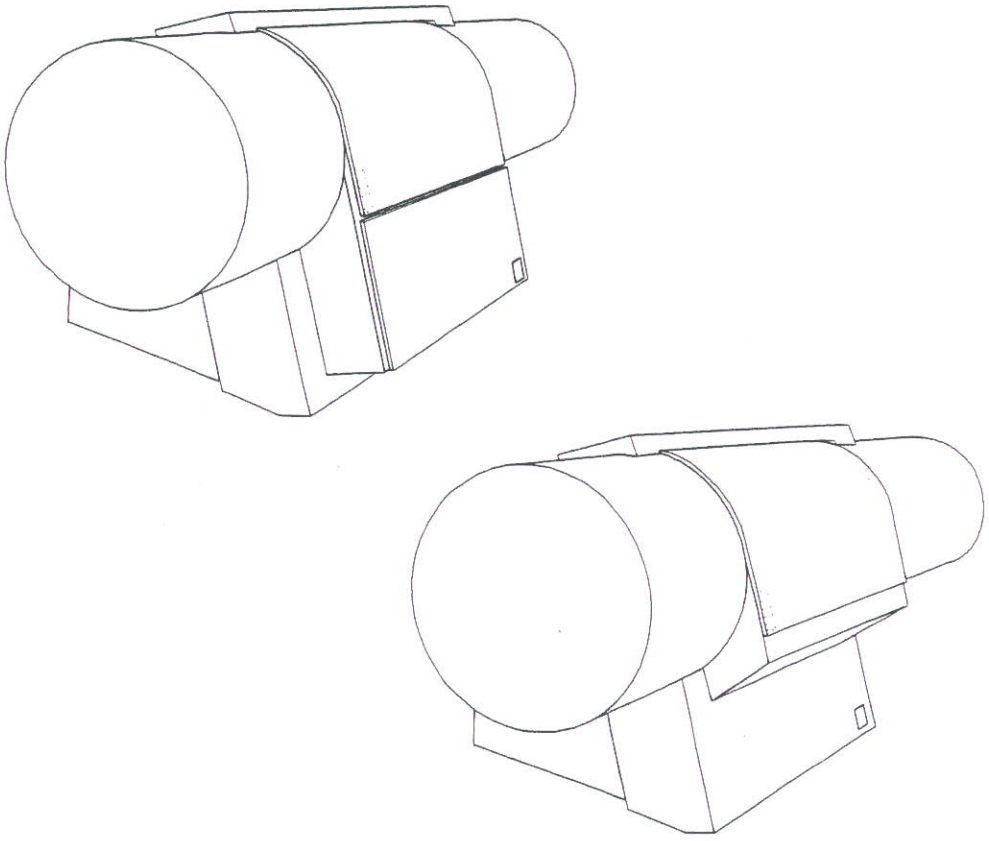
SCANVIEW

ScanMate 5000
ScanMate 4000



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Head office
ScanView A/S
Meterbuen 6
DK-2740 Skovlunde
Denmark
Tel: (+45) 44 53 61 00
Fax: (+45) 44 53 61 08

U.S. Subsidiary
ScanView, Inc.
330 Hatch Drive, Suite A
Foster City, CA 94404
U.S.A.
Tel: (+1) 415-378-6360
Fax: (+1) 415-378-6368

These products have 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 products are operated in a commercial environment.

These products are supplied with a shielded cable. They must be operated with a shielded cable in order to meet FCC Class A emission limits.

These products generate 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 these products in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

Manual edition: 1 PN 732-25-011-01
Software versions:
Macintosh Plug-in: V 2.1.10
Mac MultiMate: V 3.2.3
PC Plug-ins: V 2.1.11
PC multiMate: V 3.0.6

Contents

About the Service Manual

This manual serves as a technical service and maintenance manual for the ScanMate 4000 and 5000. Its purpose, linked with the technical training courses provided by ScanView, aim to give the the service engineer the in-depth knowledge of the function and construction of the ScanMate 4000 and 5000 and the skills necessary to perform repair and maintenance operations.

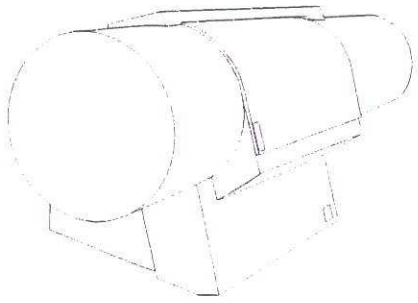
About the ScanMate 4000 and 5000

The ScanMate 4000 and 5000 are single-pass, ultra high resolution scanners utilizing three PMT sensors. They can scan images up to 222 x 303 mm in both A4 and B4 formats with a scanning resolution for the 4000 model from 50 to 4000 dpi and the 5000 model from 50 to 5000 dpi, which allows for enlarging originals to as much as 1000%.

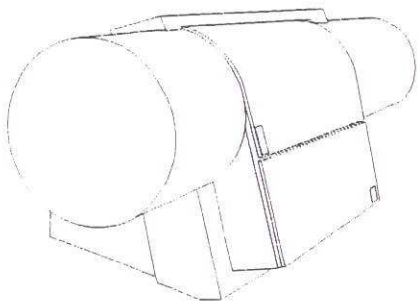
The ScanMate 5000 is basically identical to the ScanMate 4000 apart from the addition of an extra drum, (located behind a hinged flap below the main drum) and a drum bar code reader.

ScanMate 5000 is found in two variants; earlier model scanners have a serial number of 0200-xxx and later versions are 0210-xxx.

The differences between the ScanMate 4000 and the two variations of the 5000 can be seen in the Part Replacement section of this manual.



ScanMate 4000



ScanMate 5000

Service Manual Revision System

Revisions to this manual will show the most recent revision number and date issued on the bottom of each page. Each section will show the latest revision of the contents of that section. A master revision list showing the revision status of each section is shown below

To assist in the identification of which part of the new section has been revised, a vertical line on the left hand side of the affected page or pages will define the area of revised text. Additionally, the cover letter sent with the manual revision will name the revised page or pages.

For ease of reference, Service Manuals will have their own edition number; a number which will be the number of the **latest** section edition.

Revision List

	Edition	Date
Section 1 • General Information	1	January 1996
Section 2 • Installation	1	January 1996
Section 3 • Service program	1	January 1996
Section 4 • Part replacement	1	January 1996
Section 5 • Adjustments and testing	1	January 1996
Section 6 • Cleaning and maintenance	1	January 1996
Section 7 • Diagrams and layouts	1	January 1996
Section 8 • Trouble shooting	1	January 1996
Section 9 • Not allocated		
Section 10 • Parts list and spare parts policy	1	January 1996

Physical Specifications

Data interface:	Standard SCSI to Macintosh or PC
Dimensions (WxHxD):	840 x 340 x 410mm (33 x 13 1/2 x 16")
Weight:	39 kg. (86 lbs)
Power consumption:	250 W
Power supply:	50 - 60 Hz, 100/120/220/240VAC
Fuse:	T-4A

General Cautions

Caution!

- Turn off power **Before** connecting or disconnecting SCSI cables. **Before** carrying out service or adjustment operations.
- When starting up, always turn on the SCSI units first (including the scanner) and the computer last.
- When handling, always lift the ScanMate 4000 and 5000 by their bases.
- Do not obstruct the ventilation intakes on the rear of the scanners.
- The drums must be handled with utmost care to avoid scratches. Use only non-abrasive repro wipes and graphic arts drum cleaner to clean the drums.
- The ScanMate 4000 and 5000 are class 1 electrical equipment and must be connected to a single phase mains outlet with a protective ground (earth). Never connect the scanners to the mains without a protective ground.
- Always test **White calibration** (section 5•5), **Focus calibration** section 5•4), **Register error** (section 5•12) and **Stripes in shadow** (section 5•13) after every part replacement and service operation.

Dip Switch Definitions

The dip switches, located on the back panel of the Scanners, sets the SCSI ID number, activates the focus motor, allows software black and white point calibration of the PMT, sends a test picture and enters the service mode. The addresses are defined as follow:

#	On	Off
1	SCSI ID bit 1	
2	SCSI ID bit 2	
3	SCSI ID bit 3	
4	Fixed focus	Standard focus
5	No black point	Standard black point
6	No white point	Standard white point
7	Test picture	Standard scan mode
8	Service mode	Standard scan mode

Set-up facilities:

SCSI ID	SW#	1 2 3 (1=On) 0=Off)
1		1 0 0
2		0 1 0 (default)
3		1 1 0
4		0 0 1
5		1 0 1
6		0 1 1
7		1 1 1 (do not use on PC configuration)

