

# The DesignaKnit Serial E8000 Links 1 & 2

For the Passap / Pfaff Electronic 8000



**Serial E8000 Link 1**

**Serial E8000 Link 2**

## What these links do

The serial E8000 Link 1 enables downloading of stitch patterns from DesignaKnit to the E8000 control unit, but not interactive knitting.

The serial E8000 Link 2 enables both downloading and interactive knitting. This cable link has a KnitLink Arm that attaches to the lock and enables detection of carriage movement.

The serial E8000 Link 1 can be converted to a serial E8000 Link 2 by adding the optional KnitLink Arm: the two serial cable links are otherwise identical.

Patterns can be transferred in one direction only: the E8000 control unit is not able to upload patterns to a computer. When the selected knitting machine is the E8000, the following options on the Stitch Designer Transfer menu are therefore disabled: Upload, Extract, & Restore.

The USB E8000 cable links are described in a separate document.

## Part List

1. The DesignaKnit Cable.
2. The magnetic KnitLink Arm (E8000 Link 2 only).

## Connecting the Link to the computer & E8000 control box

This cable may be used with a DesignaKnit USB-to-serial converter. Other converters might not work for this purpose. If using a converter, install it first, referring to its own manual, which is available here: <https://softbyte.co.uk/cablelinkmanuals.htm>

Connect the E8000Link to a free serial port on your computer or to a USB-to-serial converter. If the E8000Link has a 25 pin connector, use a 25 to 9 serial adapter.

Only use a cable that has been designed for your make and model of knitting machine. Do not connect your DesignaKnit cable to anything other than a Passap E8000 Control Unit and a

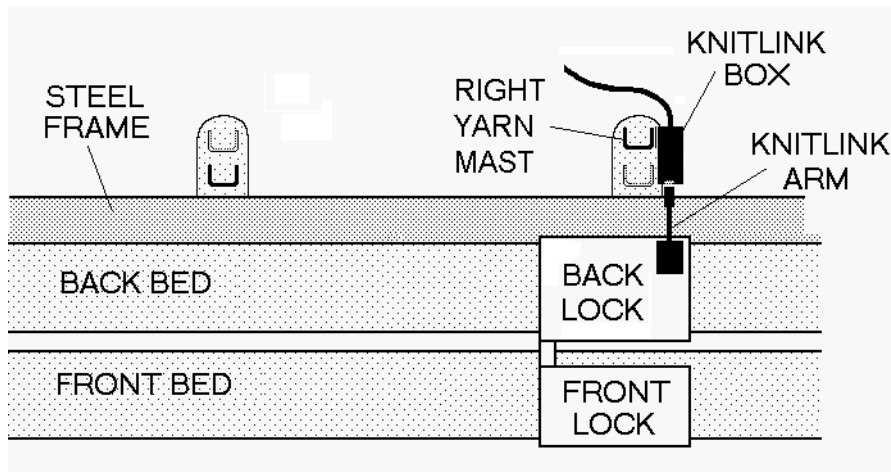
computer. Soft Byte Ltd and its agents can accept no responsibility for damage caused by connecting to the wrong devices.

***It is recommended that socket III be taped over to make sure that the DesignaKnit cable cannot be attached there. Damage can be caused to the E8000 Control Unit by attaching the cable to that socket.***

