User's Guide

Imacon Flextight 646

English

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Hardware Reference - Flextight 646

This manual provides important information about using your Flextight 646 scanner.

Topics include:

- Important warnings and restrictions
- System requirements
- Diagrams of the front panel, rear panel, and internal structure of the Flextight 646 scanner
- Installation instructions
- Environmental requirements
- Electrical requirements
- Operating instructions
- Calibration instructions
- Maintenance advice
- Disposal instructions
- Technical specifications
- Declarations of FCC and CE regulation conformity

English

Warnings and Restrictions

- Read all of the included documentation before attempting to install and use the scanner.
- Do not touch the originals and/or the original holder while scanning.
- Do not start scanning or previewing until an original holder with an original has been mounted.
- The original holder is only to be mounted or removed when the drum is in the load position.
- When you turn on the scanner, the drum will roll to the load position, if it is not there already. Do not touch the scanner while the drum is rotating.
- Do not place your fingers or any other object into the scanner while it is connected to power.
- Before servicing or opening the scanner, the power supply must be disconnected from the mains (unplugged). It is not sufficient simply to press the on/off button.
- Install the scanner in a location where children can not get to it. It contains small openings and moving parts that can cause injury.

System Requirements

English

Below are the basic hardware requirements for the PC or Macintosh system to which the scanner is to be connected.
For information about the processor, operating system, RAM and harddisk requirements please refer to the "Software Reference" manual, that comes with the FlexColor software.

- Screen resolution of 800 x 600 pixels with true colors (24-bits).
- Mouse or other pointing device.
- FireWire interface
  or
  SCSI Interface
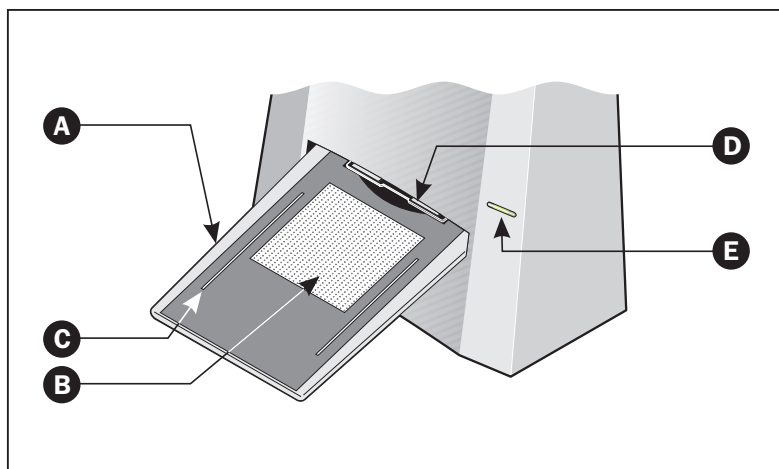 (with Adaptec EZ-SCSI version 4 or later for IBM PC-compatibles only).

English

Front Panel

Figure 1: Front panel features of Flextight 646

A **Feed Table:** place original holders here for scanning.
B **Light Area:** for viewing originals. The grid helps you to align your transparent originals.
C **Transparency Holder Guide**: all transparency holders fit between two rails to keep them straight.
D **Original Holder Clasp:** all original holders slide into a slot here and are held in place by a magnetic clasp.
E **Power Switch with indicator lights**: press to turn the unit on/off. The switch can light up in 3 different colors indicating the following:
Green (Power/Ready) - remains lit when ready to scan. Flashes when first installed to indicate that firmware must be loaded (it will be loaded automatically when you run **FlexColor**).
Yellow (Motor Drive) - when the scanner is repositioning the optics to scan in a new format or when drum is repositioning.
Red (Scanning) - when scanning. Do not touch the scanner while the indicator is red. If the light is flashing when not scanning, then an error has occurred - please contact your Flextight dealer for assistance.
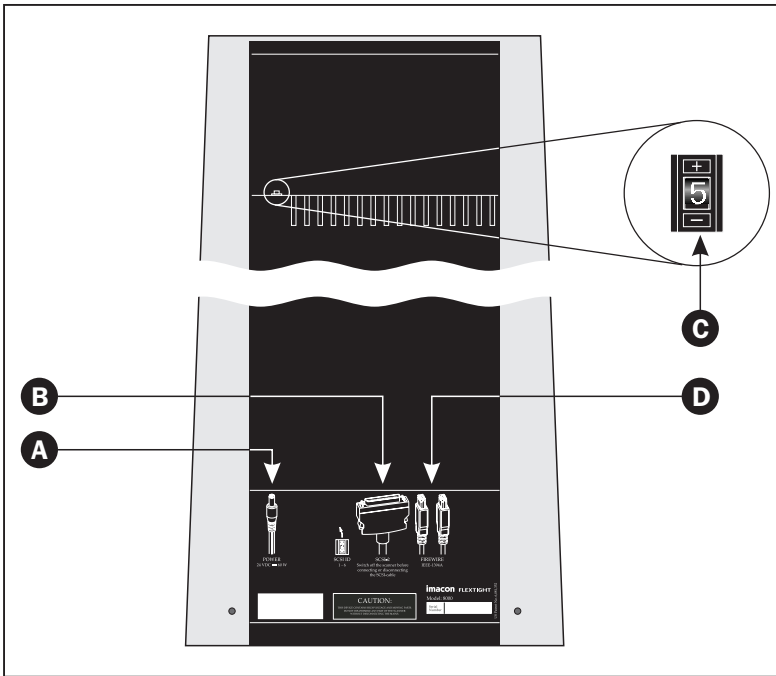
Back Panel & Connectors

English

Figure 2:   Back panel features of Flextight 646

A   **Power Cable Socket:** plug the power cable into this socket.