Fuse Values and Test Points

Driver Board

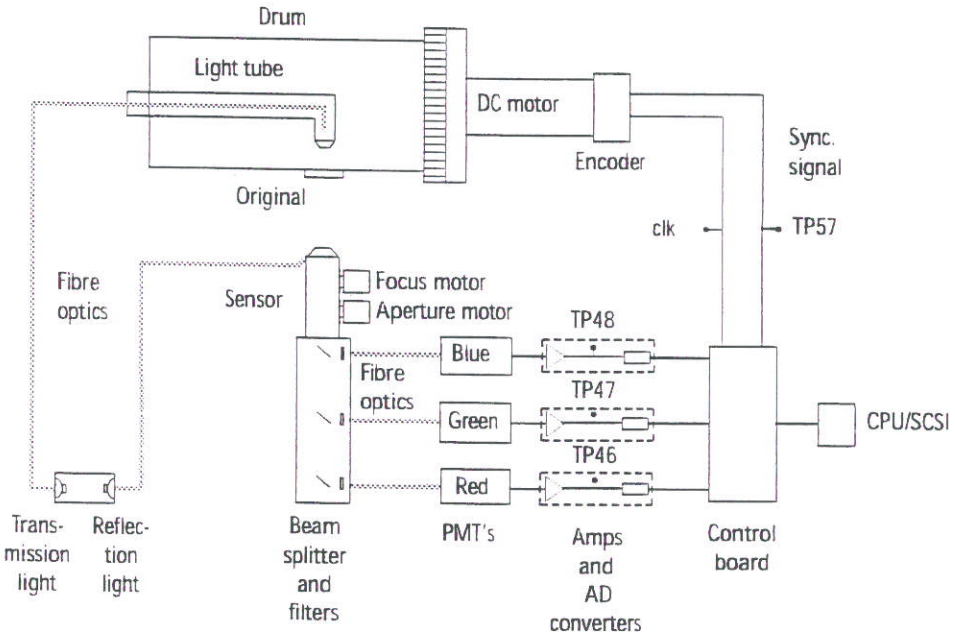
Fuse	Value	Voltage	LED	Test point
F3	T-5A	+12V	D29	TP26 (only on latest rev. boards)
F1/F2	T-2A	+ 15V	D22	TP20
F1/F2	T-2A	- 15V	D26	TP21
F1/F2	T-2A	+ 5V	D23	TP18
F1/F2	T-2A	- 5V	D25	TP19
F4	T-5A	+ 5V	D24	TP22
F5	T-8A	+19V	D20	TP23
F3	T-5A	+20V	D21	TP24
		Digital ground		TP 100
		Analog ground		TP 200

Control board

Signal	Test Point
Red	TP46
Green	TP47
Blue	TP48
Sync.	TP57
Ground	TP100

Refer to section 7•7 for location of the fuses and test points on the driver board, and 7•5 for test points on the control board.

Optical System Block Diagram



All test points are located on the control board

Drum Speeds and Aperture Settings - Scanmate 4000

Four drum rotation speeds, six aperture settings and automatic focus with software override are available.

The drum speeds change with resolution and the scanner will automatically select an aperture. Higher resolutions demand slower rotational speeds and smaller apertures.

Speed of rotation and aperture selection is adjusted automatically, (the aperture can be overridden by the system software to smooth large fields). The focus is adjusted automatically but can be overridden to produce smoothing of rasterised originals.

Manual adjustment is achieved as follows:

- open photoshop plug-in.
- click on the options button.
- choose an aperture range from 1 to 6.
  Note: 1 is the smallest value.
- choose a focus value from -500 to +500.
  Note: positive (+) is away from the drum.

The following table is a feature and not an adjustment:

Resolution	Transmission Aperture	Reflection Aperture	Rotation Speed
100 - 299	4	6	
300 - 499	4	5	
500 - 999	4	4	
1000 - 1399	3	4	
1400 - 1999	2	4	
2000 - 4000	1	4	
25 - 1800			1600
1801 - 2400			1200
2401 - 3200			900
3201 - 4000			750

Drum Speeds and Aperture Settings - Scanmate 5000

Four drum rotation speeds, six aperture settings and automatic focus with software override are available.

The drum speeds change with resolution and the scanner will automatically select an aperture. Higher resolutions demand slower rotational speeds and smaller apertures.

Speed of rotation and aperture selection is adjusted automatically, (the aperture can be overridden by the system software to smooth large fields). The focus is adjusted automatically but can be overridden to produce smoothing of rasterised originals.

Manual adjustment is achieved as follows:

- open photoshop plug-in.
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100 - 299	4	6	
300 - 499	4	5	
500 - 999	4	4	
1000 - 1399	3	4	
1400 - 1999	2	4	
2000 - 2500	1	4	
25 - 2600			1600
2601 - 4000			1000
4001 - 5000			900

Standard Equipment Required

Voltmeter
20 MHz (minimum) oscilloscope, 2 channels, probes

Service Kit

1	C-spanner for light tube adjustment
1	ScanView liquid drum polish, including one cloth
1	ScanView anti-static cloth
2	ScanView grease for spindle and shaft (2 x 3 g. tubes)
1	ScanView Monitor program
1	3. 5" 1.44 MB DOS 5.0 disk with ScanView service program ver. 1.0.2
1	2 m. RS232 cable for PC to scanner communication
1	2 m. RS232 cable for Mac to scanner communication
1	9 to 25 pin converter
2	ScanView focus target, (focus adjust original)
1	UGRA offset test target
1	ScanView 4000/5000 service manual
1	3.0 mm T-handle allen key
1	Extender board

Error Reporting

The aim of the Error Report is to give ScanView A/S a standard error reporting medium where all the necessary information is given to ScanView's Support Department to enable the assessment of defects to be made in a rational and effective way.

A master copy of this error report is shown on page 1•13 and should be used to take all the necessary copies.

Of particular importance, is the allocation of a CRN (Confirmation of Return Number). This number is obtained by contacting ScanView (Support departments hot-line, telefaxing or using the BBS) and **must** be included on all error reports.

Exchange parts **must** be returned to ScanView within 3 weeks of the invoice date.

In addition to the error report, we also ask for a Software Report for both scanner/Mac and scanner/PC to be completed. This will assist our support department in isolating software problems and speed up down time on your equipment. A copy of these reports can be found on pages 1•15 and 1•17 respectively and should be used to take all the necessary copies.

Contents

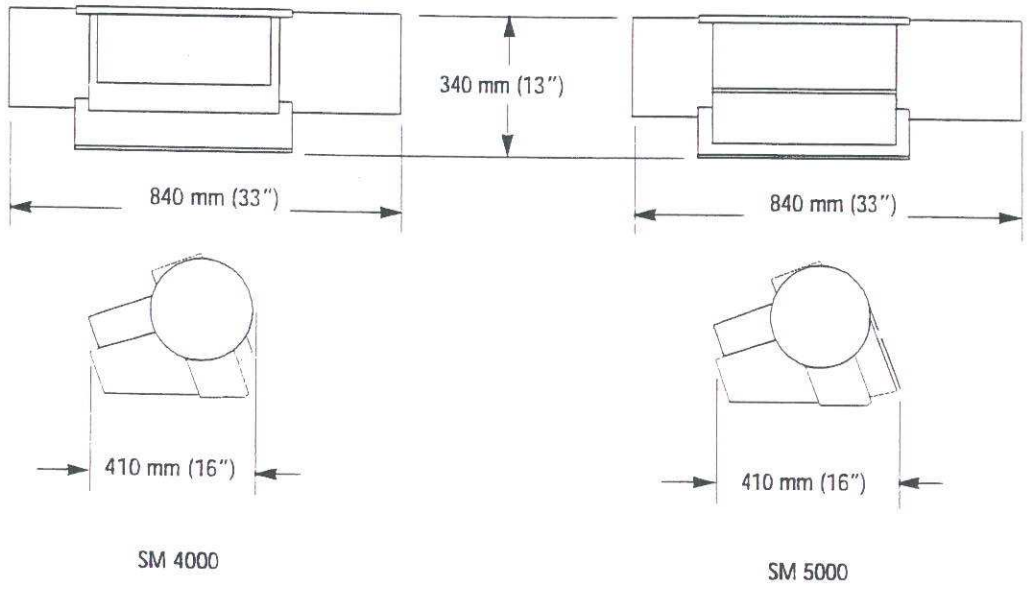
Pre-installation Requirements

The following mains installations are required:

Electrical wall outlet: 100-240 VAC, 50-60 Hz

Caution! ☛ The ScanMate 4000 and 5000 are Class 1 electrical equipment. For personal safety they must be connected to a single phase mains outlet with a protective ground, (earth) in accordance with national and local regulations.

ScanMate 4000 and 5000 Dimensions



SM 4000

SM 5000

Unpacking and installation

Caution! ☛ Turn off power **before** connecting or disconnecting SCSI cables.

1 • Check the Tip-N-Tell and Shockwatch indicators on the container before unpacking.
Note: if the indicators show that the container has been subject to mishandling or has been tipped, note this on the Bill of Lading and contact your freight forwarder.
2 • Lift the Scanner out of its container by the base only.
Note: damage will occur to the scanner if it is lifted by the drum.
3 • Place on a firm surface (avoid obstructing the ventilation ducts at the rear of the scanner).
4 • Continue with hardware installation by refering to section 1 in the ScanMate 4000and 5000 Operators Manual.
5 • Perform a focus calibration by refering to section 5•4.

Contents

ScanMate 4000 and 5000 monitor program

This section describes the use of the ScanMate monitor program which is used to service and trouble shoot the ScanMate 4000 and 5000 and gives access to all the internal hardware without any further use of software.

Hardware requirements.

To use the ScanMate monitor program, the following are required:

- A Mac computer with a serial communication program (Quicklink or compatible software).
- A PC or 100% compatible computer, running MS-DOS version 2.11 or later and equipped with at least one free RS232 port.
- A disk with the ScanMate monitor program, normally supplied on 3.5" disks.
- RS232 cable for PC or Mac to Scanner, (if the PC is equiped with a 25 pole RS232 port, a 9 to 25 pole RS232 converter is required).

Although the ScanMate monitor program is a terminal program, receiving and transmitting characters on the RS232 interface without handshake, it is possible to use other communication programs to interface to the ScanView scanner, for example, Windows terminal .

The monitor program controls the RS232 hardware directly and therefore overrides the BIOS. The monitor program uses the interrupts to the RS232 interface. The program uses either COM1 or COM2 on the PC and are assumed to be located on I/O address:

COM1 I/O address: 03F8h and connected to IRQ 4
COM2 I/O address: 02F8h and connected to IRQ 3

Start-up

Turn off both the ScanMate 4000 or 5000 and the PC and set dip switch number 8 to its **on** (down) position. Turn on the PC and insert the supplied disk with the ScanMate monitor program, into the disk drive.