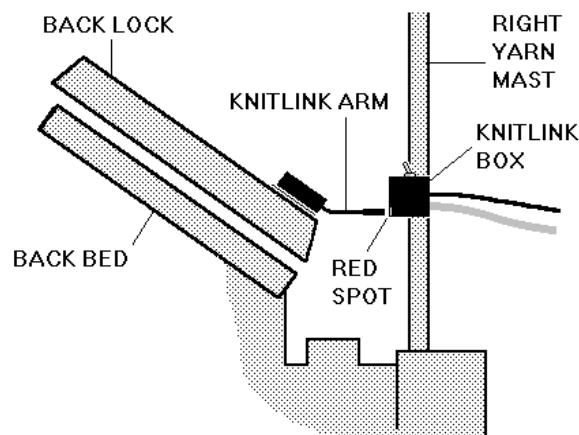
1. To be completely sure that the E8000 Control Unit is powered off, unplug the power supply from socket IV (or socket IIII) at the back of the control unit.
2. Also remove the cable from socket I at the back of the control unit.
3. Take the flat lead part of the E8000 Link, which ends in a telephone-type plug, and fit it into socket II at the back of the E8000 Control Unit.
4. Plug the E8000 power cable back into socket IV (or socket IIII) at the back of the E8000 Control Unit.
5. Take the E8000 Link's long lead which ends in a rectangular USB connector, and connect it to a USB port on the computer.
6. Make sure that the locks are at the start position (or at least not exactly opposite the red spot on the KnitLink box).

### **Fitting the KnitLink Box and Arm (E8000 Link 2 only)**

1. Place the left hand mast in the front position, and the right hand mast in the rear position. Move the locks so that the left edge of the back lock is slightly to the right of the right-hand yarn mast.
2. Find the magnetic KnitLink Arm. Make sure the arm is bent so that the magnetic end is roughly horizontal when the Arm is mounted on the lock. If your KnitLink Arm is black, it is quite stiff and needs some effort to bend it, but it is very strong and will not break: it can safely be bent using pliers. If it is made of aluminium, loosen the nut to adjust it, and tighten it when the arm is in the correct position.
3. The KnitLink Arm has fabric fastener attached to the underside of its base. Remove the backing strip and position it (pressing only lightly) at the back left corner of the back lock as shown. The arm should be sticking out horizontally, pointing backwards.
4. Take the KnitLink box with both layers of the fastening fabric still attached. Remove the backing strip and hold it with the red spot towards the front of the machine and the cable pointing to the back. Move it to the right side of the right yarn mast, at such a height that the end of the Knitlink Arm passes opposite and close to the red spot on the KnitLink box. The rear end of the knitlink box should attach to the mast. Press against the mast to stick it lightly.
5. Ensure that the end of the KnitLink arm passes directly opposite the red spot and close to it. When you are satisfied that the positioning is more or less correct, press the both the KnitLink arm and box firmly to stick them securely in place.
6. The fabric fastener allows the arm to be attached and detached easily and its exact position adjusted as required. Look from the side to make sure that when the locks move, the Knitlink Arm passes close to the red spot on the box without actually touching it. Aim for a clearance of about 2 to 3 mm.



**Figure 1: Fitting the Knitlink Arm and box: view from above**



**Figure 2: Fitting the Knitlink Arm and box: view from the right**

## Telling DesignaKnit 8 which port number to use

This applies whether you are using a true serial port or a USB to serial converter.

1. Open Stitch Designer and select Options / Method of Knitting.
2. Select the Passap E8000 from the Knitting Machine Selection list by left clicking it, then click the **Setup** button
3. Click on the Find Link button and then Start Search. If you have a KnitLink Arm, then when the link is found, touch the magnetic end of the Arm to the red spot and the screen should flash red to confirm that the correct port number has been detected. If the screen doesn't flash, set the range of ports to exclude this port number and search again.
4. When DesignaKnit finds the port number it will automatically enter that number into Knitting Machine Setup. If it reports that the link was not found, go to the section titled Troubleshooting for information about updating the driver.
5. Click OK and OK again. Back at the list of knitting machines, finish by clicking OK.

## Telling DesignaKnit 7 which port number to use

This applies whether you are using a true serial port or a USB to serial converter.

Please see <https://softbyte.co.uk/usingdevicemanagertofindport.htm> for instructions on how to find the port number using Device Manager. When you have worked out which port number you are using:

1. Open Stitch Designer and select Options / Knitting Machine.
2. Select the Passap E8000 from the Knitting Machine Selection list by left clicking it, then click the **Setup** button
3. At the top of the Knitting Machine Setup dialogue box there is 'Connected to serial port number'. Enter the USB port number that was found in Device Manager and click OK.
4. Back at the list of knitting machines, finish by clicking OK.