B   **SCSI Port:** plug a SCSI cable here and connect it to the previous SCSI-device in your SCSI-chain or to your computer if no other devices are connected.
  NOTE! The scanner must always be connected as the last device in a SCSI-chain as the scanner's SCSI interface has an internal active terminator (see page 13).

C   **SCSI Address Selector:** assign an address number using the + and - buttons. Use only 1, 2, 3, 4, 5, or 6. Do <u>not</u> use 0, 7, 8, or 9.

D   **FireWire Interface Sockets:** plug a FireWire cable (max. 6 m) here and connect it to your computer. You can use the second plug to connect another device (hard disk, printer etc.) to the FireWire chain.
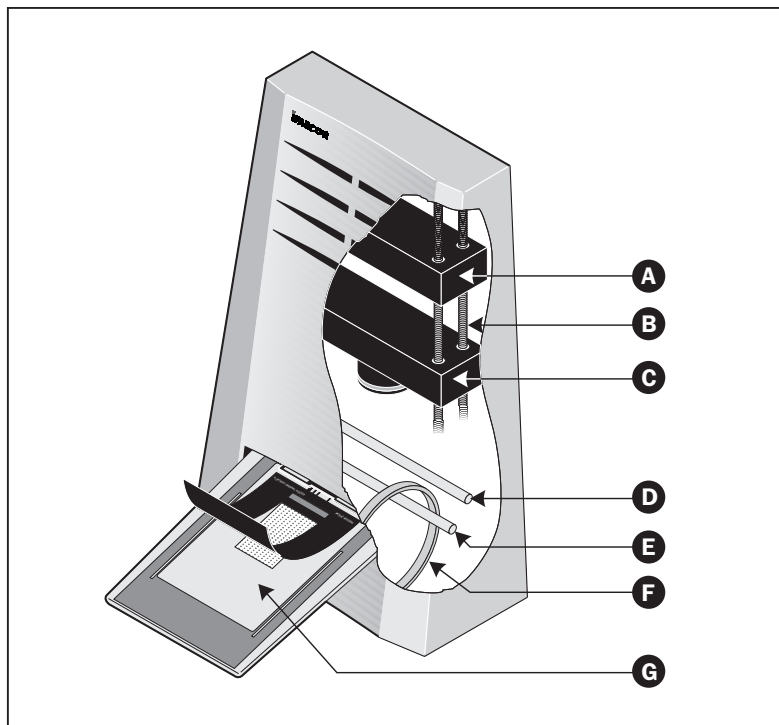
English

Cut-Away View

Figure 3:   Cut-away view of Flextight 646

A   CCD Housing: this movable platform contains the light sensor and holds the optics.

B   Positioning Lead Screws: for positioning of the CCD housing and optics housing for the appropriate resolution and original size.

C   Optics Housing: focuses the image of the original on the CCD.

D   Upper Light Source: illuminates reflective originals.

E   Lower Light Source: illuminates transparent originals.

F   Drum: rotates the original into the scanner and steps it past the CCD line of focus.

G   Original Holder: a transparency holder is shown mounted and with the top layer held open.

Setting up the Scanner

Environmental Requirements

Set up the scanner in a location that fulfils the following requirements:

- Keep the scanner away from sources of heat, such as direct sunlight or a radiator. Warm temperatures will degrade the quality of your scans - for best results, work in a cool environment.

- The scanner must be operated away from sources of strong electromagnetic interference. Although the scanner complies with all regulations governing electromagnetic immunity and Imacon has taken every reasonable step to make the unit immune to electromagnetic interference, it is still a precision electronic device so strong radio waves can interfere with your scans.

- The surface on which the scanner is placed must be stable and free from vibrations. If the scanner is shaken or moved while scanning, your results may be affected.

- If the scanner has been in a colder environment (e.g. outside or in storage) just before you set it up in a warmer room, then wait about two hours before using it - otherwise, condensation may form, which will prevent the scanner from operating correctly.

- Avoid using the scanner in areas where there is a high level of dust.

Electrical Requirements

The Flextight 646 power supply requires a mains voltage of between 100 and 240 V AC at a frequency of 50 to 60 Hz. This is within the normal wall-socket power standards of most countries. Do not attempt to use Flextight 646 with any power source outside the specified range.

The scanner and all devices attached to the scanner (computer, monitor, FireWire or SCSI devices, etc.) must be grounded (i.e. use a three-point electrical connection).

Note that the power supply may emit a low hissing sound when plugged in but not connected to the scanner. This is normal and will not damage the power supply or scanner.

English

English

Installation Procedure, FireWire Interface

1. Place the scanner on a table near your computer with the front facing away from you. Make sure that the location you choose meets all environmental - and electrical requirements as described on page 11.

2. When using a FireWire interface connection, it is not necessary to switch of your computer and other connected units. Connect a FireWire cable from one of the FireWire connectors on your scanner (see "Back Panel & Connectors" on page 9) to either the computer's FireWire connector or to a free FireWire connector on any other FireWire device already connected to your computer.

3. Connect the round connector from your power supply to the round power supply socket on the back of the scanner.

4. **IMPORTANT:** Make sure that the wall socket you are planning to use meets the electrical requirements outlined earlier.
    Plug the Flextight 646 power supply into a wall socket. Note that the power supply may emit a low buzzing sound when plugged in. This is normal and will not damage the power supply or scanner.