The monitor program can be copied to the hard disk by typing:

```
C:
CD\
MD SCANMATE
CD SCANMATE
COPY A:\SCANMATE.EXE
```

Now go to the appropriate directory:

```
C:
CD \SCANMATE
```

Run the monitor program by typing:

```
SCANMATE.EXE /5000
```

If COM2 is used, type:

```
SCANMATE.EXE /5000  /2
```

Turn on power on the scanner and the following will be shown on the screen:

```
*********************************************
*       9600 Baud communication utility     *
*       Version 1.0.2.                      *
*       <F3> for logfile                    *
*       <F10> for Exit                      *
*********************************************

COM 1 is used
```

`9600 Baud communication utility:` indicates that the program is actually just a communication utility showing the baud rate.
`Version 1.0.2:` is the version number of the monitor program.
`<F3> for logfile:` to create a logfile that contains a transcript of all communication between the scanner and the monitor program, press **F3**. The monitor program then asks for a file name for the log file. Enter a file name, for instance **scanmate.log** , and press **Enter**. All that is written to the screen is also written to the file. To stop the monitor program from logging data, press **F3** again.
`<F10> for exit:` quits the program. Press **F10** and the DOS prompt is shown again.
Note: always remember to terminate the log file mode before the monitor program is terminated, otherwise the content of the log file will not be correct.

To view the log file, press **F10** to exit the monitor program and use an ASCII editor (for instance EDIT) to examine the log file after a session.

Using the monitor program.

The protocol is 9600 baud, 8 data bits, 1 stop bit, and no parity.
Use a Mac or PC cable (depending on your equipment), which are supplied in the service kit.
Terminate the SCSI connector and check that the dip switch is set, for example to number 8 (SCSI address 3).
Note: DO NOT connect or disconnect SCSI with power on.
Start the Mac or the PC in communication mode and turn on the scanner.

If you will start your PC monitor program from a disk, type:

```
Scanmate /5000.
```

To choose the com port, type:

```
ScanMate /5000 /2 (com 2)
```

The following will now scroll over the screen:

```
Hello World
Motherboard number is: xxx
Focus point 0: xxxx
My ID is X
Prom version is x.xx

ScanMate 5000 monitor version x.xx
Commands available are :
Move spindle Z/P/L/.                    1
Adjust PMT gain                         2
Choose aperture                         4
Check focus                             7
Calibrate apertures                     9
Toggle lamps                            0
Turn on SCSI                            S
Turn on SCSI in switch seek mode        W
Rotate drum                             T
Set focus position to zero              H
Test barcode circuit                    G
Show scanner options                    *
Show this help menu                     ?

F3) Enable/disable LOGFILE
F10)Exit monitor program
```

Move the drum to zero, park or lock - Z/P/L/. (1)

This command facility is used to move the spindle, adjust the spindle motor speed, select direction and to lock the drum.

Select **1** to choose **Z/P/L/.** and the following message will appear:

```
>> Which position is wanted (Z/P/L/.)?
```

Z : sets the drum in the **Zero** position (fully right)
P : sets the drum in the **Park** position (fully left)
L : sets the drum to the lock position
. : further changes the drum position parameters. Key in and select from the following choices shown on the screen:

```
Press 1 for stop, 2 for start.
Press 3 for left, 4 for right
Press 5 for speed down, 6 for speed up.
Press 7 for current down, 8 for current up.
Press 0 for Park position, 9 for Zero position.
Press Q for utility end.
```

Adjust PMT gain (2)

This command facility is used to adjust the PMT gain constants to a value suitable for hardware fine tuning.

Select **2** to enter the **Adjust PMT Gain** menu and the following will be displayed:

```
>> Routine for set of PMT gain.
Press the 9 for gain down, 0 for gain up, q for done.
Aperture point found.
Gain is now 255
Gain is now 254
. . . .
. . . .
Gain is now 52
Gain is now 51
It is programmed, with return code 0.
Done.
It is programmed, with return code 0
Done
```

Note: 255 is maximum gain and 0 is minimum.

Choose aperture (4)

This command facility is used to choose the aperture required.

Select **4** to enter the **Choose Aperture** menu and the following will be shown:

```
>> Which aperture should be selected <0-6)
Searching for aperture x
Aperture point found
Aperture x found
```

Note: choose aperture 1 for **all** adjustments

Check focus (7)

This command facility is used to check the focus value.

Select **7** to enter the **Check focus** menu and the following will be shown:

```
>> Is it for transmission or reflection <T/R>: Now we check
the focus position.
```

In both sub-menus, **T** (transmission) and **R** (reflection) selection parameters are the same, therefore only **T** will be shown below.

Select **T** to enter the transmission menu and the following sub-menu will be shown:

```
Now we check the focus position
Use BarCode or Index values : <B/I>:
```

Select **B** to enter the **barcode** sub-menu and the following will be shown:

```
Status received : HBCR-161X Version 15
Found BarCode chip

Got DrumNumber xxxx, and Diameter xxx
Recieved string 'xxxxxxxxxxx'
Got DrumNumber xxxx, and Diameter xxx
Recieved string 'xxxxxxxxxxx'
Got DrumNumber xxxx, and Diameter xxx
Recieved string 'xxxxxxxxxxx'
Got DrumNumber xxxx, and Diameter xxx
Recieved string 'xxxxxxxxxxx'
Got DrumNumber xxxx, and Diameter xxx
```

```
Recieved string 'xxxxxxxxxxx'
Used barcode Index : x Using Focus Value : xxxx
Searching for focus point.
Focus position found, press any key to terminate.

>> Is it for Transmission or Reflection <T/R> : Now we check the
focus position.
Use BarCode or Index values : <B/I>
```

Select **I** to enter the **Index** sub-menu and the following will be shown:

```
Aperture point found.
Enter Focus Index to use <0..9> 0
Using Focus Value : xxxx
Searching for focus point.
Focus position found, press any key to terminate.
```

Calibrate aperture (9)

This command faclility is used to calibrate the aperture.

Select **9** to enter the **calibrate apertures** menu and the following will be shown:

Note: The values shown are only examples.

```
>> Now we find the aperture positions.
Waiting for drum to settle, with integrator enabled.
Drum speed is ok.
Not direct A/D data
Waiting for focus
Focus position found.
Aperture point found
Now we calibrate the aperture position
Black level is x, search for xx
Aperture position calibrated to position xx (F/S : xx, xxx).
Aperture point found
First, Second, Diff, Type : 201.000000, 10.000000, 20.100000, 8001
Aperture point found.
1 First, Second, Diff : 202.000000, 41.000000, 4.926829
Aperture point found.
Aperture point found.
2 First, Second, Diff : 201.000000, 48.000000, 4.187500
Aperture point found.
Aperture point found.
3 First, Second, Diff : 203.000000, 54.000000, 3.759259
Aperture point found.
Aperture point found.
4 First, Second, Diff : 208.000000, 94.000000, 2.212766
Aperture point found.
```

```
Aperture point found.
5 First, Second, Diff : 208.000000, 78.000000, 2.666667
It is programmed, with return code 0.
Apertures found ok.
The spindle is started.
```

Toggle lamps (0)

This command faclility is used to toggle the lamps.

Select **0** to enter the **toggle lamps** menu and the following will be shown:

```
>> Transmission lamp is set ON
```

Select **0** again and the following will be shown:

```
>> Reflection lamp is set ON
```

Select **0** again and the following will be shown:

```
>> Lamps are set OFF
```

Turn on SCSI (S)

This command faclility is used to turn on the SCSI interface and when activated, the scanner can be controlled from and scan into, the Mac or PC through the interface.
When the command is executed, the only way to return to the monitor program mode is to turn the scanner off and then on again.

Select **S** to enter the **Turn on SCSI** menu and the following will be shown:

```
>> The ScanScsi routine is called now
Status received : HBCR-161 Version 15
Found barcode chip
```

The scanner is now in the SCSI mode. To return to the service mode and main menu, turn the scanner off and then on again.

Turn on SCSI in switch seek mode (W)

This command faclility is used only for adjusting the position of the zero switch.

Select **W** to enter the **Turn on SCSI in switch seek mode** menu and the

following will be shown:

```
>> The ScanScsi routine is called now

Status received : HBCR-161X Version 15
Found barcode chip
```

The scanner is now in the SCSI mode. To return to the service mode and main menu, turn the scanner off and then on again.

Rotate drum (T)

This command faclility is used to start the drum rotating.

Select **T** to enter the **Rotate drum** menu and the following will be shown:

```
>> Enter wanted drum speed in rpm.
Drum speed set to xxxx RPM
```

Press **Enter**.

To stop the drum after the drum speed has been entered, select **T**, then **0** and enter.

Set focus position to zero (H)

This command facility is used to set the focus position to zero.

Select **H** to enter the **Set focus position to zero** menu and the following will be shown:

```
>> Now we set the focus position to zero
Seeking focus switch
Focus zero point found
```

Test barcode circuit (G)

This command facility is used to test the barcode reader.

Select **D** to enter the **Test the barcoded circuit** menu and the following will be shown:

```
>> Switching to barcode chip
```

```
Status received : HBCR-161. Version 15
Found barcode chip
```

Manually rotate the drum slightly and the following will be shown:

```
Got string : xxxxxxxxxxxx
```

For example, 0000**0288**9405 where 0288 is the drum serial number.
000002**8894**05 where 940 is the drum diameter of 99.4
000002889405 where 5 is the bar code check number.

Show scanner options (*)

This command facility is used to show the gain, aperture and focus constants. It can also be used for sending a logfile to ScanView's support team.

Select * to enter the **Show scanner options** menu and the all the constants will be shown.

