Technical Service Guide
for T1120 SD-MFP

FSM/TSG/xxx (1.1)

Revision table

1.0 -> Original Issue of Document	January 28 2009	CDM
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Scanners covered by this Service Guide.:

MA52M - T1120 SD-MFP

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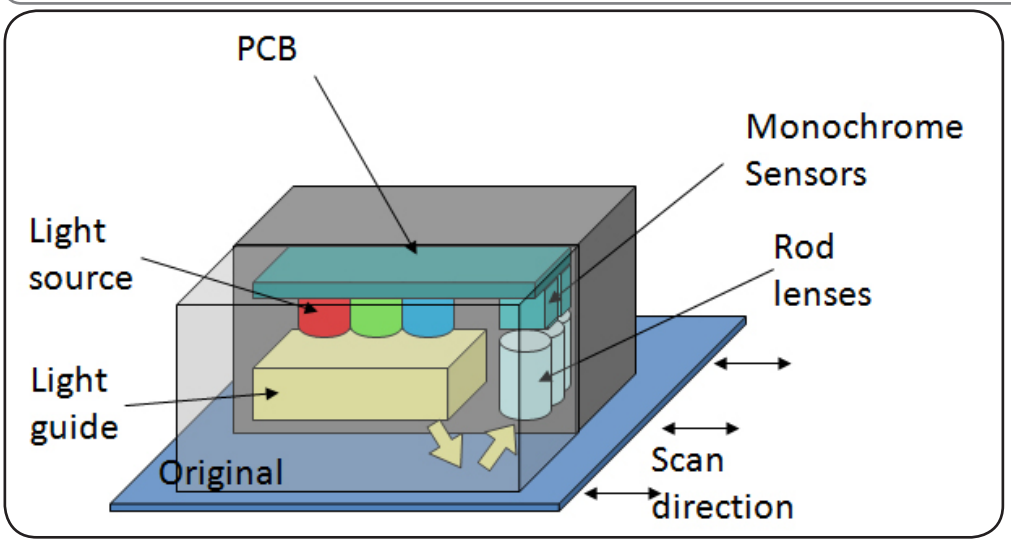
CIS Element

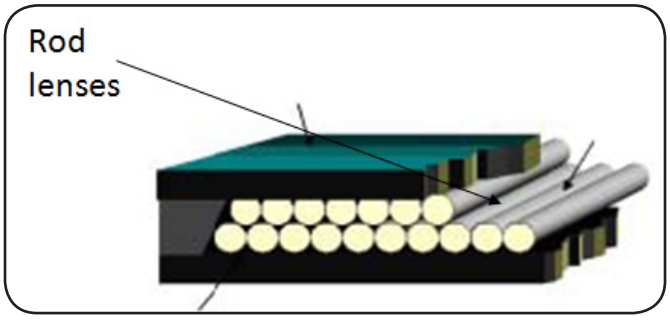
CIS Element buildup
Focus
Light

CIS Element, **C**ontact **I**mage **S**ensor

CIS Element buildup

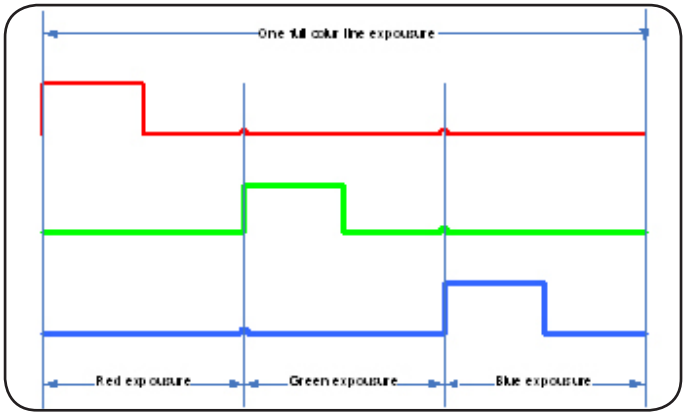


The CIS Element consist of 3 major part Sensor, Lens and Light source
The Light source is 3 LEDs in RGB that are lit one at the time.
The sensor consists of 10368 individual Monochrome sensors (CCD chip)
The Lens is a collection of many lenses, each lens covers about 20 pixels.



The purpose of the lens is to channel the light from the “pixels” on the image to the sensors! There is no magnification in the lens (1x1).

Due to the very short focal length, the focus depth is also very little! The original has to be in contact with the surface of the glass plate in order to be in focus.



The LEDs flash one at the time, once for each scan line

The light source is designed to last the lifetime of the scanner.

Design

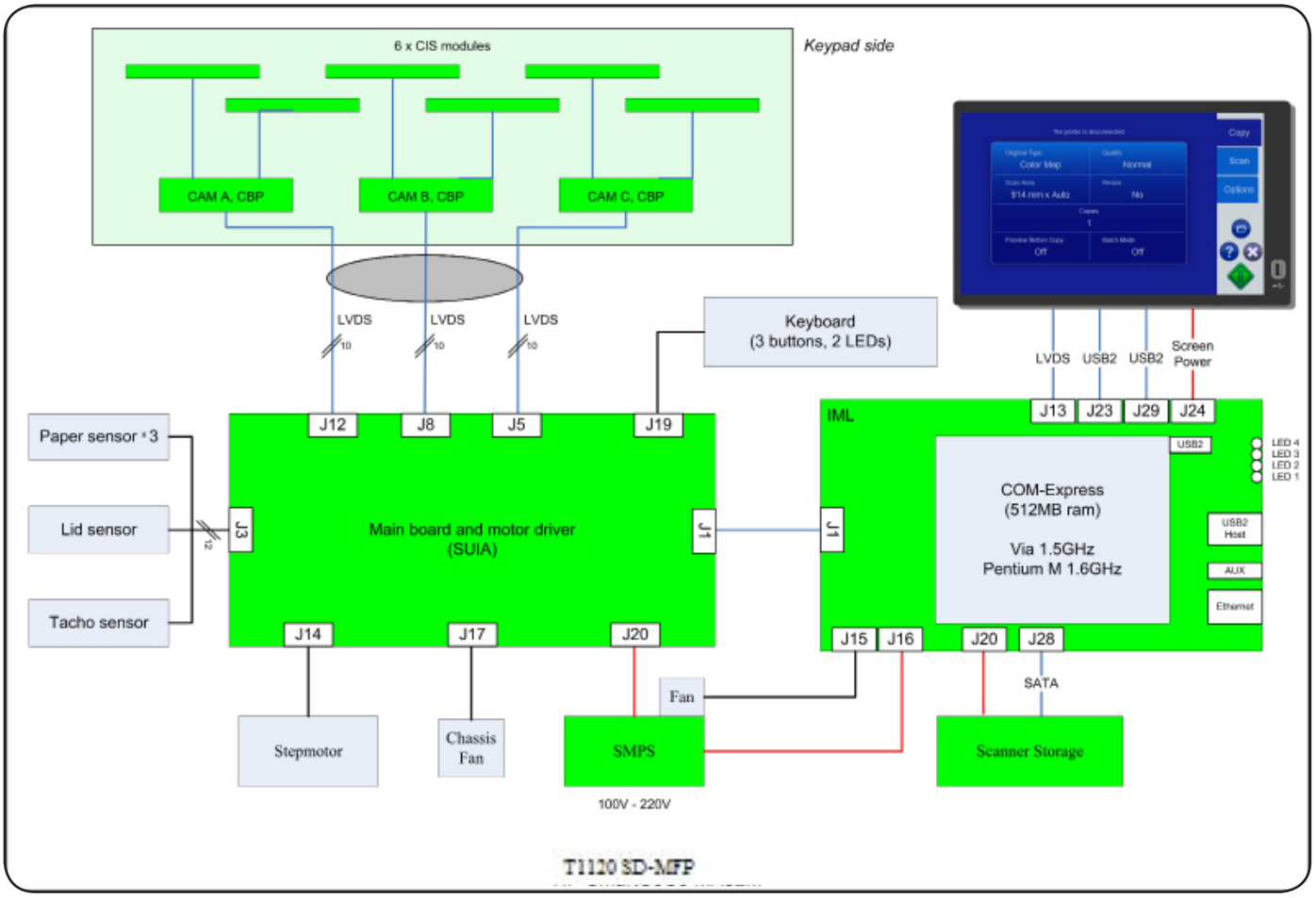
Electronics

- Block Diagram
- Wire Diagram
- Circuit board layout's
- CIS Construction
- Optical sensors

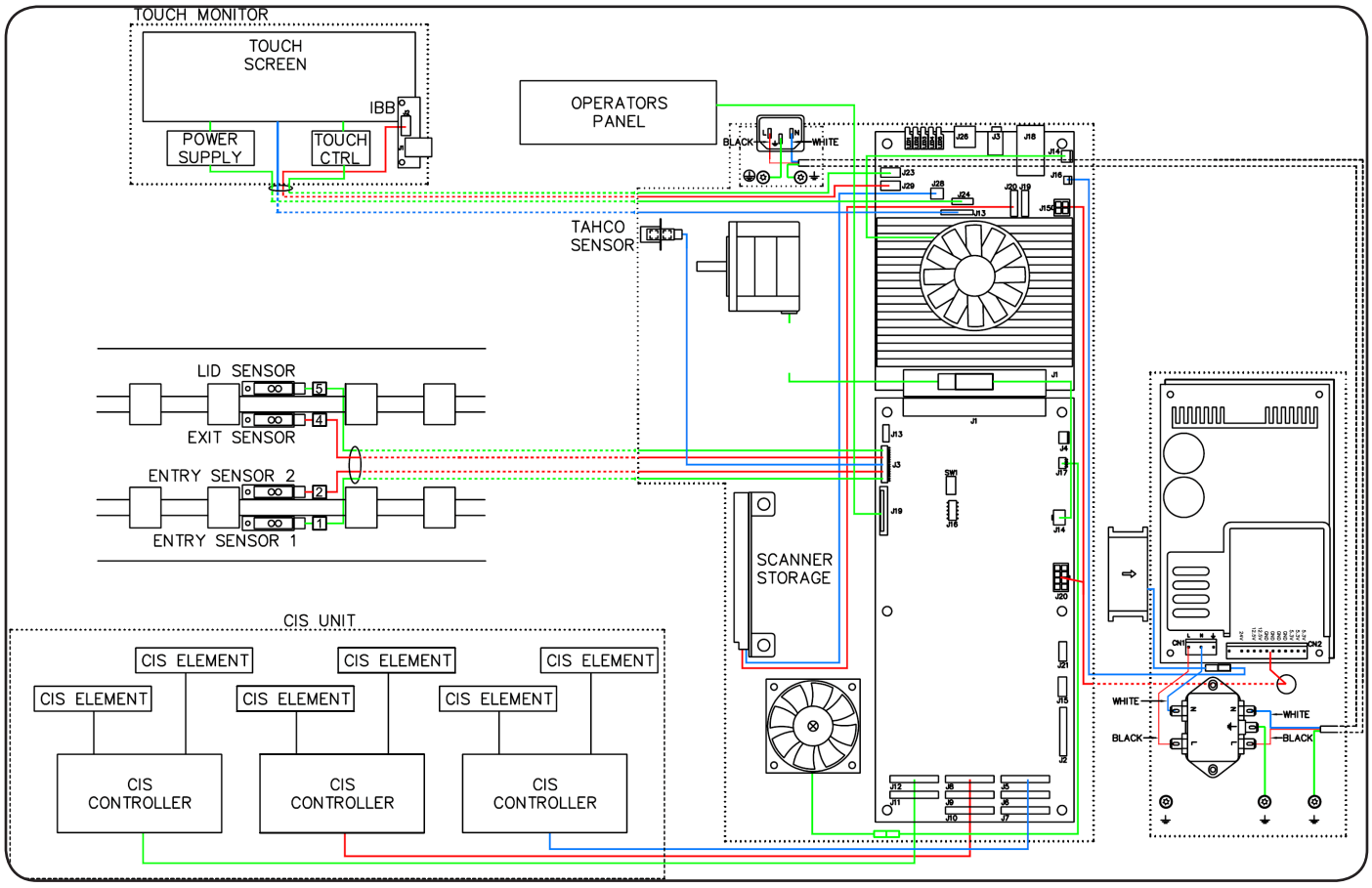
Mechanics

- Cross Section View
- Belt Tension

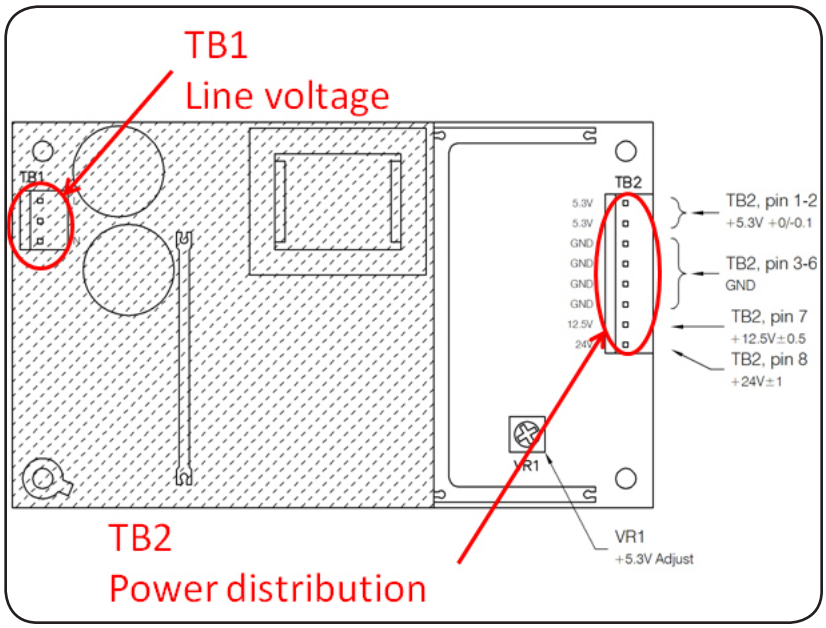
Block Diagram, Electronic



Wiring Diagram, Electronic

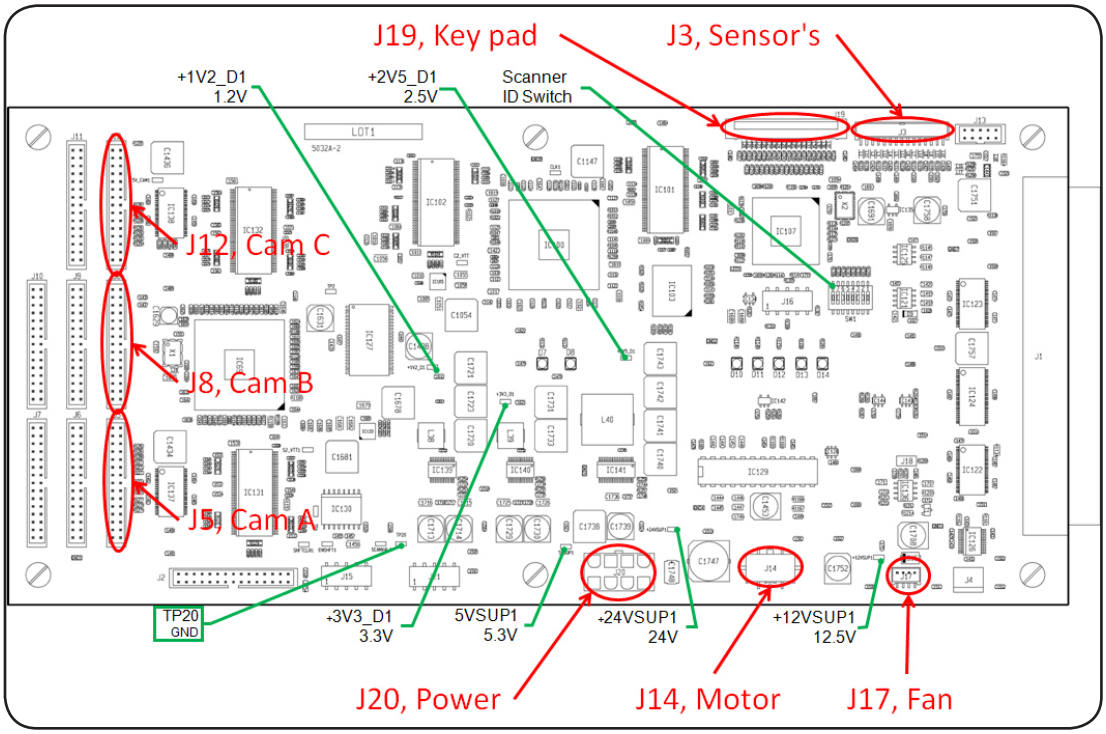


Power Supply layout and measuring points (SMPS)



Voltage on TB2 can either be measured while connected or disconnected to determine if it is the Power Supply or another board that is causing the problem.

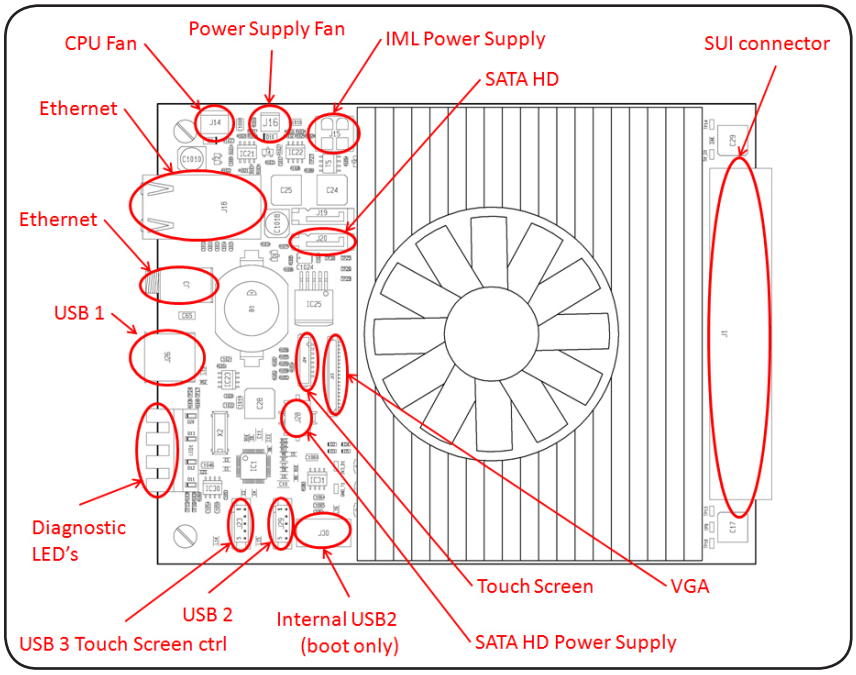
Scanner Control Unit layout and measuring points (SUIA)



SUI Switch Settings									
Scanner Model	**SW1**	**SW2**	**SW3**	**SW4**	**SW5**	**SW6**	**SW7**	**SW8**	**HEX**
MA52M	OFF	**ON**	OFF	**ON**	OFF	OFF	**ON**	ON	0x53

SUI Board Markings		
	From Factory	**When Replaced**
MA52M	SUIxdd	SUIA***dd***
Where *dd* = Board Revision no.		