5. Turn the scanner around so that the front is facing you.

6. Your system is assembled. Turn on your computer and install the **FlexColor** image scanning software.

Installation Procedure, SCSI Interface

1. Place the scanner on a table near your computer with the front facing away from you. Make sure that the location you choose meets all environmental - and electrical requirements as described on page 11.

2. **IMPORTANT:** Make sure that your scanner, your computer and all devices connected to the SCSI chain are switched off. You can damage your equipment if you make or break SCSI connections to or from units that are turned on.

3. Connect a SCSI cable from the scanner's SCSI connector (see "Back Panel & Connectors" on page 9) to the free SCSI-connector on the previous device in your SCSI-chain (you may have to remove a terminator) or to the SCSI connector on your computer if no other devices are connected.

English

IMPORTANT: The scanner must always be connected as the last device in a SCSI-chain as the scanner's SCSI interface has an internal active terminator.
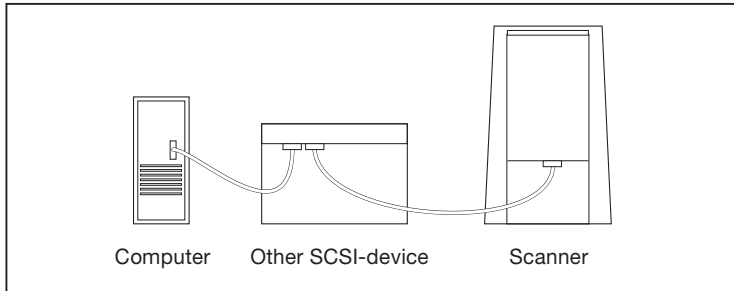

Figure 4:   SCSI chain

4. **IMPORTANT:** On the back of the scanner is a small switch, which is used for setting the SCSI address for the scanner (see Figure 5). Make sure that each device in your SCSI chain has been assigned a different SCSI address. If necessary, use the + and - buttons to select a new address for the scanner. Use only 1, 2, 3, 4, 5, or 6. Do not use 0, 7, 8, or 9.

Figure 5:   SCSI address selector switch

5. Connect the round connector from your power supply to the round power supply socket on the back of the scanner.

6. **IMPORTANT:** Make sure that the wall socket you are planning to use meets the electrical requirements outlined above.
    Plug the Flextight 646 power supply into a wall socket. Note that the power supply may emit a low buzzing sound when plugged in. This is normal and will not damage the power supply or scanner.

7. Turn the scanner around so that the front is facing you.

8. Your system is assembled. Turn on your computer and install the **FlexColor** image scanning software.

English

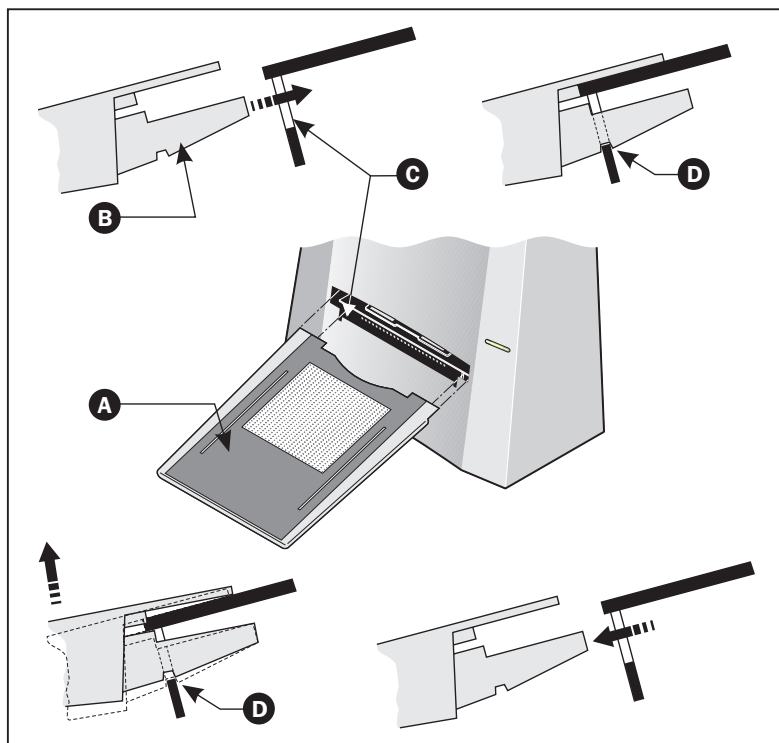### Attaching/Detaching the Feed Table

Figure 6:   Attaching/Detaching the Feed Table

To attach the feed table correctly onto the scanner lead the brackets **(B)** as far as they go into the slits **(C)** in the scanner base, then lower the table and pull it slightly backwards to ensure that the notches **(D)** catch the bottom of the slits.

To detach the feed table correctly from the scanner lift it slightly upwards to release the notches **(D)** from the bottom of the slits **(C)** then pull it away from the scanner.

