liftplan: the lag chain may take specific sections of the liftplan (p.14), may repeat (p.15) or may reverse the pick order of the liftplan (p.16); picks from the liftplan can alternate with tabby that is omitted from the original liftplan (p.15).
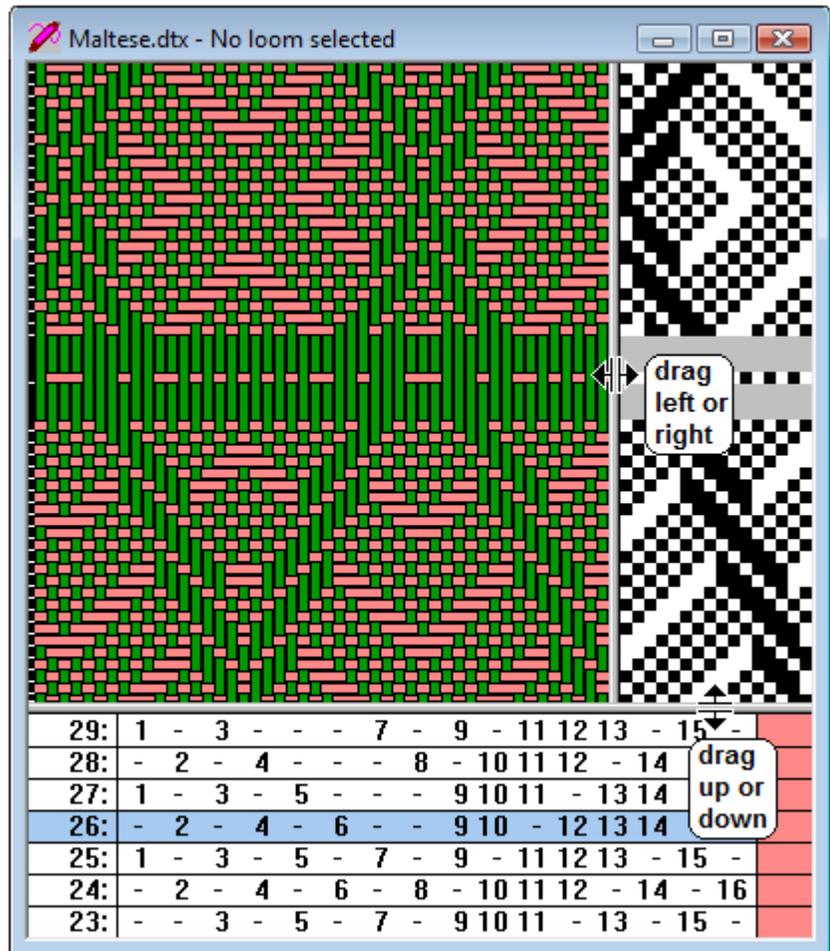
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File Menu (weaving window)

Open   keyboard: **Ctrl + O**   toolbar   📂

This opens **dtx** or **wif** files the weaving Window. A **new** weaving will start at pick 1. A design that was **woven and saved previously** as a **dtx** file will resume at the last woven pick if the design was saved on the previous exit.

Close

This closes the weaving window. If the design is also open in a drawdown window, the drawdown window remains open, otherwise you may be prompted to save the file.

Save   keyboard: **Ctrl + S**   toolbar   💾
Save As
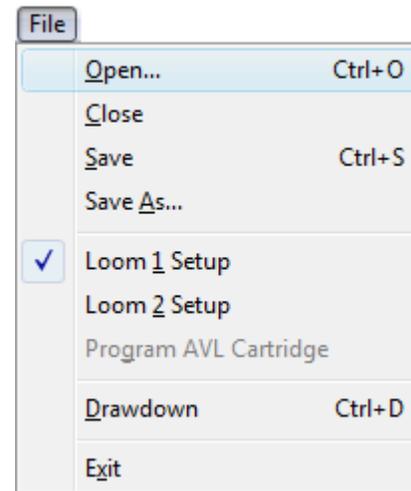
These save the currently active design. If you save as a **dtx** file, the **last pick woven** and **current weaving state** will be **included** in the file, so that you can resume exactly where you left off when you reopen the file. Wif files do **not** include weaving information. Use **Save As** to change the filename or folder location when you save, so that you do not overwrite the original. For a design originally opened as a **wif** file, you may wish to use Save As to save a **dtx** version of the file so that the current weaving state is recorded.

Note: The program assumes that if you open a shed, you also threw the shuttle, so the last open shed counts as the last pick woven. If you open the shed, and quit without throwing the shuttle, you will be one pick too far ahead when you resume. See Unweave (p.17) and Navigating in the lag chain (p.8-9) to see how to correct this situation.

Loom Setup   see next page for details.

Program AVL Cartridge

This loads the current design into the memory cartridge which is available as an option for the AVL Compu-Dobby I or Compu-Dobby II (p.26).

Drawdown   keyboard shortcut: **Ctrl+D**

This brings the drawdown window for your current design to the front and activates that window. If the current design is not open in a drawdown window, a new window is opened. Use this menu item if you need to make major adjustments to the design.

See also: **Sequence>Reset Chain, p.12.**

Exit

This closes the **whole** Fiberworks program, including the weaving window, any open drawdown windows and any sketchpad windows. For each unsaved design, a prompt will appear asking if you wish to save before the program finally closes down.

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Selecting up your Loom

Use the menu items **Loom 1 Setup** and **Loom 2 Setup** to select and configure one or two looms connected to your computer. The looms supported* are listed below right.

When you have selected your loom, you will need to set the **Com number** for the port. Fiberworks scans for available ports, and lists them. If you know the Com number, select it from the list. Otherwise see pp.19-21,36-38, **Finding and troubleshooting ports**.

Then set the maximum number of shafts for the loom.

Some looms have optional settings:

For **ARM** ☑ Use port flow control

Try the setting with and without the check mark: see which works best for you.

For **Toika** ☑ Place shaft 1 at back of loom

Toika uses the Scandinavian convention that shaft 1 is furthest from the weaver, at the **back** of the loom. By default, Fiberworks reverses the shaft order so that **shaft 1 appears to be at the front** of the loom. If you thread your loom Scandinavian style, shaft 1 at the back, put a check mark in the box, otherwise leave it **blank**.

For **AVL**, click the **Options** button. It has been known (rarely) that the magnetic or optical arm sensors have been installed inverted. If the Weaving status says OPEN when your shed is closed, and READY when the shed is open, put a check mark in the box to correct the problem. On CDIII, you can also choose whether to activate solenoids late (when shed is **closed**) or to activate them early (when shed is **open**). Experiment to find what is best for you. Fast weavers should probably take the early (shed open) option.

When you have selected your loom and made Com and options settings, close the dialog and go to **Diagnostics > Response Test** (p.18) to check that communications are working.

Fiberworks no longer supports LIPS or Combby looms in version 4.2 because the programming for the parallel port used by these looms is not compatible with Windows XP and later. For a solution for J-COMP looms, contact lampas@mindspring.com.
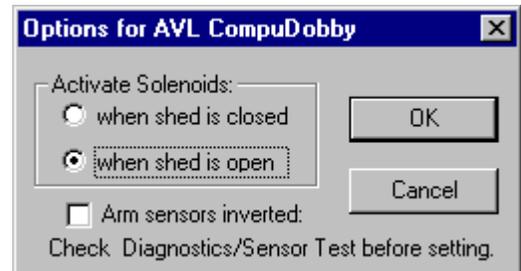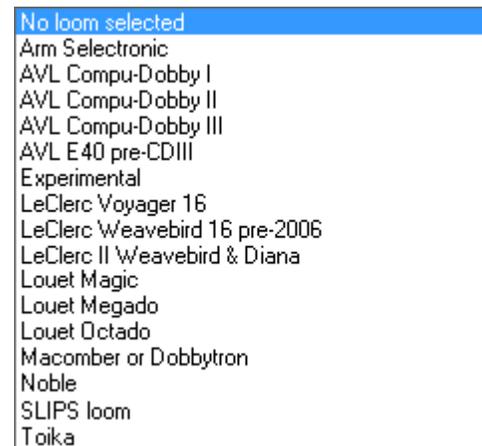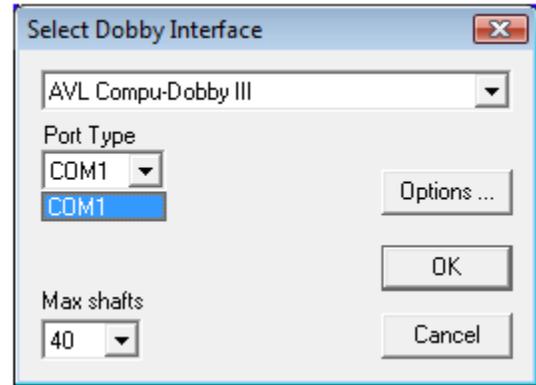
Edit menu (weaving window)

The **Edit menu** contains important items relating to **editing** and **navigating** the lag chain.

Edit
Undo	Ctrl+Z
Edit lag chain	Ctrl+E
Insert Pick	INS
Delete Pick	DEL

Undo   keyboard shortcut **Ctrl+Z** toolbar   ↰

This menu item reverses any **editing** function you may have carried out. To correct a **weaving** action, see **Unweave** in the **Sequence** menu, (p.17).

Edit Lag Chain   keyboard shortcut: **Ctrl+D**   toolbar ✎ inactive

✎ active

This menu items puts directional arrow keys in **Navigating** mode when it is **inactive**. This is the normal **safe** setting that limits unintended modification of your design while you are weaving. There is **no check mark** next to the menu item and the toolbar button appears **popped out**. **Click** the button or select the menu item to permit active **editing**: a **check mark** should appear next to the menu item and the toolbar button will appear to be **pushed in**.

Navigating by keyboard

The **up arrow** key ↑ advances the **Preview** portion of the lag chain. The **down arrow** key ↓ lets you move back up.

PgUp and PgDn jump in steps of 20 picks. The **woven** portion won't move - what's already woven is woven and won't change just because

start						up arrow twice						down arrow x 5				
28:	-	2	3	-		30:	1	2	-	4		25:	-	2	3	-
27:	-	2	3	4		29:	1	-	3	4		24:	1	-	3	4
26:	-	2	-	4		28:	-	2	3	-		23:	-	-	3	4
25:	-	2	3	-		27:	-	2	3	4		22:	-	2	-	4
24:	1	-	3	4		26:	-	2	-	4		21:	-	2	-	-
23:	-	-	3	4		25:	-	2	3	-		20:	1	-	3	-
22:	-	2	-	4		22:	-	2	-	4		22:	-	2	-	4
21:	-	2	-	-		21:	-	2	-	-		21:	-	2	-	-
20:	1	-	3	-		20:	1	-	3	-		20:	1	-	3	-
19:	1	2	-	-		19:	1	2	-	-		19:	1	2	-	-
18:	1	-	-	4		18:	1	-	-	4		18:	1	-	-	4

you move to a new part of the lag chain. If the shed is still closed, the **current pick** is considered to be part of the preview. If shed is already open, the shaft selection can't change and the current pick won't move. For most looms, it's recommended to navigate and make adjustments when shed is closed.

If you open and close a shed without throwing the shuttle, the pattern advances because the computer can't tell that no weft was inserted. You can use the down arrow key to back up to the missed pick.

Left and **right** arrow keys shift the portion of the threading that is used to draw the cloth panels in the upper part of the weaving window. This does not affect the lag chain or anything that you weave, just what you see in the cloth panels. **Home** and **end** jump 20 warp threads right or left respectively.

See also **Sequence > Go to Lag**, p.13.

Navigating by mouse

If you move the mouse cursor over the **preview section**, either in the upper cloth panels (upper panels) or in the **pick number column** of the lag chain, the pointer or pencil cursor changes into a hand. Click and drag: the hand points its index finger at the selected pick. You

can drag this pick up or down to reposition the lag chain. The **woven** part of the cloth and chain panels will not change: they represent a **history** of what is already woven. In the cloth preview, you can drag from side to side as well as up and down. This brings different parts of the threading into the preview.

If the shed is closed (status is READY), the **current pick** is still part of the preview. When shed is open, the current pick is now fixed in place. For most looms it's good practice only to move the lag chain when shed is closed.

See also **View > Vertical Scrollbar**, p.11.

Editing by keyboard"

Click the **Edit Lag Chain** toolbar button or select the menu item to make editing active.

A blinking horizontal bar appears in one of the picks in the **preview** part of the lag chain; this indicates the **active insertion point**. The **woven** part of the lag chain is grayed out, indicating that it can't be edited. The cursor arrow keys let you move the insertion point within the editable area and to scroll to other parts of the lag chain.

Type + at the insertion point to make that shaft lift.

Type − on a shaft number at the insertion point to stop that shaft from lifting.

Type any number. This is entered into the pick containing the insertion point. If a shaft is already marked as lifted, typing that number erases it. If the shaft is not marked, typing the number marks it to be lifted, so it **toggles** that shaft number on and off.

Editing by mouse

The mouse cursor takes the form of a **pencil** when it is in the **preview** area of the lag chain. Click on a dash symbol to make the corresponding shaft lift. Double click on a shaft number to stop it from lifting. You can also click new colors into the weft color column.

The mouse cursor is a **pointer** in the area already woven, indicating that you can't edit.

