

The DesignaKnit USB Brotherlink 5 for Brother electronic machines



What this link does

- Uploading and downloading patterns to the KH930, KH940, KH950i, KH965i, and KH970 knitting machines.
- Interactive knitting with almost any knitting machine. Knitters who have pacemakers fitted should be aware that the KnitLink Arm contains a magnet. It is not an especially strong magnet, but please observe the normal guidelines concerning the proximity of magnets to pacemakers.
- Uploading and downloading to the PPD with cartridge III in the mode for the KH900. It is also suitable for use with the PPD + CK35 cartridge.
- If used in conjunction with the DesignaKnit PPD Adapter, it is also suitable for use with the PPD in modes for KH270, KH930, KH940, KH950i, KH965, KH965i, and KH970, and for uploading from the Stitch Pattern Extras Cartridge. When the PPD Adapter is added, the Brotherlink 5 cable effectively becomes converted to a Brotherlink 3 Plus cable, when the instructions for the USB Brotherlink 3 Plus should be referred to instead of this document. See <https://www.softbyte.co.uk/cablelinksbrother.htm> for the PPD Adaptor and <https://www.softbyte.co.uk/cablelinkmanuals.htm> for all our cable link manuals.

Part List

1. The DesignaKnit USB Cable.
2. CD with test program and USB drivers.
3. The magnetic KnitLink Arm.

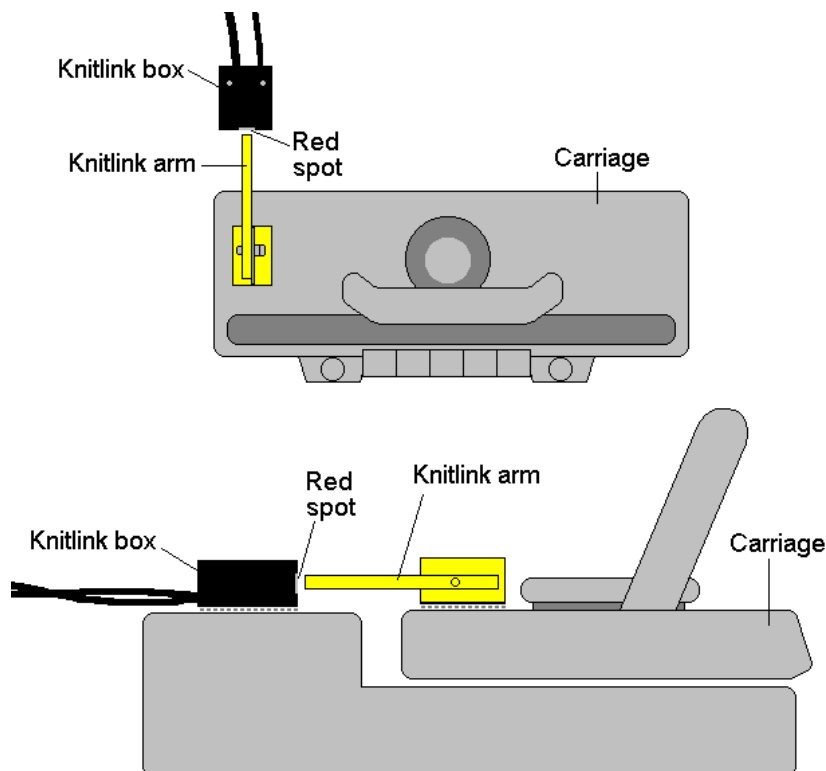
Fitting the link to the knitting machine

For uploading or downloading, connect the cable to the 8-way FB100 connector on the knitting machine. In the case of the KH970, the 8-way connector attaches to the FB100 connector on the CB-1. For uploading or downloading, it doesn't matter whether the Knitlink box is attached to the knitting machine.

For reliable results when interactively knitting it is best to disconnect the 8-way end of the cable from the knitting machine or CB-1.

The Knitlink box is fitted as follows.

1. Move the carriage to the middle of the bed.
2. Place the base of the KnitLink Arm with both layers of the fastening fabric still attached to its underside onto the carriage.
3. Place the KnitLink Box with both layers of the fastening fabric still attached to its underside onto the plastic top surface of your knitting machine. Direct the red spot towards you and the cable pointing away.
4. Make sure that the magnet in the end of the KnitLink Arm lines up with the red spot on the KnitLink Box and passes as closely as possible without actually touching when the carriage is moved.
5. The angle of the Knitlink Arm is adjustable. If your KnitLink Arm is made of aluminium, loosen the nut to adjust it, and tighten it when the arm is in the correct position. If the 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.