English

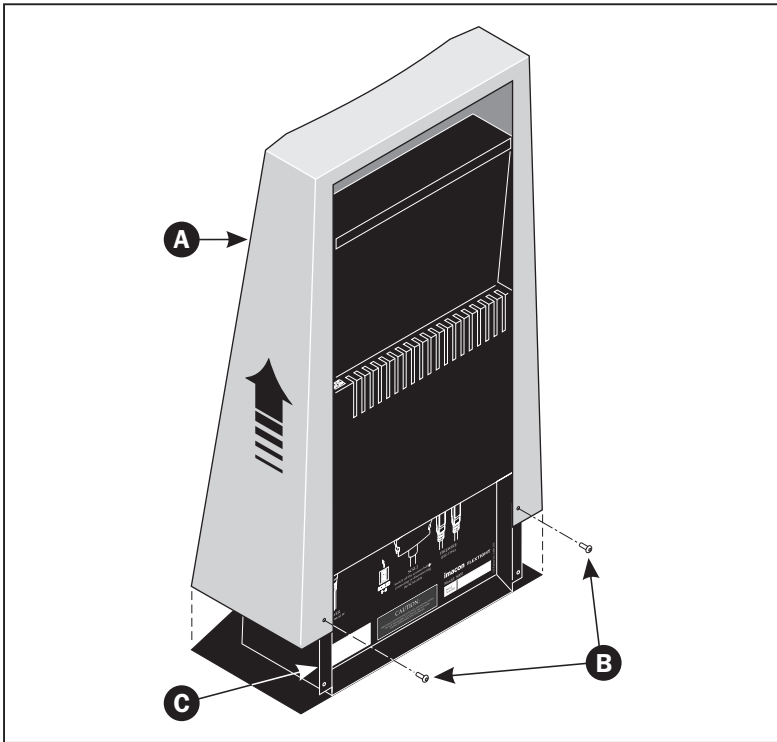## Mounting/Dismounting of the Cabinet

Figure 7:   Mounting/Dismounting of the Cabinet

To dismount the cabinet **(A)** remove the two screws **(B)** at the scanner back using a 2.5 mm allen key, then pull the cabinet upwards.

When mounting the cabinet, make sure that it catches the bends **(C)** in both sides, then lower it slowly while making sure that it goes free of all cables and extrusions and finally tighten the screws (**B**).
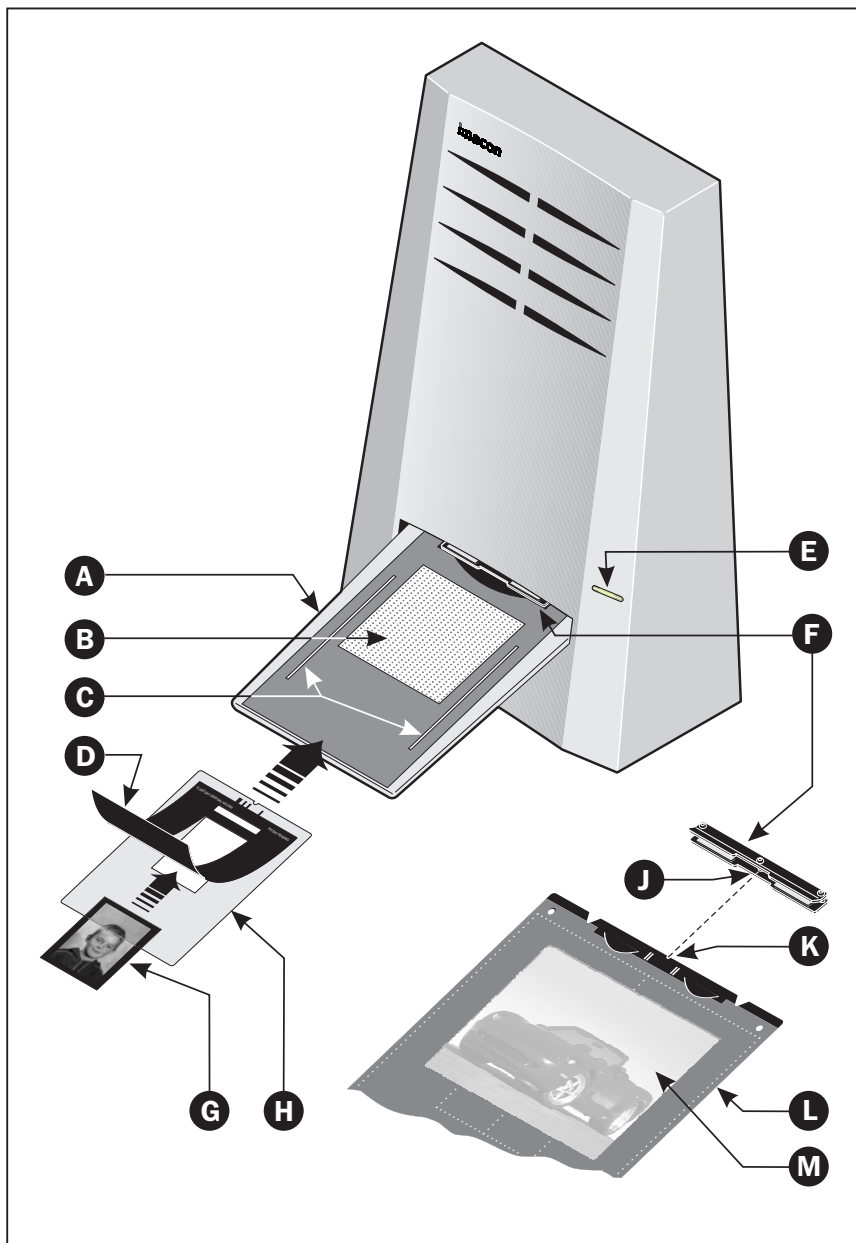
English

Figure 8: Operating the Flextight 646 scanner

Operating the Scanner

(See Figure 8 opposite).