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The remaining two menu items **require an insertion point**, so they are inactive when Edit Lag Chain is inactive. To get an insertion point in the intended pick:

• Either select Edit Lag Chain, then when the insertion point appears, use the cursor arrow keys to move it to the right spot.

• Or simply click the mouse pencil cursor on a shaft in the intended pick that's already marked as being lifted.

Remember you can only edit the preview region, not the woven part of the lag chain.

Insert Pick   keyboard shortcut: **Ins**   toolbar: 🔼

This and the next item are only active in **Edit Lag Chain** mode. This menu item, keystroke or toolbar click inserts a **blank pick** at the insertion point. The blank pick can then be edited as you please. Use this to add extra picks to your liftplan "on the fly" so that you can add extra features in your weaving such as inlay or pickup.

Delete Pick   keyboard shortcut: **Del**   toolbar: 🔽

This menu item, keystroke or toolbar click deletes the pick at the insertion point.

When you have finished editing, click Edit Lag Chain back to **inactive** again to protect your liftplan from unintended modification and restore normal navigation.

View Menu (weaving window)

These menu items control various aspects of the **appearance** of the weaving window.

Zoom in   shortcut: **Alt +**   toolbar: 🔍

Zoom out   shortcut: **Alt -**   toolbar: 🔍

These items control the **magnification** of the color and structure views of the cloth in the upper panels. They do **not** affect the magnification of the lag chain. If you resize the whole weaving window smaller, the shaft numbers squeeze together and eventually switch to a smaller font size.

See p. 5 for how to change the amount of space given to lag chain and cloth views.
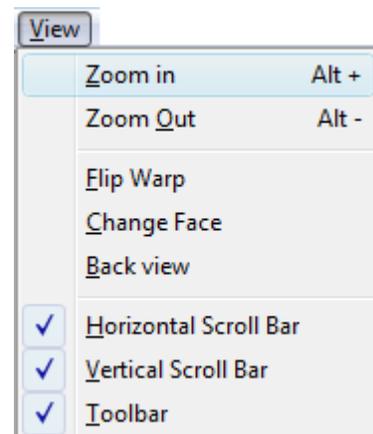
Flip Warp

This option lets you set **left to right** or **right to left** threading order for the cloth views. It's up to you to ensure that the threading on the loom and the display match.

Change Face

Use this menu item to weave with the **opposite face** of the cloth upwards. When you select Change Face, shafts that were previously unlifted are now lifted and vice versa.

43:	-	-	-	4	5	-
42:	-	2	-	4	5	6
41:	1	-	3	-	5	-

change face ⇩

43:	1	2	3	-	-	6
42:	1	-	3	-	-	-
41:	-	2	-	4	-	6

If your original design was unbalanced and was set to lift more than half the shafts, you can use Change Face so that you lift fewer shafts while weaving. You can also use Change Face if one face of your cloth is susceptible to damage such abrasion of floats, and would be better protected the other way up.

Be **careful** about using change face if your design has **asymmetric elements** that should not be reversed. You can Flip Warp on the screen, but that won't correct anything if your loom is already threaded.

Back View

This menu item lets you inspect the back face of the cloth on the computer screen **without** changing the way you actually weave it. Strictly speaking, what you see is the mirror image of the back of the cloth unless you also flip the warp.

Horizontal Scroll Bar, Vertical Scroll Bar

The **horizontal** scroll bar menu item lets you put a scroll bar across the bottom of the weaving window. This lets you scroll to different parts of the threading into view in the cloth display panels and does not affect the weaving sequence. The **vertical** scroll bar menu item puts a scroll bar on the right side of the weaving window. This lets you scroll quickly to different points in the liftplan, altering the preview portion of the cloth panels and lag chain. Use this cautiously, since it changes the sequence of picks to be woven.

Toolbar

This menu item lets you hide or show (default) the toolbar.

Cloth Menu (weaving window)

These menu items let you select the display modes for the two cloth panels at the top of the weaving window.

Cloth

	Normal Color Drawdown	Alt+N
✓	Interlacement	Alt+I
	Rep/Warp faced	
	Weft faced	
	Bound Weave	
✓	Warp Drawdown	
	Weft Drawdown	

Interlacement is the most generally useful for weaving. Although some of the other modes show particular styles of weaving more accurately, they can be confusing when you want to see how each thread is placed.

Warp drawdown shows warp over weft as black and weft over warp as white. Weft drawdown shows weft over warp as black and warp over weft as white.

Sequence Menu

This menu controls how you progress through the lag chain and other factors affecting events while weaving.

Endless Loop

Autoreverse   toolbar

Halt at End

These three menu items determine what happens when you reach the **end** of your liftplan, and one member of the three is always selected, indicated by a **check mark** in the menu and a **pressed in look** to the selected button.

The default is to make an **endless loop**. The last pick in your liftplan is followed by the first pick and the entire liftplan sequence repeats without limit. Watch out for liftplans that have top to bottom **symmetry**: if the last pick is **identical** to the first pick, there will be a pair of identical picks at the transition point. Either **delete** the identical last pick, or see **Set Range** for another way to deal with this.

Autoreverse means that when you reach the last pick in the liftplan, the direction of weaving **reverses**, and you work backwards through the chain. When you reach the **first** pick of the lift plan, the direction of progress reverts to forwards again.

Halt at end puts blank picks (marked **M:**) after the last pick in your liftplan.
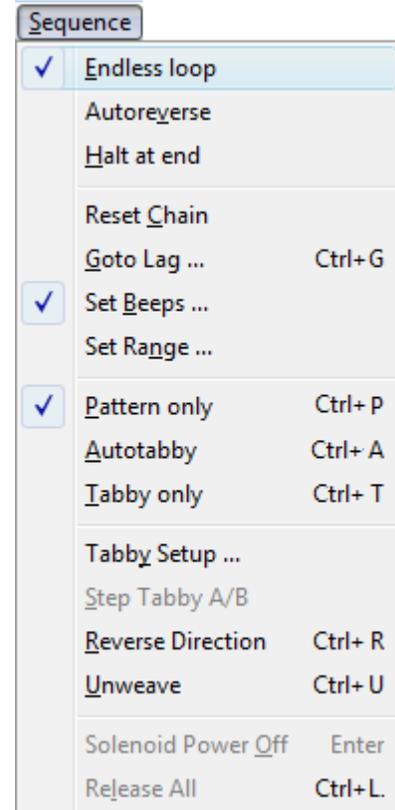
endless loop ▼				
2:	1	2	-	4
1:	1	-	3	-
111:	-	2	-	4
110:	1	-	3	-
109:	-	2	-	4

autoreverse ▼				
109:	-	2	-	4
110:	1	-	3	-
111:	-	2	-	4
110:	1	-	3	-
109:	-	2	-	4

halt at end ▼				
M:	-	-	-	-
M:	-	-	-	-
111:	-	2	-	4
110:	1	-	3	-
109:	-	2	-	4

### Reset Chain

This menu item clears out the past history of your weaving session allowing you to start a fresh session from scratch.

PCW

Warning: Reset to Start clears the previous weaving records.

OK   Cancel
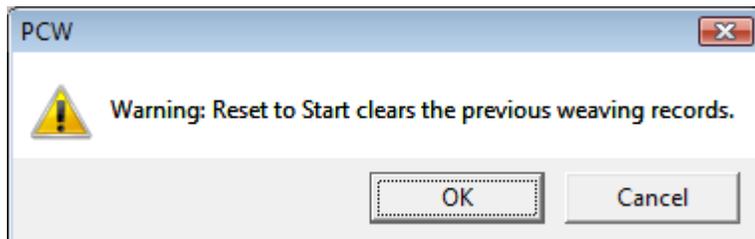
A rather alarming warning appears when you select this menu item: **don't** use it as a quick shortcut to get back to pick 1, but there are times when you do need to Reset the chain to its starting point.

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Reset chain, continued

When you start a weaving session, Fiberworks records how many picks have been woven, your current position in the liftplan and the current direction of progress. In addition, there's a history of the last 64 picks woven. This information is stored in your file if you **save** after ending each weaving session, and allows you to resume where you left off in the next weaving session.

The lag chain always has a designated **start** point and **end** point in your liftplan. By default the start is pick 1 and the end is the last pick, but the **Set Range** menu item described on p.14 allows you to start and end using only part of your complete liftplan.

Minor edits of the liftplan done in the drawdown window that alter the pattern but not the total number of picks are automatically picked up by the weaving window. Major edits of the liftplan done in the drawdown window that **alter the total number of picks** will **require Reset Chain** so that the weaving window can use the altered liftplan properly.

If you add or remove a few picks using the Insert Pick and Delete Pick from the Edit menu (p.10), the weaving window keeps track and does not need a reset.

### Go To Lag   keyboard **Ctrl+G**   toolbar:

Use this menu item to move to a specific lag or pick number the chain. If you have a very long chain, the slider moves around quickly; for fine control, use the spin buttons or just type a number in the box.
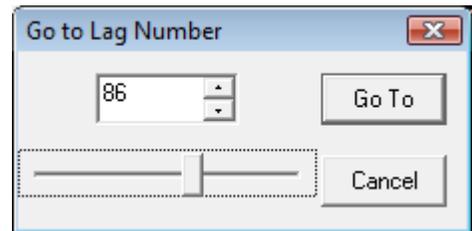
Set Beeps

Use this menu item to set visible and audible marks in the lag chain that you can use as **alerts.** The default is **every 20 picks**. For a **visible** alert, every twentieth pick appears with red rather than black text.

For an **audible** alert, you can set one of the standard Windows alerts to sound every 20 picks. Click the **Test** button to listen to the alert to see if it is suitable. For this to work, your computer must have speakers and have sound enabled. Check the Windows Control Panel > Sounds to ensure sounds are enabled.
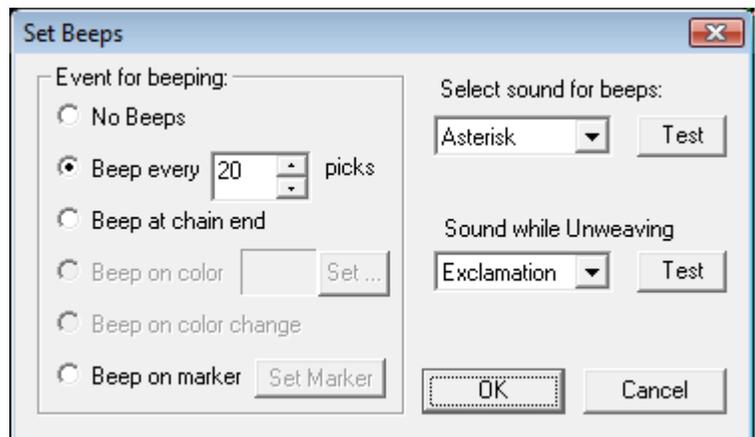
Alternative prompt points include:

Beep whenever a **particular color** appears in the weft color sequence.

Beep on every **color change** (don't use this if you are alternating colors every pick!)

Beep on **markers that you can set** in the lag chain. Click on the **Set marker** button.

Set beeps, continued

This dialog allows you to set specific markers in the liftplan to sound an **alert** when the marked point is reached. The dialog shows **drawdown** on the left and **liftplan** on the right. Marks are placed in the divider that
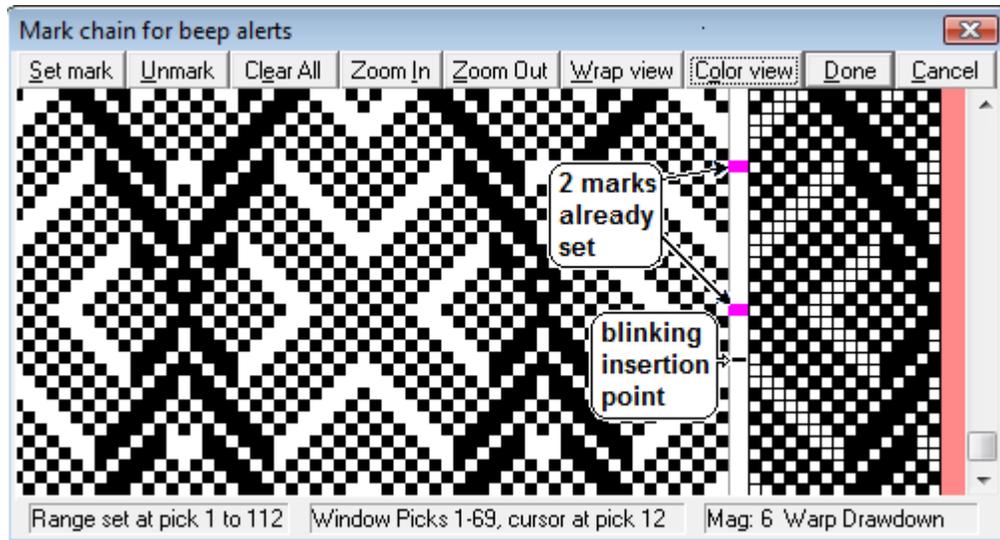
separates drawdown and liftplan. Either **click** with the mouse to place a mark (click again to erase), or move the blinking insertion point with the up and down arrow keys and type **S to set a mark** and **U to unmark**. You can scroll to mark other parts of the liftplan that are currently off-screen.