6. When positioned correctly, remove the backing strip of the fastening fabric from the base of the KnitLink Arm and fix to the carriage. Remove the backing strip of the fastening fabric from the base of the KnitLink Box and fix to the plastic top of the knitting machine.
7. Make fine adjustments to the positioning of the arm and box by altering the position in which their fabric fasteners engage. Aim for a clearance of two or three millimetres.

8. Press the arm base and box down firmly to make sure they stay in place.
9. Make sure that the KnitLink Arm does not catch on anything in its path when the carriage is moved, including charting devices.
10. Extra pieces of ordinary fastening fabric may be purchased and attached to other knitting machines, so that the KnitLink arm and box can be moved to whichever machine you need to work with.
11. To pack your knitting machine in its case, simply pull the KnitLink Box upwards so that the two layers of fabric fastener are separated. You might also need to detach the KnitLink Arm from the carriage in the same way.
12. Excess cable should not be tightly coiled as this can cause electromagnetic effects that can interfere with the operation of the link.

Installing the Driver

The process varies according to the version of Windows and whether the same driver already happens to be installed for a similar device. All the DesignaKnit cable links, and many other devices use the same driver.

Installing the driver should be done by an Administrator Windows user. If your computer doesn't offer you a choice of user names when starting up, it almost certainly means you are an Administrator user.

For the driver for Windows CE, please visit <http://www.ftdichip.com/Drivers/VCP.htm>

If your DesignaKnit computer is **not** connected to the internet, go straight to the section titled "Installing the driver from CD".

Installing the driver from the internet

Insert the USB cable into a standard USB port on your computer.

When Windows starts, or if the link is connected while Windows is running, it will recognize that the cable link has been attached and may show a message saying that it is searching for a driver. A message may appear to say that devices are being installed or it might say that the best driver is already installed. If a problem is reported please see the Troubleshooting section.

If Windows does not react when the cable link is connected for the first time, it could mean that a similar USB device has previously been installed on the computer. In this case, Windows might not search or request a driver for the cable link but may just continue to use the driver that is already installed, which may be too old to work well with your current version of Windows. If Windows does not react when the cable link is connected for the first time, please see the Troubleshooting link about updating the cable link driver.

Finally you may be presented with an instruction to restart the computer - if so, do it.

Now please go to the section titled "Telling DesignaKnit 8 or 9 which cable & port number to use"

Installing the driver from CD

Do not connect the DesignaKnit cable link yet. If the cable is already connected, disconnect it.

If the cable link was purchased after DesignaKnit, insert the CD that came with the cable link, otherwise insert the DesignaKnit CD to install the driver (if the DesignaKnit Setup program opens, do not install DesignaKnit again - close the window).

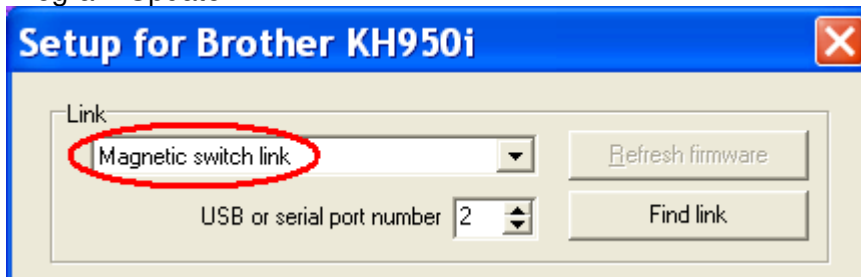
If Windows offers to open a folder to view the files accept that option; otherwise open a My Computer window yourself, right click on your CD or DVD drive and select Explore, Browse, or

Open in a new window. Run the program whose filename begins with USBlinks_DriverInstaller. The driver will then be installed. Finally you may be presented with an instruction to restart the computer - if so, do it.

Insert the USB cable into a standard USB port on your computer.

Telling DesignaKnit 8 or 9 which cable & port number to use

1. Open Stitch Designer and select Transfer / Upload.
2. Highlight the required knitting machine from the knitting equipment list by left clicking it, then click the Setup button.
3. Under Link or Cable link, select "Magnetic switch link". If this choice is not available, it may mean that you need to update your DesignaKnit using Help / Web Updates / Program Update.