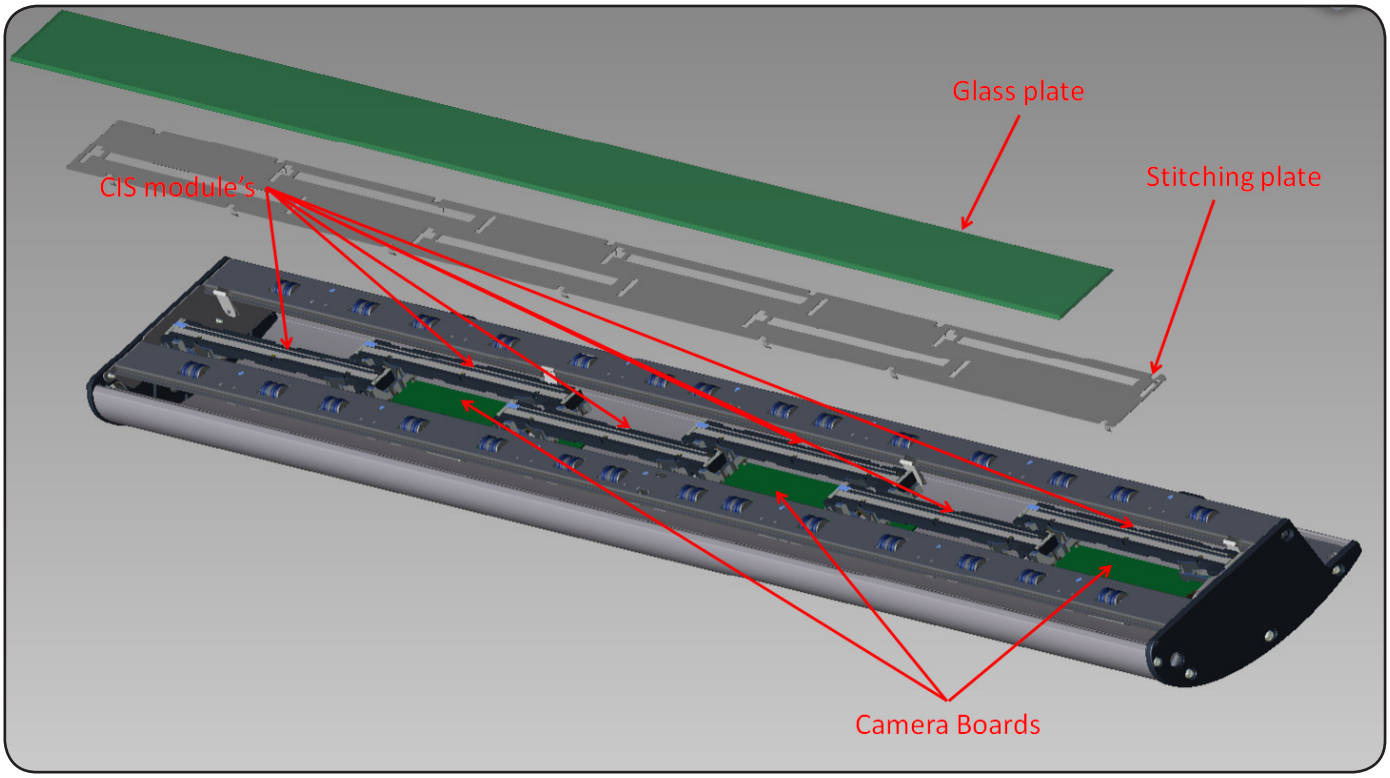
Interface Board layout and measuring points (IML)



IMM Board Markings	
MA52M	IMMA*dd*
Where *dd* = Board Revision no.	

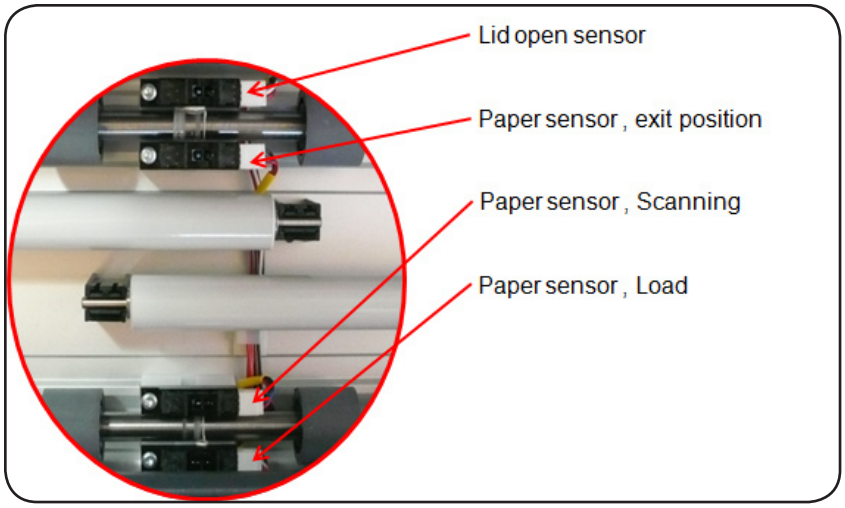
TP38	5.3V +0/-0.2V	Supplied directly from the SMPS
TP39	3.3V ±0.1V	Derived from 5.3V
TP40	GND	

CIS Construction, Electronic



CIS Unit.
Everything in the CIS Unit is factory mounted and there is no adjustment on the optical system, even if a CIS element is being replaced.
Glass Plate that can be replaced by the user.
If the more than one CIS element fail it is like it a camera board that have failed and the hold CIS Unit should be replaced

Paper sensors, Optical



Optical sensors

The scanner is equipped with 3 paper sensors and one for detection if the CIS unit is closed.

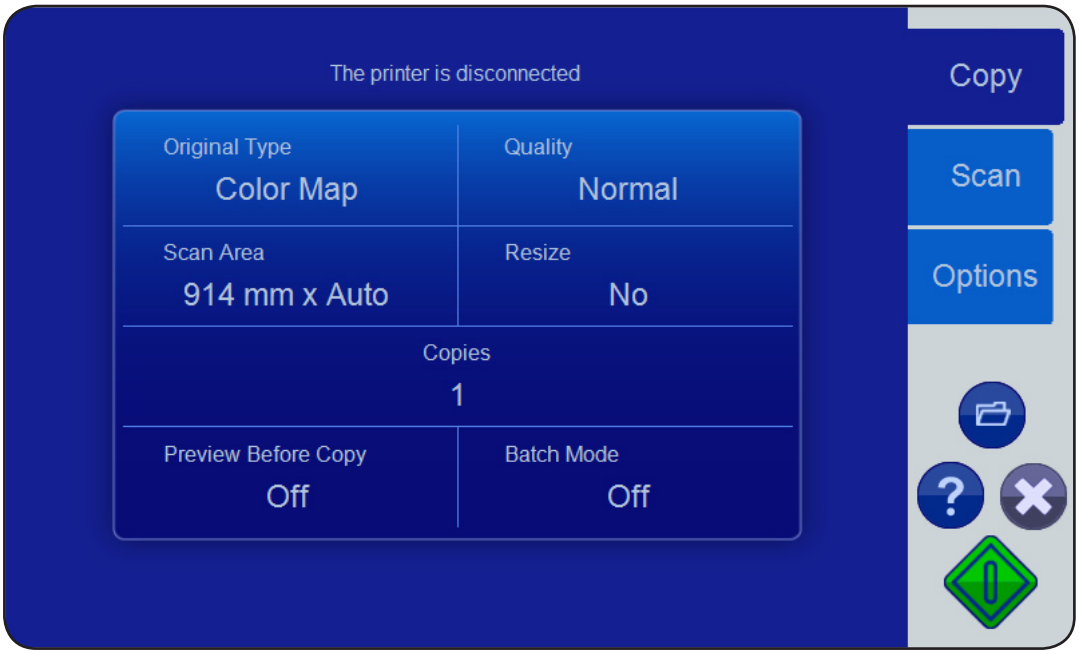
Touchimage

Menu overview

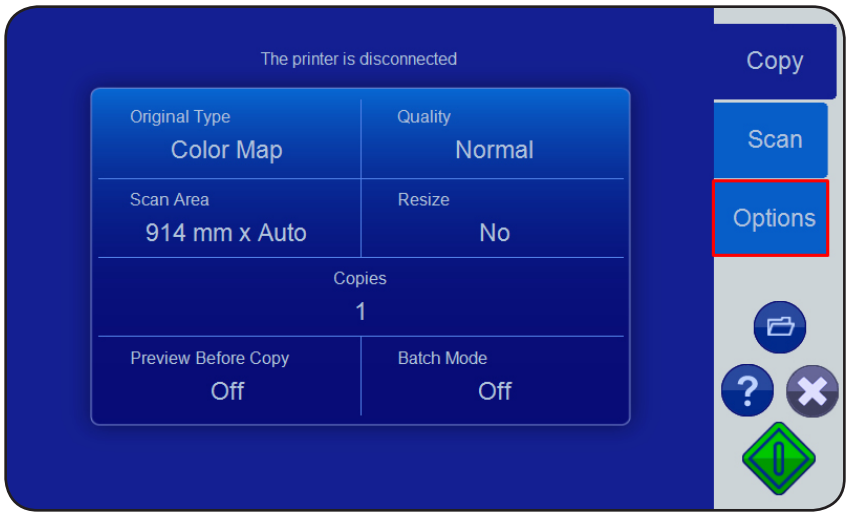
- Options
- Calibrating Touch Screen
- Service Menu
- Test program
- Exporting log files
- Updating Scanner Firmware

Service Mode

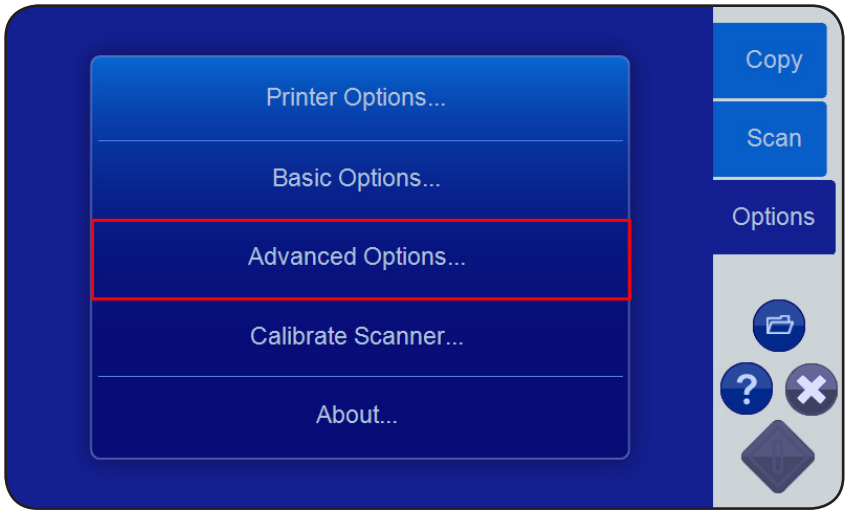
- Getting Access
- System Update



Menu Overview

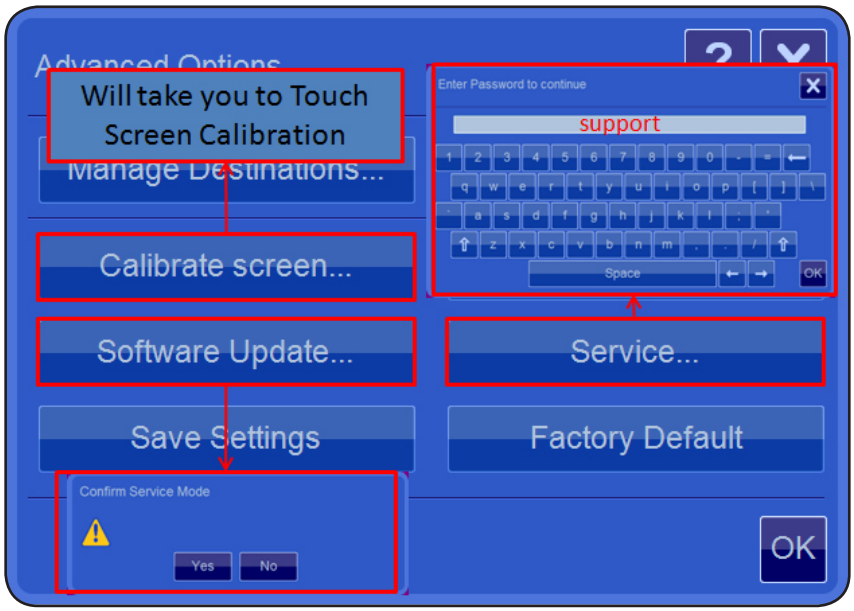


Touchimage has 3 different Tab's Copy, Scan and Options.
Under options you will get access to different setting and service tools



The options tab, gives you access to some basic features, intended for the User.
Under Advance Options you will get access to less used features and also the service tools .

Advanced Options



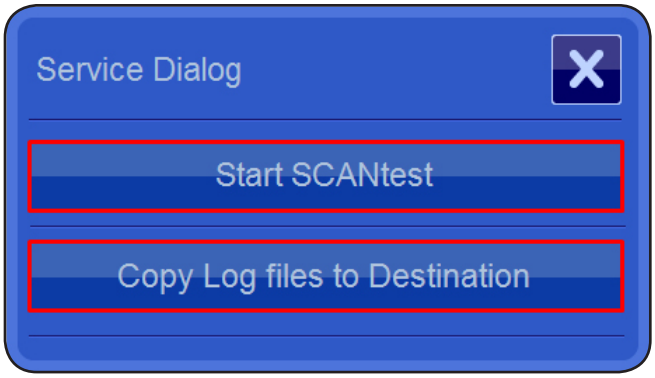
Calibrate Screen will launch the Touch screen calibration application, just follow the instruction!

Software Update will take you to a Safe mod where the Uploaded system software can be activated.

See Appendix B for more information

Service, is an restricted menu ONLY for Service technician and is therefore password protected

Service Dialog



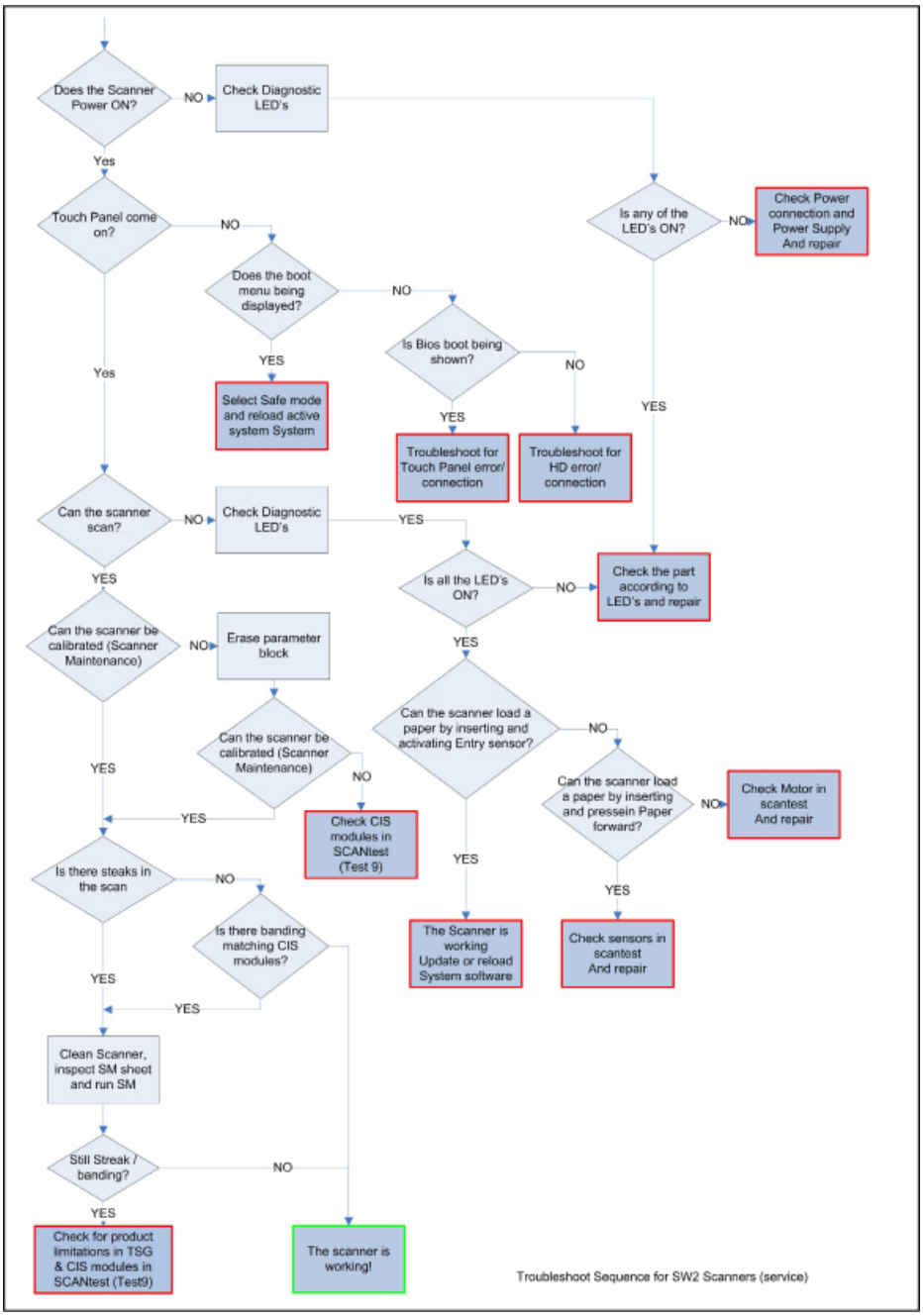
SCANtest is an Service tech. ONLY application and the end user should NEVER have access.

For more information about SCANtest see Appendix A

Copy Log files to destination will copy all log files to default scan destination (USB or lan) Can be change under “Manage Destinations”

Troubleshooting

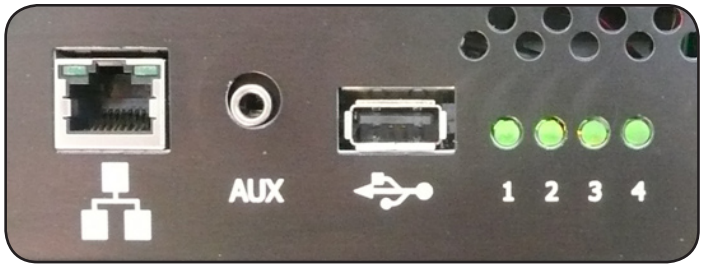
Troubleshooting Sequence



This is a suggested Troubleshooting Sequence and will work in most cases. There are always some gray zones, especially if the problem is related to image quality.