## Passes per row and tensions

When a Passap electronic machine is currently selected, there is a special version of the Tensions Dialogue. This enables the vertical tension to be entered as passes of the lock, instead of rows of finished fabric, and it therefore needs to take into account the currently entered technique number.

DesignaKnit row tensions are entered either as the number of lock passes in 10 cm (or 1 inch or 4 inches) or as the height of the fabric made by 100 lock passes.

It is more normal for Passap knitters to enter the measurement of 100 lock passes rather than the number of lock passes per 10 cm. Whichever method you use it is vital to realize that, for most techniques, a single lock pass does not normally complete a pattern row. Therefore, to produce a swatch which consists of 60 complete pattern rows it is necessary to multiply 60 by the number of passes per row to find out how many lock passes are required.

The number of passes per row is shown in the E8000 Technique dialogue box that opens whenever you enter or change the technique number.

The number of passes per row of stitch pattern, and for multicolour techniques the sequence of yarn colours, are defined by the Passap technique number. DesignaKnit knows about the technique numbers by referring to the file E8000.tec which is in the DesignaKnit installation folder. This is a plain text file that can be opened using Notepad or a word processor. If you make any additions to this file please be sure not to alter the existing technique numbers or the formatting.

If you prefer to enter the row tensions as rows of finished fabric rather than passes of the lock, use Options / Knitting Machine and set the current knitting machine to any non-Passap machine. After the tensions have been entered, select the E8000 machine again.

## Knitting machine memory limitations

The E8000's memory is large enough to take a pattern which is the full width of the needle bed (383 stitches) by DesignaKnit 7's maximum number of rows (1130), provided that a large number of other patterns are not also being stored in the E8000 Control Unit's memory. Slightly larger patterns may be downloaded by DesignaKnit 8. If the E8000 Control Unit displays an error message while downloading, this could indicate that its available memory space is insufficient for the pattern being downloaded: remove other patterns in the E8000 Control Unit or reduce the size of the pattern which is currently being downloaded.

The E8000 memory may be cleared as follows. Power up the E8000 control unit while holding down the bent arrow key and 6. Select "1 Load". Press bent arrow and 6 until a new menu appears. Select "4 Format" and then "2 Mod" then "1 Yes". You should then find the free space is reported as 327680. Then press Ent, Minus, Minus.

## Preparing the E8000 control unit to accept a download

The following steps should be followed on the E8000 Control Unit.

1. Select ProgS, enter a memory sector number (for example 1) and press the large ENT key.
2. Enter 3 (meaning from ROM).
3. If necessary use the cursor down key to get to the place where you can enter a Passap technique number. Enter the number of the technique which you will use for knitting, and press the large ENT key.
4. Select 4 (meaning from PC).
5. If necessary, use the cursor down key to get to the place where you can enter a design number. Enter your own design number and press the large ENT key. We recommend that to save confusion, reserve the use of pattern numbers from 3000 to 4000 for patterns which are downloaded from DesignaKnit. We also suggest that the pattern number forms part of the DesignaKnit filename (only for identification purposes).
6. The E8000 Control Unit should then display the message "ON THE PC, SELECT KNIT A PATTERN". It is then ready to accept a pattern download from DesignaKnit.

## Preparing colour patterns for downloading

- The method of Jacquard separation that is selected in Options/Knitting Machine/Jacquard is not used for downloading to the E8000, or for knitting from the screen. The sequence of yarns is controlled instead by the Passap Technique. Similarly, suppression of blank rows is never used when downloading to the E8000 or knitting from the screen with the E8000.
- DesignaKnit works out which yarn goes in which feeder position and the printout shows the result. Yarn numbers are allocated by selecting Yarn Numbers/Feeders from the View menu.
- For downloading to Passap machines, colour patterns must be assigned a Jacquard knitting method from 2 to 4: Fair Isle and 5 or 6 colour Jacquard are not available. Open the stitch pattern in Stitch Designer and check that it has the correct knitting method allocated. The sequence of colours is controlled by the memo numbers. For a pattern with 4 colours per row, each of the 4 colours must be given a number from 1 to 4. If colour 2 changes from red to blue at a certain row, both red and blue must have memo number 2 assigned. Memo numbers must be assigned to each yarn colour before downloading - or a reminder to do so will pop up.
- No special preparation is required for texture patterns that have the Right facing or Wrong facing knitting method.
- It is not possible to download more than one pattern in one operation.