4. Click on the Find Link button and then Start Search. When the link is found, touch the magnetic end of the KnitLink 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.
5. 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.
6. Finish by clicking OK and OK again. When back at the list of knitting equipment, finish by clicking Cancel.

Telling DesignaKnit 7 which port number to use

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 Transfer / Upload.
2. Highlight the required knitting machine from the knitting equipment list by left clicking it, then click the Setup button.
3. At the top of the Knitting Machine Setup dialogue box you will see 'Connected to serial port number'. Enter the port number and click OK.
4. When back at the list of knitting equipment, finish by clicking Cancel.

Upload, Extract, & Restore

These features are available from the Transfer menu in Stitch Designer.

Upload transfers all 900 series patterns from the knitting machine or CB-1 memory to DesignaKnit, in a single batch.

For the CB-1 use the Save data to disk icon.



After uploading the batch of patterns, DesignaKnit requests a filename for the batch, which is stored with the filename suffix .bro. If there are 900 series pattern numbers in the knitting machine that you want to keep and are not already in DesignaKnit, they can be uploaded and stored on the computer.

The **Extract** option on the Transfer menu can then be used to extract individual patterns from the stored .bro file and save them as DesignaKnit stitch pattern files.

The **Restore** option takes a previously uploaded .bro file and downloads it back to the machine or CB-1, thereby restoring the 900 series pattern numbers that were in the memory of the machine or CB-1 at the point at which the batch was previously uploaded to the computer.

Downloading an Unintegrated Stitch Pattern to KH965i or KH970

1. In Stitch Designer, open the stitch pattern you want to download to the machine and select Transfer/Download.
2. At the list of knitting machines, make sure that the required knitting machine is highlighted and click OK.
3. Connect the cable link's 8-way connector to the FB100 connector on the knitting machine or CB-1. Ensure the USB connector is attached to the computer USB port.
4. Click the Download button in the next dialogue and follow the on-screen instructions.
5. For the CB-1 use the Load data from disk icon.



6. A bar indicates the progress of the download. The time taken to download will vary according to the size of the pattern.

Downloading an Unintegrated Stitch Pattern to other machines

1. For the KH965i and KH970 only: In Stitch Designer, open the stitch pattern you want to download to the machine and select Transfer/Download.
2. At the list of knitting machines, make sure that the required knitting machine is highlighted and click OK.
3. For machines other than KH965i and KH970, the "Assemble Batch of Patterns" dialogue opens. Use the Help button if necessary to find out how to assemble the required batch of patterns. Note the 900 series pattern number that gets assigned to each stitch pattern in the batch - these numbers will be required later. When the required batch of patterns has been specified select OK.
4. Connect the cable link's 8-way connector to the FB100 connector on the knitting machine or CB-1. Ensure the USB connector is attached to the computer USB port.
5. Click the Download button in the next dialogue and follow the on-screen instructions. A bar indicates the progress of the download. The time taken to download is not related to the size of the pattern.

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 knitting machine or CB-1 memory, 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. At the list of knitting machines, make sure that the required knitting machine is highlighted and click OK.
3. The Integrate window opens. In the left column, select the required garment piece(s). For the KH965i and KH970, only one piece may be selected, but for other models multiple pieces may be selected. The filename of the stitch pattern that has been integrated with the selected piece(s) should be shown in the middle column. For machines other than the KH965i and KH970, note the 900 series pattern number that has been assigned to each integrated garment piece, starting at 901. These numbers will be required later. Click OK.
4. Connect the cable link's 8-way connector to the FB100 connector on the knitting machine or CB-1. Ensure the USB connector is attached to the computer USB port.
5. Click the Download button in the next dialogue and follow the on-screen instructions.
6. For the CB-1 use the Load data from disk icon.



Load data Save data
from disk to disk

7. A bar indicates the progress of the download.

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.

When downloading to the KH965i or KH970 machines, patterns are downloaded singly, but for other machines a batch of patterns is downloaded. For a given pattern or batch of patterns

DesignaKnit is able to calculate whether the total memory required will fit into the knitting machine memory. If there is insufficient memory a message will be shown and the download cancelled. If downloading a batch, then some patterns will have to be removed from the batch.

It is also possible that one large pattern is too large for the machine memory - in which case 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.

Preparing for Interactive Knitting

Knitters who have pacemakers fitted should be aware that the KnitLink Arm contains a magnet. It is not an especially strong magnet, but please observe the normal guidelines concerning the proximity of magnets to pacemakers.