See Appendix C for Error Codes

Diagnostic LED's



Back of Scanner

If all the LEDs are lit the Scanner should be working, all though there are some errors that can't be detected by the electronic. The LED's should be taken as a guide or starting point for the troubleshooting process.

LED no.	**Description**	LED on. (Green)
1	Power supply unit	OK
2	Scanner Control Unit	OK
3	Interface board	OK
4	CIS Unit	OK

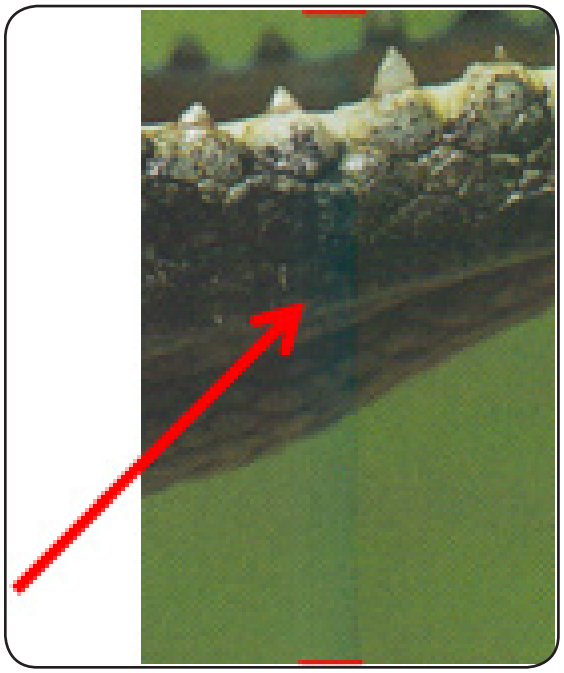
Light Source

Since each CIS Element hold's it own light source and it is divided into 3 LED's (red, green, blue).
A failing LED will result in a missing color in the scan!
The light source can be checked by opening the CIS unit when the scanner is powered on, the LED's will flash (red, green, blue) for all 6 CIS elements.

Dust problems

There are image quality problems that are not related to HW errors, but are instead related to either insufficient cleaning, bad calibration or limitations of the CIS technology.

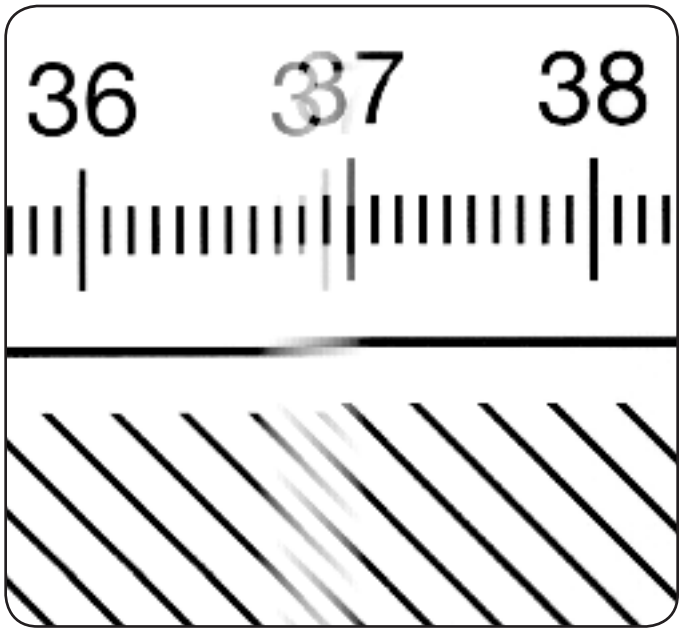
Strikes that run in scan direction, witch that come and goes during the scan is like to be dust. Clean scanner and original. The strikes are often a darker shade of the color.



Strikes that run in scan direction, that are color dependent, or a lighter shade of the color, are often related to the calibration. Dust that was present in the scanner during calibration, but has been cleaned away since.

Stitching problems

Other issues can be that the scanner simply needs to be calibrated, either because the the scanner never been calibrated or that the scanner has been moved around.



Stitching between 2 CIS modules.

Banding problems

Bad/no gray balance calibration (CIS module to module match)

Image quality problems

Scanning originals that have folds or is curled on a CIS scanner is often taken as a defect on the scanner, where it is actually a limitation of the used technology. Due to the very short distance from sensor to surface of the original, also called “Focal Length” we also have a very short “Focus Depth” meaning, if the original is NOT in contact with the glass plate it is very likely to be out of focus!

Part Replacement

Electronics

- CIS Element
- CIS Unit
- Scanner Controller Unit (SUIA)
- Power Supply
- Interface Module
- Scanner Storage (HD)
- Stepper Motor Assy.
- Paper /Lid Sensor
- Tacho Sensor
- Cooling Fan
- Power Entry Module
- EMI-Filter
- Touch Panel Assy.
- Top Cover with Operators Panel

Mechanics

- Pressure Rollers
- Gas Spring for CIS Unit

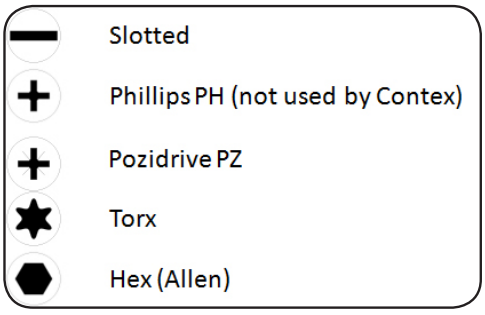
Consumable's

- Glass Plate
- Calibration Sheet

Identifying parts
Complete list of parts

Tools needed

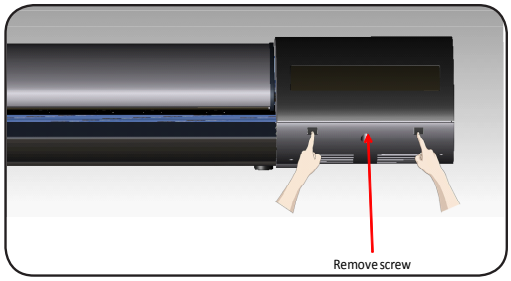
Torx	10 Straight
Torx	15 Straight & Angled
Torx	15IP Straight
Torx	20 Straight & Angled
Torx	25 Straight
Torx	30 Straight
Wrench	5.5 mm
Wrench	7.0 mm
Slotted	0.6 x 10 x 75 mm



Scanner Control Unit (SUIA)

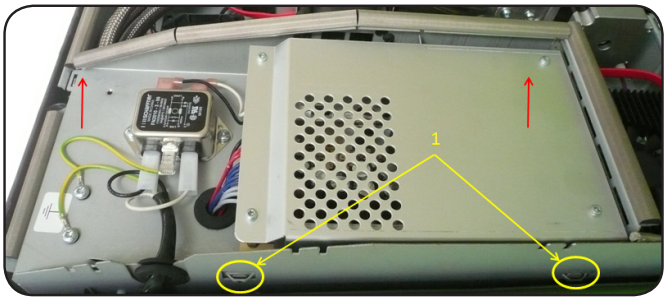
***Switch Scanner off and disconnect from power source and PC prior to any repair**

Tool use.: Torx 10 & 20



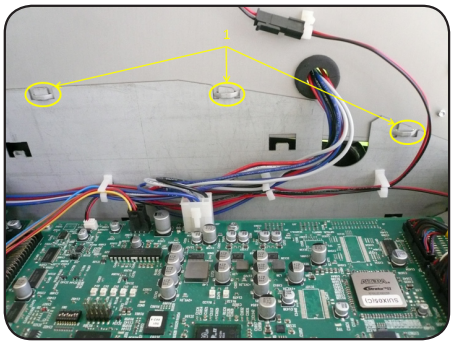
Open HW-box

Remove the screw and push the 2 lock tabs in.

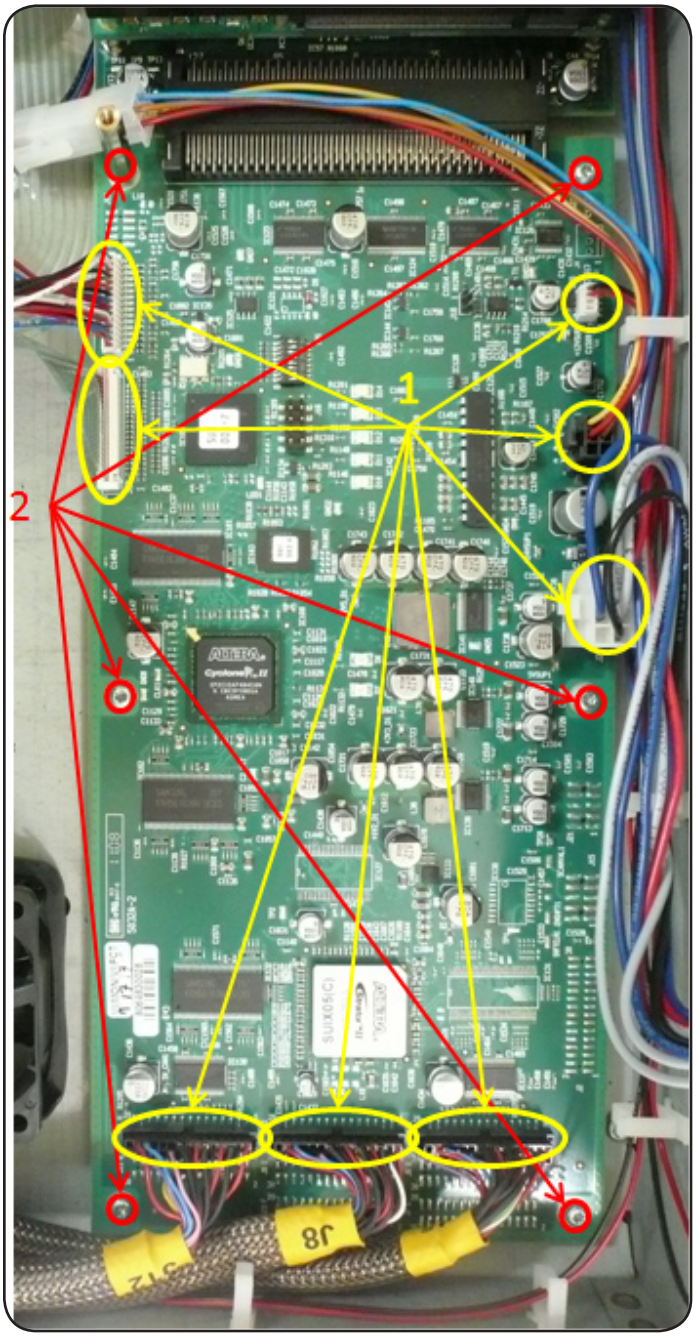


1. Lift up/out Power Supply Tray
   and free of taps

Place Power Supply Tray on side of HW box in service position



1. Secure Power Supply train on taps



1. Remove Cables
2. Remove Screws
3. Remove SUI board

Replace SUI and reverse steps

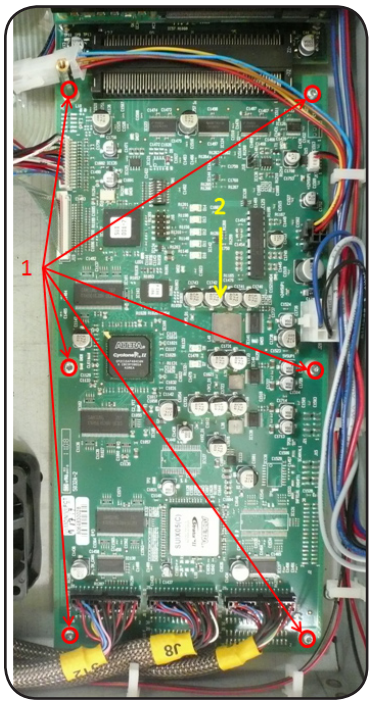
Install the new SUI board and reverse the steps.
Power on the scanner and run Scanner Maintenance

Interface board

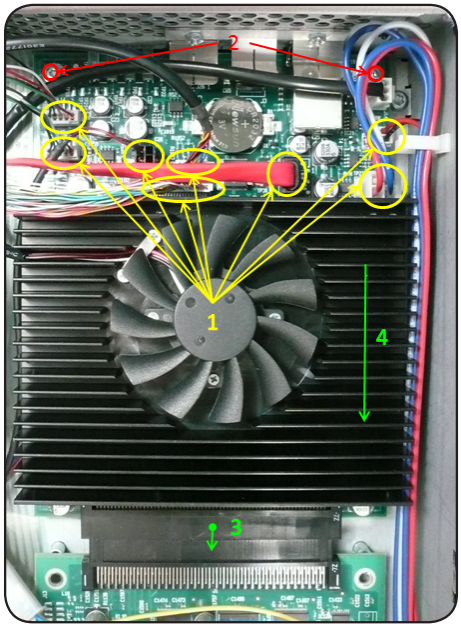
***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open Hardware box, see page 5-2

Tool use.: Torx 10



1. Remove Screws
2. Slide SUI slightly towards front so it disconnects from Interface board



1. Remove Cables
2. Remove Screws
3. Lift free of lock pins
4. Slide away from back plate

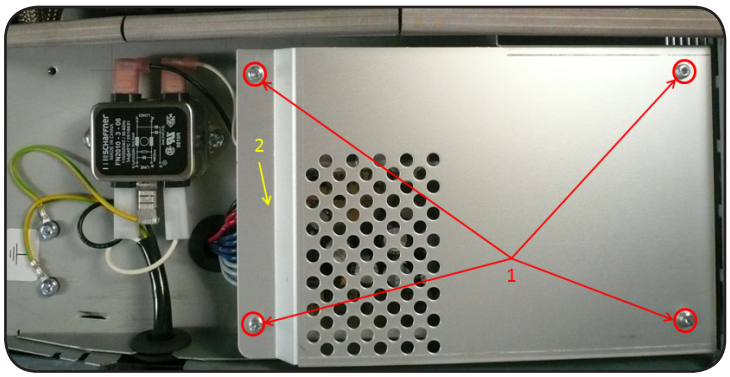
Replace Interface board and reverse steps

Power Supply

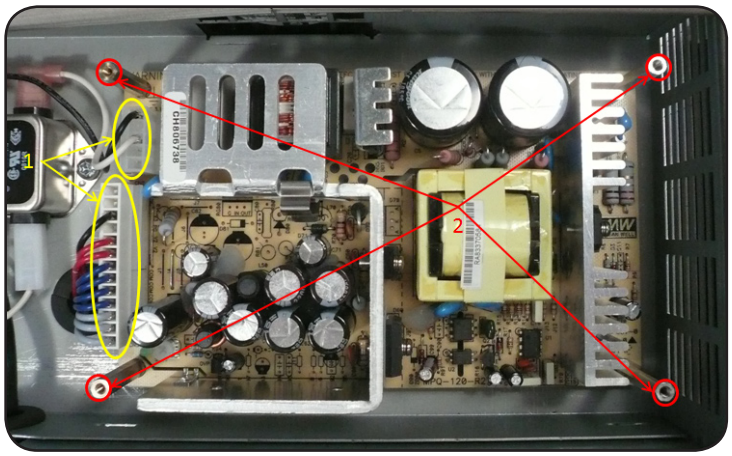
***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open Hardware box, see page 5-2

Tool use.: Torx 10



1. Remove Screws
2. Lift Cover off



1. Disconnect Cables
2. Remove screws
3. Lift out Power Supply

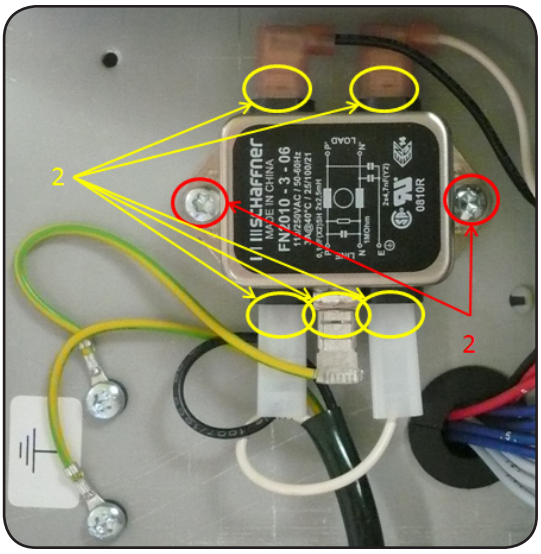
Replace the Power Supply and reverse the steps

EMI Filter

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open Hardware box, see page 5-2

Tool use.: Torx 20



1. Disconnect cables
2. Remove screws
3. Remove EMI Filter

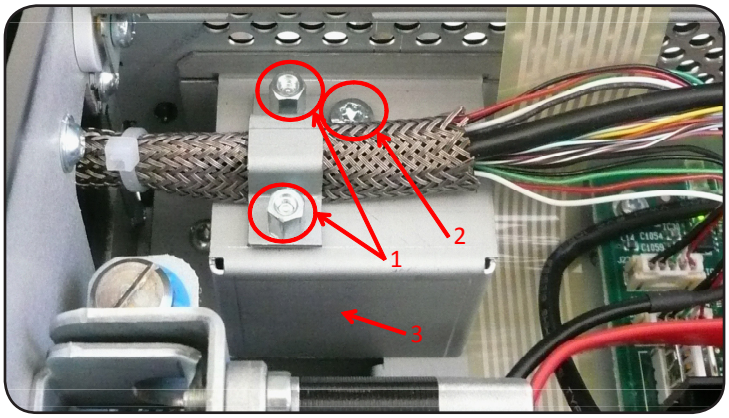
Replace the EMI filter and reverse the steps.