Note: The values shown are only examples.

```
>> ApertureValue 0 : 20.100000
ApertureValue 1 : 4.920000
ApertureValue 2 : 4.180000
ApertureValue 3 : 3.750000
ApertureValue 4 : 2.210000
ApertureValue 5 : 2.660000
Aperture 1, PMTTransGain PMTReflectGain    : 51 60
Red   TransGain, ReflectGain              : 110 131
Green TransGain, ReflectGain              : 106 130
Blue  TransGain, ReflectGain              : 100 103
Aperture 2, PMTTransGain PMTReflectGain    : 159 60
Red   TransGain, ReflectGain              : 115 131
Green TransGain, ReflectGain              : 107 130
Blue  TransGain, ReflectGain              : 107 103
Aperture 3, PMTTransGain PMTReflectGain    : 107 60
Red   TransGain, ReflectGain              : 103 131
Green TransGain, ReflectGain              : 110 130
Blue  TransGain, ReflectGain              : 104 103
Aperture 4, PMTTransGain PMTReflectGain    : 135 60
Red   TransGain, ReflectGain              : 91 131
Green TransGain, ReflectGain              : 110 130
Blue  TransGain, ReflectGain              : 104 103
Aperture 5, PMTTransGain PMTReflectGain    : 135 93
Red   TransGain, ReflectGain              : 91 125
Green TransGain, ReflectGain              : 110 130
Blue  TransGain, ReflectGain              : 104 103
```

```
Aperture 6, PMTTransGain PMTReflectGain    : 135 122
Red   TransGain, ReflectGain              : 91 118
Green TransGain, ReflectGain              : 110 128
Blue  TransGain, ReflectGain              : 104 102
Aperture 1      : 181
Aperture 2      : 337
Aperture 3      : 495
Aperture 4      : 653
Aperture 5      : 811
Aperture 6      : 967
Focus Number, Dia, TValue RValue : 1210 940 1376 1000
Focus Number, Dia, TValue RValue : 237 940 1256 1000
Focus Number, Dia, TValue RValue : 505 950 1504 1264
Focus Number, Dia, TValue RValue : 1787 964 1440 1000
Focus Number, Dia, TValue RValue : 689 930 1448 976
Focus Number, Dia, TValue RValue : 1383 950 1320 984
Focus Number, Dia, TValue RValue : 1339 505 1416 928
Focus Number, Dia, TValue RValue : 1164 940 1408 1336
Focus Number, Dia, TValue RValue : 182 940 3568 1000
Focus Number, Dia, TValue RValue : 288 940 1360 1824
Focus Index, TValue RValue : 0 2000 1384
Focus Index, TValue RValue : 1 1528 1168
Focus Index, TValue RValue : 2 2000 1000
Focus Index, TValue RValue : 3 2000 1000
Focus Index, TValue RValue : 4 1536 1000
Focus Index, TValue RValue : 5 2000 1000
Focus Index, TValue RValue : 6 1368 1000
Focus Index, TValue RValue : 7 2000 1000
Focus Index, TValue RValue : 8 2000 1000
Focus Index, TValue RValue : 9 2000 1000
Index offset    : 1
Spindle Delta value : 458514
My ID is x
Prom version is x.xx (xxxxxxxx.xxx)
Motherboard number is : xxx
```

Contents

General

Removal and Assembly

(4000 and 5000) Access Panels

Covers and panels

A Lamp cover
B Back cover
C Right hand end plate
D Right hand drum cover
E Left hand end plate
F left hand drum cover

Tools required

2.5 mm allen key (long) for lamp cover
3 mm allen key (T-handle) for left and right hand drum cover screws
3 mm allen key for left and right hand end plate mounting screws
2 mm allen key for back cover mounting screws
3 mm allen key for end plate mounting screws

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Access Panels

How to remove

1 • **Lamp cover A** is a secured by two dome head 3 mm allen screws to the back cover **B**. Remove by loosening the two allen screws, (access is through the ventilation slots, as shown on the diagram on the cover) and slide the cover off towards the rear.

2 • **Back cover B** is secured by nine 2.5 mm allen screws along the back edge. First remove the lamp cover **A**, and disconnect the connector to the cooling fan. Remove the nine allen screws, slide the cover towards the rear and carefully lift it away.

3 • **Right hand end plate C** is secured by one 4 mm countersunk allen screw underneath the drum cover **D**. Remove the allen screw and lift the plate away from the drum cover.

4 • **Right hand drum cover D** is secured by four 3 mm allen screws on the inside of the cover securing it to the the frame. First remove the end plate **C**, remove the four allen screws and washers and lift the cover away.

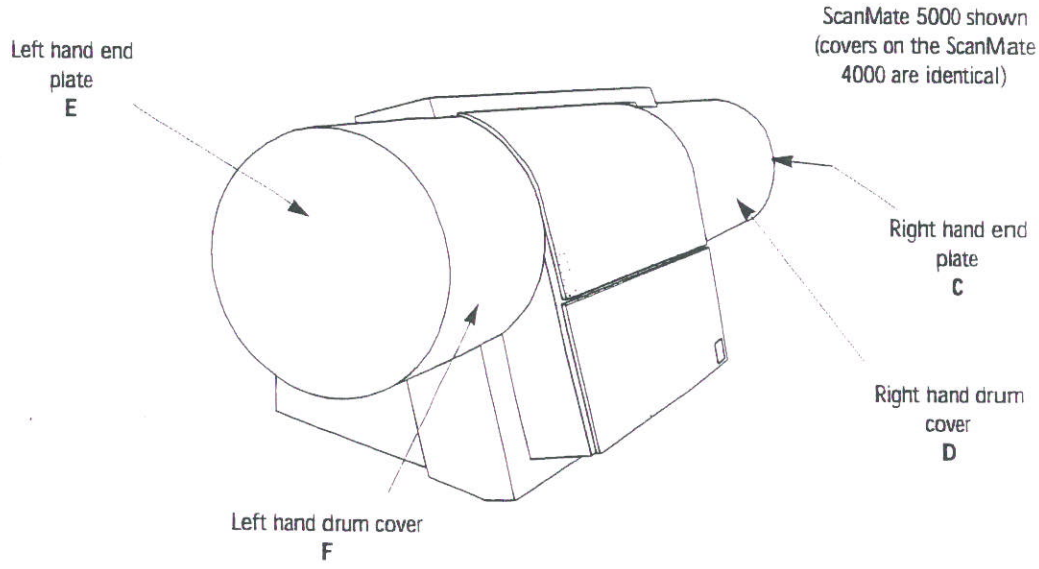
5 • **Left hand end plate E** is secured by one 4 mm countersunk allen screw underneath the drum cover **F**. Remove the allen screw and lift the plate away from the drum cover.

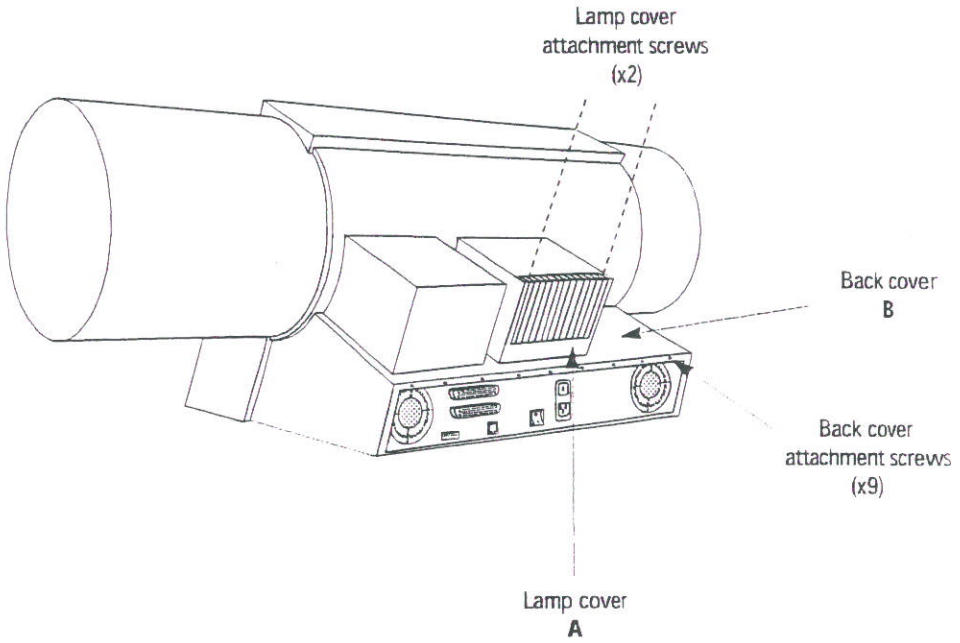
6 • **Left hand drum cover F** is secured by four 3 mm allen screws on the inside of the cover securing it to the frame. First remove the end plate **E**, remove the four allen screws and washers and lift the cover away.

How to replace

7 • Refitment of the covers and plates are carried out in the reverse order to that of removal.

Access Panels





PN 920 20 000 20 (4000 and 5000) Halogen Lamps

Function

The halogen lamps are common to both the 4000 and 5000 models and are the source of light when scanning originals.

Light from the transmission lamp is transmitted through a fibre optics cable to the light tube.

Light from the reflection lamp is transmitted through a fibre optics cable to the sensor module.

Technical data

Halogen projector lamps 12V, 75W

Tools and materials required

2.5 mm allen key (long) for lamp cover mounting screws

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ The lamps will be very hot if the scanner has been running, therefore take care when removing.

Halogen Lamps

How to replace

Removal

1 • Remove the lamp cover **A** by loosening the two 3 mm dome head allen screws, (access is through the ventilation slots, as shown on the diagram on the cover) and slide the cover off towards the rear.
2 • Disconnect the connector to the relevant lamp(s).
Note: the reflection lamp is on the left, viewed from the back of the scanner and the transmission lamp on the right.
3 • Slide the lamp against the spring pressure until it is clear of its guide and carefully lift away.