Preparing to knit with KH940 or KH950i

These machines generate a pulse (detectable by DesignaKnit) when the patterning belt has been engaged using a KC setting and the carriage changes direction. For knit methods other than lace, the Brotherlink 5 owner can choose whether to use the detection by pulse or detection by magnetic KnitLink Arm + KnitLink box. If using the detection by pulse, the cable must be connected to the machine's FB100 socket and the KnitLink box moved back so that it cannot detect the motion of the carriage. If using detection by KnitLink Arm + Box, the cable must be disconnected from the machine's FB100 socket and the Arm must pass close to the red spot on the Box.

The Arm + Box method should be used when knitting plain. Otherwise, for the pulse system to work, a blank pattern would have to be downloaded and the patterning belt engaged.

When knitting lace, it isn't possible to use the pulse method. It is necessary to have a magnetic KnitLink arm mounted on the lace carriage as well as on the main carriage, and for the 8-way connector to be disconnected from the knitting machine's FB100 socket. *[The machine-generated pulse cannot be used when knitting lace interactively because when the main carriage is followed by the lace carriage moving in the same direction, no pulse is generated and therefore DesignaKnit cannot detect that the lace carriage has been moved.]*

Preparing to knit with other machines

Before knitting, remove the cable link from the knitting machine's FB100 socket, in case the carriage snags the cable and causes damage to either the socket or the cable.

It is also recommended to disconnect the 8-way end of the cable from the knitting machine or CB-1 in order to obtain reliable detection of the carriage movements when interactively knitting.

All machines

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. Only points that are specific to this type of cable link and knitting machine are included in the present document.

Whatever the model of Brother electronic knitting machine, it is necessary to select the pattern number on the knitting machine console. The downloaded pattern number will be in the range 901 to 998. For the KH900, KH930, KH940, and KH950i, the pattern numbers will be the same

as they appeared in DesignaKnit, because an entire batch is downloaded together in one operation with the pattern numbers already defined.

For the KH965i and KH970, the knitting machine assigns its own 900 series number - it gives the next available 900 series number to each downloaded pattern, so they are likely to end up with different numbers from those shown in DesignaKnit earlier.

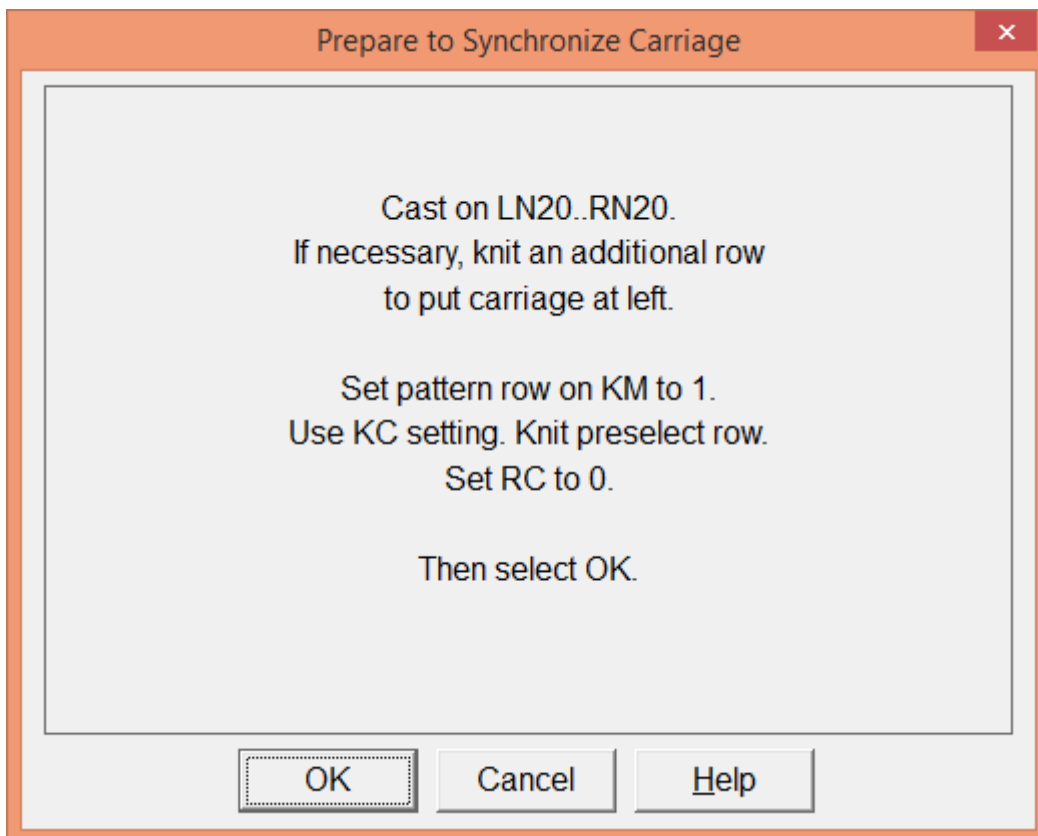
For the KH965i and KH970 care must be taken to delete other 900 series patterns periodically, or before downloading a particularly large pattern. When working out if a pattern will fit into the machine memory, DesignaKnit assumes that no other patterns are using up memory. For other models of machine, all other 900 series patterns are automatically replaced by the new batch of downloaded patterns so there is no need to delete anything.