Power Inlet

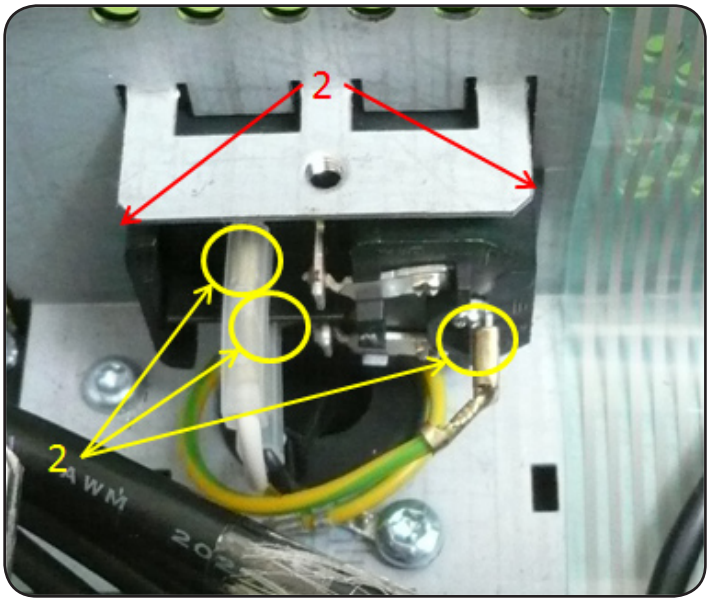
***Switch Scanner off and disconnect from plower source and PC prior to any repair**

Open Hardware box, see page 5-2

Tool use.: Wrench 5.5, Torx 20 and a slotted screwdriver



1. Remove screws and cable bracket
2. Remove screw
3. Remove cover



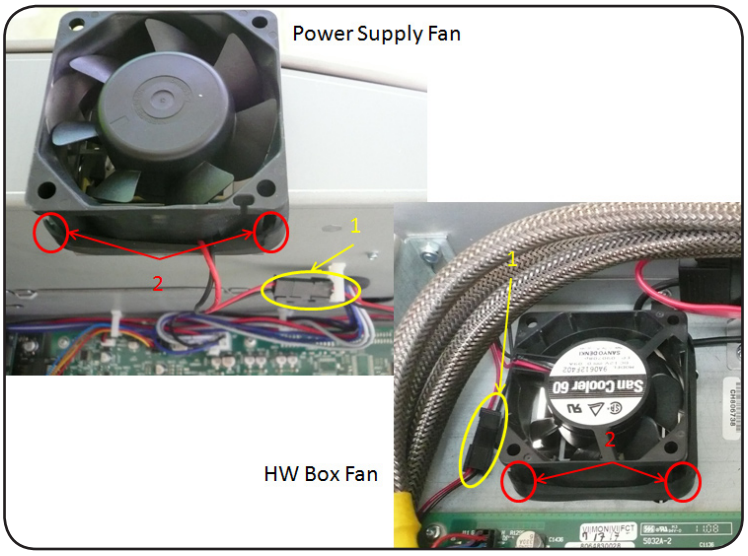
1. Remove cables
2. Release lock taps
3. Push out Power Inlet

Replace Power Inlet and reverse the steps.

Cooling Fan's

Switch Scanner off and disconnect from power source and PC prior to any repair!

Open Hardware box, see page 5-2



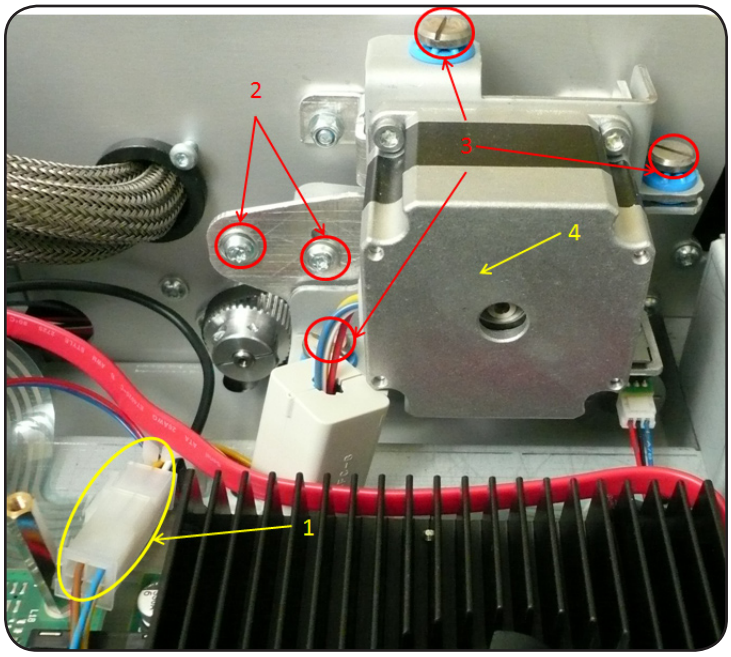
1. Disconnect Cables
2. Pull flaps for easier replacement!

Stepper Motor Assy.

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open Hardware box, see page 5-2

Tool use.: Wrench 7, Torx 20 & Slotted screwdriver

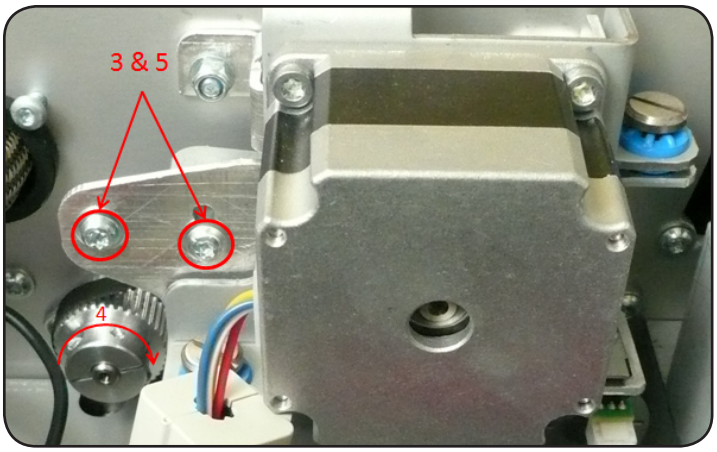


1. Disconnect Cable
2. Loosen the belt tension
3. Remove screws for Motor
4. Remove the Motor

Replace the Motor and reverse the steps

Belt tension

Tool use.: Torx 20



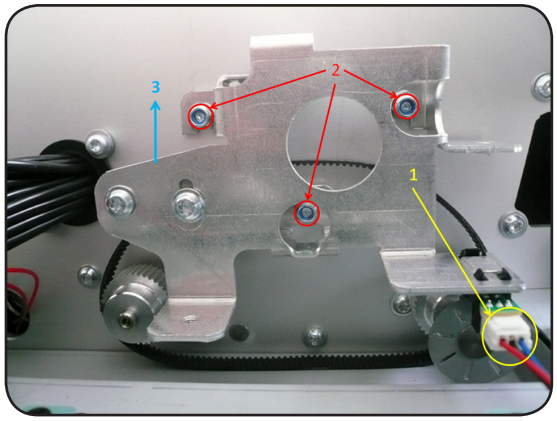
1. Open HW box
2. Flip open the CIS unit.
3. Loosen screws
4. The correct tension is automatically applied to the belt by the spring when turning belt wheels back and forth
5. Tighten screws again

Taco Sensor

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open Hardware box, see page 5-2 and remove Motor, see page 5-8

Tool use.: Wrench 7, Torx 20 & Slotted screwdriver



1. Disconnect Cable
2. Loosen screws
3. Remove bracket by sliding it upwards
4. Remove sensor from bracket
5. Remove the Motor

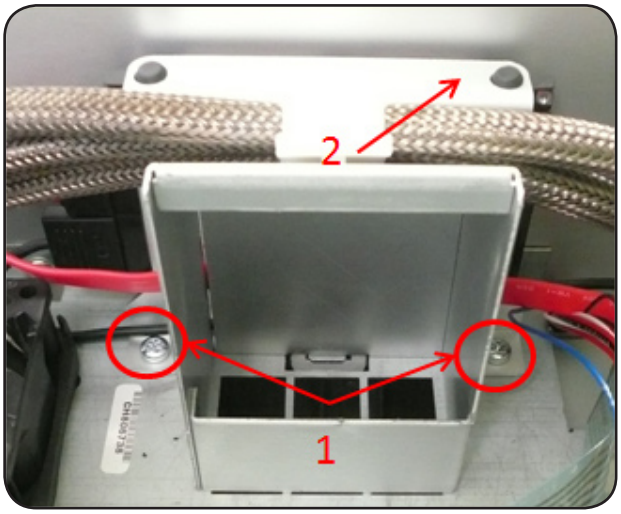
Replace the Taco Sensor and reverse the steps

Scanner Storage (HD)

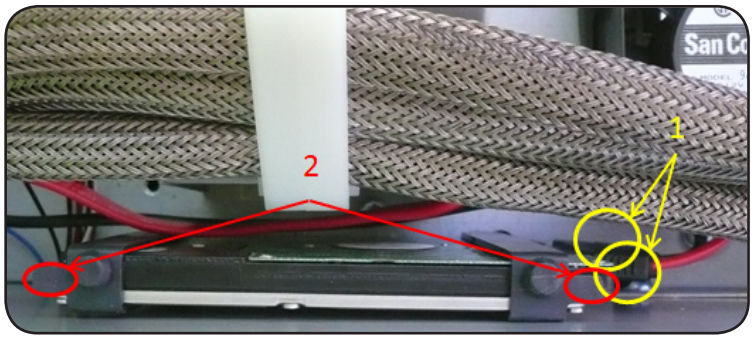
***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open Hardware box, see page 5-2

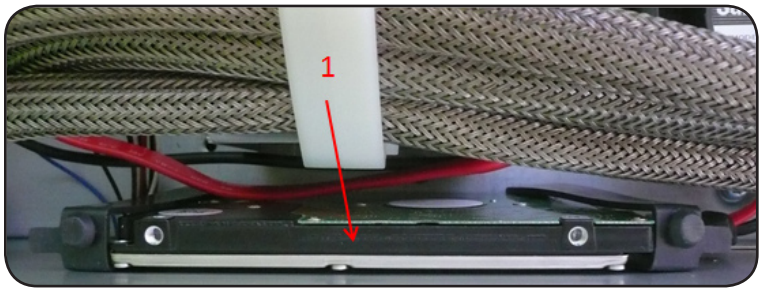
Tool use.: Torx 20



1. Remove screws
2. Lift out bracket HD bracket



1. Disconnect HD cables
2. Pull out rubber mount for HD



1. LIft out HD and replace.

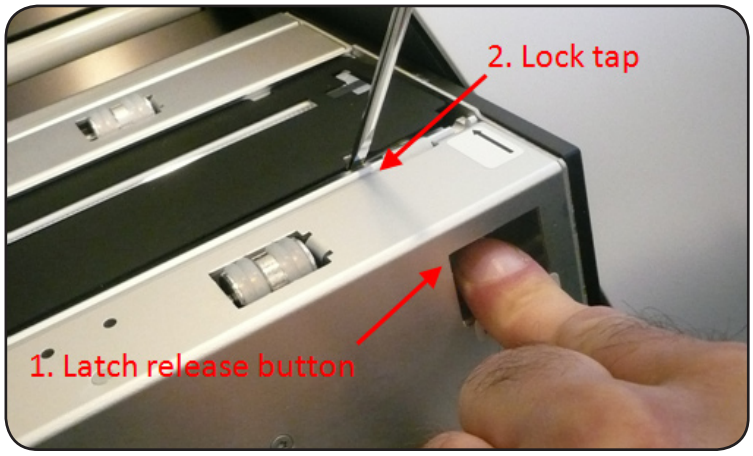
Reverse the steps
A system upgrade maybe needed. See appendix B

CIS Element

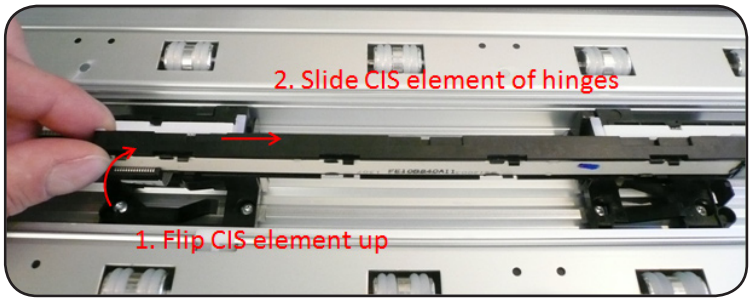
***Switch Scanner off and disconnect from power source and PC prior to any repair**

1.Tilt open CIS Unit by releasing handles
2. Remove glass plate. (see page)

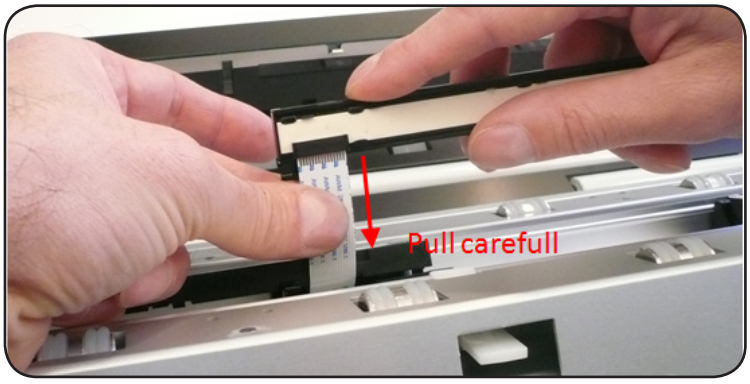
Tool use.: Slotted screwdriver



Remove black pressure plate CIS
1. Release latches by pressing down release button
2. Release lock tap
3. Repeat step 1 & 2 along the Stitching plate until it is free



Remove CIS element
1. Flip CIS element careful up
2. Slide CIS a litte so it goes free of hinges



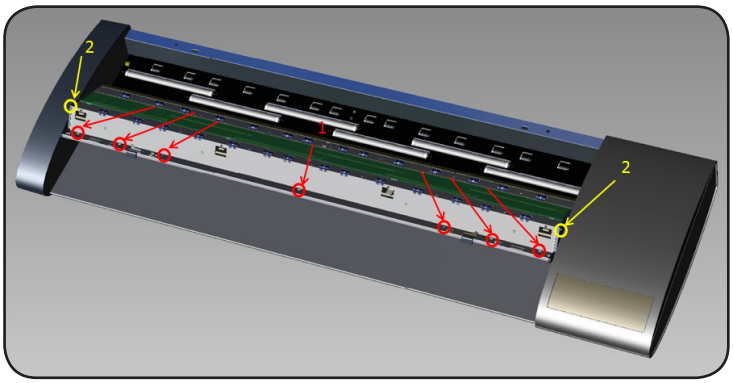
Disconnect CIS element bu pulling ribbon cable carefully straight out of connector.

Replace CIS element and reverse steeps.
Complete the repair by Running Scanner Maintenance!

CIS Unit

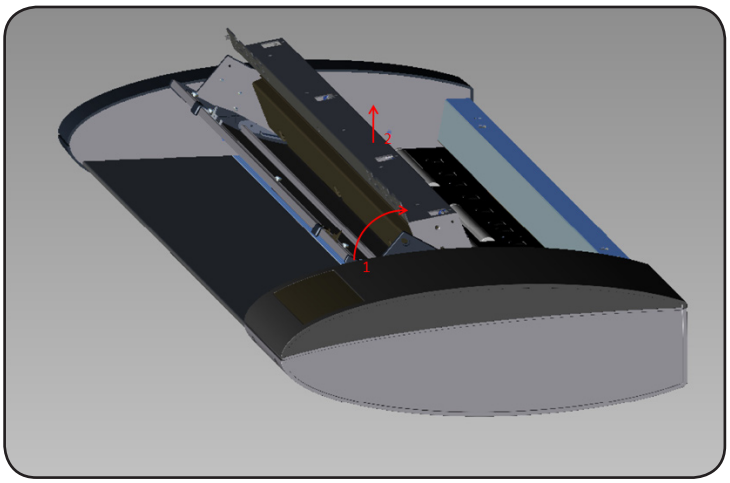
***Switch Scanner off and disconnect from power source and PC prior to any repair**

Tool use.: Torx 10, 15 & Slotted screwdriver

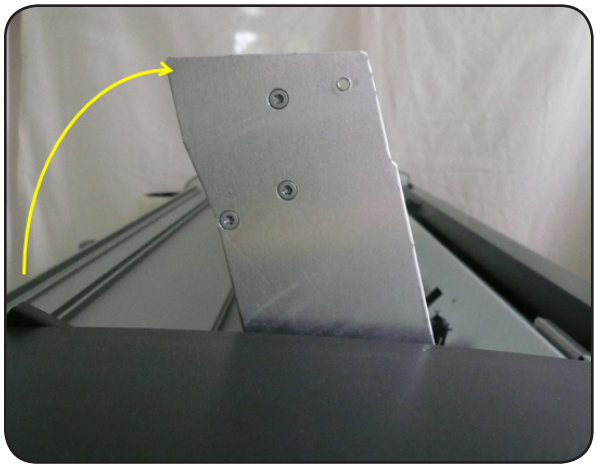


Tilt open CIS Unit by releasing handles

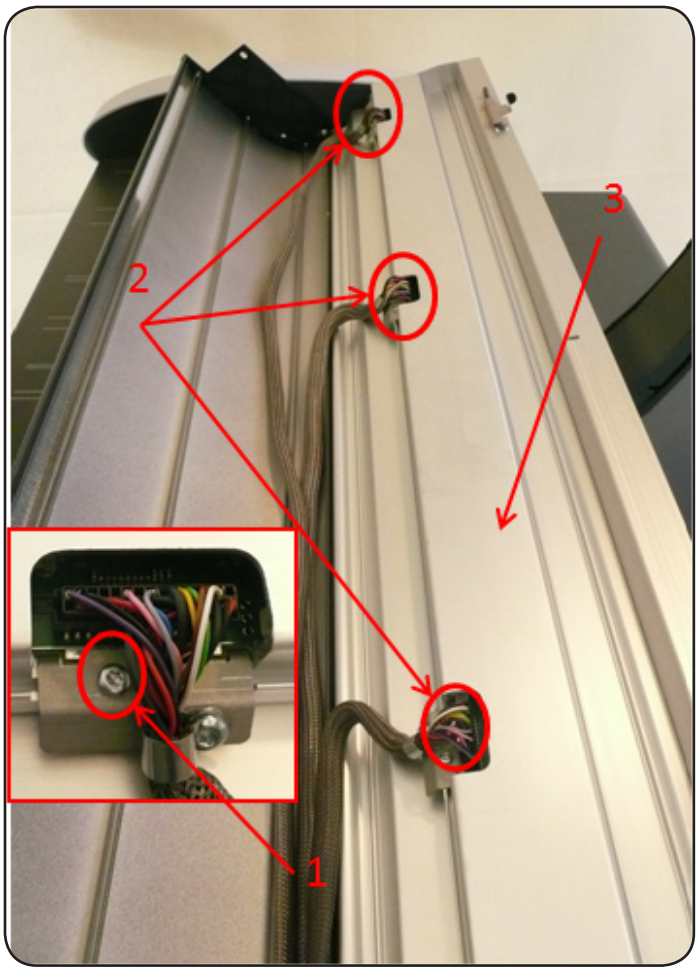
1. Remove 7 screws in the Roller Cover.
2. Remove 1 screw in each end



1. Open Roller Cover
2. Lift out CIS Unit



1. Tilt CIS unit



1. Remove screws
2. Unplug cables
3. Lift out CIS unit

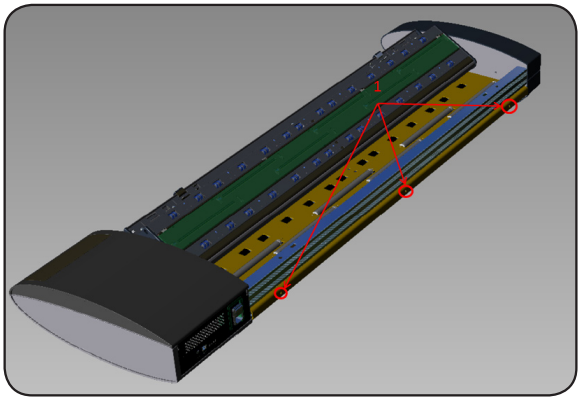
Install the new CIS and reverse the steps.