1. It is assumed that the scanner and **FlexColor** software have been properly installed.

2. **IMPORTANT:** If you are using a SCSI interface connection it is important that you turn on the scanner (and all other SCSI devices if any) before you turn on the computer. Otherwise the computer will not detect the unit(s).

3. Make sure that the feed table **(A)** has been attached properly onto the scanner (see "Attaching/Detaching the Feed Table" on page 14).

4. Press the power button **(E)** on the front of the scanner to switch it on. The button will start flashing green, indicating that no firmware has been downloaded yet. It will be downloaded automatically later when you first run the **FlexColor** program.

5. Turn on your computer and launch the **FlexColor** program. The power button **(E)** will stop flashing indicating that firmware has been downloaded to the scanner.

6. Select the original holder that matches your original:

    •   For transparencies, choose one of the holders **(H)** that has a square hole in it.
    •   For reflectives, select the large A4/letter-size holder **(L)** with the clear plastic layer (not included in the standard delivery).

7. Place the original holder with the slotted tab facing into the scanner. For transparency holders **(H)**, the flexible magnetic layer **(D)** must face upwards and the holder must fit between the guides **(C)** on both sides of the feed table.
    For the reflective holder **(L)**, the clear plastic sheet must face upwards. Make sure that the slot **(K)** in the leading edge of the holder catches the notch **(J)** in the center of the original holder clasp **(F)**.

8. Slide the holder gently into the original holder clasp **(F)** at the scanner entrance. It will slip about ½ cm (1/4 inch) into it. Do not press too hard. It slips in very easily and is held in place by a pair of magnets. To remove the holder, simply pull it gently backwards.
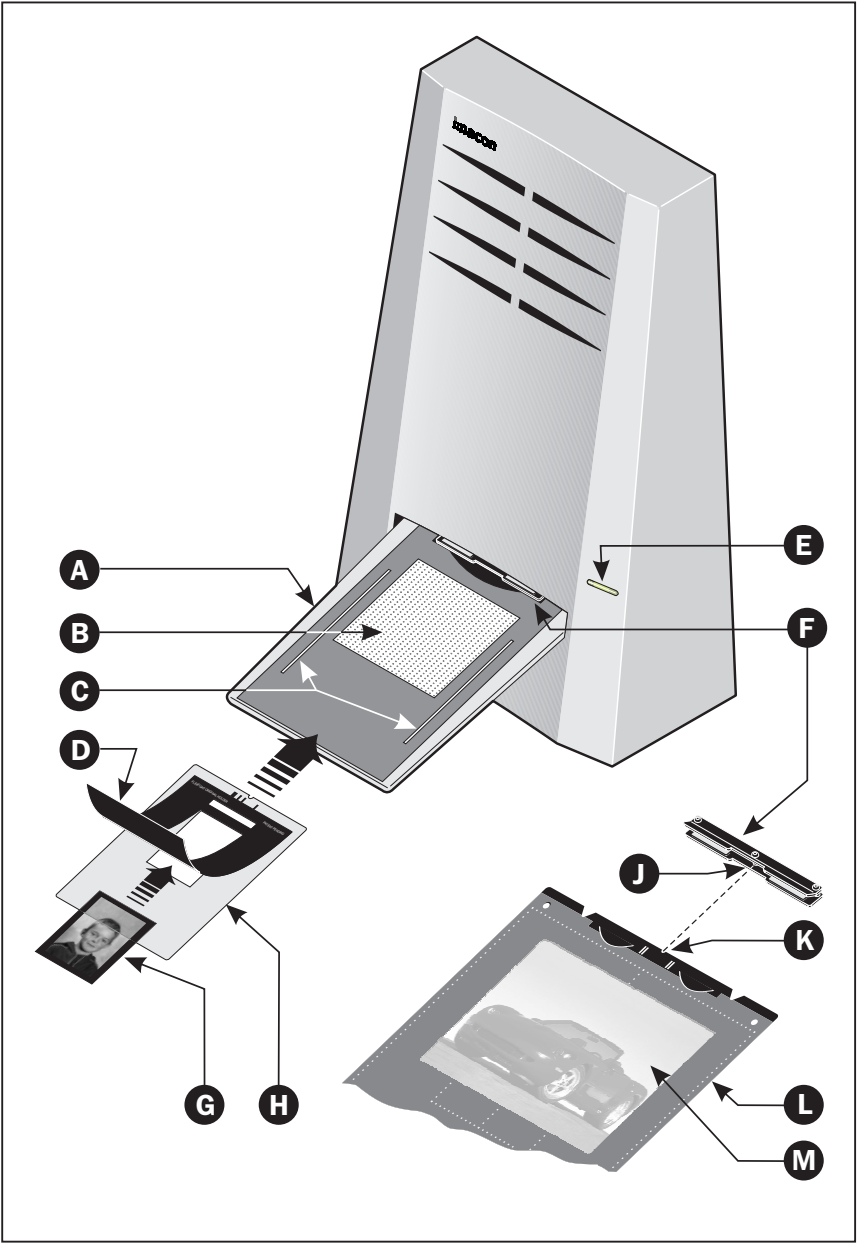
English

Figure 8: Operating the Flextight 646 scanner

9. Lift the top layer of the original holder and place your original as follows:

    • For transparencies, place your original **(G)** with the emulsion side down. The original must completely fill the hole with no edges showing and with a minimum overlap of 2mm along each edge. Also, no edges of the original must extend past the outer edges of the holder. Use the grid in the light area **(B)** of the feed table **(A)** to help line up the image.