Set Range

This dialog is very similar to the dialog above, and allows you to select a **limited part of the liftplan** to act as the current lag chain. You can mark a **start point** and an **end point** anywhere in the liftplan, and these will be used as the limits for **Endless Loop** or **Autoreverse**.
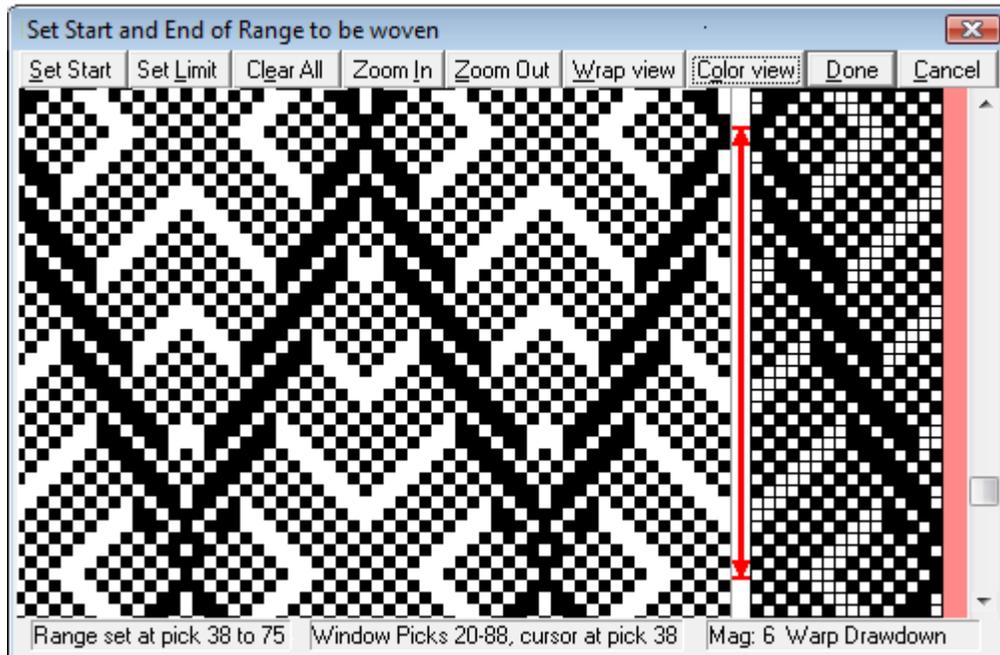
The **limits** are marked by the **red arrowheads** in the divider that separates drawdown and liftplan. The **red line** indicates the **range** that will be woven

When the mouse cursor rest on an arrowhead, it becomes a hand symbol. You can now click and drag the arrowhead to a new position.

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Pattern Only   keyboard   **Ctrl+P**

Autotabby   keyboard   **Ctrl+A**
toolbar

Tabby only   keyboard   **Ctrl+T**

These three menu items determine the tabby content of your lag chain. One member of the three is always selected, and this is indicated by a check mark placed next to the selected menu item, and a pushed in look to the corresponding toolbar button.

In **Pattern only** mode, every pick in the lag chain comes from successive picks in the liftplan, with no tabby (unless there was tabby in the original liftplan).

In **Autotabby mode**, tabby picks **alternate** with pattern picks taken from the liftplan. Tabby picks are marked **A:** and **B:**. If tabby was included in the original liftplan, **both liftplan tabby** and **autotabby** will appear. Autotabby does not add tabby to the original liftplan and you can't remove tabby from the original liftplan by switching from Autotabby back to Pattern; instead use **Weft > Remove Tabby** in the Drawdown window, and then do Reset Chain.

In **Tabby only** mode, only tabby picks are woven.

pattern only ▼

15:	1	-	3	-	5	6	7	-
14:	-	2	-	4	5	6	-	8
13:	-	-	3	4	5	-	7	8
12:	-	-	3	4	-	6	7	8
11:	1	-	3	-	5	6	7	-
10:	-	2	-	4	5	6	-	8

autotabby ▼

13:	-	-	3	4	5	-	7	8
A:	1	-	3	-	5	-	7	-
12:	-	-	3	4	-	6	7	8
B:	-	2	-	4	-	6	-	8
11:	1	-	3	-	5	6	7	-
A:	1	-	3	-	5	-	7	-

tabby only ▼

|								
B:	-	2	-	4	-	6	-	8
A:	1	-	3	-	5	-	7	-
B:	-	2	-	4	-	6	-	8
A:	1	-	3	-	5	-	7	-
B:	-	2	-	4	-	6	-	8
A:	1	-	3	-	5	-	7	-

Tabby Setup   toolbar

This menu item and dialog gives you control over the tabby or ground weave structure, and allows for more complex ground weave structures than simple plain weave. The grid can be 2,3 or 4 picks deep, depending on the ground weave selected. Initially, the grid contains two simple tabby picks, which are determined by analyzing your threading. You are free to edit the tabby grid as you please by clicking the mouse or by typing.
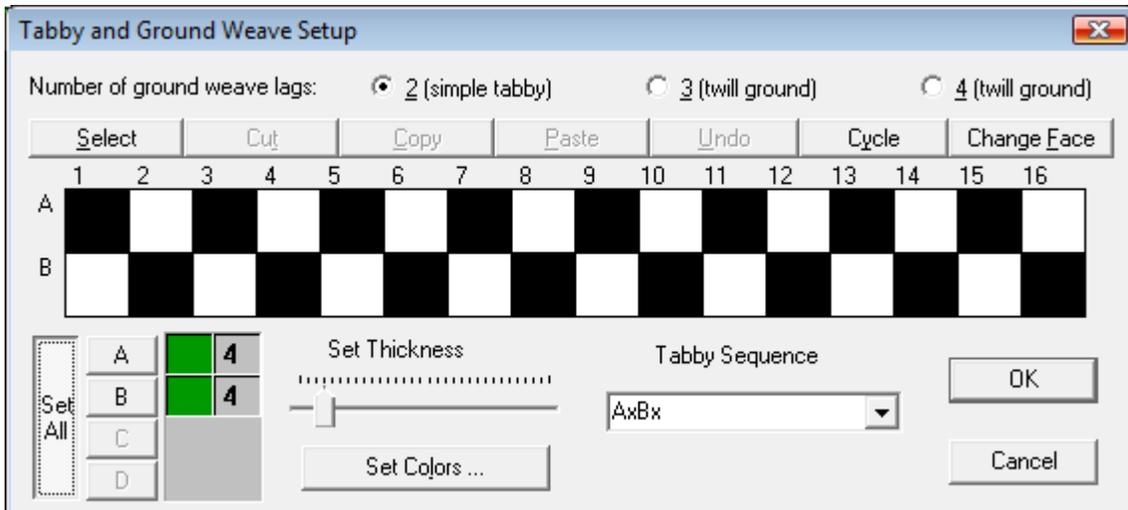
Tabby setup continued

The lower half of the dialog lets you set **colors** and **thicknesses** for the tabby threads, and to choose a **sequence** for inserting tabby and pattern in the Autotabby mode. The default sequence for simple tabby is **AxBx**, where A and B represent the two tabby picks and x represents pattern picks taken in the order that they appear in the original liftplan.

AxBx
AxB
ABx
ABxx
AxxBxx
AxxxBxxx
AxABxB
AxBxBxAx

If your ground weave is all one color and thickness, click the **Set All** button, otherwise you need to set the color and thickness for each pick in the tabby sequence. The default thickness of **4 units** is the thickness of a **normal thread** in Fiberworks.

Step Tabby   keyboard: **Ctrl+B**   toolbar

Step tabby switches the positions of the **A** and **B** tabby picks in the Autotabby mode. If you are using a three- or four-pick **twill** type ground weave, it steps through the pick sequence of the ground weave.

autotabby ▼

13:	-	-	3	4	5	-	7	8
A:	1	-	3	-	5	-	7	-
12:	-	-	3	4	-	6	7	8
B:	-	2	-	4	-	6	-	8
11:	1	-	3	-	5	6	7	-
A:	1	-	3	-	5	-	7	-

after step tabby ▼

13:	-	-	3	4	5	-	7	8
B:	-	2	-	4	-	6	-	8
12:	-	-	3	4	-	6	7	8
A:	1	-	3	-	5	-	7	-
11:	1	-	3	-	5	6	7	-
B:	-	2	-	4	-	6	-	8

Reverse Direction   keyboard: **Ctrl+R**   toolbar

Select this menu item or click its toolbar button to **reverse** the lag chain and progress **backwards** through the liftplan sequence. If the liftplan sequence is already reversed, the lag chain will revert to forward progression. Only the **preview section** of the lag chain is rebuilt. This **includes the current pick** while shed is **closed**, but **not** if shed is **open**. In the illustration, a red asterisk marks the **turning point** of the pattern. You should select Reverse Direction immediately after the turning point has been woven.

original sequence

17:	1	-	3	-	5	-
16:	-	2	-	4	-	6
15:	1	-	3	-	5	6
14:	-	2	-	4	5	6
13:	-	-	3	4	5	-
12:	-	-	3	4	-	6
11:	1	-	3	-	5	6
10:	-	2	-	4	5	6
9:	1	-	3	4	5	-
8:	-	2	3	4	-	6
7:	-	2	3	-	5	-

reverse

3:	-	2	3	-	5	-	
4:	-	2	3	4	-	6	
5:	1	-	3	4	5	-	
6:	1	2	-	4	5	-	
7:	-	2	3	-	5	-	
8:	-	2	3	4	-	6	
9:	1	-	3	4	5	-	
10:	-	2	-	4	5	6	*
9:	1	-	3	4	5	-	
8:	-	2	3	4	-	6	
7:	-	2	3	-	5	-	

weave 2 picks, reverse again

15:	1	-	3	-	5	6
14:	-	2	-	4	5	6
13:	-	-	3	4	5	-
12:	-	-	3	4	-	6
11:	1	-	3	-	5	6
10:	-	2	-	4	5	6
9:	1	-	3	4	5	-
8:	-	2	3	4	-	6
9:	1	-	3	-	5	6
10:	-	2	-	4	5	6
9:	1	-	3	4	5	-

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Unweave   keyboard: **Ctrl+U**   toolbar U

Select this menu item, or type **Ctrl+U**, or click its toolbar button to work **back** through the lag chain's history of what has been woven already, so that you can **correct an error in a previous pick**. Click the button or type **Ctrl+U** again to revert to normal Weaving.

How Unweave differs from Reverse

If you select **Unweave** after weaving pick 59, the current pick will be pick 59 again so you can remove the weft

If you select **Reverse** after weaving pick 59, the current pick will be pick 58. The turning point of the pattern is not repeated.

After you remove weft 59 and close the shed in **Unweave** mode, the current pick moves back **down** the list of picks already woven so that you can remove successive wefts until you reach the error. The preview section does not change direction.

When you **Reverse** direction, the **already woven** section continues to accumulate picks, and picks run in descending in the preview section. Compare the illustration on this page with p.16.

pick 59 has just been woven;
pick 60 should be next

	1	2	3	4	5	6
64:	-	-	3	4	-	6
63:	-	-	3	4	5	-
62:	-	2	-	4	5	6
61:	1	-	3	-	5	6
60:	-	2	-	4	-	6
59:	1	-	3	-	5	-
58:	-	2	-	4	-	6
57:	1	-	3	-	-	6
56:	-	2	-	-	-	6

a mistake is detected; select unweave

next shed will re-open pick 59 so weft can be removed

	1	2	3	4	5	6
64:	-	-	3	4	-	6
63:	-	-	3	4	5	-
62:	-	2	-	4	5	6
61:	1	-	3	-	5	6
60:	-	2	-	4	-	6
59:	1	-	3	-	5	-
58:	-	2	-	4	-	6
57:	1	-	3	-	-	6
56:	-	2	-	-	-	6

close pick 59; the current pick backtracks down the already woven section

next shed to open is pick 58

	1	2	3	4	5	6
64:	-	-	3	4	-	6
63:	-	-	3	4	5	-
62:	-	2	-	4	5	6
61:	1	-	3	-	5	6
60:	-	2	-	4	-	6
59:	1	-	3	-	5	-
58:	-	2	-	4	-	6
57:	1	-	3	-	-	6
56:	-	2	-	-	-	6

Solenoid power off   keyboard: **Enter**   toolbar

Release All   (AVL CD III only)

Select **Solenoid power off** to **rest** the solenoids in your dobby head by turning power off to the solenoids while leaving the dobby box itself powered up. Use this option whenever you are taking more than a couple of minutes break to avoid any risk of overheating. For most looms, you can also use this option when you want to lift nothing, e.g. for loom maintenance.

Use **Solenoid Power Off** on the **AVL Compu-Dobby III** to rest the solenoids as described above. However with solenoids **off**, the Compu-Dobby III **lifts all shafts**. For the Compu-Dobby III, the additional menu item **Release All** releases all shafts by **sending power to all solenoids**. Use this menu item **sparingly** to avoid overheating and don't leave it on for more than a few minutes.

