

The DesignaKnit Serial Brotherlink 2 or 5

For Brother KH965i & KH970

What these links do

These cables are suitable for uploading and downloading patterns between DesignaKnit and the KH965i and KH970 knitting machines, and for doing interactive knitting in DesignaKnit with almost any knitting machines.

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.

The serial Brotherlink 2 was developed for the KH965i and the serial BrotherLink 5 for the KH970, but they are electrically the same: the only difference between them is the height of the KnitLink box. The KH970 required a taller box so that the magnetic KnitLink arm could more easily reach the red spot on the KnitLink box.

These cables may be used with a DesignaKnit USB to serial converter. Other converters might not work because the Brother machines were not designed to connect to computers. If using a converter, install it first, referring to its own manual.

Part List

1. The DesignaKnit Cable.
2. The magnetic KnitLink Arm.

The USB to serial converter is not included.

Fitting the link to the knitting machine

This cable may be used with a DesignaKnit USB-to-serial converter. Other converters might not work because the Brother machines were not designed to connect to computers. If using a converter, install it first, referring to its own manual, which is available here:

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

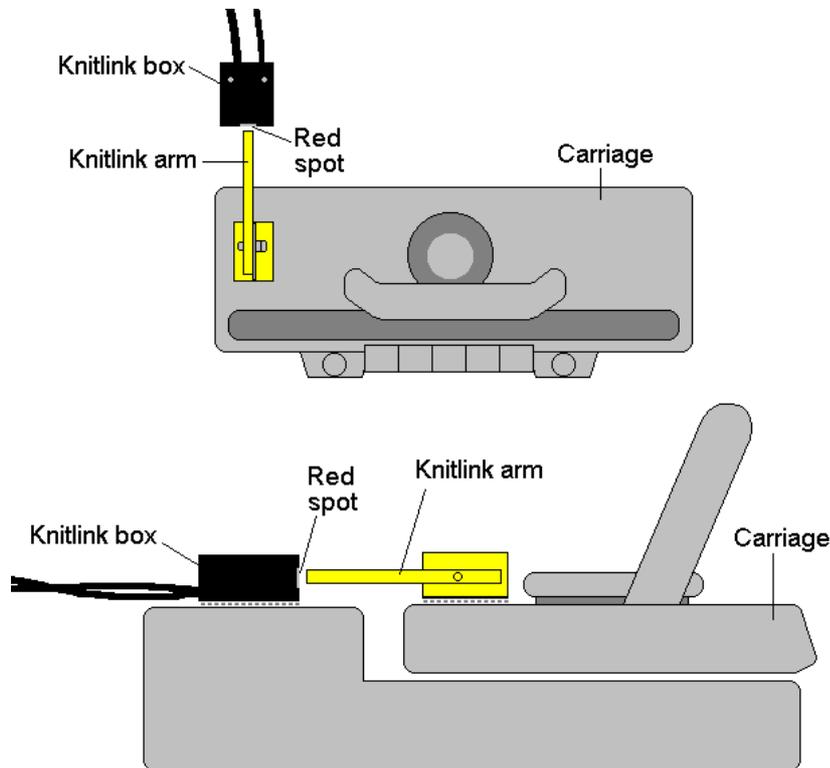
Connect the BrotherLink to a free serial port on your computer or to a USB-to-serial converter. If the BrotherLink has a 25 pin connector, use a 25 to 9 serial adapter.

For uploading or downloading, connect the 8-way end of the Brotherlink to the FB100 connector on the KH965i machine, or on the CB-1, which is the controller for the KH970 machine. 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 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.

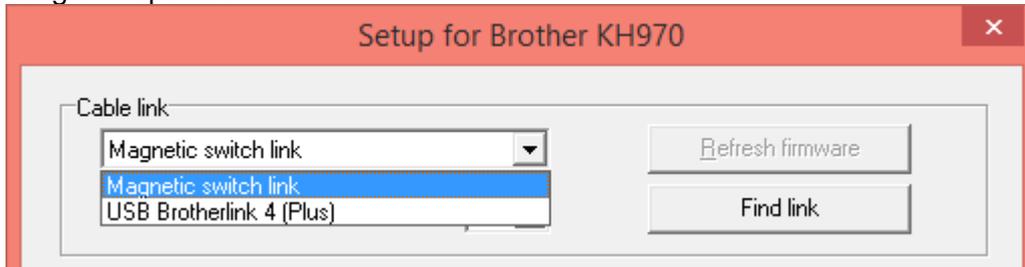


6. When positioned correctly, remove the backing strip of the fastening fabric from the base of the KnitLink Arm and fix to the carriage. Remove the backing strip of the fastening fabric from the base of the KnitLink Box and fix to the plastic top of the knitting machine.
7. Make fine adjustments to 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.

Telling DesignaKnit 8 or 9 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 Transfer / Upload.
2. Select the required knitting machine from the Knitting Machine Selection 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. Click OK and OK again. When back at the list of knitting equipment, finish by clicking Cancel.