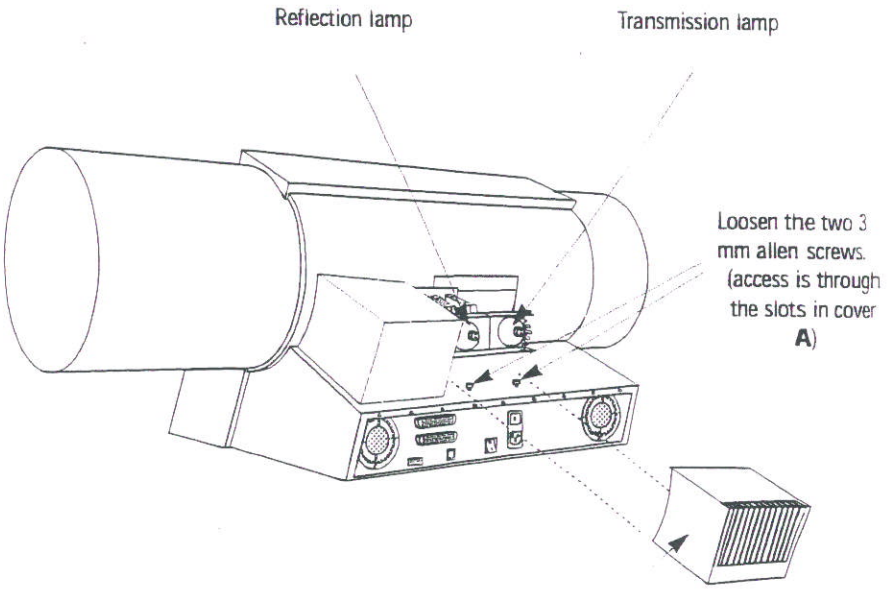
Assembly

4 • Insert a new lamp, or lamps, by positioning the tab on the lamp rim so that it faces towards the center of the lamp holder.
5 • Position the lamp rim under the spring and press it outwards against spring pressure until it can slide under the guide.
6 • Lock the lamp in place by allowing the spring pressure to slide the lamp into the holder.
Note: ensure that the tab on the lamp rim fits into the slot of the holder.
7 • Reconnect the relevant connector.
8 • Carry out the calibrations specified below.
9 • Refit the lamp cover **A** by sliding it onto the two 3 mm dome headed allen screws and then tighten the screws.

Adjustments and tests required

White calibration in transmission and reflection (section 5•5).

Halogen Lamps



Lamp cover **A**

PN 960 20 001 10 (4000 and 5000) Sensor Module

Function

The sensor module is common to both the 4000 and 5000 models and transforms light from the scans and separates the beam into RGB light.

Technical data

Tools and materials required

1.5 mm allen key for fibre optic cables set screws
2 mm allen key for sensor optics holder
2.5 mm allen key for lamp cover and back cover mounting screws
3.0 mm allen key (T-handle) for right hand drum cover mounting screws
3 mm allen key for end plate and sensor mounting bracket screws

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Sensor Module

How to replace

Removal

1 • Remove the lamp cover **A**, back cover **B**, right hand end plate **C** and right hand drum cover **D**, (section 4•2 steps 1-4).
2 • Remove the hardware unit, (section 4•5 steps 2-6).
3 • Loosen the three 3 mm set screws **A** securing the three RGB fibre optics cables to the sensor and carefully remove the cables
Note: mark the cables as necessary to ensure correct refitment.
4 • Disconnect the two 2 pin, 6 pin and 8 pin connectors to the aperture and focus zero switches, aperture motor and focus motor of the sensor module.
5 • Loosen the 3 mm set screw **B** securing the sensor optics holder over the lens of the sensor and remove the holder.
6 • Remove the four 4 mm allen screws **C** securing the sensor to the mainframe of the scanner and carefully remove the sensor module from the rear.
7 • Remove the halogen lamp bracket by loosening the one allen screw under the bracket, (for earlier model ScanMates), or loosening the two allen screws either side of the bracket (for later model ScanMates)
Note: removal is for adjustment of the focus motor for sensor adjustment.

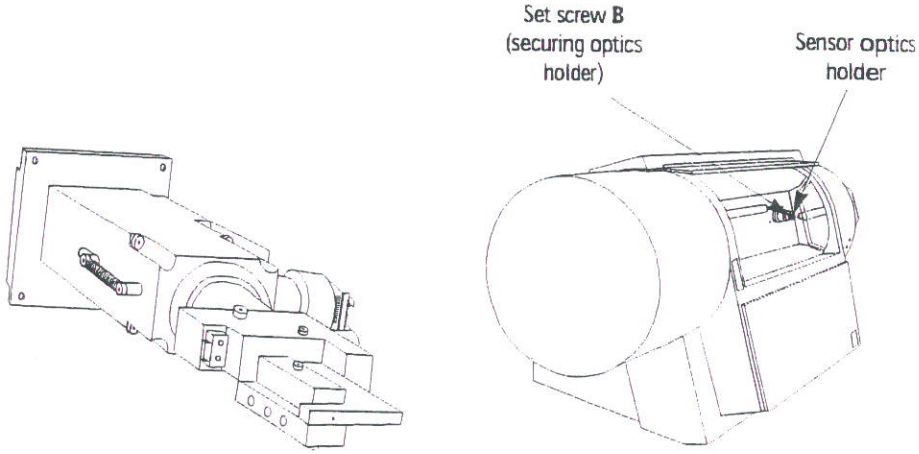
Assembly

8 • Mount the new sensor module and fit the four 4 mm allen screws **C**.
9 • Refit the optics holder to the sensor lens and tighten the 3 mm set screw **B**.
10 • Refit the three RGB fibre optic cables as marked in step 3, and tighten the three 3 mm set screws **A**.
Note: avoid bending the fibre optics cables excessively.
11 • Reconnect the two 2 pin, 6 pin and 8 pin connectors to the aperture and focus zero switches, aperture motor and focus motor respectively.
12 • Partially refit the hardware unit, (section 4•5 steps 7-10).
13 • Carry out the adjustment and test operations specified below.
14 • Refit the halogen lamp bracket and tighten the allen screw(s).
15 • Carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws **A** on each side of the unit.
16 • If no further replacement operations are required, refit the covers removed in step 1 in accordance with section 4•2.

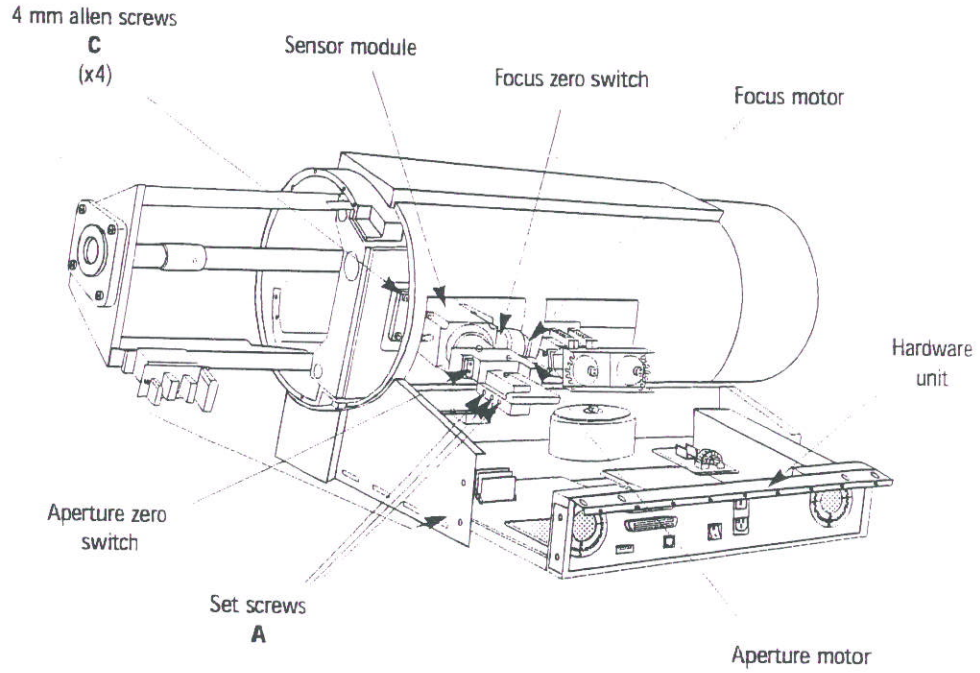
Adjustments and tests required

Focus (section 5•3) and light tube (section 5•2).
White calibration in transmission and reflection (section 5•5).
Focus calibration (section 5•4) and focus sharpness (section 5•11).
Register error (section 5•12) and stripes in shadow (section 5•13).
Zero point horizontal (section 5•7) and zero point vertical (section 5•8).

Sensor Module



ScanMate 5000 shown
(SM 4000 is identical)



Hardware Unit

PN 960 25 001 70 (4000)
PN 960 20 001 70 (5000 - 0200 model)
PN 960 21 001 70 (5000 - 0210 model)

Function

The hardware unit differs between the ScanMate 4000 and 5000, (both 0200 and 0210 models), but removal and assembly is identical.

On all ScanMate 4000 and 5000 models, it contains the control board, CPU module, SCSI controller, amplifier boards and driver board.

In addition, on the ScanMate 5000, (0210 model), it contains the bar code board.

Technical data

Tools and materials required

2 mm allen key for back cover and hardware unit mounting screws

Caution!

☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ If a green colored connector is used in connection J20 on the control board, ensure that is reconnected with the locking tabs on the **right hand side**, viewed from the **back** of the scanner. If reconnected incorrectly, the amplifiers in the PMT module will blow.

☛ If the hardware drawer is partially removed and power turned on, ensure that the open side of the heat sink on the driver board is covered, with, for example a piece of cardboard or paper, in order that cooling is still effective.