    • For reflectives, make sure that no part of the original **(M)** extends past the edge of the holder. Use the dotted lines printed on the holder to line up the image. Handle the clear plastic layer only by the edges to avoid fingerprints. Curl the plastic layer back and slip the front edge into Flextight's foil holder.

10. Lay the top layer of the holder down flat over the original.

    • For transparency holders **(H)**, the top layer **(D)** is magnetic, which will hold the original in place.

    • For the reflective holder **(L)**, note the four metal pegs (the top two are shown as **A** and **C** in Figure 9 below); make sure that the clear plastic sheet is pressed all the way down over all four pegs. Note also the two curved tabs at the top of the holder (**B** in the figure below); the clear sheet must slip under each of these tabs, as shown.
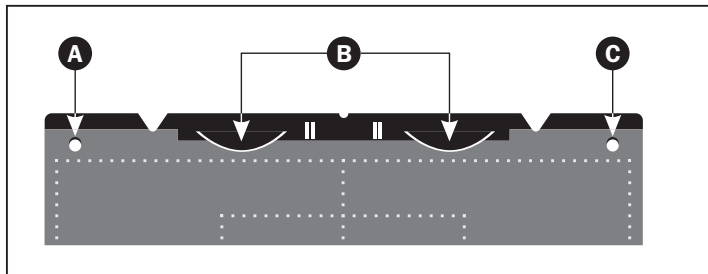

Figure 9: Reflective holder, top

11. Go to your computer and follow the directions given in the **FlexColor** software manual to take a preview, make settings, and take the final scan.

English

Resolutions

True Resolutions

The table below shows the max. resolutions (in ppi) available with each of the original holders when scanning in **True Resolutions** mode.

Original	Max. resolution (PPI) at full scanning width.
35 mm Portrait	6300
35 mm Landscape	5000
45 x 60 mm Portrait *	4000
60 x 60 - 60 x 70 mm	3200
4" x 5" Portrait	2040
13 x 18 Portrait *	1600
A4 Portrait *	960
*) Not included in the standard delivery	

Table 1:   True Resolutions

Calibrating the Scanner

The scanner requires two types of calibration:

- **Focus calibration** adjusts the positioning of the scanner's optics for each zoom level. If your scans are coming out unfocused or at slightly the wrong size, then you may need to make a new focus calibration to adjust the zoom mechanism. The focus calibration is stored in the scanner's flash PROM, so it is preserved when you move the scanner to a new computer. See "Focus Calibration" on page 21 for more information.

- **White calibration** is only required for reflective scans (it is done automatically for transparencies). During calibration, the scanner scans a white target to establish the white point along the full length of the scanner's CCD. The white calibration is stored in the scanner's flash PROM, so it is preserved when you move the scanner to a new computer. See "White Calibration for Reflectives" on page 22 for more information.

Both of the calibration procedures are simple and are initiated from the **FlexColor** program.

English

Focus Calibration

The Flextight 646 scanner uses an adjustable zoom and focus mechanism to optimize its scanning resolution for each of the original formats it can handle. If you suspect your scans are not as sharp as they should be, then you may need to calibrate your scanner. Note that you must not calibrate the scanner every day. It is intended that the scanner is calibrated not more than once every three months. In most cases, this procedure will never be necessary.

Use procedure below to make Focus Calibration:

1. Locate the "Focus sheet" that came with your scanner. It is a 8 x 9 cm (3" x 3.5") square of transparent film with a black image on it.

2. Load the sheet into the 6 x 6 original holder with the lines pointing towards the scanner (vertically). Place the sheet as straight as possible. Use the scanner's light table grid and the corners marked on the sheet to help align it.

3. Select **Focus Calibration** from the **Maintenance** menu.
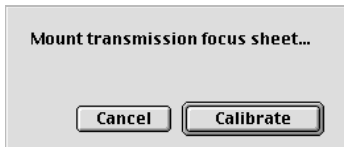
4. Click on the **Calibrate** button, and the focus calibration starts.

5. When the focus calibration is finalized, the focus calibration window closes again.

Your scanner is now calibrated for all resolutions and for both transparent and reflective originals.

English

White Calibration for Reflectives

The Flextight scanner uses a white reference to make sure that all elements in the scanner's CCD react consistently to light brightnesses. The scanner has been calibrated from the factory, and the calibration data is stored in the scanner's flash PROM.
As the scanner ages, the properties of the light tubes may change slightly. Therefore, you must redo the white calibration every six months or so and immediately after changing the light tubes.

Use procedure below to make White Calibration:

1. Find the white calibration sheet that came with your scanner. It is a square white piece of paper (219 x 219 mm (8.6" x 8.6")).
If you have lost the white calibration sheet, then you can use a flat (non-textured), perfectly white piece of paper of the same dimensions.

2. If you have used the reflective holder before, make sure that there are no finger prints or other marks on the plastic layer. Replace the layer with a new one if necessary.
(Please note that the A4/letter-size reflective holder in not included in the standard delivery).

3. Align the top edge of the sheet with the dotted line near the top of the original holder (see Figure 10 opposite). Align each side of the target with the edges of the original holder.