Power on the scanner
Clean the Glass plate and complete repair by running Scanner Maintenance

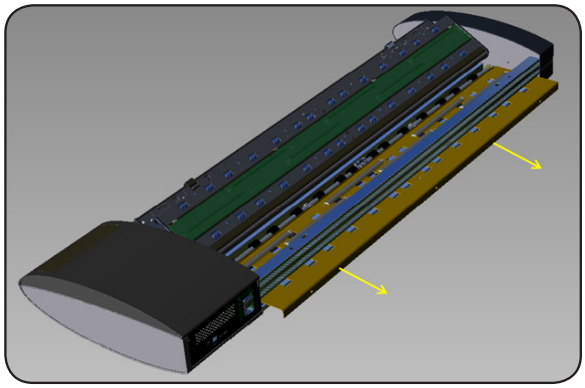
Sensors

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Tool use.: Torx 10

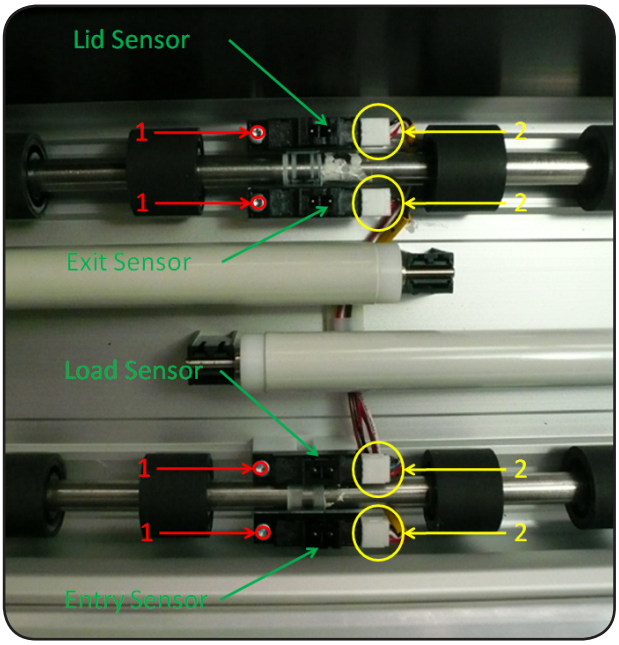


1. Remove Screws

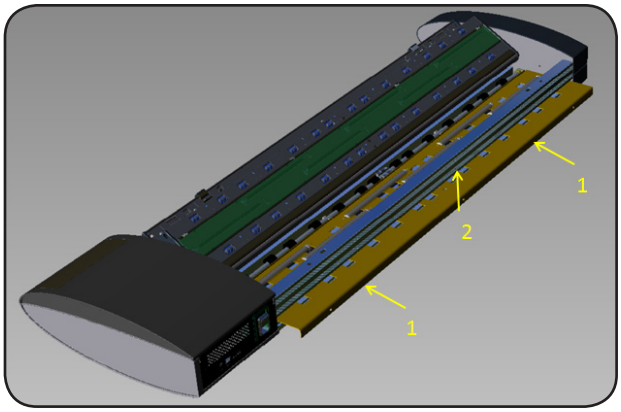


Pull out the roller cover

Overview, Sensor’s



1. Remove the screw
2. Disconnect the sensor



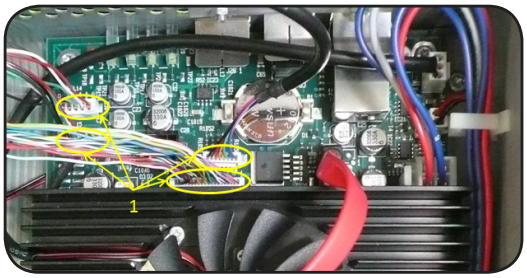
Push the cover back in (1) while adding a little pressure upwards (2)

Touch Panel

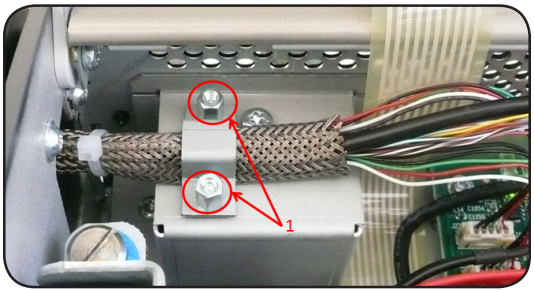
***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open Hardware box, see page 5-2

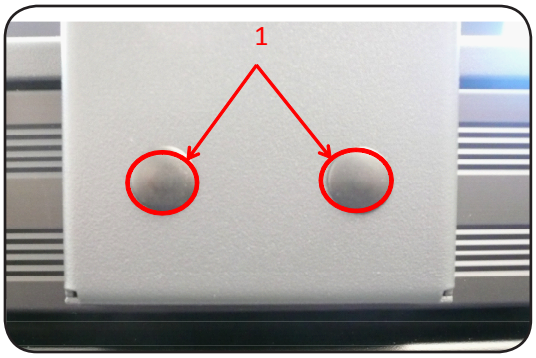
Tool use.: Wrench 5.5, Torx 15IP



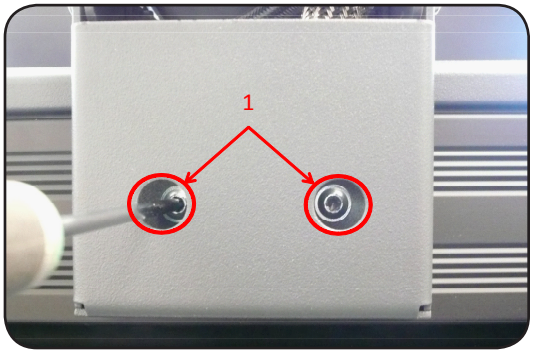
1. Unplug Cables



1. Remove screws
2. Remove Cable bracket



1. Remove screw hold covers



1. Remove Screws (hold on to Touch Panel)

1. Pull the cable carefully out

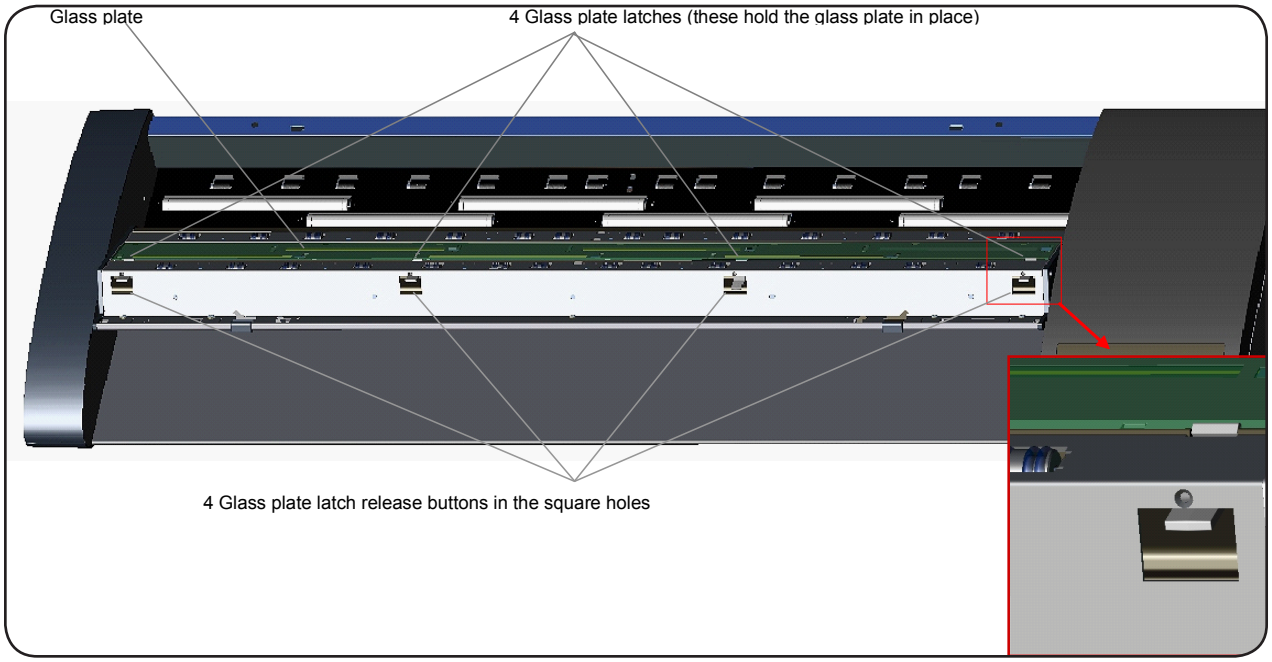
Reverse steps.

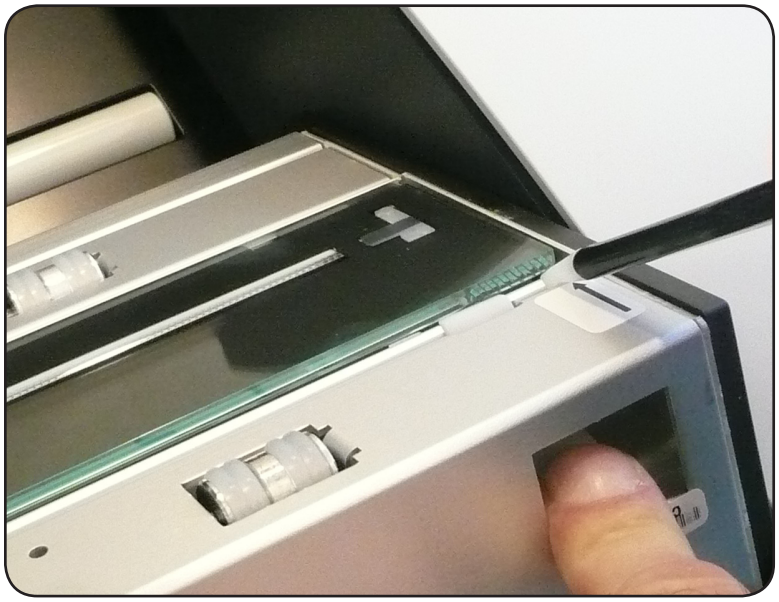
After the new Touch Panel has been installed power-up the system and calibrate the Touch Screen!
See Chapter 3, TouchImage

Glass Plate

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Tilt open the CIS unit





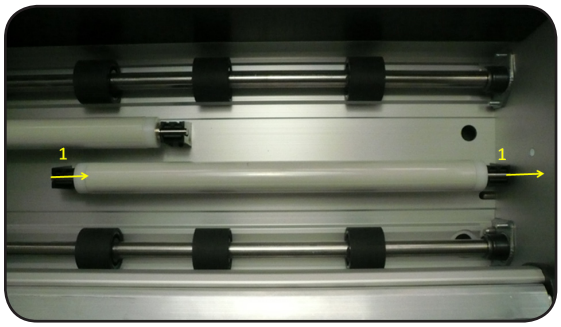
1. Detaching the first (right most) latch requires a sharp, flat tool such as a pen or a small screwdriver
2. Position the tool just under the glass plate edge where the arrow label indicates. At the same time; press down on the latch release button in the first (right most) square hole.
3. Carefully, use the tool to flip the edge of the glass upwards until it comes above and free of the white latch that held it down.
4. Release the latch release button.
5. Release the 3 remaining latches

Pressure Rollers

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Remove roller cover, see page 5-14

Tool use.: Torx 10



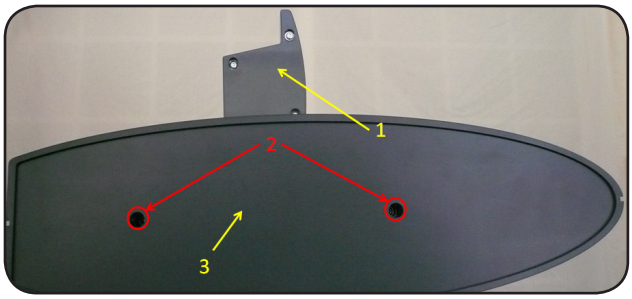
1. Pull out Pressure Roller

Replace Reference Roller and reverse the steps.

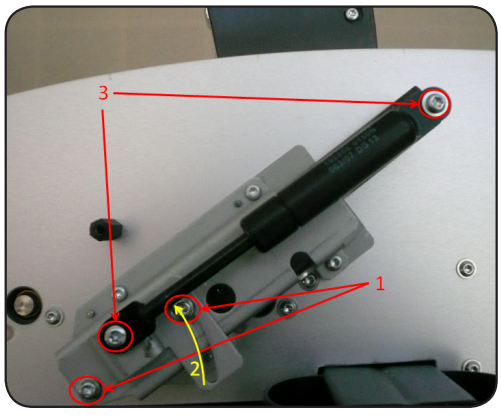
Gas Spring for CIS Unit

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Tool use.: Torx 20



1. Click open CIS Unit so it stand in a vertical position
2. Remove the screws
3. Pull out side Cover and let it slide it down



1. Loosen screws
2. Release pressure on Gas Spring
3. Remove Screws
4. Remove Gas Spring

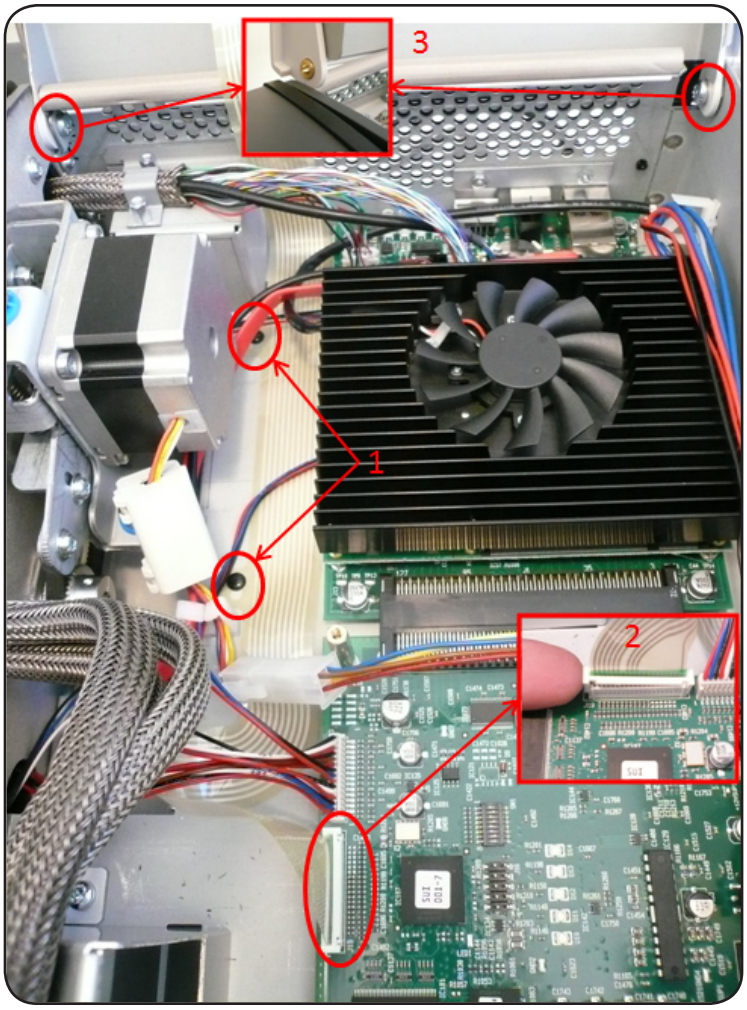
Replace Gas Spring and reverse the steps.

Top cover and Operators Panel

***Switch Scanner off and disconnect from power source and PC prior to any repair**

Open HW-box, see page 5-2

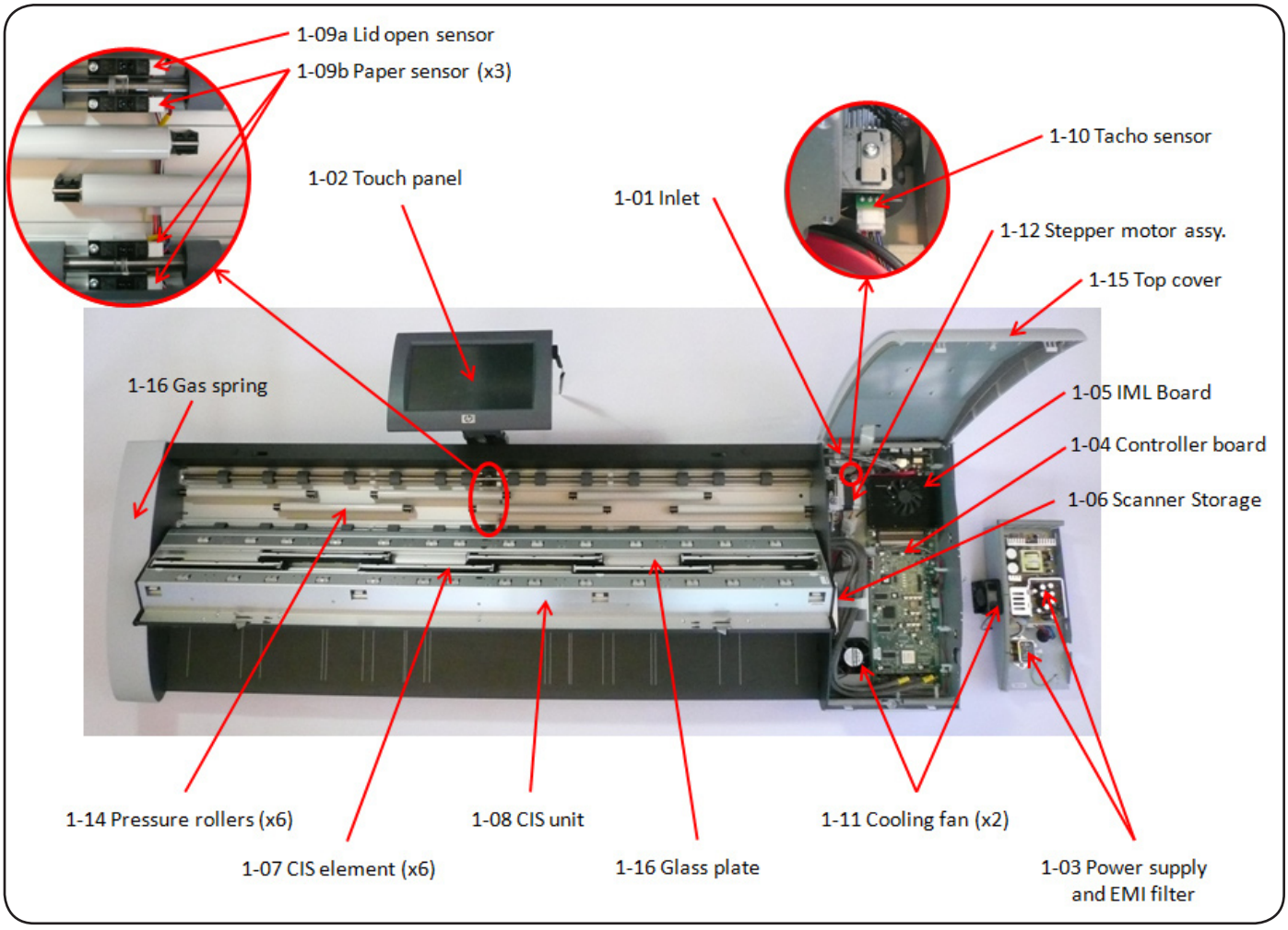
Tool use.: Torx 20 & Slotted screwdriver



1. Pull out Lock-pins and remove locks
2. Disconnect ribbon cable
3. Remove screws for cover (watch out for brass ring

Replace the Top Cover and reverse the steps

Identifying parts.