## Downloading an unintegrated stitch pattern

1. In Stitch Designer, open the stitch pattern you want to download to the E8000.
2. Prepare the pattern for downloading as described earlier.
3. Select Transfer/Download.
4. Check that the Passap E8000 is highlighted in the Knitting Equipment list by left clicking it, then click OK.
5. DesignaKnit requests the E8000 Technique number. This number is checked to make sure it is compatible with the knitting method that has been assigned in Stitch Designer's Options / Method of Knitting. The number of passes of the lock and the colour numbers that will be used to knit each row of the pattern are shown.

6. Connect the E8000Link to the control unit and to the computer as described earlier.
7. Click the Download button in the next dialogue. DesignaKnit then requests that the E8000 Control Unit is programmed until it shows "ON THE PC, SELECT KNIT A PATTERN". Prepare the E8000 control unit to accept a download as described earlier. When that message appears on the control unit, select OK in DesignaKnit, and within 2 seconds press the large ENT key on the E8000 Control Unit.
8. A bar indicates the progress of the download. The time taken to download varies according to the size of the pattern. In order to use maximum download speed ensure that DesignaKnit is updated: some earlier releases had very slow download speeds.
9. Proceed with the actions in "After downloading: preparing to knit" as described below.

## Downloading an integrated stitch pattern

An integrated stitch pattern is one which has been positioned on a garment piece, either by dragging the outline of the garment piece over the stitch pattern in Stitch Designer, or by dragging the stitch pattern over the garment piece in Original Pattern Drafting. The filename and position of a stitch pattern may be stored independently for each piece in a shape file.

Whichever way a garment piece is integrated with a stitch pattern, it is unlikely that row 1 of the garment piece will end up coinciding with row 1 of the repeating stitch pattern unit as shown on the Stitch Designer screen. It is also unlikely that the centre stitch of the garment piece will coincide with the centre stitch of the repeating pattern unit, though the interactive knitting instructions include centring each garment piece on the needle bed. DesignaKnit manages this situation by automatically shuffling the pattern vertically and horizontally by the required number of rows and stitches before downloading it. The end result is that the knitted piece exactly matches the display of the integrated piece on the Stitch Designer or Original Pattern Drafting screen.

In Stitch Designer, when Transfer / Integrated Download is selected, a garment piece is first chosen. The stitch pattern that has been integrated with that piece is then downloaded to the E8000 control unit, correctly positioned at the centre of the needle bed.

Even if the same stitch pattern has been integrated with more than one garment piece, the positioning of the pattern on each piece is likely to vary, so the automatic shuffling of the pattern will be different, and a separate download is required for each piece.

The garment shaping cannot be transferred to the console memory: only the stitch pattern can. The process is as follows.

1. In Stitch Designer, open the shape file that has been integrated and select Transfer / Integrated Download.
2. Check that the Passap E8000 is highlighted in the Knitting Equipment list by left clicking it, then click OK.
3. DesignaKnit requests the E8000 Technique number. This number is checked to make sure it is compatible with the knitting method that has been assigned in Stitch Designer's Options / Method of Knitting. The number of passes of the lock and the colour numbers that will be used to knit each row of the pattern are shown.
4. The Integrate window opens. In the left column, select a garment piece. The filename of the stitch pattern that has been integrated with the selected piece should be shown in the middle column. Click OK.
5. Connect the E8000Link to the control unit and to the computer as described earlier.
6. Click the Download button in the next dialogue. DesignaKnit then requests that the E8000 Control Unit is programmed until it shows "ON THE PC, SELECT KNIT A PATTERN". Prepare the E8000 control unit to accept a download as described earlier. When that message appears on the control unit, select OK in DesignaKnit, and within 2 seconds press the large ENT key on the E8000 Control Unit.