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Diagnostic Menu

This menu allows you to check aspects of your loom's function, in particular, communication with the loom. Not all looms use all of the functions in this menu, and specific details for each type of loom are given in the Looms section.
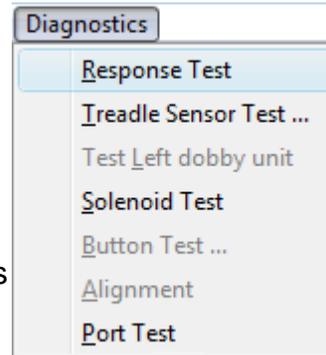
Response Test

This menu item test **two way communications**. The computer sends a query, and the loom sends a response. If the response is detected, you will get the message

Loom X responding OK!

If this test fails, the left hand end of the status line will say
Switch Loom X on now if it's not on yet!

Treadle Sensor Test

This test detects signals sent by the loom when the treadle is moved up and down. Run this test if the **pattern does not advance** when you treadle the loom. For AVL looms, this is a test of communication **from loom to computer**. Other looms use two way communication.

Test Left Dobby Unit   On a loom with two dobby control units, this sends
diagnostic tests to the left hand unit, otherwise tests go to the right hand unit.

Solenoid Test

This tests communication from **computer to loom** and checks that solenoids respond properly. If the pattern is empty, click **Fill Pattern** to set all the odd-numbered solenoids. Click **Activate Solenoids** to send the pattern to the loom and check that they respond.
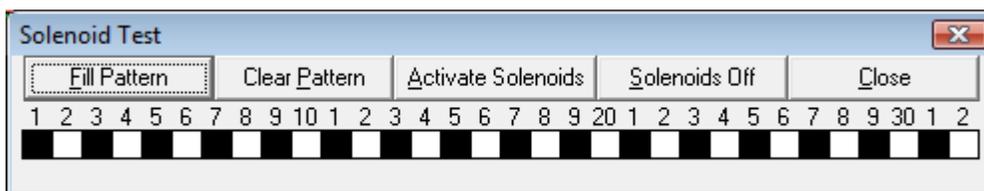
If you click **Fill Pattern** again, it will invert the pattern to set all the even shafts, or you can click or double-click individual squares in the grid to turn them on and off in any pattern you like. **Click Solenoids off** when you are done.

Button Test, Alignment   See the AVL section, p.24.

Port Test

This tests whether the currently selected port can be opened by Windows. See also Finding and Troubleshooting Ports, pp.19-21,36-38.

Finding Ports

All the looms currently supported in Fiberworks Silver Plus use a **RS232 serial** interface, commonly known as a **serial port**, although in some cases this is hidden behind a built-in USB adapter. This means that the port is identified by a Com number e.g. **Com1**, **Com5** etc. To establish communications with the loom, you need to know which Com number the loom is using. This is entered in the Loom Setup dialog.

Using built in serial ports on your computer

The standard serial port connector is typically a **nine pin D-shape**. The socket on the computer has **pins**, and the socket on the loom has **holes**. On very old computers and some older looms, you may encounter sockets with 25 pins. If you don't have a vintage cable, 25-pin to 9-pin adapters for these variants can be obtained at larger computer stores.

Since the advent of Windows XP, new computers frequently do not have serial ports. In some cases the chips that control the serial port are installed, but there's no external socket to connect to. If that's the case, the least expensive solution is a USB to RS-232 Serial adapter.

Note: *The **25 pin socket with holes** on many computers is a parallel or **printer port**. You **can't** connect the loom via the **printer** port.*

Using USB to serial adapters

These have a USB plug at one end that goes into the computer and serial connector at the other end that goes into the loom. These are available at most large computer stores. If the cable is short, you can add a USB extender cable to reach the computer end.

Looms that have USB sockets have the USB to serial adapter built in, and can use a standard USB cable.

All USB to serial adapters, including those built in to the loom, need to have a **driver** installed, otherwise **Windows won't recognize them.** The driver is usually provided on a CD than comes with the adapter, or you may have to go to the manufacturer's website to download the driver. Drivers may be specific for a **particular Windows version**. If you have Windows Seven or Vista, make sure that your adapter has the appropriate driver.

Keep the CD accessible in case you have to reinstall the driver. If you don't have it or can't get the driver by download, the only solution is to purchase a new adapter.
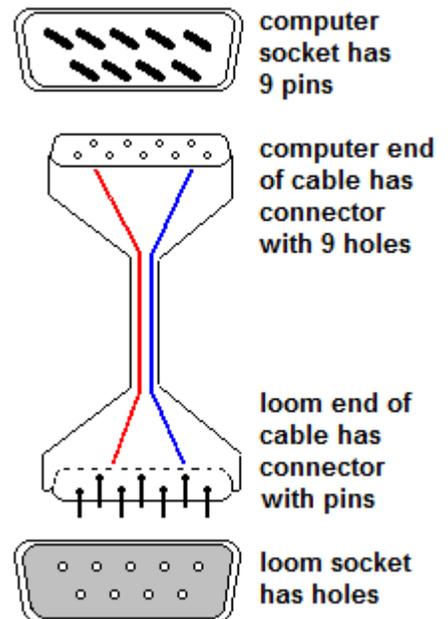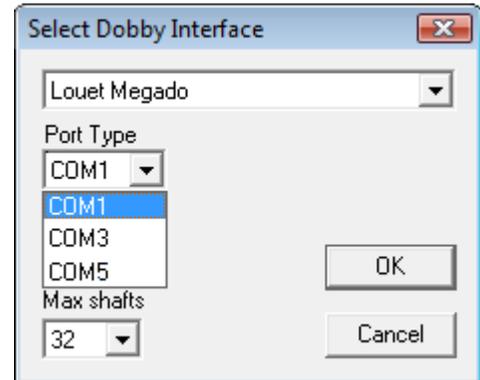
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Finding your Com number

To help you find your Com port, Fiberworks **scans** for all available Com numbers up to **Com9**, and lists them in the Port type box in the loom setup dialog. If it's not in this list, the port is not available to use.

If the list is **blank**:

- You may not have a port and you need to add a USB Serial adapter.

- You may have the serial socket, but the port is **disabled internally**. It's probably cheaper to get a USB to serial adapter than to have a computer tech fix the port.

- You may have the adapter, but the driver is not properly installed.

- Another program may be using the port; ports can't be shared by two programs.

However, just because ports are listed does not mean they are truly available. For the scan illustrated above, the computer has an internal chip for Com1 but it's **not connected to a socket** that you can plug into. This is a common situation for computers less than 6 years old, or laptops less than 8 years old.

On this computer, Com3 is a **modem**, **not a serial port**.

Of the 3 Com numbers listed for this particular computer, the only one suitable for connecting a loom is Com5, a USB-serial adapter.

Typically, built in serial ports are Com1 or Com2. Modems may be Com1 to Com 4. Polite modems do not override an existing serial port's Com number, but cases are known where a modem takes over Com1 and disables the actual serial port.

USB-Serial adapters typically take higher Com numbers, starting at Com3 or Com 5. **To identify a USB-serial adapter Com number**, do the following.

1) Unplug the USB-Serial adapter from the computer and open the Loom Setup dialog. Check the list of Com numbers and note down those that are listed.

2) Close the dialog, plug in the USB-Serial adapter, and reopen the Loom Setup Dialog. This makes it repeat the scan for ports. You should see an additional Com number in the list. This is the USB-serial adapter's Com number.

See also the **Portchecker** (p.36-38) for detecting and identifying ports.

Check communications with the loom

Once you think you know the Com number for your port, select that port in the Loom Setup Dialog, go to the Diagnostics menu and try the Solenoid Test and the Response Test. Com setup is done automatically by Fiberworks to match the loom you have selected. There is no need to set baud rate etc. manually. The Solenoid test establishes whether computer to loom communications are proceeding. The response test checks for two-way communication between loom and computer. If there are problems, use the **Portchecker** to test and troubleshoot loom communications directly without going through a weaving program (p.36-38). Additional details and possible solutions are given in that section.

## Troubleshooting Ports

This section assumes that you have

- **selected the right loom**; the selected loom is identified in the title bar of the weaving window.
- **identified and selected the right port**; this is reported at the left end of the status bar. Verify this by trying Diagnostics>Port Test.
- made sure that the dobby control box on the loom is switched on and the cable linking it to the computer is connected. This may sound obvious, but sometimes the obvious is missed!

Start by trying the **response test (**diagnostics menu). The message shown on the right indicates a successful response test. The computer is talking to the loom and the loom is replying.

If the Response Test Fails

If no reply is received, the message below right shows at the left end of the status bar. This could mean that there's no communication in either direction, or that the computer is talking to the loom but no reply has been received.

Next try the **solenoid test** (p.18). If the solenoids respond as expected, the computer is talking to the loom OK, but not receiving a reply.

- Some antivirus software intercepts data entering the computer via serial ports, and does not pass the data on quickly enough to allow you to weave. If you need virus protection, McAfee, Trend Micro, and Avast are antivirus programs that don't hinder loom communication, but consider uninstalling all antivirus programs if the loom computer is never connected to the internet.
- Try disconnecting and reconnecting the serial cable. This has been known to rejuvenate a weak connection.
- If you can lay your hands on a different serial cable, try that.

If the solenoid test does not work, there is no communication in either direction.

- Does the Com number you have selected belong to a modem, not a serial port?
- Make sure that the cable you are using is not a NULL MODEM cable.
- It's possible that the socket on the computer that you plugged into is disabled.

Com settings are done automatically by Fiberworks to match the loom you have selected. There is no need to set baud rate and so on manually.

The least-fuss solution to serial port problems may be to add a USB-serial adapter.

See also the Portchecker, p.36-38.
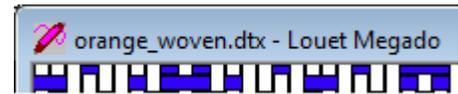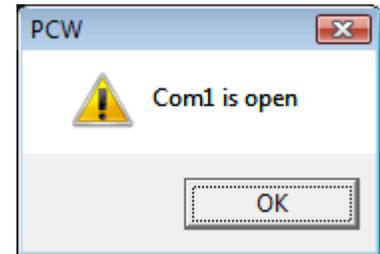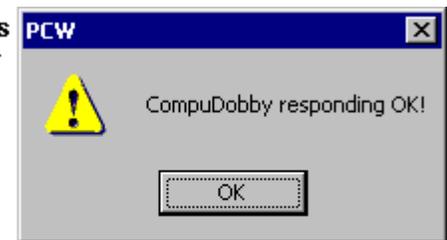
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Looms

AVL Compu-Dobby series

Power on

If you switch power on to the AVL Compu-Dobby before entering the weaving window, Fiberworks should detect it immediately, assuming communications are established. This is reported at the **left end of the status bar**.

Compu dobby responding OK!

If the AVL Compu-Dobby is not powered up when you open the weaving window, you will first see the reminder to switch on. When you switch on

Switch Compu dobby on now if it's not on yet!

the Compu-Dobby, it starts an internal test which activates each solenoid in turn, and you should hear the regular clicking sound. At the end of the self test, it signals the computer that it is ready, and it should then report that it is **responding OK** on the status bar.

> *Important: On AVL **Compu-Dobby I** and **Compu-Dobby II**, do **not** press any buttons on the control box until the computer has communicated with the loom by sending the first pick to the solenoids, or by doing the Response Test or Solenoid test. If you press a control box button before the computer has communicated with the loom, the Compu-Dobby goes into **Cartridge mode**, and **ignores all further signals from the computer**. To get out of cartridge mode, turn the power off to the Compu-Dobby, wait five seconds, and turn it on again.*

| Mag 6 | Woven = 0 | Ends 1-33 | STARTUP | # |

Starting to weave

Initially, the word **STARTUP** appears at the right end of the status bar. The computer is waiting for an indication that you are ready to weave. On the Compu-Dobby I and II, do this by **pressing each treadle in turn**. Nothing lifts on the first cycle, because solenoids are still inactive. The next time the lifting treadle is down, you should hear the solenoids click on. Push the release treadle to complete the cycle, and the next time you press the lifting treadle, shafts will lift and open the shed. When you are into the weaving cycle, solenoids should click each time the shed is fully open in readiness for the next pick.

You can follow the same procedure on the Compu-Dobby III, with the disadvantage that with solenoids inactive, you have to lift **all** shafts. Do this if you can put up with the effort required. The alternative is to press the Enter key to signal you are ready to weave; this will make the computer send the first solenoid data to the loom. When you do loom setup for the CD III, you can choose to have solenoids activate when shed is open (better for a fast weaver) or when shed is closed (less heating of the solenoids).

If you leave the loom for any significant period of time, click the **Solenoids Off** button or press the Enter key to **rest** the solenoids and avoid overheating. Use the startup procedure described above or press Enter again to resume weaving.

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Navigating the lag chain

It is recommended that you do all adjustments of position or direction of the liftplan in the **shed closed** position. If you change position in the liftplan with cursor arrow keys or by scrolling or dragging the mouse in the weaving window (p.8-9), solenoids will click in rapid succession. This can be avoided by selecting Solenoids Off while doing major adjustments. Follow the start up procedures described previously to resume weaving.

Diagnostics

Response test checks communication. If the loom receives the test, solenoids will start clicking one by one. The Compu-Dobby also clicks its solenoids when you first turn on power to the unit. Do the **Response test** after you power up the Compu-Dobby and it has completed its self-test so you can be sure that the Compu-Dobby is responding to the computer. When the solenoids finish clicking, the Compu-Dobby signals to the computer, and the message above right should display.

success →

PCW

CompuDobby responding OK!