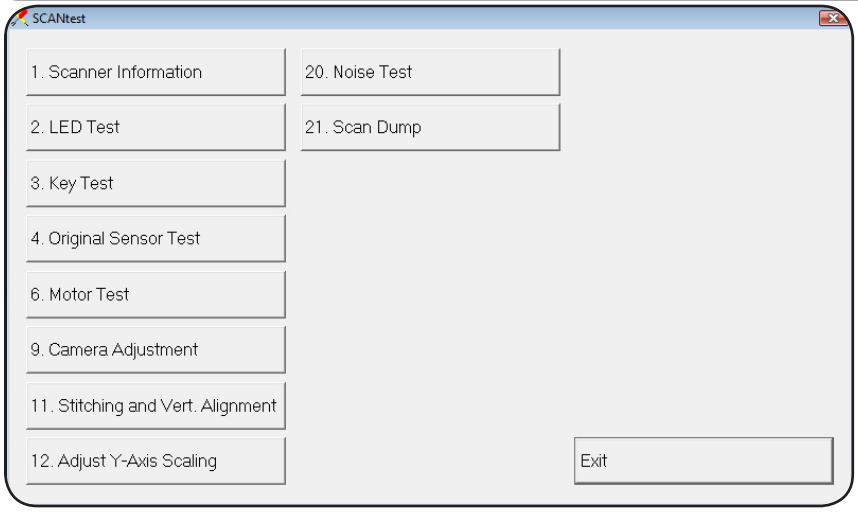


Complete list of parts

Part Number	Description	MA52M	Fig.
Spare Parts			
CM719-60011	Inlet	x	1-01
CM719-60005	Touch panel incl. arm and cables	x	1-02
CM719-60004	Power Supply (SMPS) + EMI Filter	x	1-03
CM719-60006	SUIA Controller Board	x	1-04
CM719-60010	IMLA Interface Module L (USB2.0)	x	1-05
CM719-65001	Scanner Storage	x	1-06
CM719-67001	CIS element	x	1-07
CM719-67003	CIS unit	x	1-08
CM719-60009	Paper/Lid Sensor (1 pcs.)	x	1-09
Q1277-60008	Tacho Sensor	x	1-10
CM719-60002	Cooling Fan (2 pcs.)	x	1-11
CM719-60002	Stepper Motor iSD	x	1-12
Q1277-60097	Gas Spring for CIS Bridge (150N A40)	x	1-13
CM719-40023	Pressure Rollers (6 pcs.)	x	1-14
CM719-60001	Cover Assy, Contex	x	1-15
Consumables			
CM719-60013	Glass Plate	x	1-16
CM719-30001	44” Basic Calibration Sheet	x	

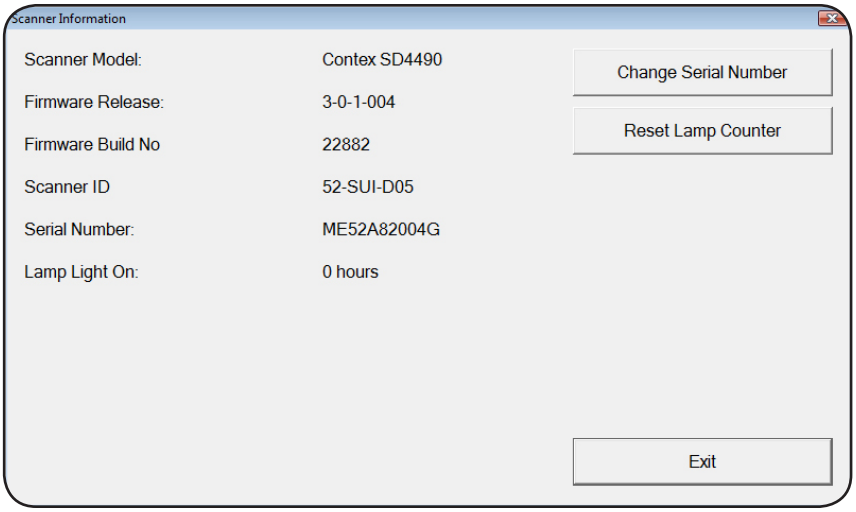
SCANtest, walk though

Description of each individual test in SCANtest

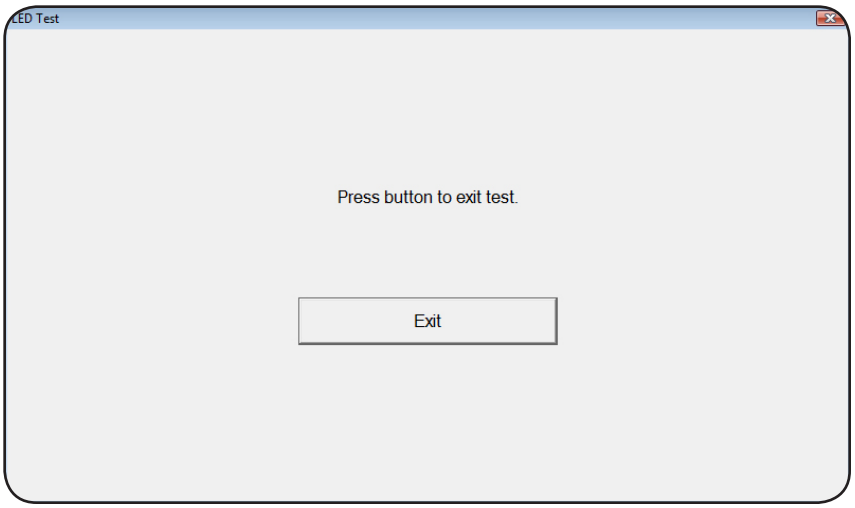


Overview of tests in SCANtest

Note!
Before running any tests make sure the CIS Unit in closed position and that there is no documents loaded in the scanner unless specified in the test



Test 1. Scanner Information
Here Firmware version can checked. Scanner sn.: can be typed in if the Scanner Control Unit has been changed!

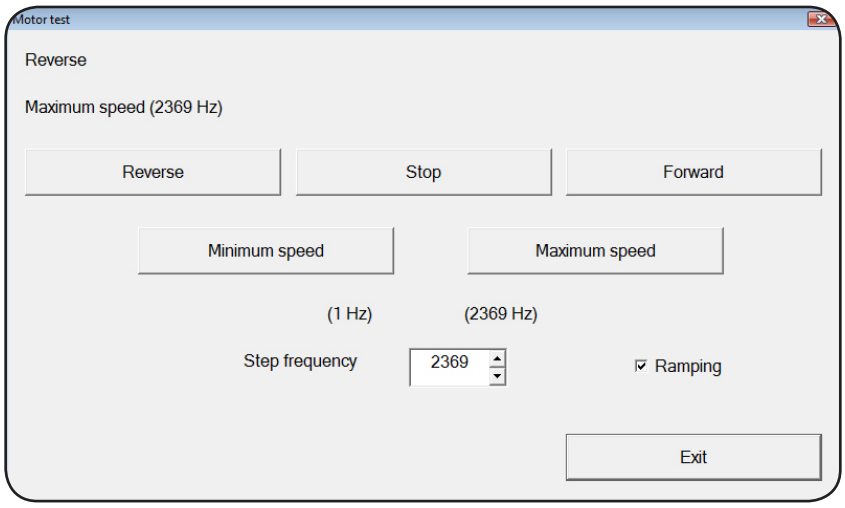


Test 2 - 3 & 4
Do not have any interface except for a exit button.

Test 2. LED Test
The LED's on the Operators panel will flash one at a time.

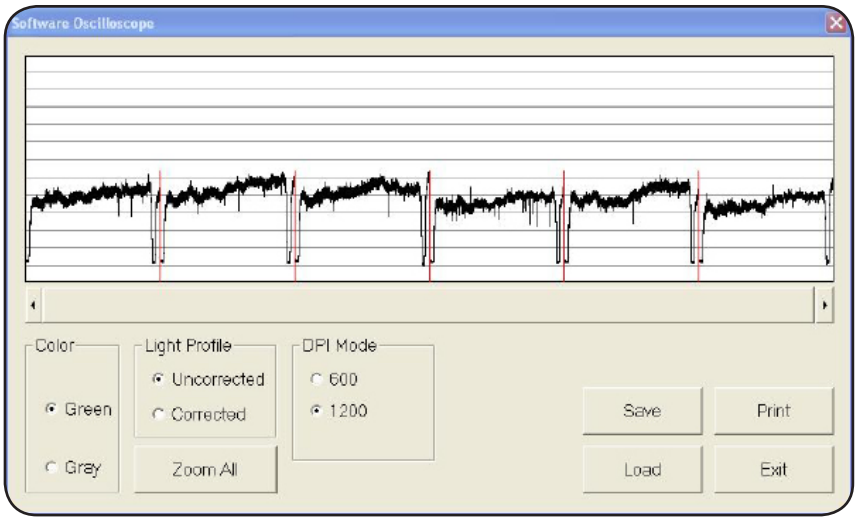
Test 3. Key Test
The Paper LED will light-up when a button is depressed.

Test 4. Original Sensor Test
The Paper LED will light-up when one of the paper or the lid sensors is activated.



Test 6. Motor Test
Here the motor can be tested at various speed and directions.

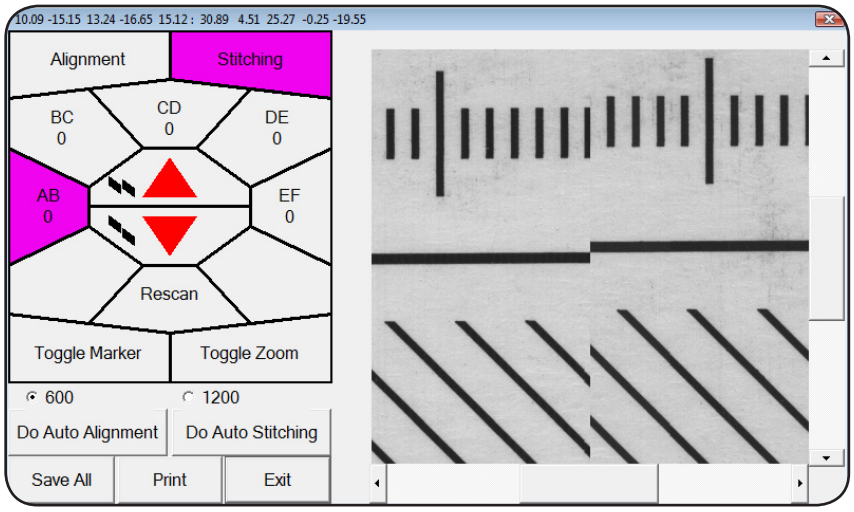
This Test can be useful if there is banding in scan width or complains about noise while scanning!



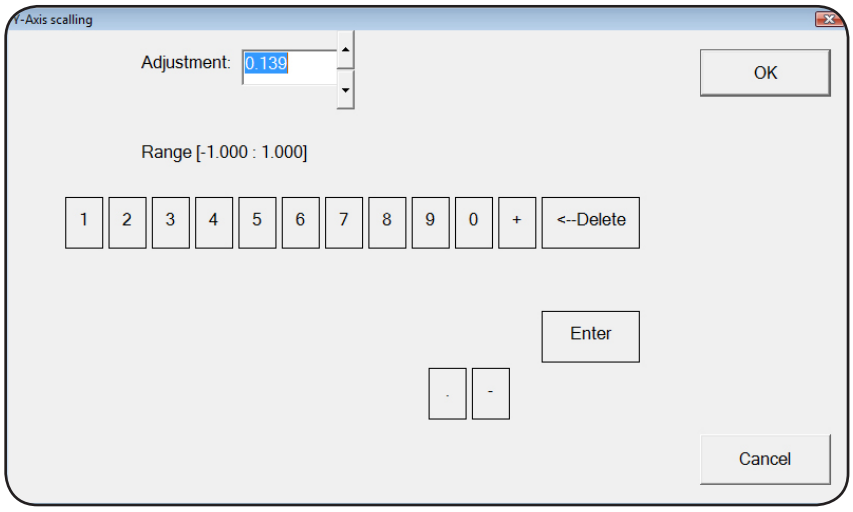
Test 9. Camera Adjustment
Provides you with a live image of what the CIS element is looking at.

"Light Profile
Uncorrected light profile shows the raw data from the CIS module
Corrected light profile shows the calibrated data.

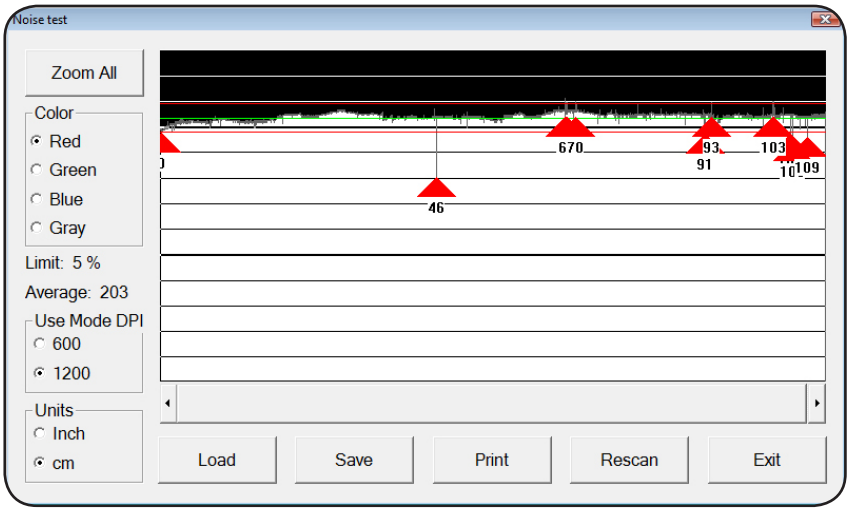
See note about dpi, B-5.



Test 11. Stitching & Vertical Align.
Allow you to adjust either Alignment or Stitching between 2 CIS modules.
1) Select Alignement or Stitching
2) Select the transition area
(AB, BC,CD, DE, EF)
3) Use the arrows to either increase or decrease the value
If the DPI is changed it requires a rescan. ***See note, B-5.***
Alignment have to be correct before Stitching can be adjusted!
Under normal circumstances Alignment and Stitching will be adjusted automatically by running SM



Test 12. Adjust Y-axis Scaling
Here, the scaling in the Y-direction (scan direction) can be changed.



Test 20. Noise Test
This test is very useful if there are image quality issues such as streaks throughout the scan (scan direction).

It can be determined if the streaks are: dust that are
1) present in the scanner (Dark streak that goes below the average line)
2) it has been present during Scanner Maintenance (White streak that goes above the average line)

Please, insert a white piece of paper after the test has been started.

If the DPI is changed it requires a rescan. ***See note, B-5 .***

Test 21. Scan Dump
Will create a still picture of what the CIS elements is looking at.

The generated SCANdump.con can extracted and view with SCANtest installed.

SCANdump is a very use full tool when a problem is being escalated to support.

600 dpi and 1200 dpi scan modes

The CIS module is able to scan in binning mode. When scanning resolution between 1200 and 600 dpi, it uses the 1200 dpi scan mode. When scanning at 600 dpi or below, it uses 600 dpi binning mode. That means that it uses information from adjacent pixels in order to minimize noise. Because of these two modes, it requires a calibration for both 1200 dpi and 600 dpi. In this way we get the benefit on 600 dpi scans by having a 1200 dpi CIS module.

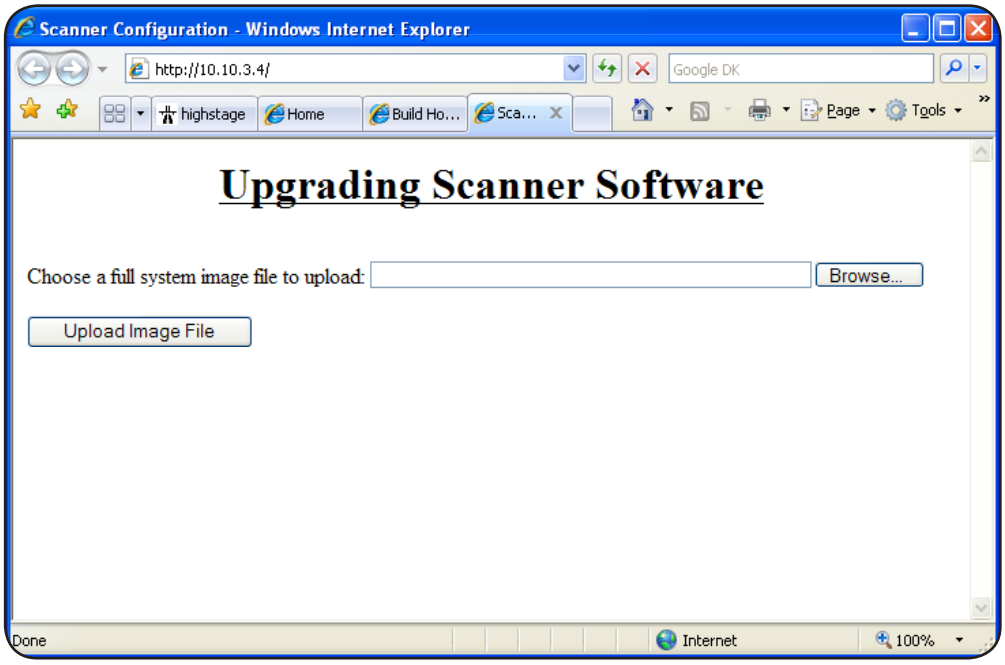
System software update

The complete software for a ScanWing2 scanner consists of two image files, a recovery image file and a system image file (which also includes the scanner firmware).
The recovery image file is for the recovery HD partition, which is booted when the scanner is put in recovery mode. The recovery image file contains a full XPe installation and the recovery software. The recovery image file is installed at the factory using the HDSoftwareInstall tool, and is not intended to be updated in the field.

The system image file is for the normal HD partition, which is booted during normal operation of the scanner. The system image file contains a full XPe installation, all relevant HP software (WIDESystem, TouchImage etc.) and the scanner firmware. The system image file is initially installed at the factory and can be updated in the field as well by the end user. The naming convention for system image files is SW_ system_<vendorid>_x.x.x.sif (e.g. SW _system_hp _1.0.0.sif).