Hardware Unit

How to replace

Removal

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1-2).
2 • Remove the two 2.5 mm countersunk screws **A** on each side of the hardware unit and carefully slide the unit partially out.
3 • Disconnect connector J4 and the connector to the two ventilation fans from the driver board.
4 • Disconnect the large white power connector to the transformer.
5 • Disconnect connector J20, (green) **or** J21, (black) from the control board.
Note: earlier model scanners use J20, (green)- see the note in step 9 below.
6 • Carefully slide the hardware unit out of its tray.

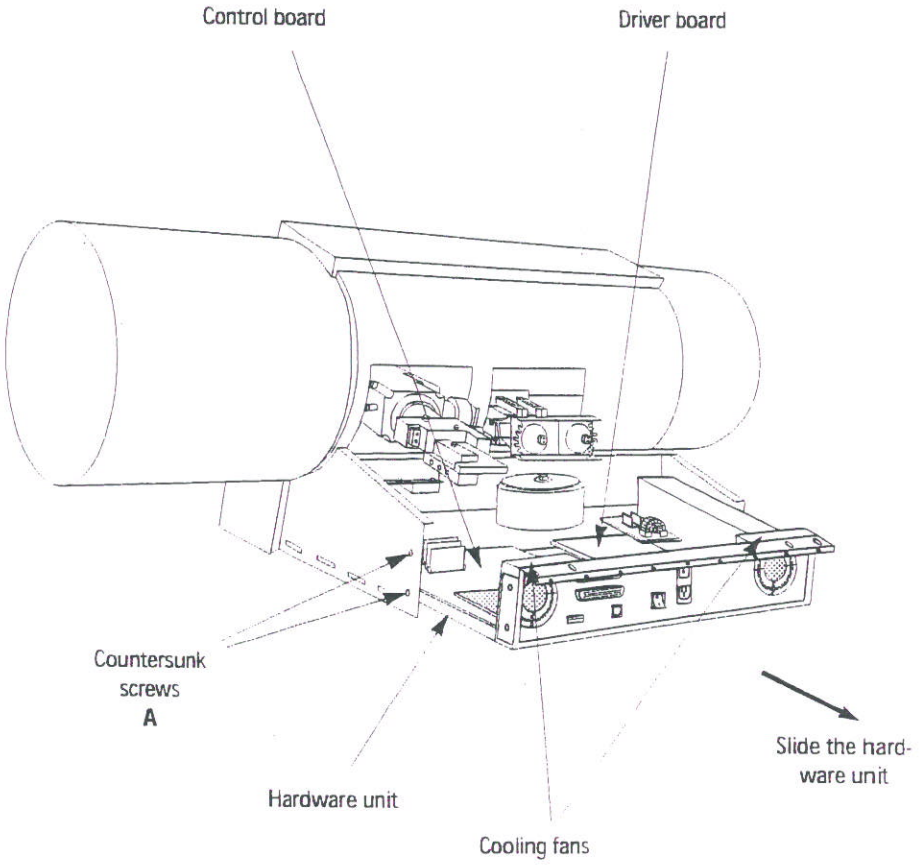
Assembly

7 • Mount the new hardware unit onto its tray and slide it partially in.
8 • Connect the large white power connector to the transformer.
9 • Connect connector J20, (green) **or** J21, (black) to the control board.
Note: If J20, (green) is used, it is possible to fit both ways. If fitted incorrectly, it will cause the amplifiers in the PMT module to blow. Ensure that the locking tabs on the connector fit into the locks on the control board, (that is, facing to the **right hand side** viewed from the **back** of the scanner).
10 • Connect connector J4 and the connector from the two ventilation fans to the driver board.
11 • Carry out the adjustment and test operations specified below.
12 • Slide the hardware unit fully in (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws **A** on each side of the unit.
13 • If no further replacement operations are required refit the covers removed in step 1 in accordance with section 4•2.

Adjustments and tests required

White calibration in transmission and reflection (section 5•5).
Focus calibration (section 5•4).

Hardware Unit



Control Board

PN 960 25 000 10 (4000)
PN 960 20 000 10 (5000 - 0200 model)
PN 960 21 000 10 (5000 - 0210 model)

Function

The control board differs between the ScanMate 4000 and 5000, (both 0200 and 0210 models), but removal and assembly is identical.

It contains control circuits for the DC motor, spindle step motor, sample control, color look-up table, A/D converter and holds the SCSI and RS 232 PC interfaces, CPU, memory and firmware.

Technical data

Tools and materials required

2 mm allen key for back cover and hardware unit mounting screws
Posidrive screwdriver

Caution!

☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ If a green colored connector is used in connection J20 on the control board, ensure that is reconnected with the locking tabs on the **right hand side**, viewed from the **back** of the scanner. If reconnected incorrectly, the amplifiers in the PMT module will blow.

Control Board

How to replace

Removal

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1-2).
2 • Remove the hardware unit, (section 4•5, steps 2-6).
3 • Remove the CPU module by lifting away from connectors J12 and J13 on the control board.
4 • Disconnect connectors J16, J18 and J19.
5 • On ScanMate 5000 (0210 model), disconnect the connector from the bar code board, located in IC21.
6 • Remove the nine 2.5 mm posidrive screws from the control board and remove the board.
7 • Remove #1 amplifier board from J1 on the control board by opening the two side clips, carefully rotating the board towards the back of the scanner and lifting away.
8 • Remove #'s 2 and 3 amplifier boards from J2 and J3 as in step 7.

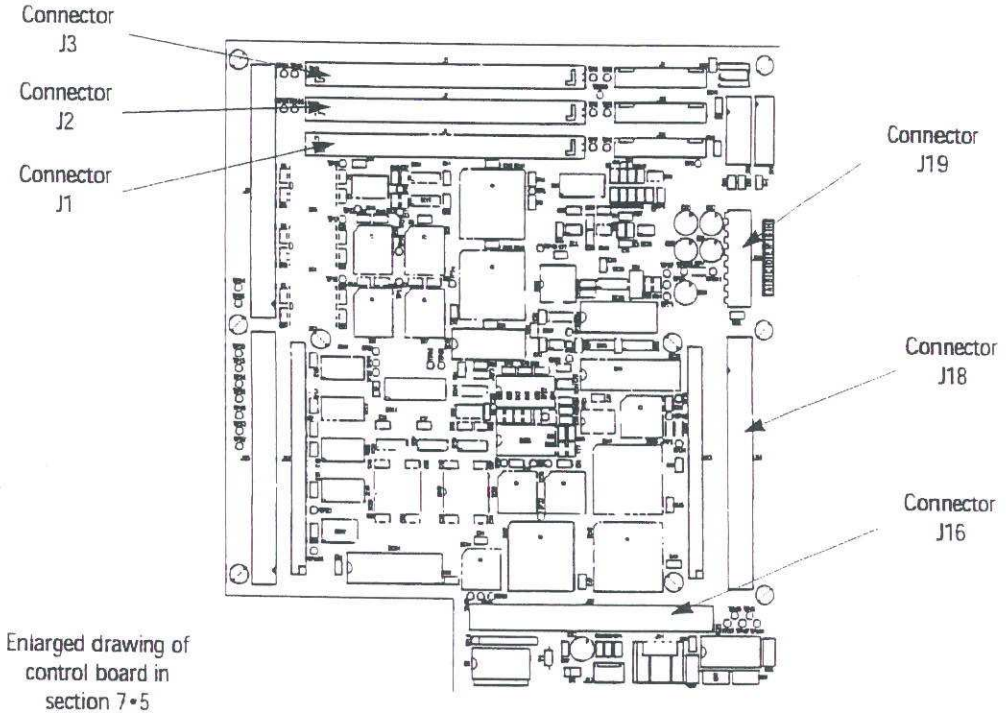
Assembly

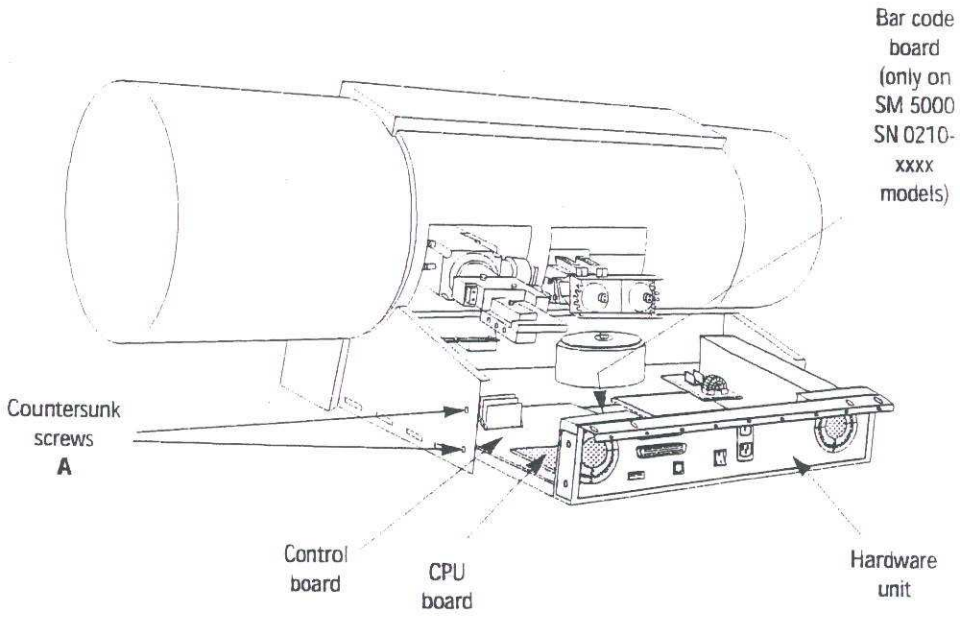
9 • Refit the three amplifier boards to the new control board by carefully mounting at an angle, rotating to the vertical position and locking with the two side clips.
10 • Fit the control board and secure with the nine 2.5 mm posidrive screws.
11 • Refit the CPU module onto connectors J12 and J13 on the control board.
12 • Reconnect connectors J16, J18 and J19.
13 • On ScanMate 5000 (0210 model), reconnect the connector from the bar code board, into IC21.
14 • Partially refit the hardware unit, (section 4•5 steps 7-10).
Note: if connector J20, (green) is used on the control board, ensure that it is connected correctly, (see the caution on page 4•6a).
15 • Carry out the adjustment and test operations specified below.
16 • Carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws **A** on each side of the unit.
17 • If no further replacement operations are required, refit the back cover **C** in accordance with section 4•2.