4. Select **White Calibration** from the **Maintenance** window. The **External White Calibration** window appears.
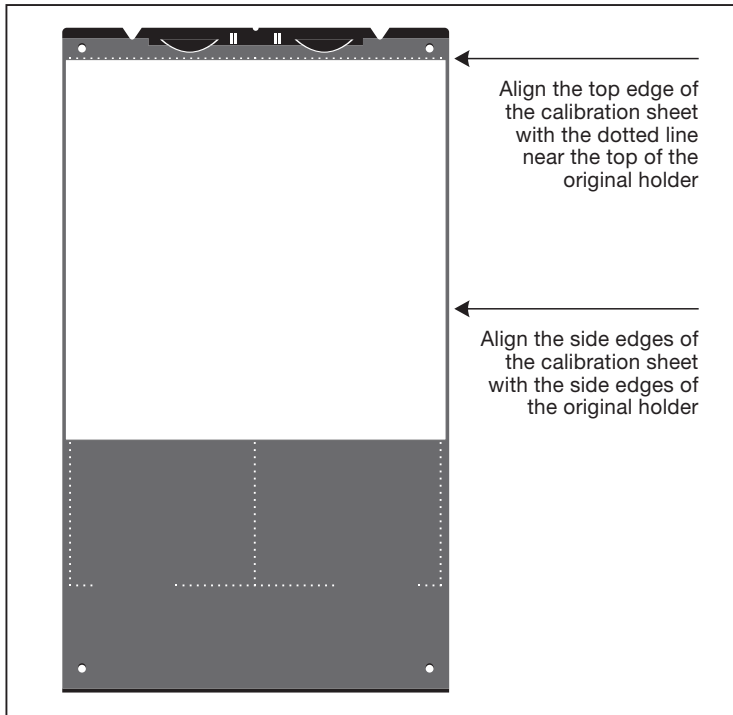
Align the top edge of
the calibration sheet
with the dotted line
near the top of the
original holder

Align the side edges of
the calibration sheet
with the side edges of
the original holder
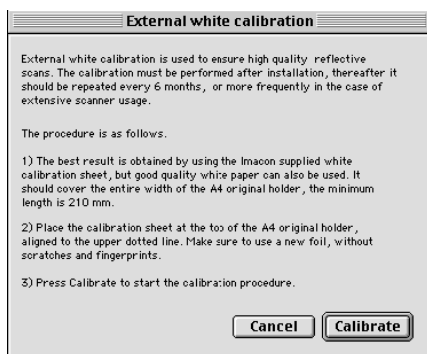
Figure 10: Positioning the white calibration sheet on the reflective holder

5.   Click on **Calibrate**. The scanner will take several scans of the white
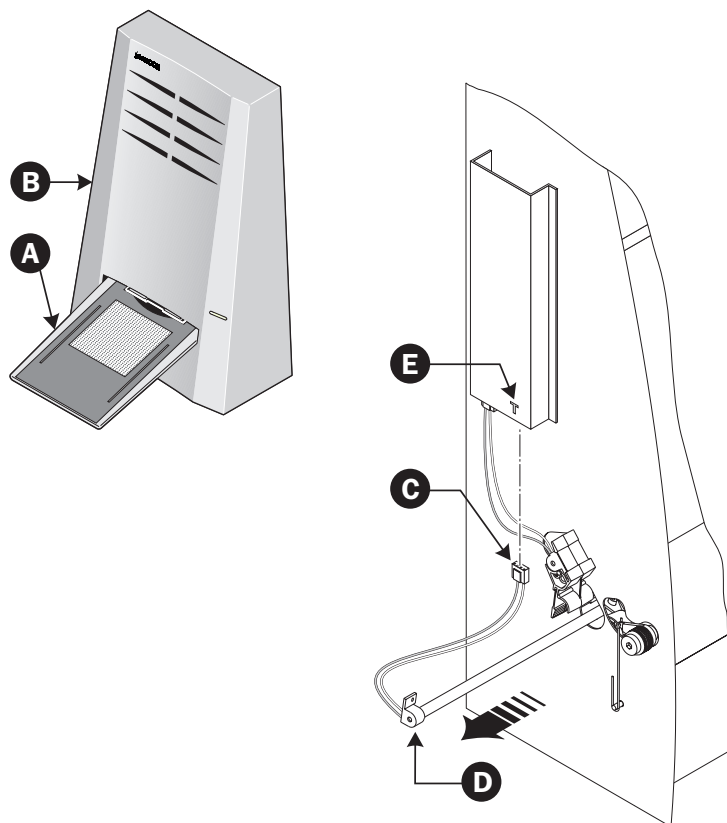   target. The process will take about eight minutes.

English

Figure 11: Replacing the Light Tubes

Replacing the Light Tubes

English

General

The Flextight 646 contains two light tubes: one for illuminating reflective originals from above, the other for shining light through transparencies from below.

Replacing the Light Tubes

If your scans are suddenly coming out black (or all white if you are scanning negatives), then one of your light tubes may be defective. Make a preview using both types of scans (transparent and reflective) to find out which tube is affected.

• If transparencies are not working, then the bottom tube may be burned out.

• If reflectives are not working, then the top tube may be burned out.

Follow procedure below to replace a tube:

(See Figure 11 opposite).

1.   Get the appropriate replacement lamp (ask your Flextight dealer).

2.   Turn off and unplug the scanner from the primary power supply.

3.   **IMPORTANT:** Let the light tubes cool down for app. 10 minutes before proceeding.

4.   Detach the feed table **(A)** as described on page 14.

5.   Remove the cabinet **(B)** as described on page 15.

6.   At the left side of the scanner locate the tube to be replaced and dismount the plug **(C)**.

7.   Remove the defective tube **(D)**:

   • Press the flaps backwards to release the tube.

   • Pull the tube gently out of the holders and then sideways out of the scanner.