Uploading software

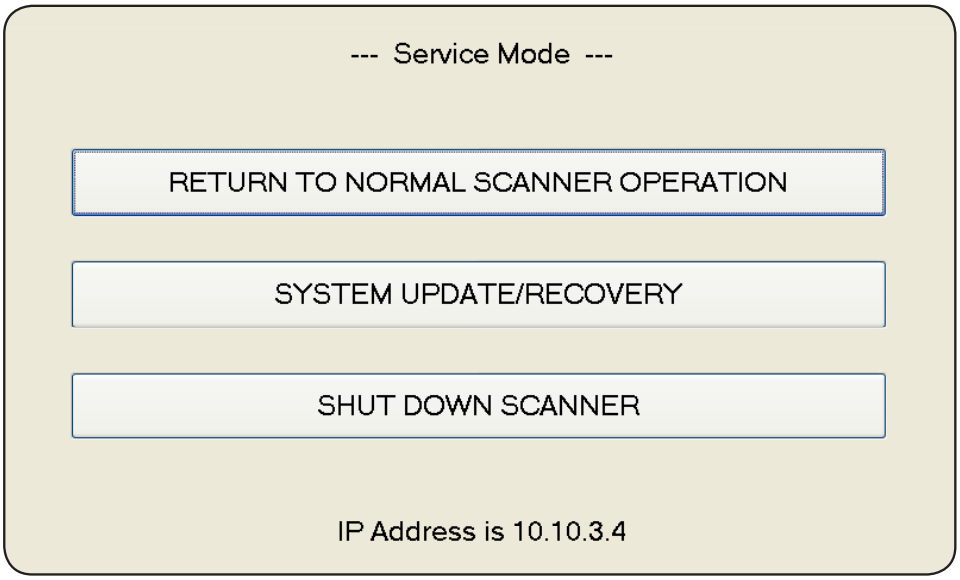
Before you can update the system software, you must first upload a system image file to the scanner using a WEB browser. You find the scanners IP address in TouchImage under Options\Advanced\Network (if your scanner is already in service mode, the IP address is displayed on the startup screen).



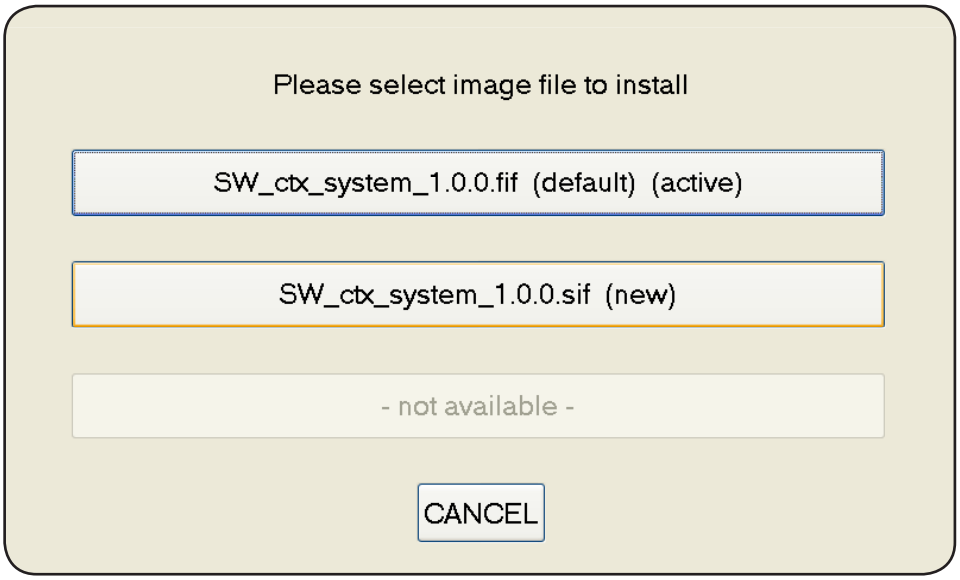
On the scanners homepage browse for a system .sif file using the Browse button. Then press the Upload Image File button to start the upload process.

Updating software

To start the update process you must put the scanner in service mode. You do this by pressing the Service button under advanced options in TouchImage. The scanner will now reboot to the recovery partition and launch the service mode application.



From the main screen select SYSTEM UPDATE/RECOVERY to enter the image selection screen.



Press the button representing the file you just uploaded (the text 'new' will be displayed next to the file). Accept the file by pressing YES, and the update process will start. After the process has completed select RETURN TO NORMAL SCANNER OPERATION from the main menu to go back to TouchImage (the scanner will reboot).

Appendix - C --- Scanner Terms

AdaptiveThresholding
Advanced 2-D Adaptive Thresholding estimates the background gray level in a window area around each pixel. The difference between the actual pixel value and the background is then compared to the adaptive settings to determine if a pixel is thresholded as a black or a white pixel

Additive Colors:
The additive primary colors are red, green and blue. These additive primaries represent the three main components of white light. Used individually or together, these three colors of light can be mixed to create nearly all colors. When these three primary colors are mixed in equal parts they produce white. Additive color is used in scanners and computer displays.

ADL+ Error Diffusion Halftoning
Image Processing that supports visibility of graytones in printed output by adding toned shades of gray in regions between black and white. Carried out as a segment of Dual 2D-Adaptive enhancement processing in copy modes.

ALE - Accuracy Lens Enhancement
Accuracy Lens Enhancement (ALE) is an electronic correction of spherical errors in CCD based camera- scanning systems. When looking at pixels across the range of a camera, the pixels tend to be more elliptical at the outside edges of the lens and more round in the middle of the lens. This anomaly is known as a spherical lens error and can introduce inaccuracies in the scanning system that can vary quite substantially between different points along the scan line. Most manufactures typically state a +-0.1% accuracy of the scanner between the two outermost end-points of the scan line. However, when measuring between two points that do not fall across the entire scan line, it is not unusual to see variations of up to +- 0.5% or even higher. This is naturally unacceptable in demanding environments and markets such as GIS, which need a stable and well-defined maximum error of 0.1% or less.
ALE solves this problem by a process to electronically correct the spherical errors in the scanner and maintain a stable maximum error across any two points of less than 0.05% ± 1 pixel.

ATAC
Automatic Thickness Adjustment Control - A special technology that allows the scanner pressure platen to be raised to accommodate thick originals and then lowered - both actions performed by pressing a key from the operators panel. Sensors in the platen detect when perfect pressure is applied to the the original and automatically stop the downwards motion of the platen so it rests on the original with an optimal grip.

Bitmap:
An image format made from a matrix of individual pixels. .bmp.

Bitmapped Image:
A bitmapped image is a computer file representing a line-art image that was scanned with a scanner. Refers to the pattern (map) of bits that are either black or white.

Black Level
The Black Level is a setting in scan programs used to change dark graytone colors to true black. For example, if one is copying a brochure with a mixture of text and pictures, the text will often be digitized to a color that we may see as black but really is a dark graytone. When the printer digests this graytone data, it will print the original's text with a halftone pattern, meaning scattered dots instead of solid black. By increasing the Black Level value, one can get the text to be copied in real black and it will therefore appear clearer.

Black Point Adjustment
An adjustment made that will determine the amount of shadow detail in an image. It is considered proper to set the black point so that the darkest part of an image will only just have zero detail.

Blueprint
A process of photographic printing used mainly for copying architectural and mechanical drawings; produces blue lines on a white/bluish background.

Blur
The averaging of pixel elements.

Brightness Adjustment
An adjustment on a scanner that allows the user to compensate for a light or dark original.

Calibration
Adjusting a device so that it performs in accordance with an established standard. Scanner calibration is minimizing color deviation between scanned ANSI IT8 reference color patches and the known color reference values. Generally, Calibration is the process of setting a device to known color conditions - stabilizing the device to a known and quantifiable state. Calibration is commonly done with devices that change color frequently, such as monitors (phosphors lose brightness over time), scanners (light changes) and printers (proofers and other digital printing devices can change output when colorant or paper stock is changed).

CALS
Computer-aided Acquisition and Logistics Support (CALS) standard, a U.S. Defense Department and industry initiative that addresses the design, manufacture, and support issues of generation, access, management, and use of technical data in digital form.

CCD
Charge Coupled Device, CCD is the image sensor in the scanner that converts light to voltages. These voltages are converted by the scanner into the image.

CCITT Group3
Standard runlength compression format used with FAX transmission. It utilizes modified Huffman coding to further compress the runlength numbers. Most scanner file formats are dialects of this format.

CCITT Group4
Two-dimensional compression format, giving very compact image files. Standardized by CALS (MIL 28002) and ISO-ODA for Drawing Archival and Interchange.

CIE LAB
A device-independent color space specified by CIE, used in modern color management software to facilitate conversion of data from a scanner to a display, or from a display to an output device.

CIE
Centre Internationale d'Eclairage (CIE) is an international organization that establishes methods for measuring color. These color standards for colormetric measurements are internationally accepted specifications that define color values mathematically. The first color space model, the CIE xyz, was developed in 1931. CIE defines color as a combination of three axes: x, y,and z. The two color spaces released in 1978 are CIE Lab and CIE Luv. The goal was to provide an accurate and uniform reference of visual perception.

CMYK
The subtractive printing colors. Cyan, Magenta, Yellow, Black.

Color Balance
The visual effect of an image when the amount of each color and the overall amount of color are balanced.

Color bit depth
The simplest pixel has two options: black or white. (A pixel with two choices is known as a 1-bit image, or two raised to the power of one). Adding more bit information increases the number of color options. The number of potential color options for a pixel is called color bit depth. For example a 4-bit pixel would have 16 color options, and an 8-bit pixel would have 256 color options, while a 24-bit pixel would have 16,777,216 color options.

Color Cast
An image is said to have a color cast if its colors are not true. A color cast will usually be described by stating the particular color predominant in the image, e.g., the grass appears to have a red color cast.

Color Correction
To improve the color rendition. Correcting for, and eliminating an unwanted color cast.

Color Management System
Color Management System (CMS) software increases the accuracy of color interchange between scanners, displays and printers based on profiles for each device. The CMS is a layer of software resident on the computer that negotiates color reproduction between the application and color devices. The CMS performs the color transformations necessary to exchange accurate color between diverse devices. The Color manager needs access to characterization data for the device. The format and content of such device profiles is standardized by the International Color Consortium (ICC.)

Color Separation
Process of separating colors, in an image, into primary color components for printing. Converting an RGB color image into CMYK color image. Color separation is a technical function during which critical settings such as GCR, black ink limit and total ink limit are applied to the image.

Color Space
A color space is a particular language used to describe color. Examples of color spaces are: RGB, CMYK, HSV, CIE LAB.

Contrast
The difference between the lightest and darkest significant areas in a picture. A picture with high contrast has nearly white areas and nearly black areas with sharp changes in brightness between them. The picture seems dominated by stark light and dark tones.

Density units
Photographers and printers measure transmission in base-10 logarithmic density units, where transmission of unity corresponds to a density of 0, transmission of 0.1 corresponds to a density of 1, transmission of 0.01 corresponds to a density of

2, and so on

Density
The light stopping ability of a film. Density is inversely proportional to the amount of light reflected or transmitted by an image.

Device Dependent Color Space
For example RGB. A device dependent color space, e.g., the same scan file will appear different when viewed on different computer displays. For example CIE LAB. A device independent color space is one in which color values are absolute, e.g., defined by CIE standard. CIE LAB is the central color space in color management systems (CMS) and is used to translate between different device dependent color spaces such as scanner RGB and display RGB.

Device Profile
A file used as part of a Color Management System (CMS). A device profile contains information about the characteristics of a scanner, computer display or printer. The format for device profiles (Win95, Colorsync. etc.) is standardized by ICC (International Color Consortium).

DIP
Digital Image Processor. Hardware embedded function that does image enhancement in real-time while scanning.

Dither
To use patterns of different colored pixels to create blended colors; or, to use dots of different sizes to simulate grayscale images. (see below)

Dithering
A printing or display device may have only a small number of grayscale or color values for each device pixel. However, if the viewer is sufficiently distant from the printed page or display, the value of neighboring pixels can be set so that the viewer's eye integrates several pixels to achieve an apparent improvement in the number of levels or colors that can be reproduced.

Dots Per Inch (dpi)
A measure of dots in a square inch where the individual element is a round dot on the printed page.

DPI
Dots Per Inch, equivalent to Pixels Per Inch. An expression of resolution of a scanned image.

DSP
Digital Signal Processor, does image enhancement in real-time while scanning.

Dual 2D-Adaptive Enhancement
Enhancement processing on the foreground and background separately. Processing is performed on-the-fly. The separate enhancement processes are simultaneously performed on different drawing aspects.

Dynamic Range
A measurement of scanner quality; the density difference between highlights and shadows.

Edit
Modify an entry using standard Windows text-editing techniques.

Emulsion
The light sensitive silver, coated on the clear acetate film base, that forms the photograph when a picture is taken and the film is developed.

Equalizing
Distributing all color or tone equally along a density range.

File Format (image)
The format in which a scanned picture is saved. Many programs can insert or import a picture from a file, if it is saved in a file format that the program supports. Common file formats include TIFF (Tagged Image File Format), BMP (Windows bitmap), JPEG (Joint Photograph Expert Group), and FPX (FlashPix format).

Flip Horizontal
To flip the picture left/right.

Foreground
Foreground when scanning raster data (black and white, or monochrome data) refers to the pixels that represent data of interest (background refers to everything else). Typically, lines and shapes are represented by black pixels (foreground) and empty space is represented by white pixels (background). When scanning grayscale data, background means the gray level of a region of pixels that surrounds some desired foreground data.

Gamma Adjustment
An adjustment that makes the tone distribution lighter or darker in an image.

Gamut Transformation
Color Management System function, where out-of-gamut colors are converted to colors within the gamut of the targeted device, e.g., a printer.

Gamut
The color range scanable, printable or displayable by a device; e.g., if some of the displayable colors are outside of the gamut of the printer they cannot be printed.

GCR
Gray component replacement. A color separation setting used on color photographs where cyan, magenta and yellow inks are replaced by black ink (in a balance that would yield a gray value). The advantages are a reduction in overall ink usage and some increase in image detail.

Grayscale
A term for a black and white photographic image or a scanner setting. Refers to the range of 256 gray tones that make up the image.

Halftoning
The processes of offset printing and laser printing are intrinsically bilevel. However, these devices can reproduce a range of tone levels by halftoning; e.g., an array of widely spaced dots produces the perception of light gray, and an array of tightly spaced dots produces dark gray. Halftone dots are usually placed in a regular grid. In color printing it is conventional to use cyan, magenta, yellow and black grids that have exactly the same dot pitch but different carefully-chosen screen angles.

Highlights
The lightest part of a picture--reproduced as white on the screen or when printed.

Histogram
A bar graph representing the statistical distribution of Graytones or colors in an image. Each column represents the number of pixels at that gray level or color.

HLS
A color space with the three variables of Hue, Lightness, Saturation. See HSV.

HSV
A color space with the three variables of Hue, Saturation, Value. Hue means color (as in the color wheel.) Saturation is an indication relating to the richness or vibrancy of the color. Value is a term best related to the intensity of light illuminating the object.

Hue
A named color. In discussions of color that relate to photography, scanning, and printing, six hues are especially important: red, yellow, green, cyan, blue, and magenta. These hues make up every color we can see, and are the designated hues on color wheels.

Hue
A measurement of color that can be related by pointing towards a certain color on the color wheel. Hue indicates the relative redness, blueness, greenness, yellowness, etc., of a color.

ICC
The International Color Consortium (ICC) was formed to address the need for a common color framework. The ICC has developed a standard device profile that contains information about how various devices render color. This concept is supported by Apple (Colorsync), Microsoft for Windows 95, Sun for Solaris, and by Silicon Graphics for Irix.

Image Editor
A program used to edit pictures to change colors, increase detail, scale or otherwise alter the picture.

Indexed color
Indexed color (or pseudo-color) is the provision of a relatively small number, say 256, of discrete colors in a colormap or palette. For each pixel in the image, the index number of a color is then stored. When retrieving the image, a lookup table uses the index to retrieve red, green and blue components that are then sent to the display. In graphic file formats such as PCX of TIFF, an indexed color image is accompanied by its colormap.

Interpolation
Using the interpolation method of resampling generates values for points in between the actual pixels by looking at the surrounding colors or intensities. In a scanner resolution is increased beyond the actual number of CCD cells. As each line of pixel data arrives from the cameras, new interpolated pixels are added between original pixels. The added pixels enhance line edge definition.

JPEG Compression
Joint Photographic Experts Group Compression. A method to save storage space by compressing files. JPEG achieves a high degree of compression by discarding non-important picture detail.

JPEG
A compressed file format for images. Named after the Joint Photographic Expert Group, JPEG images feature small file size and speed, but lower quality than other formats.

Lossless Compression
File compression and subsequent de-compression without any loss of data.

Lossy Compression
File compression that will compress data to a high degree. When subsequently un-compressed, data will have been lost.

LZW
Method of lossless compression used with many file formats; developed by Lempel, Zev and Welch.

Midtones
The most important part of a picture between black (shadows) and white (highlights).

Negative
A reversed photographic image used to produce a positive print or a scanned image.

NET - NET Architecture
NET Architecture is a solution for scanning across local networks.
What does it do?
- Enables Sharing a scanner on a network.
- Enables scanning to a Designated Scan Folder on another computer.

NET Architecture allows a a scanner to scan to a client PC in a single coherent and secure process. The client does not need to expose or share his local hard disk as the system can be set up for authorized transfer to the client.
Example of usage - a company that needs to create digital documents of its drawing archive, can send the drawings to a service bureau that scans all the documents directly to the client (company) file server allowing immediate feedback from the client and prevents digital distribution of confidential documents outside the client company.
NET Architecture also allows users in a company to use a scanner, from their own PC workstations although the scanner is physically placed elsewhere. It only need to be on the same LAN. In this way a single scanner is “shared” throughout the company.

Noise
A term used to describe the occurrence of pixels that contain random colors within an image.

Original
The paper, negative, slide, or film to be scanned.

Palette
The set of colors available for an image.

PICT
A file format for pictures used primarily on the Macintosh.

Pixels Per Inch (ppi)
A measurement of resolution for scanners, where the individual element is a square picture element (pixel).

Pixels
The word pixel is a combination of the two words picture and element. It is the smallest building block within a scanned line-art or photographic image. A pixel is the small square picture element that is filled with a color, black or white. The value of a pixel depends on the luminance of the area, and is either a single bit for a black and white image, or multi-bit for a color or gray-tone image. Pixels come in various sizes and their size is expressed in terms of resolution. Resolution is measured in pixels per inch (ppi) or the equivalent dots per inch (DPI.)

PostScript
A computer language developed by Adobe (R) Systems, Inc. for printing text, graphics, and scanned images. PostScript (R) is a vector format that can include scanned bitmapped images.