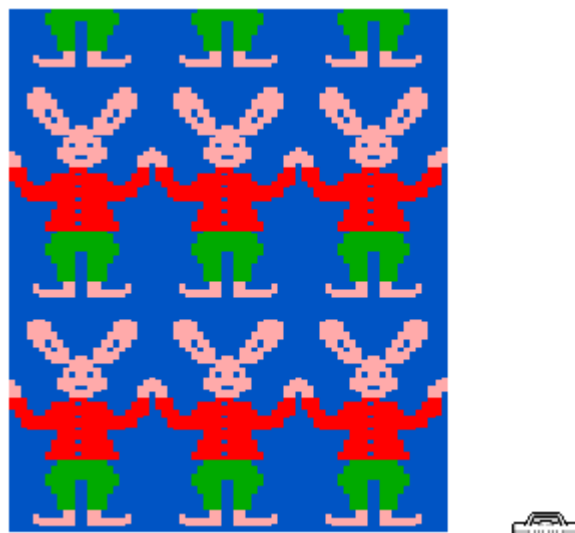
When doing plain knitting with this type of cable link, the KC setting on the carriage is not used. For pattern knitting, a KC setting must be used.

When starting to work the first preselect row for a new stitch pattern, and the carriage is moved for the first time with the KC setting, it is necessary to move it past the further turn mark in order for the machine to start selecting needles and to start incrementing the electronic row count on the machine. This is not necessary for subsequent carriage passes.

Preselection

Except when using the garter carriage, Brother knitting machines preselect needles for the following pass of carriage. Each pass of the carriage knits the pattern that was defined by the previous pass, and also selects needles for the following pass. When the amber traffic light button is clicked to prepare to start knitting, the following dialogue appears:





Note that in this example, the Progress window at the top right of the Interactive Knitting screen shows the carriage at the right-hand side of the work. The instructions are saying to work the first preselect row starting with the carriage at the left - so that it will be at the right when starting to knit row 1. ***The interactive knitting screen always shows the row that is about to be knitted, not the row that is about to be preselected.***

Once knitting has begun (using the amber or green traffic light buttons), each time the carriage passes the KnitLink box, the screen should update itself and show the instructions for the next row.

Updating the Driver from the Internet

From time to time the manufacturer of the chips in the cable link publishes a new driver because a modification may be necessary for it to work with newly published Windows updates. We recommend that from time to time you follow the instructions on this webpage to keep the driver updated. If you have a problem with the cable link at any time it is a good idea to update the driver before contacting technical support. <https://softbyte.co.uk/updatinganexistingdriver.htm>

Troubleshooting

If Windows reported a problem when trying to install the driver from the internet, or Device Manager shows a yellow error icon next to the serial port, or there is a yellow error icon next to an "Unknown device", try using the driver installer. Either follow the directions in this document under "Installing the driver from CD", or from <https://softbyte.co.uk/cablelinksdriver.htm>.

If your DesignaKnit computer is not connected to the internet, download a driver installer here and transfer it on a pen drive: <https://softbyte.co.uk/cablelinksdriver.htm>.

Updating the cable link driver: please see <https://softbyte.co.uk/updatinganexistingdriver.htm>

For problems uploading or downloading, please see <https://softbyte.co.uk/uploading&downloadingwithbrotherlinks.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 February 2022.

The most recent editions of cable link manuals may be found at <https://softbyte.co.uk/cablelinkmanuals.htm>

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