7. A bar indicates the progress of the download. The time taken to download varies according to the size of the pattern. In order to use maximum download speed ensure that DesignaKnit is updated: some earlier releases had very slow download speeds.

## Large patterns

Different knitting machines have different memory sizes. The memory space required for a given pattern is roughly proportional to the total number of stitches. For a given pattern DesignaKnit is able to calculate whether the memory required will fit into the knitting machine memory.

If the pattern is too large for the machine memory, DesignaKnit will give a message saying how many sections it must be divided into and asking which of those sections you want to download. Dividing into sections is done automatically - you do not have to decide how to divide the pattern. When a section number is chosen, a message shows how many rows must be knitted before the next section needs to be downloaded. Interactive Knitting will give a message reminding when the current section has been knitted and the next section must be downloaded.

## After downloading: preparing to knit

1. After downloading, continue programming the control unit, entering the technique number.
2. If you are using a technique that requires two patterns, one for the front bed and another for the rear, the E8000 Control Unit will at this point request the second pattern. If the second pattern is also to be downloaded from the PC, proceed as from the paragraph beginning "Select 4 (meaning from PC)".
3. Unplug the power supply from the E8000 Control Unit.
4. Remove the cable from socket II.
5. Remove the cable from the PC port.
6. Replace control unit on E8000 knitting machine, putting the appropriate cable into socket I, taking great care NOT to put it into socket II. Putting it into socket II would result in destroying the processing board in the E8000 Control Unit. The download cable is the larger plug and will not go into any socket other than II, but it is possible to put the cable meant for socket I into socket II.
7. Plug in the power cable.
8. If you have the magnetic KnitLink Arm, prepare for Interactive Knitting as follows. Synchronize the E8000 Control Unit row count and DesignaKnit's RC. After you have knit the rib, and before you start the knitting process in DesignaKnit's Interactive Knitting, zero the row counter on the E8000 Control Unit. It will then agree with the RC number shown on the screen during interactive knitting.

## Interactive Knitting

The manual and help for interactive knitting are available from the Help menu in the Interactive Knitting section of DesignaKnit: please see those in order to find out about the general principles of interactive knitting.

If the magnetic KnitLink Arm is installed, then each time the Arm passes the KnitLink Box, a signal is generated. When Interactive Knitting has started, the signal causes the screen to progress to the next row and to show any knitting instructions that may be required.

## Unravelling rows

When unravelling several rows of knitting it is necessary to select either Go to RC from the Go menu, click on the swatch at the row to which you wish to return, or press the down arrow key once for each row unravelled. Any of these actions will cancel the Go button.

When the knitting is unravelled as far as required, set the pattern row on the knitting machine and click the Amber Ready button on DesignaKnit. Return all needles to normal working position then follow the E8000 Control Unit instructions to re-set the pushers for the next row.

Click the OK button and continue knitting.

## Sleeve seam shaping

DesignaKnit Ready instructions tell you to bind on the number of stitches at the bottom of the sleeve. To avoid having to re-program the left and right end needles in the E8000 Control Unit every time an increase is encountered they can be set 5 or 10 stitches more than indicated, provided you ensure the locks pass the programmed needles on every row.

## Troubleshooting

For problems downloading, please see

<https://softbyte.co.uk/downloadingwiththepassape8000link.htm>

For problems with interactive knitting, please see

<https://softbyte.co.uk/interactiveknittingwithbrotherpassapscreenlinks.htm>

## Updates to this manual

The document you are reading was updated in March 2017.

The most recent editions of cable link manuals may be found at

<https://softbyte.co.uk/cablelinkmanuals.htm>

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