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/usingdevicemanagerstofindport.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 correct machine 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 you will see 'Connected to serial port number'. Enter the port number that was found in Device Manager and click OK.
4. When back at the list of knitting equipment, finish by clicking OK.

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.



Load data Save data
from disk to disk

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 on your hard disk 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 knitting 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 from disk Save data 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. 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.

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

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.

Before knitting, remove any 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.

If using the CB-1 and KH970, interactively knitting is more reliable when the 8-way end of the cable is removed from the CB-1.

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 KH965i and KH970, the knitting machine assigns its own 900 series number - it gives the next available 900 series number to each downloaded pattern.

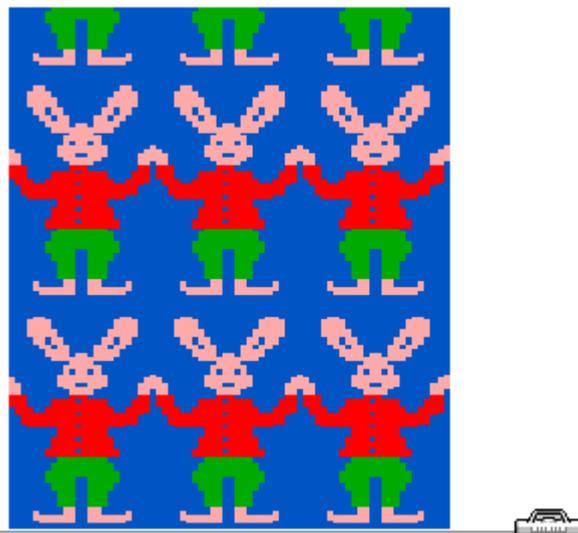
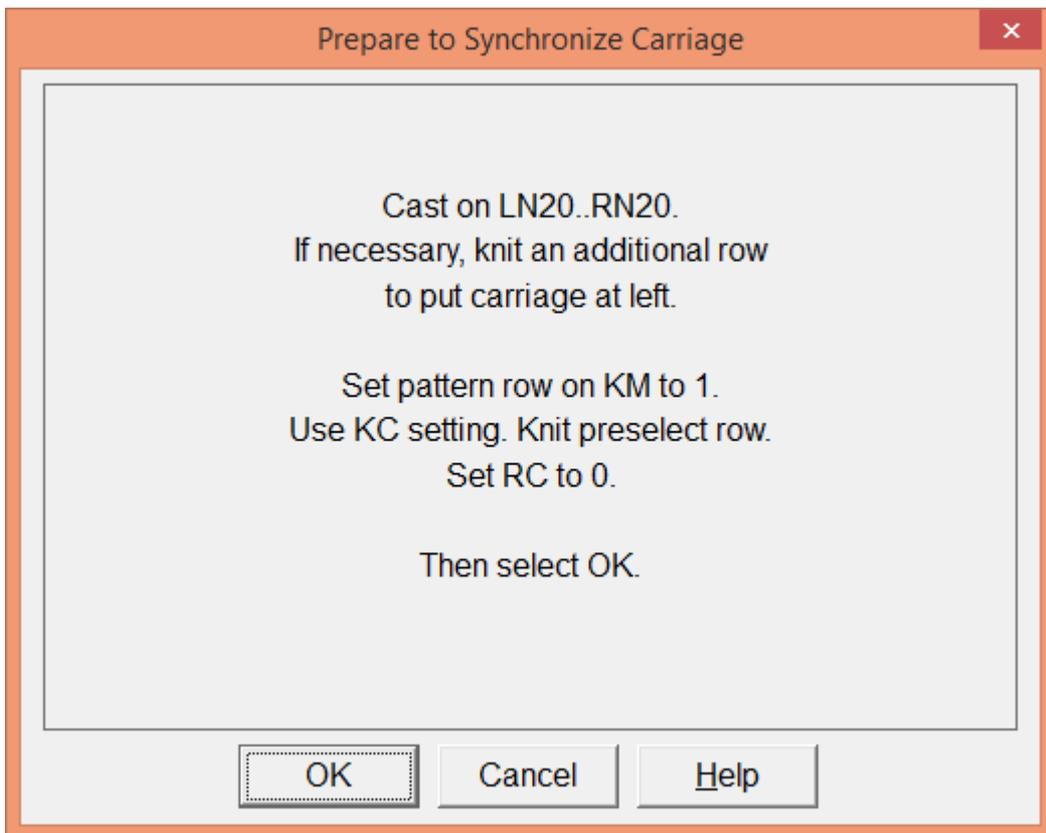
For the KH965i and KH970 care must be taken to delete other 900 series patterns periodically, or before downloading a particularly large pattern. When working out if a pattern will fit into the machine memory, DesignaKnit assumes that no other patterns are using up memory.

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.

Troubleshooting

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 December 2021.

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

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