Adjustments and tests required

White calibration in transmission and reflection (section 5•5).
Focus calibration (section 5•4).
Register error (section 5•12).
Stripes in shadow (section 5•13).

Control Board





PN 960 20 000 20 (4000 and 5000) CPU Board

Function

The CPU module is common to the ScanMate 4000 and 5000, (both 0200 and 0210 models) and contains the CPU and memory, EPROM and SCSI controller.

Technical data

Tools and materials required

2 mm allen key for back cover and hardware unit mounting screws

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

CPU Board

How to replace

Removal

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1-2).
2 • Remove the two 2.5 mm countersunk screws **A** on each side of the hardware unit and carefully slide the unit partially out.
3 • Remove the CPU module by lifting away from connectors J12 and J13 on the control board.

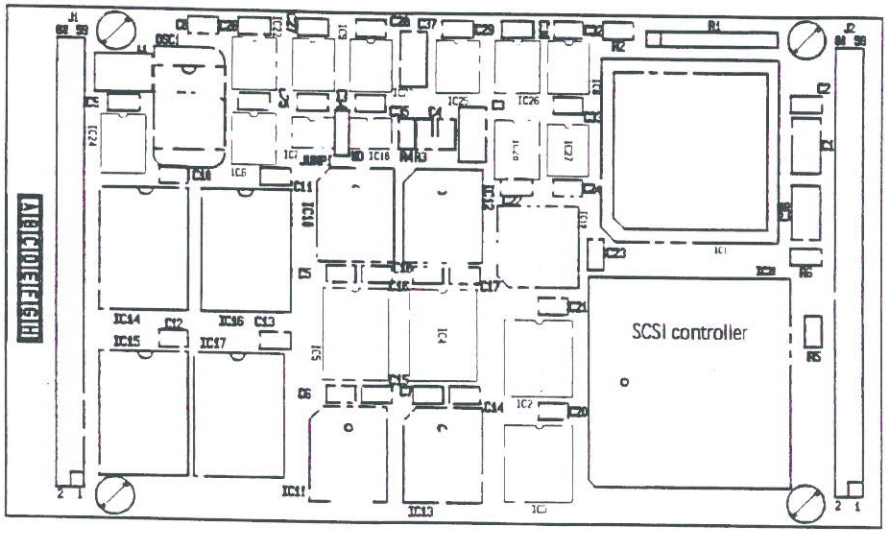
Assembly

4 • Fit the new CPU module onto connectors J12 and J13 on the control board.
Note: in isolated cases, it is possible to fit the module both ways, therefore it is important that the side with the SCSI controller is to the **right hand side** as viewed from the **back** of scanner.
5 • Partially refit the hardware unit, (section 4•5 steps 7-10).
6 • Carry out the adjustment and test operations specified below.
7 • Carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws **A** on each side of the unit.
8 • If no further replacement operations are required refit the covers removed in step 1 in accordance with section 4•2.

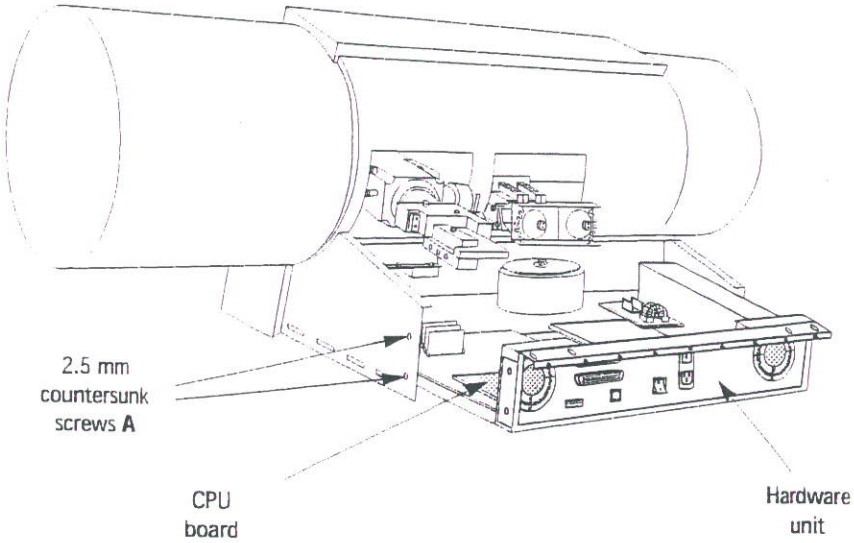
Adjustments and tests required

White calibration in transmission and reflection (section 5•5).
Focus calibration (section 5•4).
Register error (section 5•12).
Stripes in shadow (section 5•13).

CPU Board



Enlarged drawing of CPU board in section 7•6



PN 960 20 001 60 (4000/5000)

SCSI Controller

Function

The SCSI controller is common to the ScanMate 4000 and 5000, (both 0200 and 0210 models) and controls the SCSI communication between the scanner and host.

Technical data

1 IC chip with 84 pins located on the control board.

Tools and materials required

2 mm allen key for back cover and hardware unit mounting screws
PLCC removal tool for SCSI controller

Caution!

- Turn off power
  - **Before** connecting or disconnecting cables.
  - **Before** carrying out service operations.
- only use the special PLCC removal tool for the SCSI controller. **Do not** use other tools, otherwise the chip socket will be damaged.

SCSI Controller

How to replace

Removal

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1-2).
2 • Remove the two 2.5 mm countersunk screws **A** on each side of the hardware unit and carefully slide the unit partially out.
3 • Using a special PLCC removal tool, (fig. 2), remove the SCSI controller from IC20 on the CPU module.
Note: only use the special PLCC removal tool. **Do not** use other tools, otherwise the chip socket will be damaged.

Assembly

4 • Fit a new SCSI controller into IC20 on the CPU board.
5 • Carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws **A** on each side of the unit.
6 • If no further replacement operations are required refit the covers removed in step 1 in accordance with section 4•2.

Adjustments and tests required

No adjustments are required

SCSI Controller

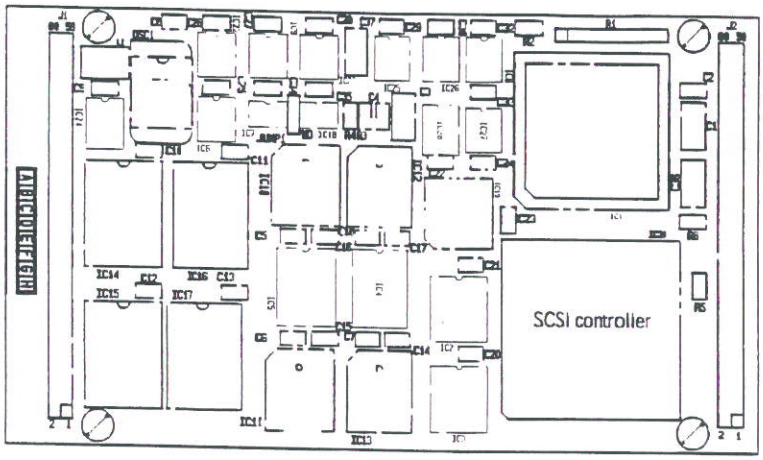


Fig. 1

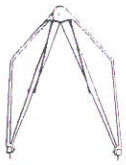


Fig. 2

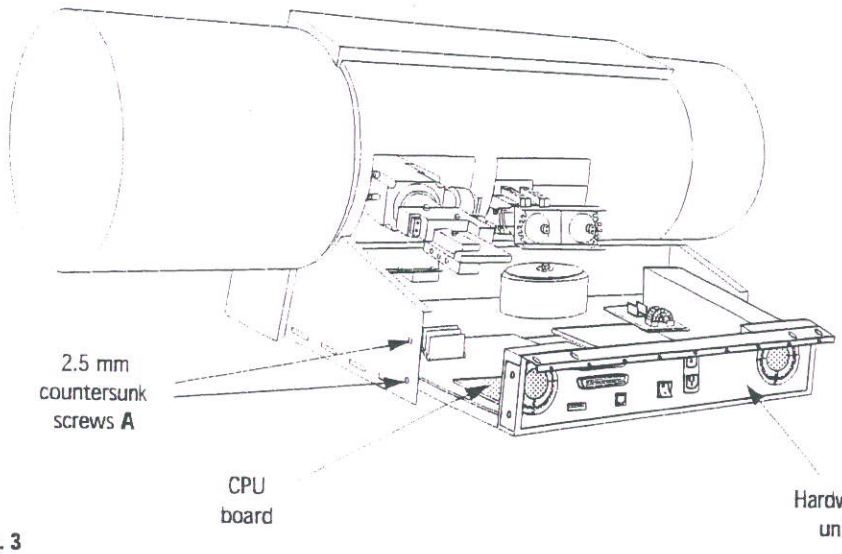


Fig. 3

PN 960 25 000 30 (4000)
PN 960 20 000 30 (5000)

Amplifier Board

Function

There are three identical amplifier boards, but they differ between the ScanMate 4000 and 5000, (both 0200 and 0210 models), however removal and assembly is identical.