OK

failure ↓

Switch Compu dobby on now if it's not on yet!
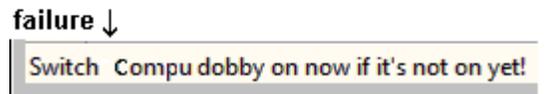
Treadle Sensor test detects the signals that the Compu-Dobby sends to the computer when the arm that picks the shafts reaches its **upper** position (shed fully **closed, release treadle down**) and when it reaches the **lower** position (shed fully **open**, **lifting treadle down**). Normally the lifting treadle is on the right and the release treadle is on the left, but treadles can be connected either way without affecting how the loom performs.

AVL Compu-Dobby Arm Sensor Test

Push each treadle a few times to check the sensors:

☐ Arm is Up
   Shed closed

☑ Arm is Down
   Shed Open

☐ Sensor errors
   detected

☑ Test has passed

If Up and Down are inverted:

Switch Positions

Close
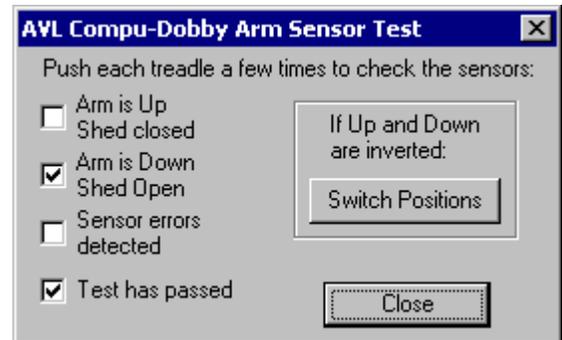
The dialog that appears when you select Treadle Sensor test from the diagnostics menu indicates when these signals are received by putting checkmarks in the boxes. Push each treadle a few times until the box labelled **test has passed** shows a check mark.

If the test reports **arm up** when it's actually down and **arm down** when it's actually up, click the **switch positions** button to correct this. The loom will seem to function with the wrong orientation, but may occasionally skip a shaft or two because of the bad timing.

Sensor error detected indicates a possible electronics fault. Ignore it if it occurs once in a blue moon, but you may need to consult AVL if errors are detected frequently.

The **Compu-Dobby I** uses **optical sensors** embedded in a plywood square bolted on just below the dobby box. These need steady ambient light to work properly. A bright light directly overhead from the sensors can cause them either to not detect the arm movement, or to detect both positions simultaneously, which triggers the sensor error response. **Extraneous shadows, bright sunlight or reflections passing over the sensors** can also set off spurious signals that mimic arm movement.

FIBERWORKS 4.1/4.2 SILVER PLUS

Solenoid test (p.18) tests communication from computer to loom. If this test succeeds and the response test does not, it indicates that there's something stopping the computer from receiving signals from the loom, but otherwise the Com number of the selected port is correct.

You can use the Solenoid test to check individual solenoids. Click the **Clear Pattern** button, then set solenoids on one at a time by clicking into the grid pattern. Treadle the loom to see that the selected shaft picks up and releases cleanly.

Button Test checks the response of the AVL button controls. These are found on Compu-Dobby I on a box at the end of an extension cable. On the Compu-Dobby II, they are on the control unit that is mounted in the middle of the loom. The Compu-Dobby III does not have button controls. Button controls are designed primarily to operate the Compu-Dobby with the memory cartridge, but weaving programs can also respond to them. To test, press each button once to put check marks in each box and repeat to uncheck each box. Watch out for check marks that flicker on and off as you press the button.

In weaving mode (rather than button test mode) the buttons do the following

1) **Skip** advances the pattern by one pick (similar to the cursor up arrow key).

2) **Reverse** switches the liftplan direction of progression (similar to Sequence>Reverse).

3) **Pattern** selects Pattern Only mode (p.15).

4) **Tabby** selects Tabby only mode (p.15).

5) **Save** stores the current weaving position in when weaving from the memory Cartridge. When weaving in Fiberworks, it sets **unweave** mode.

6) **Resume** restarts a weaving session from the memory Cartridge. When weaving from Fiberworks, it turns **solenoids off** to rest them and turns them back on to resume. **Don't** use **Resume** to start a session with Fiberworks before the first Pick has been sent to the Compu-Dobby. Doing so will put the Compu-Dobby into Cartridge mode and block communication from the computer (p.22).

Alignment activates your first and last solenoids (assuming you have selected the right number of shafts in Loom Setup). Use Alignment when you mount the Compu-Dobby I or Compu-Dobby II solenoid box on the loom. Refer to the AVL manual for assembling the Compu-Dobby on the loom for instructions on how to set the alignment correctly.

Alignment should be a two person job. **Your assistant should hold the box in place so it does not crash to the floor**. Loosen the bolts that mount the Compu-Dobby solenoid unit on the side of the loom (on the Compu-Dobby II, not the control unit in the middle of the loom). Position the unit so the extended solenoids displace the shaft wires enough to push them into the slots in the arm mechanism, but not so tight that the "piano keys" resist the extended solenoid tips. Now tighten the bolts. **Check bolts periodically** to ensure that they remain tight so that the Compu-Dobby does not slip out of its brackets.

FIBERWORKS 4.1/4.2 SILVER PLUS

If the Compu-Dobby does not lift all the shafts selected

- Make sure the shaft cables have not slipped off a pulley in the castle

- If you use the air-assist, make sure the piston is adjusted to bring the arm back to the topmost position.

- On the Compu-Dobby III, the solenoid tips have little stirrups to guide the shaft cables. Check to see that cables have not slipped out of the stirrups.

- Check the how the shaft cables line up with the slots in the arm. If you live in a region with large seasonal changes in humidity, the mounting strut (**CD I** and **II**) may shift.

loosen these bolts

Compu Dobby

Arm

slots in arm

cables

misaligned

reposition strut so cables line up with slots in arm

Compu Dobby

Arm

cables

well aligned
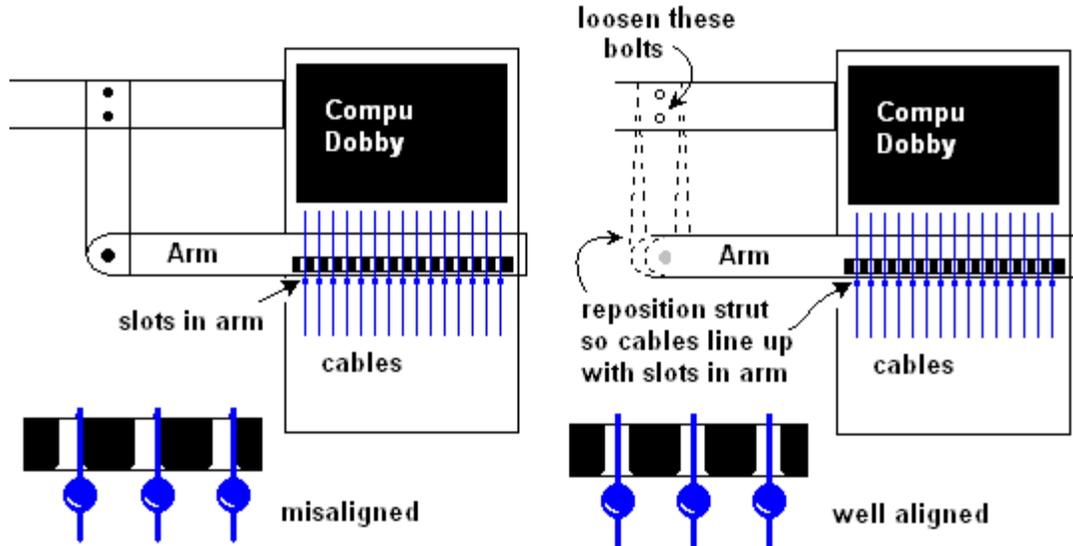
If the Compu-Dobby continues to lift shafts that were selected on the previous pick

- Although it seems that you can close the shed by releasing the lifting treadle and relying on gravity alone, a **distinct push on the release treadle** is needed to ensure that the arm rises to the topmost position so that the shaft cables can slip out of the slots on the arm. If you don't do this, some cables may stick in place.

- If you have set solenoids to activate when shed is closed on the Compu-Dobby III, go to loom setup and set it to activate solenoids when shed is open.

If the treadle needs excessive force to open the shed

- The cable from the lifting treadle should wind around a **snail-shaped cam**. Check that the cable has not slipped off this cam.

- Check the tension on the shaft-balancing springs.

If one of the solenoids does not activate

- Your Compu-Dobby box may need to go on a California vacation. Consult AVL.

Do make sure that lint does not accumulate around the cooling fan and louvres.

Do not ever use lubricant on the solenoids.

FIBERWORKS 4.1/4.2 SILVER PLUS

Programming the AVL Cartridge

This option on the File menu allows you to put designs into the AVL cartridge to allow you to continue to weave with the computer disconnected. You can load the design that's currently in the weaving window into the cartridge. When you Select this menu item, the contents of the cartridge are uploaded to the computer, which takes about a minute.

A) shows the name of the current design and the number of lags used.

Click **Add to cartridge** to store the Fiberworks design in the cartridge.

Click **Autotabby** to add tabby insert tabby into the design to be loaded. There are no autotabby controls on the cartridge, so tabby must be preloaded.

B) Current tabby picks.

C) Preview of the liftplan.

D) Summary of space used and space available in the cartridge

E) List of designs in the cartridge

F) Button controls

Undo All undoes any changes you have made in this session.

Clear All empties the current contents of the cartridge

View item puts an item in the cartridge into the preview window C.

Delete item deletes a single item in the cartridge.

Retrieve item brings a liftplan from the cartridge into the weaving window. This is not recommended as an alternative to saving designs as files on your computer, but you can retrieve to do minor editing if needed. The cartridge does not store threadings or colors, so a retrieved liftplan may not match the current threading in the weaving window.

Click OK when done. It takes about a minute to download the revised contents back to the cartridge.

Note: CompuDobby I cartridges run off an internal rechargeable battery which over time loses the ability to hold a charge. If the battery won't charge, then the cartridge forgets everything as soon as the power is turned off. If the battery has leaked and corroded the electronics, the cartridge may be a lost cause.
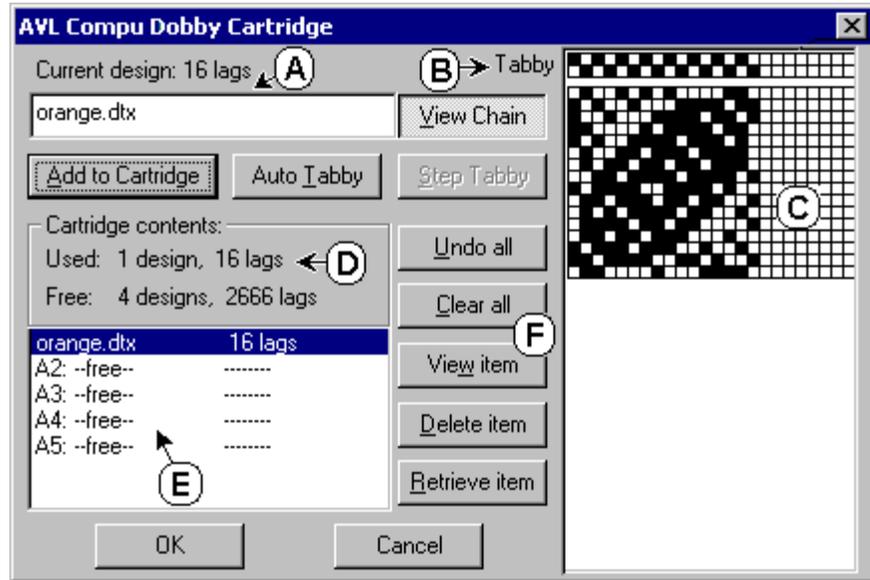
FIBERWORKS 4.1/4.2 SILVER PLUS

Louet Magic Dobby, Megado and Octado series

Ports

If you connect the Louet Dobby via the USB cable, this links to a **built in USB to serial adapter**. **Driver software** for built in or external USB to serial adapters is **not** included in any version of Windows (unlike memory sticks, cameras and MP3 players).

To use the built in USB adapter, you need to install a driver provided by Louet (downloaded from their website) so that Windows can **identify** the port. If you use an external adapter to link to the serial port, you need to use a driver from the manufacturer of the adapter, usually provided on a CD when you purchase the adapter, but sometimes downloaded from the manufacturer's website. You should ensure that the driver is **compatible with your version of Windows**. Don't bother upgrading to Windows 7 in the hope that the drivers are finally included - they are not. **Keep any CD** with this driver software on hand in case you have to reinstall or if you transfer to a new computer.

Power on

If you switch power **on** to the Louet Dobby before entering the weaving window, Fiberworks should detect it immediately, assuming that communications are established. The response is reported at the **left end of the status bar**.

Louet Megado responding OK!

If the Louet Dobby is not powered up when you open the weaving window, you will first see the reminder to switch on. When you switch on the Louet Dobby, it sends a sign-on message to the computer to indicate that it is ready, and the computer should then report that Louet loom is responding OK.