Raster File
Also called Raster Image or Bitmapped Image. A picture composed of individual dots (picture elements, pixels) the way a scanner perceives it. The rows in a high-resolution raster file typically contain 200 or 300 dots per horizontal inch of the original drawing, and there are typically 200 or 300 rows per vertical inch. As each of these dots is defined by location, and by whether it is on or off, raster images generally result in large data files.

Resolution of a Scanner
Expressed as DPI (dots per inch) or the equivalent ppi (pixels per inch). The higher the resolution of a scanner, the smoother the scanned images.

Resolution
A measure of how many pixels per inch are scanned. Generally, more pixels per inch means more detail in the picture and a larger file when saved. Defines the level of detail that can be captured or shown by a scanner, display, or output device. For scanners, the resolution is defined by the number of dots

(pixels) per inch (DPI) that can be captured horizontally and vertically, e.g. 300 DPI equals 90,000 pixels per square inch. Screen Resolutions are normally 72 pixels per inch of screen. Additional detail is thrown away by the screen display driver, anyway. For Printer Resolution scans, you need 150 dots per inch and above for good results on the printed output. One must find the level of detail that is still visible in printed output on the printer in question, and not dramatically increase the size of a saved file without bettering the result.

RGB
Red, Green, Blue. These additive primary colors are the basic elements of white light. By mixing them on a computer monitor or in a scanned image file, other colors can be created. For instance, Red and Green produces Yellow, and equal amounts of all three produce gray.

RIP
Raster Image Processor. A RIP is a special software that converts scanned images into a color dithered (halftone) image that can be output directly. An image must be 'ripped' before it can be output on a CMYK device, e.g., an inkjet printer.

Rotate
To turn the picture left (clockwise) or right (counterclockwise) from the orientation in which it was scanned.

Runlength Encoding
A method of compressing raster or bitmap data by representing "runs" of white or black dots along a scanned line as the number of dots in each run. Many variations of this scheme exist, with varying compression efficiency. Typically, runlength compression formats yield a file 20-25% the size of an uncompressed file.

Saturation
The level of colorfulness of the picture. A picture with high saturation has vivid color. A black and white picture has zero saturation. The purity of a color or the degree to which it is diluted with white light. Red is a highly saturated color. Pink is a diluted red (has lower saturation).
Saturation is one attribute of color in the color space called HSV (Hue Saturation, Value). Saturation is a characteristic indicating the vibrancy or intensity of a hue. A color with high saturation will appear more intense than the same color with less.

Scale
To reduce or enlarge the size of a picture proportionally.

Scanner Calibration
A program that helps adjust the scanner to achieve stable colors and work with a printer. Calibration gives better scanning results. The program should be run whenever changing printing equipment, toner, and inks, and whenever getting poor results when printing pictures.

Screen Calibration
A program that helps adjust the computer screen to get the best display of scanned pictures and documents. This program is run during installation and should be used again any time that the computer screen or the lighting around the computer is changed.

SCSI (Small Computer System Interface)
An interface that allows hard disks and other high-performance peripherals to be attached to Macintosh and PC computer systems.

SCSI Card
The printed circuit card that came with the scanner. With its driver software, the card allows the computer to talk to the scanner. The card is ASPI compatible with a SCSI-II output connector.

SCSI
Small Computer System Interface. Specification of interface to computer equipment like disks, printers, scanners etc.

Shadow Detail
The amount of detail contained in the dark parts of an image. It is desirable to maintain shadow detail, but there is a risk of decreasing overall contrast if one lightens the shadow too much in an attempt to expose additional detail. If an image is scanned without shadow detail, it will be impossible to regain detail using an image editing program.

Shadow
The darkest part of a picture; reproduced as black onscreen or when printed.

Sharpness
An attribute of a scanned image and also an attribute of scanner quality.

SRGB
Hewlett-Packard and Microsoft proposed the addition of support for a standard color space, sRGB, within the Microsoft operating systems, HP products, the Internet, and all other interested vendors. The aim of this color space is to complement the current color management strategies by enabling a third

method of handling color in the operating systems, device drivers and the Internet that utilizes a simple and robust device independent color definition. This is to provide good quality and backward compatibility with minimum transmission and system overhead. Based on a calibrated colorimetric RGB color space well suited to Cathode Ray Tube (CRT) monitors, television, scanners, digital cameras, and printing systems, such a space can be supported with minimum cost to software and hardware vendors.

Stitching
In large format multiple CCD camera scanners, electronic stitching adjusts for overlap in the field of view of adjacent cameras. Automatic stitching at start of scan ensures that each camera captures the correct number of pixels independently of mechanical and thermal changes.

Subtractive Colors
The subtractive primary colors: cyan, magenta, yellow. As ink applied to a piece of paper by a printer, these colors absorb light and alter the colors seen by looking at the printed paper. Cyan ink absorbs the red third of the spectrum, magenta ink absorbs the green third, and yellow ink absorbs the blue third. This should theoretically cause the viewer to see a black color, but due to unavoidable impurities in the inks, there is still light reflected and the viewer sees a muddy brown. The absence of CMY pigments results in white.

TIFF
Tagged Image File Format. One of the most common graphic file formats for line-art and photographic images.

Tonal Distribution
Tonal Distribution describes the distribution of various bright or dark tones within an image. During the scanning or image editing stage, tones can be redistributed, lightening a dark image or darkening a light one.

Tone Compression
A term used in scanning and image editing that refers to compressing the broad range of tones and colors in an image down to the narrower range available on a printer.

Tone Curves
The shape of the tone transfer curves can be adjusted by the user to alter color or tone correction. The lower left end of the curve typically represents the dark portions of a picture and an upward bend will typically lighten the shadows. Similar capabilities exist by working with the middle or highlight parts of the curve. In this way it is possible to alter only certain tonal ranges of an image without making un-wanted changes to other parts of the image.

Tone
Any color or neutral that is denser than white.

True color
True color systems provide eight bits for each of the three components (red, green and blue). Therefore true color is often referred to as 24-bit color.

TWAIN
A standard method of communications that programs can use to send instructions to hardware (such as scanners) and receive data back from them (such as pictures).

UCR
Under Color Removal. A color separation setting used on color photographs where cyan, magenta and yellow inks are removed from dark, neutral areas and substituted by black ink. The advantages are a reduction in overall ink usage. See also GCR.

Vector Drawing
Also called Vector File. Consists of mathematically defined elements, such as “Line from A to B”, “Circle with center and radius”, etc. CAD systems use vector drawings because of their accuracy, relatively low memory requirement and data-file sizes compared to raster images.

Vector File
Also called Vector Drawing. Consists of mathematically defined elements such as: Line from A to B, Circle with center and radius etc. CAD systems use vector drawings because of their accuracy and relatively low memory and data file sizes compared to raster images.

Vectorization
Also called raster-to-vector conversion (RTV). The process of automatically converting a raster (bit-mapped) image into a vector (CAD) drawing.

White Level
White Level is a setting in scan programs used if one has an original with a background that is not completely white. To get the background to appear as pure white one can set the White Level to a lower value.

White Point Adjustment
An adjustment made that will determine the amount of highlight detail in an image. The white point should be set so that the lightest part of an image will only just have zero detail

XYZ
The CIE system is based on the description of color as a brightness (luminance) component Y (as described above), and two additional components X and Z. The spectral weighting curves of X and Z have been standardized by the CIE, based on statistics from experiments involving human observers. XYZ tri-stimulus values can describe any color.

Zoom
The ability to enlarge or shrink the view of the picture in a window. Zoom does not alter the size of the final scanned picture; it only provides a better view while creating a selection border on the screen.

Error Codes

System Error: **55-101**

Description: No scanner found.

Corrective Action. Try the following:
- Check that the scanner is properly connected and turned on.
- Reboot the system

System Error: **55-121**

Description: Unknown error.

Corrective Action. Try the following:
- Restart the system.

System Error: **55-302**

Description: Failed to initialize Basic Calibration.

Corrective Action. Try the following:
- Check sheet and corresponding IT8 reference file.

System Error: **55-319**

Description: The calibration sheet was not recognized as the right sheet for this scanner.

Corrective Action. Try the following:
- Please check that the correct sheet is being used
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-351**

Description: CIS Alignment and Stitching Failed.

Corrective Action. Try the following:
- Please check sheet.

System Error: **55-401**

Description: Can’t find stitchlines.

Corrective Action. Try the following:
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-402**

Description: Can’t find gray area.

Corrective Action. Try the following:
- Please clean scanner.
- Please run application again.
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-503**

Description: Color calibration failed.
Corrective Action: Try the following:
- Please clean scanner.
- Please run application again.
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-509**

Description: IT8 file is not accessible.
Corrective Action. Try the following:
- If you have received a new Calibration Sheet, please allow application to find reference file over the internet.
- If problem persists reinstall the software to correct the issue.

System Error: **55-513**

Description: The IT8 reference file could not be found on the internet.
Corrective Action. Try the following:
- Brows to it manually WWW.contex.com and retrieve the correct IT8 file

System Error: **55-523**

Description: Sheet not recognized.
Corrective Action. Try the following:
- Please clean scanner.
- Please run application again.
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-530**

Description: When checking new calibration the result was not within the limits
Corrective Action. Try the following:
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-611**

Description: Unknown Scanner Status Error
Corrective Action. Try the following:
- Reboot system.

System Error: **55-613**

Description: No paper was detected in the scanner.
Corrective Action. Try the following:
- Place the correct sheet in the scanner.

System Error: **100-118**

Description: Unable to communicate with the scanner.
Corrective Action. Try the following:
- Please check the connection to the scanner.
- Reboot the system

System Error: **100-125**

Description: Incorrect scanner status.
Corrective Action. Try the following:
- Please check the paper path and reload the media.

System Error: **100-126**

Description: Communication (SCSI/USB) time-out
Corrective Action. Try the following:
- Reboot system
- Check connections
- Replace Interface board IMx

System Error: **100-128**

Description: The scanner has paper jam.
Corrective Action. Try the following:
- Clear paper path
- Please reload the media.

System Error: **100-1001**

Description: Please insert media in the scanner.
Corrective Action. Try the following:
- Please reload the media.

System Error: **100-1002**

Description: Please reload the media.
Corrective Action. Try the following:
- Please reload the media.

System Error: **100-1003**

Description: The scanner operation was interrupted by a user.

System Error: **100-1004**

Description: Media is currently being loaded by the scanner.
Corrective Action. Try the following:
- Please retry the operation when the media has been loaded.

System Error: **100-1005**

Description: Media is currently being positioned by the scanner.
Corrective Action. Try the following:
- Please retry the operation when the media has been positioned.

System Error: 100-1006

Description: The scanner has paper jam.
Corrective Action. Try the following:
- Clear paper path
- Please reload the media.

System Error: **100-1010**

Description: Read past end of medium
Corrective Action. Try the following:
- Please reload the media.

System Error: **100-2005**

Description: Time-out on request
Corrective Action. Try the following:
- If problem persist, reboot system

System Error: **100-2011**

Description: Fatal Error in firmware
Corrective Action. Try the following:
- Reload Firmware

System Error: **100-2016**

Description: The scanner cover is open.
Corrective Action. Try the following:
- Close it before retrying the operation.

System Error: **100-2017**

Description: Firmware download is in progress

System Error: **100-3000**

Description: The firmware was not downloaded properly.
Corrective Action. Try the following:
- Please try to download the firmware again.

System Error: **100-3001**

Description: Unknown firmware error
Corrective Action. Try the following:
- Reboot the system
- If the problem persist follow the Troubleshooting sequence page 4-2

System Error: **100-3002**

Description: Unable to adjust camera A up. (CIS 1 or 2)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3003**

Description: Unable to adjust camera B up. (CIS 3 or 4)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3004**

Description: Unable to adjust camera C up. (CIS 5 or 6)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3008**

Description: Unable to adjust camera A down (CIS 1 or 2)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3009**

Description: Unable to adjust camera B down (CIS 3 or 4)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3010**

Description: Unable to adjust camera C down (CIS 5 or 6)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3014**

Description: Unable to stitch cameras A and B (CIS 1, 2, 3 or 4)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3015**

Description: Unable to stitch cameras B and C (CIS 3, 4, 5 or 6)
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3019**

Description: Error calibrating
Corrective Action. Try the following:
- Please clean the white background / Pressure rollers and the glass plate.
- Then calibrate the scanner.

System Error: **100-3051**

Description: The scanner's ID switch has been set to an invalid value.
Corrective Action. Try the following:
- Please correct ID switch setting on Scanner controller Board SUI.
- Check that all the cables are connected correctly to the Scanner controller Board
- Run SCANtest 6, test. See Appendix A
- Check dip switches on Scanner Controller Board (SUI)
- Replace the Scanner controller Board SUIA

System Error: **100-3061**

Description: There is a problem with the Interface Board
Corrective Action. Try the following:
- Check that the Interface Board is correctly installed.
- Run SCANtest 6, test 7 See Appendix A
- Replace the Interface Board IMx

System Error: **100-3062**

Description: Fan error
Corrective Action. Try the following:
- Check Fans.
- Check cables connections
- Replace Power Supply or Interface board IMx

System Error: **100-5002**

Description: The scanner operation was interrupted by a user.

System Error: **100-5003**

Description: Error in software scanner.
Corrective Action. Try the following:
- Reboot system
- Reload software

System Error: **100-20219**

Description: There is a problem with one of the Fans.
Corrective Action. Try the following:
- Check that all the cables are connected correctly to the Fans.
- Check that all the cables are connected correctly to the Driver Board and Power Supply.
- Replace the Fan
- Replace the Driver Board or Power Supply

System Error: **100-4003x/4004x**

Description: Error on Camera Board / CIS controller board.
Corrective Action. Try the following:
- Run SCANtest 6, test 7 to verify the error. See appendix A
- Check that all the cables are connected correctly.
- Run SCANtest 6, test 9 and check the light profiles See appendix A
- Run the Scanner Maintenance
- Replace the CIS Element
- If CIS element 1&2 or 3& or 5&6 is affected replace CIS Unit

System Error: **100-40084**

Description: Camera Board, Camera Cables disconnected.
Corrective Action. Try the following:
- Check that all the cables are connected correctly to the Cameras Boards / CIS controller board.
- Run SCANtest 6, test 9 See appendix A
- Replace the CIS Element
- If CIS element 1&2 or 3& or 5&6 is affected replace CIS Unit
- Run SCANtest 6, test 7 See Appendix A
- Replace the Scanner Controller SUI

System Error: **100-4013x**

Description: Unable to calibrate a Camera / CIS element
Corrective Action. Try the following:

- Check the Switch Mode Power Supply
- Check that all the cables are connected correctly to the Cameras Boards / CIS controller board.
- Run SCANtest 6, test 9 see Appendix A
- Replace the CIS Element
- If CIS element 1&2 or 3& or 5&6 is affected replace CIS Unit
- Run SCANtest 6, test 7 See Appendix A
- Replace the Scanner Controller SUI

System Error: **100-4025x**

Description: Camera Board / CIS Controller board not found.
Corrective Action. Try the following:

- Run SCANtest 6, test 7 to verify the error.
- Check that all the cables are connected correctly.
- Run SCANtest 6, test 9 and check the light profiles See Appendix A
- Run the Scanner Maintenance
- Replace the CIS Element
- If CIS element 1&2 or 3& or 5&6 is affected replace CIS Unit

System Error: **100-50088**

Description: Hardware identification error.
Corrective Action. Try the following:

- Check that all the cables are connected correctly to the Scanner Controller board SUI.
- Run Scanner Maintenance.
- Upgrade the Scanner Firmware.
- Run SCANtest 6, test 7 See Appendix A
- Replace the Scanner Controller SUI

System Error: **100-50089**

Description: Invalid firmware for this type of scanner..
Corrective Action: Try the following:

- Please download new firmware

System Error: **100-50090**

Description: SUx, Sector in writeable area of FLASH locked
Corrective Action. Try the following:

- Please download new firmware
- Replace the Scanner Controller SUI

System Error: **100-50091**

Description: SUx, Parameter block erasure failed
Corrective Action. Try the following:
- Please download new firmware
- Replace the Scanner Controller SUI

System Error: **100-50092**

Description: SUx, Parameter block write failed
Corrective Action: Try the following:
- Please download new firmware
- Replace the Scanner Controller SUI

System Error: **100-50093**

Description: SUx, Profile block erasure failed
Corrective Action: Try the following:
- Please download new firmware
- Replace the Scanner Controller SUI

System Error: **100-50094**

Description: SUx, Profile block write failed
Corrective Action: Try the following:
- Please download new firmware
- Replace the Scanner Controller SUI

System Error: **100-50095**

Description: SUx, Flash block erasure failed
Corrective Action: Try the following:
- Please download new firmware
- Replace the Scanner Controller SUI

System Error: **100-50096**

Description: SUx, Flash block write failed
Corrective Action: Try the following:
- Please download new firmware
- Replace the Scanner Controller SUI

System Error: **100-50198**

Description: Incorrect camera board.
Corrective Action. Try the following:
- Please check all camera board types..
- Update the firmware
- Run SCANtest 6, test 9 See Appendix A
- Replace the CIS Element
- If CIS element 1&2 or 3& or 5&6 is affected replace CIS Unit
- Run SCANtest 6, test 7 See Appendix A
- Replace the Scanner Controller SUI

System Error: **100-50199**

Description: Incorrect Main Electronics Board and combination Camera Board.
Corrective Action: Try the following:
- Please validate the combination for this scanner.
- Check that all the cables are connected correctly to the Cameras Boards.
- Update the firmware
- Run SCANtest 6, test 9 See Appendix A
- Replace the CIS Unit
- Run SCANtest 6, test 7 See Appendix A
- Replace the Scanner Controller SUI.

System Error: **100-50231**

Description: Firmware download is in progress
Corrective Action. Try the following:

System Error: **100-50232**

Description: Firmware is incomplete.
Corrective Action. Try the following:
- Please download new firmware

System Error: **100-50234**

Description: Scanner is in safemode.
Corrective Action: Try the following:
- Reboot the system

System Error: **100-50235**

Description: Scan subsystem failed to initialize (FW/SW mismatch)
Corrective Action. Try the following:
- Reload system

System Error: **100-50259**

Description: Firmware unable to identify SUI-board id.
Corrective Action. Try the following:
- Check Scanner Controller ID switch
- Reload Firmware

System Error: **100-50260**

Description: Firmware unable to identify SUI-board variant.
Corrective Action. Try the following:
- Check Scanner Controller ID switch
- Reload Firmware

System Error: **100-50261**

Description: Scanner is locked
Corrective Action. Try the following:
- Reboot system

System Error: **100-50300**

Description: Unable to set scanner model
Corrective Action. Try the following:
- Check Scanner Controller ID switch
- Reload Firmware

System Error: **100-50303**

Description: Scanner has no serial number.
Corrective Action. Try the following:
- Run SCANtest 6, test 1 See Appendix A

System Error: **100-50505**

Description: SUx. FRAM Error.
Corrective Action. Try the following:
- downloading new firmware.
- Scanner Controller Board SUI

System Error: **100-60083**

Description: IMx, wrong board version installed
Corrective Action. Try the following:
- Replace the Interface board IMx.