8.   Insert the replacement tube and mount it into the holders making sure that it is properly held in place by the flaps.
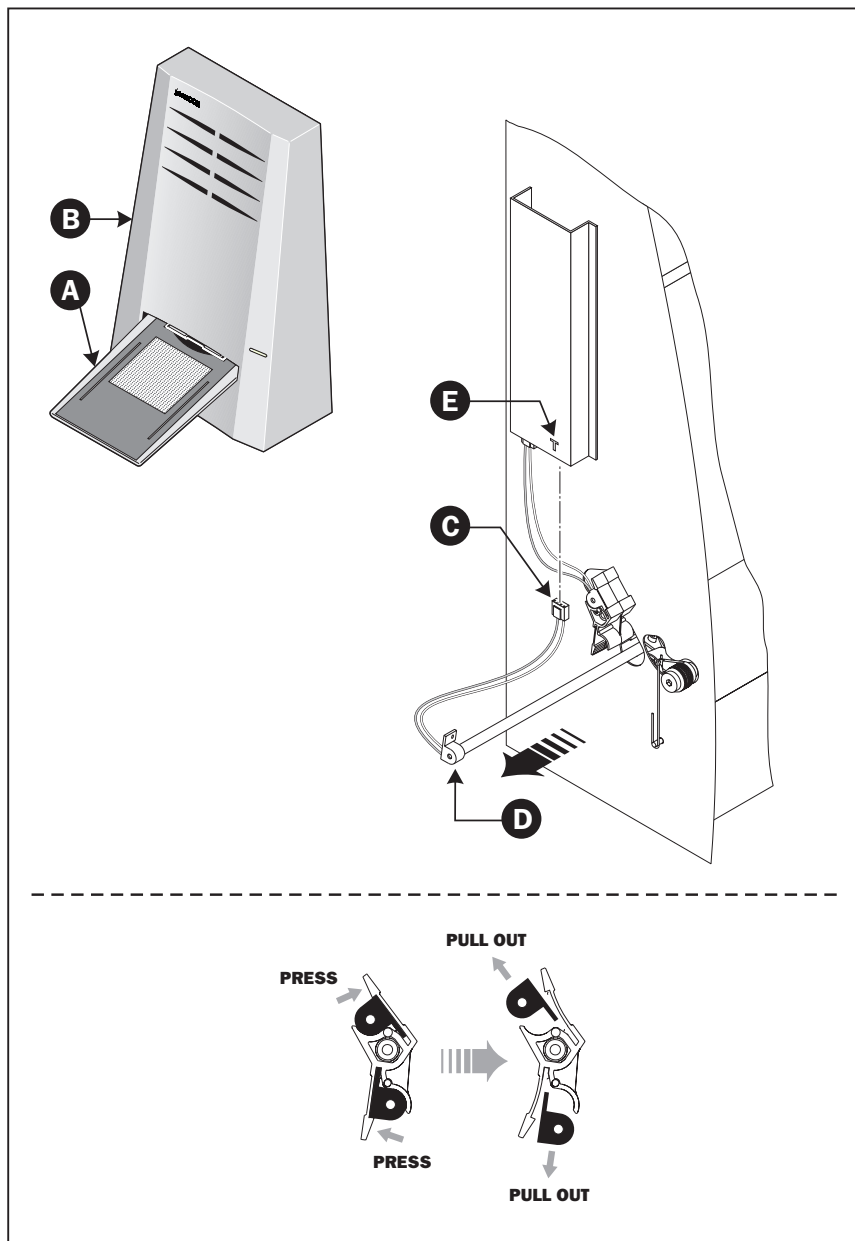
English

Figure 11: Replacing the Light Tubes

9. Connect the plug **(C)**.

10. **IMPORTANT:** The "T" on the lamp board cover **(E)** indicates the socket for the transparencies tube.

11. Mount the cabinet **(B)** and the feed table **(A)** following the reverse of the procedure used when removing them.
NOTE! When mounting the cabinet **(B)** make sure that it goes free of all cables and extrusions.

12. Turn on the scanner and check function of the new tube.

Cleaning the External Surface of the Scanner

If the external surface of the scanner becomes dirty, then clean it with a damp cloth. Be careful not to get any moisture inside the scanner or on any of the connectors. Do not use alcohol or other solvents.

Disposal

If you need to dispose of the scanner, it must be delivered to an authorized waste plant for electronics equipment.

English

Technical Specifications

Power Connector:
24 VDC === 60W

$\ominus$ —(•)— $\oplus$

Power Consumption
Max. 60 W during operation

Power Requirements
100-240V AC, 1.3A, 50-60Hz

Interface to Computer
FireWire (IEEE 1394)
SCSI-2 (ANSI X3.131)

Front Panel
One multifunction switch (on/off switch)
with integrated status light

Drum Force
1kg (2.2lbs)

Operating Environment
Operating Temperature: 10 - 35°C (50 - 95°F)
Recommended Working Temperature: 10 - 25°C (50 - 77°F)
Humidity: 20 - 80% RH (no condensation)

Storage Environment
Temperature: 0 - 50°C (32 - 122°F)
Relative humidity: 20 - 80% RH (no condensation)

Originals
Transparencies: from 35mm to 4x5 inches, <1mm thick
Reflectives: up to 220 x 310mm (A4 oversize), <1mm thick

Lamp type
Color optimized fluorescent lamp

Dimensions
Height:	650 mm (25.6")	
Width:	390 mm (15.4")	
Depth:	230 mm (9.1")	(excl. feed table)
	425 mm (16.7")	(incl. feed table)

Weight
17 kg (38 lbs)

English

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

English

CE - Declaration of Conformity