Switch Louet Megado on now if it's not on yet!

| Mag 6 | Woven = 0 | Ends 1-33 | STARTUP | # |

Starting to weave
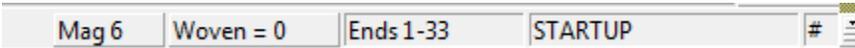
Initially, the word **STARTUP** appears at the right end of the status bar. The computer is waiting for an indication that you are ready to weave. On most Louet looms, you can do this by **pressing the treadle gently and returning to the rest position.** It's not necessary to press all the way down. On the Magic Dobby without a treadle, push the handle down a few inches and then return. The solenoids should activate when you return to the rest position of the treadle or handle. In a few cases, this may not work and you should push the Enter key to fire the solenoids for the first pick.

Weaving Cycle

Solenoids are normally activated just as the shed closes, and deactivated as the shed reaches the fully open position. If you leave the treadle in the rest position for any length of time, the solenoids remain under power and risk overheating. It's a good idea to use the **Solenoids off** menu item or toolbar button (Sequence menu) whenever you intend to take a break. Resume weaving as described for **Starting to weave**.

Timed out

| Mag 6 | Woven = 0 | Ends 1-33 | TIMED OUT |
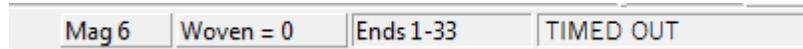
To prevent overheating, the solenoids in the Louet dobbies **turn themselves off** if the shed is not opened within about 60 seconds of the solenoid being activated. If this happens, the computer may beep and the Status bar indicates **TIMED OUT** in the Weaving Status section. Resume weaving after being TIMED OUT as described for **Starting to weave**.

Navigating the lag chain

If you can reach your computer easily from the weaving position, you can do adjustments of position or editing in the liftplan in the **shed open** position while solenoids are normally off. Changes will affect the next pick. If solenoids do not automatically activate when you close the shed, press Enter to resume weaving.

If it's hard to keep the treadles pressed while working at the computer, you can also do adjustments of position or editing in the liftplan in the **shed closed position.** If you change position in the liftplan with cursor arrow keys or by scrolling or dragging the mouse in the weaving window (p.8-9), changes affect the current pick and solenoids will click in rapid succession. This can be avoided by selecting **Solenoids Off** while doing major adjustments. Follow the start up procedures described previously to resume weaving. Minor adjustments (one or two steps) such as reversing the sequence or switching to tabby can be done in the shed closed position with solenoids on.

Diagnostics

Response test checks two way communication between computer and loom. The computer sends a query and waits for a response. When this is received the message on the right should display. If no response is received, the reminder message below remains displayed at the left end of the status bar.

success →

PCW

Louet Megado responding OK!

OK

failure ↓

Switch Louet Megado on now if it's not on yet!

Treadle Sensor test detects the signals that the Louet Megado or Octado send to the computer as the knife moves from its **upper** position (shed fully **closed, treadle up**) and as the shed is halfway open. Louet looms use a magnet on the knife and two sensor switches mounted on a wooden strut that projects from the dobby box. The upper switch is placed so the magnet triggers it at or near the shed closed position. The lower switch is roughly midway between shed closed and shed fully open positions, so the magnet passes by the switch very briefly. To do the treadle sensor test, it's advisable to

Louet Megado Sensor Test

Push each treadle a few times to check the sensors:

☐ Switch 1: should respond when treadle is almost halfway.

☑ Switch 2: should respond when arm and treadle are both up.

☐ Sensor errors detected

☑ Test has passed

Close

move the treadle steadily and relatively slowly rather than a normal weaving treadle action, so as to catch the instant when the magnet is next to the lower switch.
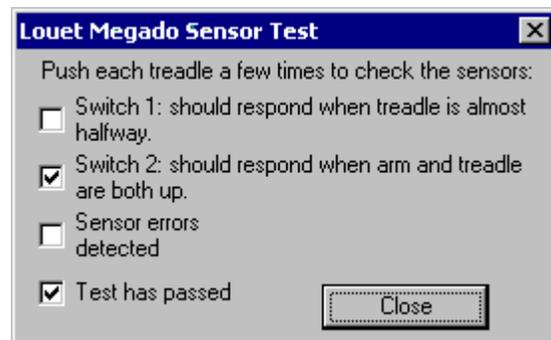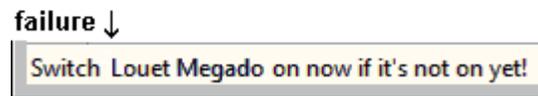
FIBERWORKS 4.1/4.2 SILVER PLUS

Treadle sensor test on the Magic Dobby: On the Magic Dobby, the knife that picks the shafts raises shafts instead of pulling down on cords, but otherwise the principle is the same.

Switch 1 should respond when the handle is almost all the way down, shafts raised

Switch 2 should respond when the handle is all the way up, shafts down.

Solenoid test (p.18) tests communication from computer to loom. If this test succeeds and the response test does not, it indicates that there's something stopping the computer from receiving signals from the loom, but otherwise the Com number of the selected port is correct. You can use the Solenoid test to check individual solenoids. Click the **Clear Pattern** button, then set solenoids on one at a time by clicking into the grid pattern. Treadle the loom to see that the selected shaft picks up and releases cleanly.

There are no button controls to test on the Louet dobby units, and no Alignment test.

If the Louet Dobby does not lift the shafts selected

- If the weaver dithers or presses the treadle tentatively, the solenoids may release before the knife has caught all the "piano keys" that lift the shafts. Typically, this causes lower numbered shafts to be missed. To prevent this, the weave needs to treadle more briskly.

- If the magnet is set too high or the knife set too low, solenoids may release too early and miss lower numbered shafts.

- If the cord to the treadle is too tight so the knife is too low, or the magnet is set too high, the knife may pass higher numbered shafts before it can pick them up.

If shafts from the previous pick are lifted when they are not selected

- Check for **sticky shafts** that don't drop back to their proper unlifted position. When this happens, the "piano keys" that the solenoids push out don't return to their unlifted position, and stick in a **pushed out** position (see step 4 above). When the knife descends for the next pick, it catches the piano key even when the corresponding solenoid is not activated.
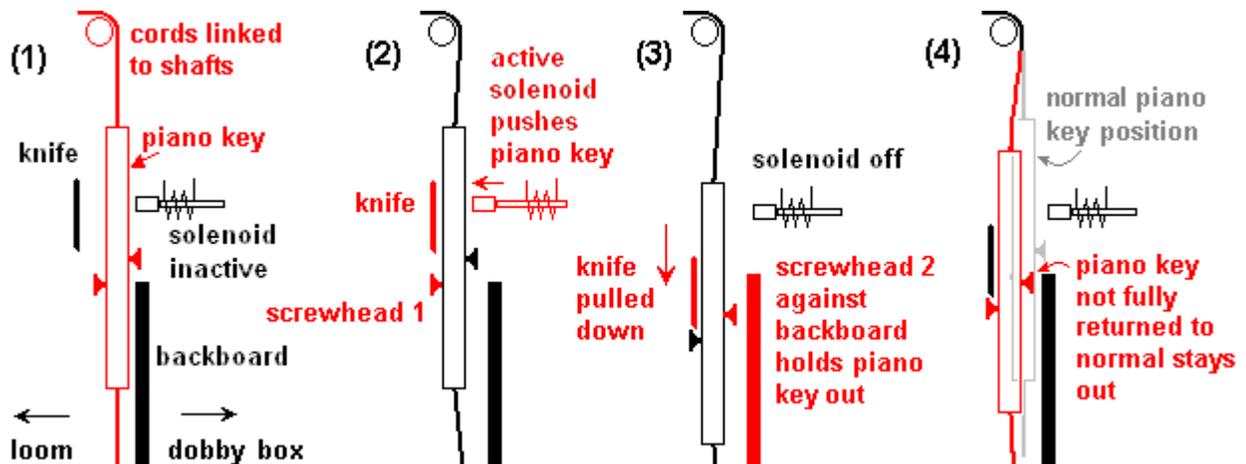
FIBERWORKS 4.1/4.2 SILVER PLUS

What makes shafts stick?

- Insufficient tension on the warp. Increase warp tension as much as reasonable, and use **weighted** shaft bars (available from Louet) rather than plain wooden shaft bars.

- Shaft cords have slipped out of the slots at the end of the wooden shaft bars - see cord 2 in the illustration on the right.

- Bowed shaft bars. The metal reinforcement in the weighted shaft bars corrects this.

- Heddles too crowded and bunched together, especially bunches of unused heddles Spread your heddles as much as possible, and stagger the placement of unused heddles at the ends of shafts.

unused | a bowed shaft | unused
heddles | will stick | heddles
bunched | | staggered
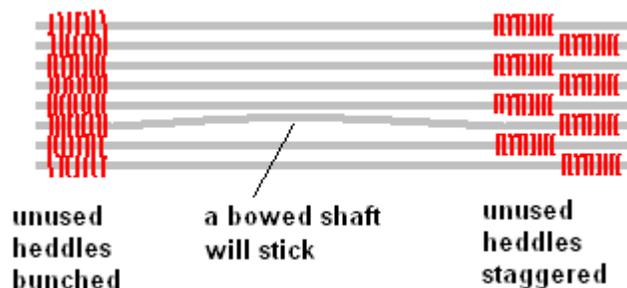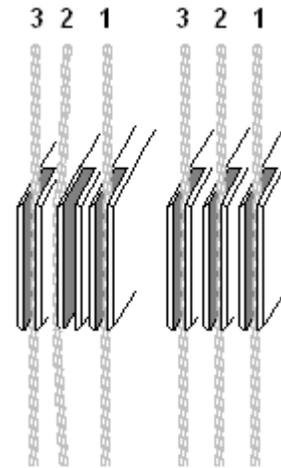
If the treadle needs excessive force to open the shed

- Check that cords have not slipped of their pulleys, in particular the large wooden pulleys below the dobby head.

- Check that lint and stray thread have not accumulated on the pulley bearings, in particular, the wooden pulleys below the dobby head.

If one of the solenoids does not activate when it should

- Use Solenoid Test to check the dobby unit when it's dismounted from the loom. Consult Louet if a solenoid appears not to respond properly.

- On the Magic Dobby, make sure that the plastic "piano keys" line up with the solenoid tips and a solenoid is not pushing between "keys".

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FIBERWORKS 4.1/4.2 SILVER PLUS

Leclerc Diana, Weavebird and Voyageur series looms

Power on

If you switch power **on** to the Leclerc Dobby before entering the weaving window, Fiberworks should detect it immediately, assuming that communications are established. The response is reported at the **left end of the status bar**.

If the Leclerc Dobby is not powered up when you open the weaving window, you will first see the reminder to switch on. When you switch on the Leclerc Dobby, it sends a sign-on message to the computer to indicate that it is ready, and the computer should then report that it is **responding OK**.

Starting to weave

Initially, the word **STARTUP** appears at the right end of the status bar. The computer is waiting for an indication that you are ready to weave. Press **Enter** to fire the solenoids for the first pick.

Weaving Cycle

Solenoids normally activate just as the shed closes, and deactivate as the shed reaches fully open. If you leave the treadle in the closed position for any length of time, solenoids remain under power and risk overheating. Use the **Solenoids off** menu item or toolbar button (Sequence menu) whenever you intend to take a break. Resume weaving by pressing the **Enter** key.

Timed out

To prevent overheating, the solenoids in the Leclerc dobbies **turn themselves off** if the shed is not opened within about 60 seconds of the solenoid being activated. If this happens, the computer may beep and the Status bar shows **TIMED OUT** in the Weaving Status section. Resume weaving after being TIMED OUT by pressing the **Enter** key.

Navigating the lag chain

If you can reach your computer easily from the weaving position, you can do adjustments of position or editing in the liftplan in the **shed open** position while solenoids are normally off. Changes will affect the next pick. If solenoids do not automatically activate when you close the shed, press Enter to resume weaving. If it's hard to keep the treadles pressed while working at the computer, you can also do adjustments of position or editing in the liftplan in the **shed closed position.** If you change position in the liftplan with cursor arrow keys or by scrolling or dragging the mouse in the weaving window (p.8-9), changes affect the current pick and solenoids will click in rapid succession. This can be avoided by selecting **Solenoids Off** while doing major adjustments. Press Enter to resume weaving. Minor adjustments (one or two steps) such as reversing the sequence or switching to tabby can be done in the shed closed position with solenoids on.

FIBERWORKS 4.1/4.2 SILVER PLUS

Diagnostics

Response test checks two way communication between computer and loom. The computer sends a query and waits for a response. When this is received the message on the right should display. If no response is received, the reminder to switch on remains displayed at the left end of the status bar.
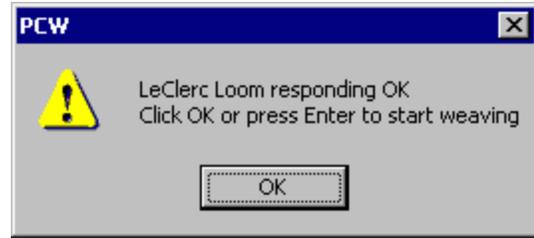
Solenoid test (p.18) tests communication from computer to loom. If this test succeeds and the response test does not, it indicates that there's something stopping the computer from receiving signals from the loom, but otherwise the Com number of the selected port is correct. You can use the Solenoid test to check individual solenoids. Click the **Clear Pattern** button, then set solenoids on one at a time by clicking into the grid pattern. Treadle the loom to see that the selected shaft picks up and releases cleanly.

Treadle Sensor test detects the signals that the Leclerc Weavebird or Diana and related Leclerc dobby looms send to the computer as the treadle is moved from shed **closed, treadle up** to **shed open** position. To do the treadle sensor test, it's best to move the treadle steadily and relatively slowly rather than a normal weaving treadle action, so as to catch the instant when the magnet is next to each sensor.
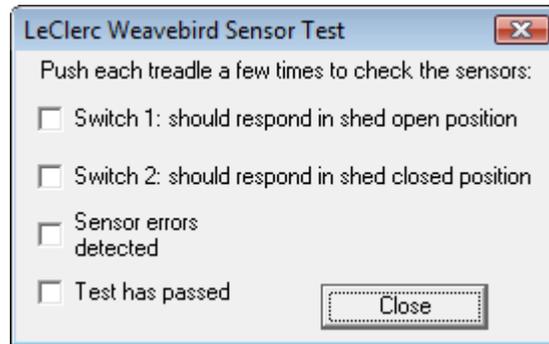
Macomber and Dobbytron series Looms

Power on

It is recommended that you should switch on power to the Dobbytron or Macomber after entering the weaving window. When the Macomber is detected, a prompt appears.

Starting to weave

Initially, the word **STARTUP** appears at the right end of the status bar. The computer is waiting for an indication that you are ready to weave. Press **Enter** to fire the solenoids for the first pick.

| Mag 6 | Woven = 0 | Ends 1-33 | STARTUP | # |

32
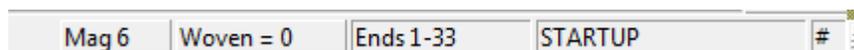
© 2010, Fiberworks

Weaving Cycle

Solenoids are normally activated just as the shed closes, and deactivated as the shed reaches the fully open position. If you leave the treadle in the rest position for any length of time, the solenoids remain under power and risk overheating. It's a good idea to use the **Solenoids off** menu item or toolbar button (Sequence menu) whenever you intend to take a break. Resume weaving by pressing the **Enter** key**.**

Navigating the lag chain

Do adjustments of position or editing in the liftplan in the **shed closed position.** If you change position in the liftplan with cursor arrow keys or by scrolling or dragging the mouse in the weaving window (p.8-9), changes affect the current pick and solenoids will click in rapid succession. This can be avoided by selecting **Solenoids Off** while doing major adjustments. Press Enter to resume weaving. Minor adjustments (one or two steps) such as reversing the sequence or switching to tabby can be done in the shed closed position with solenoids on.

Diagnostics

Response test checks two way communication between computer and loom. The computer sends a query and waits for a response (see **Power On**).

Solenoid test (p.18) tests communication from computer to loom. If this test succeeds and the response test does not, it indicates that there's something stopping the computer from receiving signals from the loom, but otherwise the Com number of the selected port is correct. You can use the Solenoid test to check individual solenoids. Click the **Clear Pattern** button, then set solenoids on one at a time by clicking into the grid pattern. Treadle the loom to see that the selected shaft picks up and releases cleanly.

There is no Treadle sensor test for the Macomber.

Toika

Power on and Starting to Weave

You can switch power on to the Toika **before or after** entering the weaving Window. However, Fiberworks can't detect whether the Toika is powered up. Instead a prompt box appears.

Click the OK button only when the Toika is connected and switched on. Your response will start the weaving cycle by sending the first pick to the loom.

PCW

⚠ Shaft 1 placed in front of loom
Switch Toika on now if it's not on yet!

OK
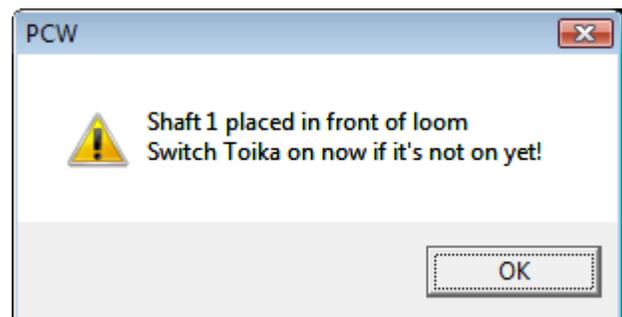
FIBERWORKS 4.1/4.2 SILVER PLUS

Shaft order on the Toika

By default, the Toika uses Scandinavian shaft order, that is **Shaft 1 is at the back** of the loom. When you do Loom Setup and select the Toika, you can choose whether to place **Shaft 1 in front** (leave the checkbox **unmarked**) or adhere to the Scandinavian convention and keep shaft 1 at the back (click on the checkbox to place a tick mark in it). Always **thread the loom** according to the convention you have chosen.
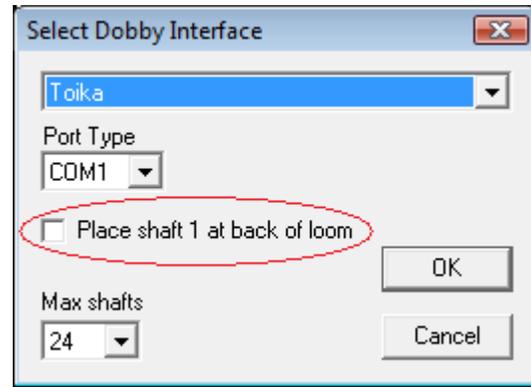
Weaving cycle

Solenoids are normally activated just as the shed closes, and deactivated as the shed reaches the fully open position. If you leave the treadle in the rest position for any length of time, the solenoids remain under power and risk overheating. It's a good idea to use the **Solenoids off** menu item or toolbar button (Sequence menu) whenever you intend to take a break. Resume weaving by pressing the **Enter** key.

Diagnostics

There is no response test for the Toika. Use Solenoid and Treadles Sensor tests instead.

Solenoid test (p.18) checks communication from computer to loom. If this test succeeds and the treadles sensor test does not, this means that there's something stopping the computer from receiving signals from the loom, but otherwise the Com number of the selected port is correct. You can use the Solenoid test to check individual solenoids. Click the **Clear Pattern** button, then set solenoids one at a time by clicking into the grid pattern. Treadle the loom to see that the selected shaft picks up and releases cleanly.

Treadle Sensor Test checks communication from loom to computer, in particular the signal that tells the computer to advance the pattern. A switch on the control box of the loom determines whether to progress though the liftplan **forwards** or in **reverse.** If communications are good, when you treadle the loom, one of the following messages is posted, depending on the position of this switch.
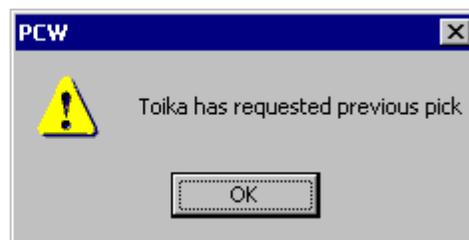
The **reverse switch** on the loom duplicates the action of the **Reverse Direction** menu item and toolbar button. The computer can track changes in switch setting on the loom, but the loom does not know when you use the toolbar Reverse button. To avoid confusion, be consistent in which method you use.

Arm Selectronic

Power on

You can switch power on to the ARM Selectronic **before or after** entering the weaving Window. Only click the OK in the reminder box after **power is switched on** to the loom control unit. Fiberworks then sends the loom a message to activate the computer controlled mode.
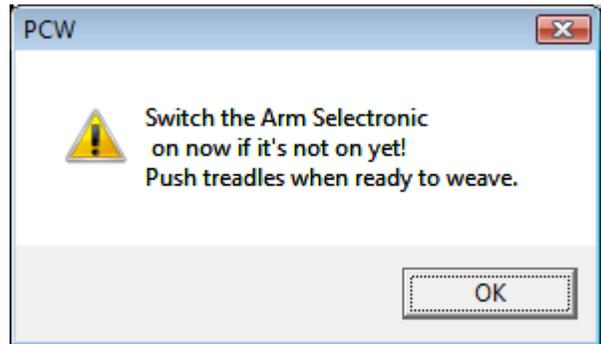
Starting to Weave

To signal that you are ready, push the treadles in turn. The first cycle may be a blank pick, but solenoids should activate the next time shed is closed. When you hear the solenoids click, open the shed without delay.

Time out
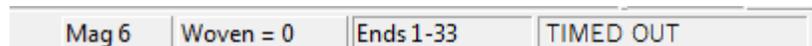
To prevent overheating, the solenoids in the Arm dobby head **turn themselves off** if the shed is not opened within five second of the solenoids being activated. If this happens, the computer may beep and the Status bar shows **TIMED OUT** in the Weaving Status section. Resume weaving after being TIMED OUT by pushing treadles in turn until the solenoids reactivate.

Diagnostics

Response test: A message should appear indicating that the ARM is responding. If The loom seems to stop clicking solenoids at any time, for example after a time-out or after the treadle sensor test, and does not respond to pushing the treadles, doing the response test will reactivate the computer controlled mode.

There is no solenoid test for the ARM. To test solenoids, make up a simple pattern that lifts one shaft at a time as well as any other pattern you need to check such as tabby, and open the pattern in the weaving window.

Treadle Sensor Test checks communication from loom to computer, in particular the signal that tells the computer to advance the pattern. After doing this test, push the treadles in turn to resume weaving.

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Portchecker

Portchecker is an accessory program installed with Fiberworks that allows you to check and monitor communication with your loom. You can find Portchecker in the Start Menu: go to **Programs>Fiberworks>Fiberworks Silver Plus 4200>Portchecker**. Portcheck helps you identify the correct port and lets you see the messages that pass between loom and computer.
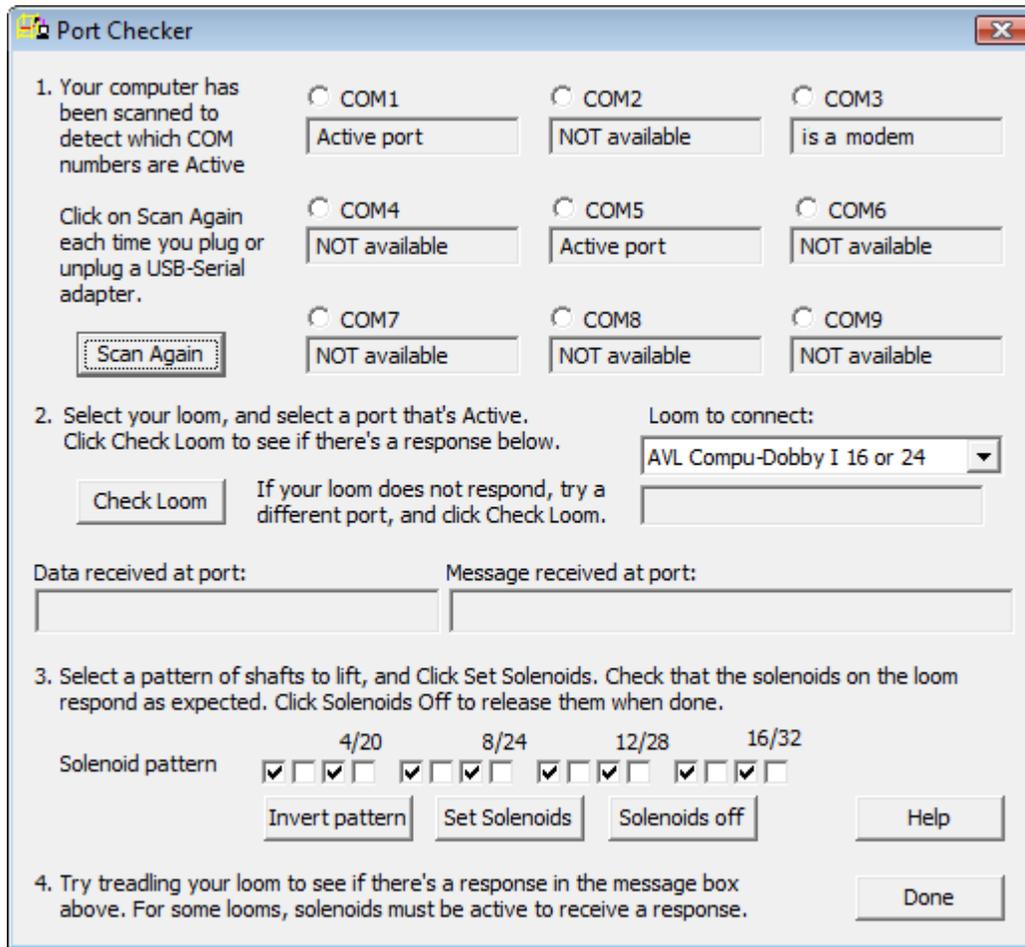
Step 1: Portchecker scans for available ports up to Com9; the scan can distinguish between normal serial ports and modems, so **Com3** is identified as a **modem**.

To identify the **Com number of a USB-serial adapter**, remove the adapter and click **Scan Again**. One of the Active ports should become **NOT available**. Plug the adapter back in, wait 20 seconds and scan again. The same port should become an **Active port** once again. Use this Com number when you do Loom Setup in Fiberworks (p.7).
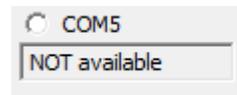
For **Louet** looms with a **built-in USB** adapter, connect the cable and **turn on power** to the dobby. Scan and note down **Active ports**, unplug the cable, and scan again to see which port becomes **NOT available**. Use this Com number for the Louet loom.

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Step 2: Select the **port** by clicking a dot into the button in front of the Com number. Select the **loom** from the list, and turn on the power to the loom. For looms that do a self-test, wait until it settles down, then click **Check Loom**.
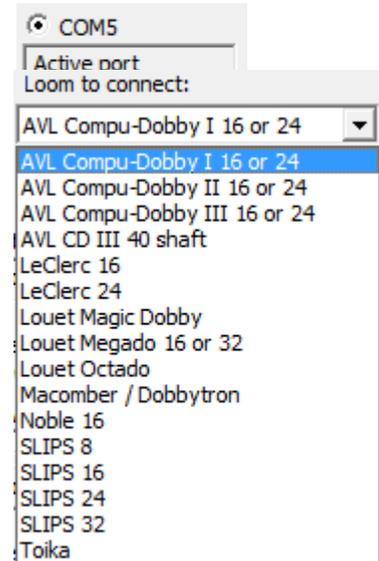
If the port was correctly selected, a response should appear in **Data Received** and **Message Received** boxes. To get a response from the **Toika**, you must treadle the loom.

Data received shows the actual codes sent back by the dobby unit. **Message received** translates this data into English. For the AVL Compu-Dobby, **Check loom** will initiate a self-test that causes solenoids to click in turn. If the self test starts after doing Check Loom, but no response is received, something is interfering with data arriving at the computer from the loom.

○ COM5

Active port

Loom to connect:

AVL Compu-Dobby I 16 or 24 ▼

AVL Compu-Dobby I 16 or 24
AVL Compu-Dobby II 16 or 24
AVL Compu-Dobby III 16 or 24
AVL CD III 40 shaft
LeClerc 16
LeClerc 24
Louet Magic Dobby
Louet Megado 16 or 32
Louet Octado
Macomber / Dobbytron
Noble 16
SLIPS 8
SLIPS 16
SLIPS 24
SLIPS 32
Toika

2. Select your loom, and select a port that's Active.
   Click Check Loom to see if there's a response below.

Loom to connect:

AVL Compu-Dobby I 16 or 24 ▼

[Check Loom] If your loom does not respond, try a different port, and click Check Loom.

COM5 opened: 1200 bps,e,7,2

Data received at port:

00 03

Message received at port:

Compu-Dobby responding OK

Step 3: Set a pattern to test solenoid activation. The default is all odd shafts, but you can create other patterns by clicking check marks on or off in the boxes. There are only 16 boxes, so shafts 17-32 echo the setting for shafts 1-16, and likewise for shafts 33-40. Click Solenoids off before quitting.

3. Select a pattern of shafts to lift, and Click Set Solenoids. Check that the solenoids on the loom respond as expected. Click Solenoids Off to release them when done.

Solenoid pattern   4/20   8/24   12/28   16/32
☑☐☑☐   ☑☐☑☐   ☑☐☑☐   ☑☐☑☐

[Invert pattern] [Set Solenoids] [Solenoids off]   [Help]
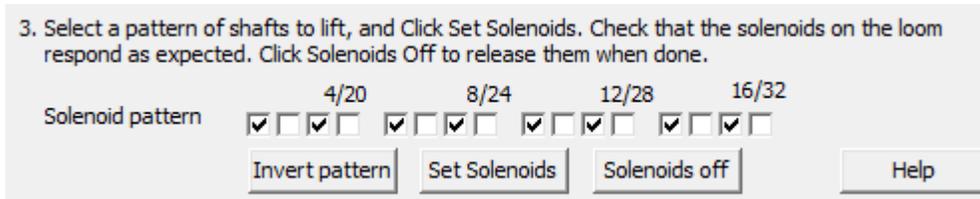
Step 4: Try pushing the treadles: the example here is for AVL Compu-Dobby. For Louet and Leclerc, you need to set solenoids before pushing the treadle.

Data received at port:

01 03 62 03

Message received at port:

Arm is down, shed open

Data received at port:

01 03 62 03 61 03

Message received at port:

Arm is up, shed closed

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The port you want to use is reported as NOT available

Ports **can't be shared between two programs** open at the same time**.** Other software may have claimed the port. Examples:

*   The software for linking a person digital assistant such as a **Palm Pilot**.

*   The driver that comes with an **uninterruptible power supply** (UPS). This driver is designed to shut down an unattended computer when power is lost. If your computer is not routinely unattended, you do not need to install this driver.

*   A driver for a serial mouse, never uninstalled when the mouse died.

*   **Fiberworks**: close down all weaving windows while you are using Portchecker. Close down Portchecker when you try to weave with Fiberworks.

Although a socket exists for the port, it **may not be connected internally**, or the port may be **disabled** in the computer's BIOS settings. If you are not familiar with adjusting your BIOS Setup, this may be something to leave to an outside expert, or buy a USB-serial adapter, which is probably less expensive than hiring outside help.

Do not mistake your **printer port** (a socket with 25 holes to fit a cable with 25 pins) for a serial port .

The USB-serial adapter keeps changing its Com number

This may happen if the USB adapter is sometimes plugged in when you turn on power to the computer, and sometimes plugged in after Windows is up and running. The adapter is being identified at different stages of Windows start up. **Be consistent:: either always plug in before turning power on or always plug in after Windows is up.**

No new Active port appears when the USB adapter is plugged in

Make sure that the **driver** that comes with the adapter is properly installed.

Make sure that the supplied driver is **compatible with your version of Windows**, in particular Vista and Seven. If you can identify the manufacturer of the adapter, go to their website and see if there's a driver available to download.

There's no response from the loom

*   If it's an AVL Compu-Dobby I or Compu-Dobby II, did you touched any buttons on the control unit after turning the power on? The Compu-Dobby may be in **cartridge mode** and not listening to the computer. Turn the Compu-Dobby off, wait five seconds, and turn it on again. Wait until solenoids stop clicking before trying to communicate again using the **Check loom** button.

*   Uninstall or disable Norton Antivirus if you have it on your computer.

*   Make sure you are not plugged into a parallel or printer port.

No response from loom, continued

Cable problems

Serial cables come in two flavours, but only one is suitable for connecting a loom.

A **standard RS-232 serial** cable is intended to link a computer to an external device such as a camera, a modem, a printer or a loom dobby unit.

A **null modem** cable is designed to link two computers together.

Two computers have their serial sockets wired the same way. If a standard cable is used to connect two computers together other, the pins that **talk** on each computer connect to each other, and likewise the pins that **listen** connect. The result is **no** communication. The null modem cable corrects this by **crossing the wires** in between. Now the left talker connects to the right listener and the right talker connects to the left listener.

External devices such as dobby units wire their sockets the opposite way to computers, so a standard cable connects **talk to listen** in both directions. In this case, a null modem cable connects **talk** to **talk** and **listen** to **listen** - hence no communication.
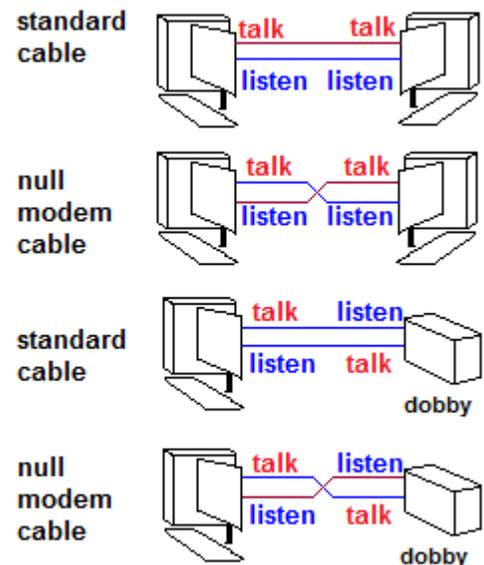
A typical null modem cable has identical connecters
at each end while a standard cable usually has male at one end and female at the other. Inspect your cable. If the cable itself has identical connecters at each end but is made to fit the loom with an extra adapter, it may be the wrong type.

Using Windows Device Manager to explore your ports

Find Device Manager by opening the **Control panel** (**Start > Settings > Control Panel**).

Click on the **System** Icon, and then select **Device Manager**.
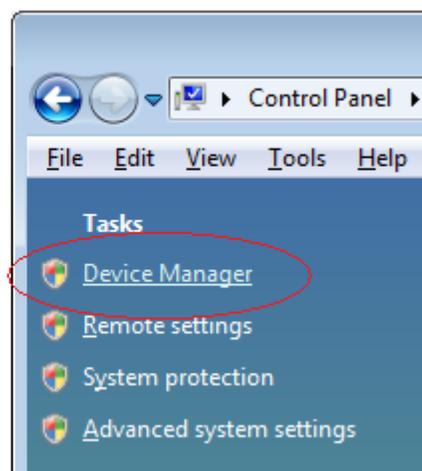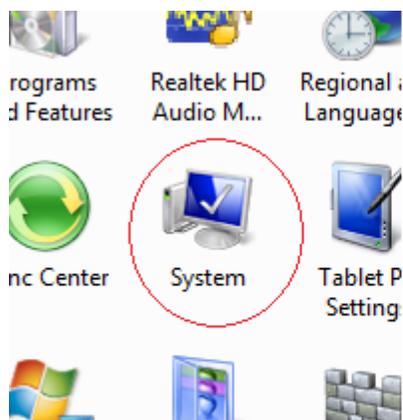
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Using Windows Device Manager (continued)
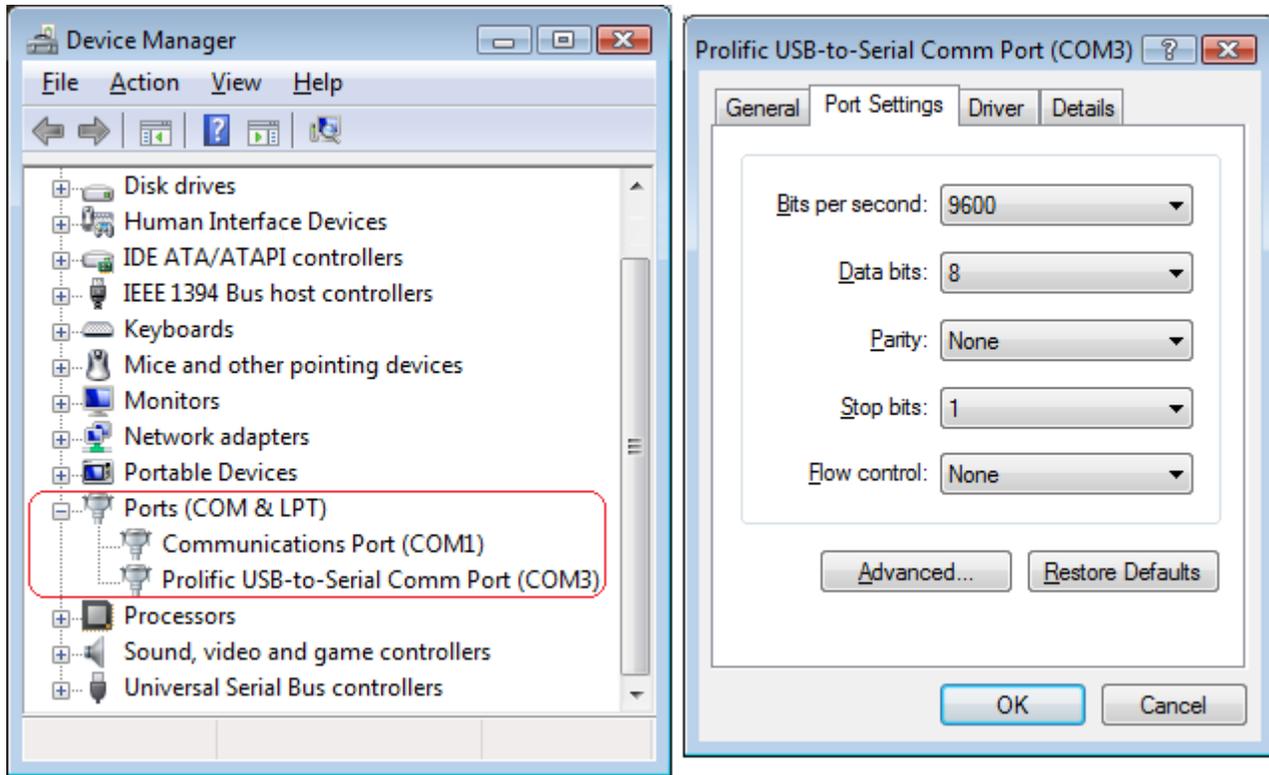
Device manager (left) lists all the hardware on your computer. Expand **Ports COM & LPT** to show the list of Com ports. Modems, if present, are listed separately. Click open the Com Port you wish to inspect to show its **Properties** dialog. The **General** Tab will indicate if a Port is disabled. There is **no** need to change Port settings here: Fiberworks automatically makes the right Port Settings for a given loom.

Click on the **Advanced** Button. The **Advanced setting** dialog lets you **change the Com number** of a port. Do this if a modem and a usable Com port conflict with each other. Try putting a lower setting on the **Receive buffer** if you are having erratic reception of signals from the loom.

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