They are mounted on the control board and contain the A/D converters. Their function is to amplify RGB signal data

Technical data

PN 960 25 000 30	SM 4000
PN 960 20 000 30	SM 5000 (0200 and 0210 models)

Tools and materials required

2 mm allen key for back cover and hardware unit mounting screws

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Amplifier Board

How to replace

Note: removal and assemby of the SM 4000 and SM 5000 amplifier boards are identical.

Removal

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1-2).
2 • Remove the two 2.5 mm countersunk screws **A** on each side of the hardware unit and carefully slide the unit partially out.
3 • Disconnect connector J4 on the driver board in order to pull the hardware drawer further out, enough to gain access to the three amplifier boards.
4 • Remove the relevant amplifier board from the control board by opening the two side clips, carefully rotating the board towards the back of the scanner and lifting away.
Note: always remove #1 amplifier board first, (on J1 on the control board), followed by #2, (on J2) and then #3, (on J3).

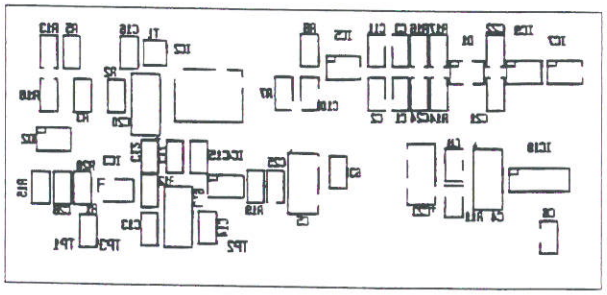
Assembly

5 • Refit the amplifier board(s) to the control board by carefully mounting at an angle, rotating to the vertical position and locking with the two side clips.
6 • Reconnect connector J4 on the driver board.
7 • Carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws **A** on each side of the unit.
8 • Carry out a white calibration in transmission and reflection (section 5•5).
9 • If no further replacement operations are required refit the covers removed in step 1 in accordance with section 4•2.

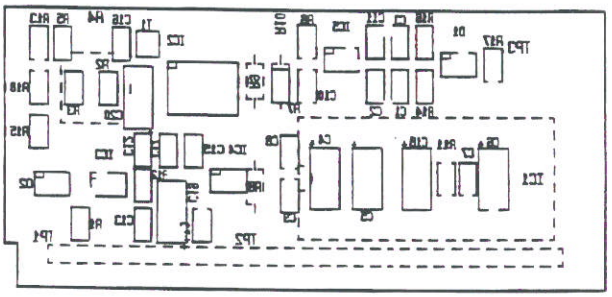
Adjustments required

White calibration in transmission and reflection (section 5•5).

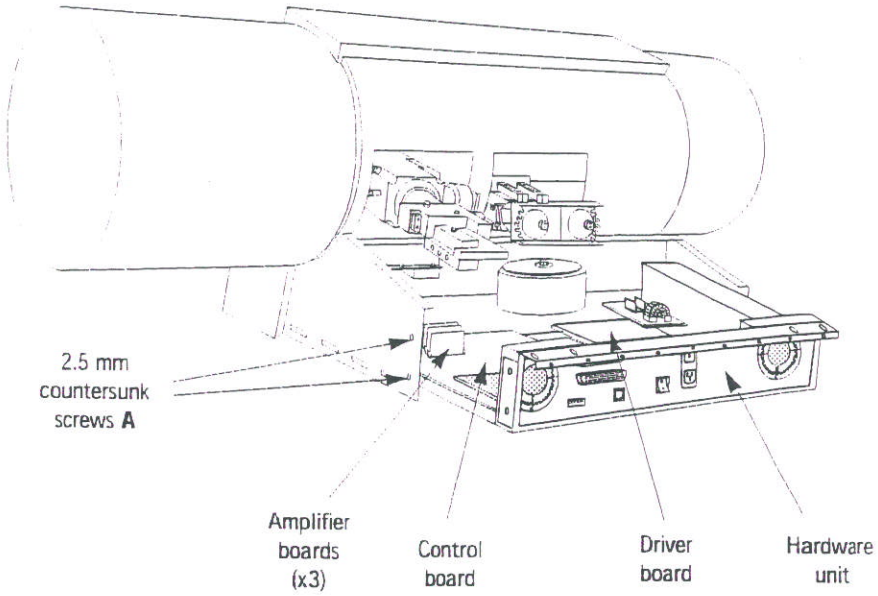
Amplifier Board



Amplifier board for SM4000



Amplifier board for SM5000



Driver Board

PN 960 21 000 40 (4000)
PN 960 20 000 40 (5000 - 0200 model)
PN 960 21 000 40 (5000 - 0210 model)

Function

The driver board differs between the ScanMate 4000 and 5000, (both 0200 and 0210 models), but removal and assembly is identical.

It contains the power supply to all analog and digital circuits and contains the motor driver and lamp driver circuits.

Technical data

+/- 5 VDC analog, + 12 VDC analog
+/- 15 VDC analog, + 19 VDC analog
+/- 20VDC analog, + 5 VDC digital

Tools and materials required

2 mm allen key for back cover and hardware unit mounting screws
Posidrive screwdriver

Caution!

☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ Wait at least 2-3 minutes after power is turned off before removing the driver board, in order for the capacitors to drain.

Driver Board

How to replace

Removal

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1-2).
2 • Remove the hardware unit, (section 4•5, steps 2-6).
3 • Disconnect connectors J2, J3 and J4 from the driver board.
4 • Disconnect the 2 pin connector (red/black leads) to the cooling fans.
5 • On ScanMate 5000 (0210 model), the driver board has a booster print board fitted, therefore it is necessary on this model to unscrew the brass-colored connector from the booster print board, (to the bar code board).
Note: this connector should be fingertight.
6 • Remove the two 2.5 mm posidrive screws **A** from the driver board.
7 • Support the driver board and remove the eight 2.5 mm posidrive screws **B** underneath the hardware unit, securing the board.
8 • Carefully move the driver board to the right, (as viewed from the back of the scanner), in order to clear the two locating tabs.
9 • Lift the driver board partly away and, on the ScanMate 5000, (0200 model), remove the 2.5 mm posidrive screw securing the ground, (earth) connection. Lift the board completely away.

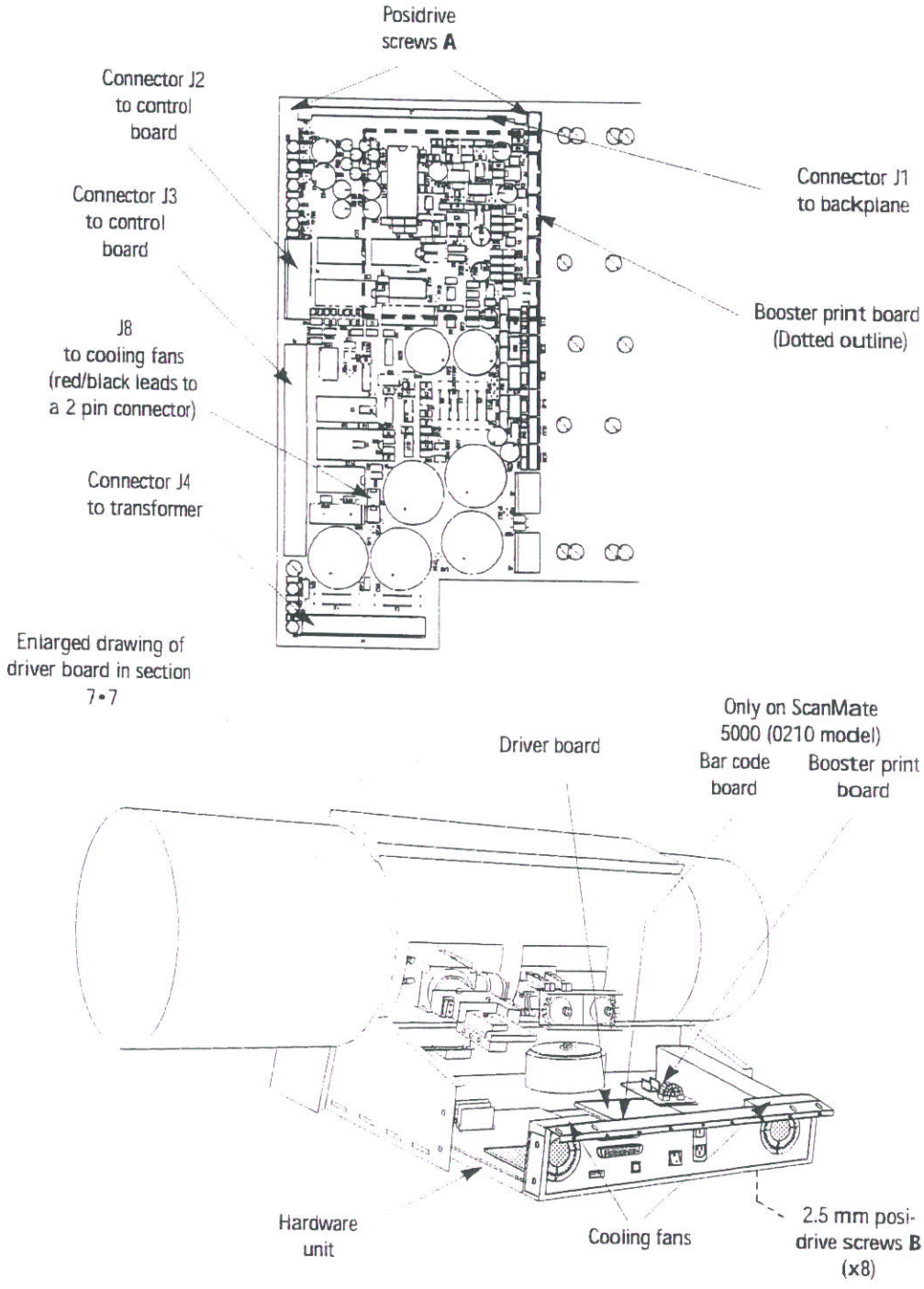
Assembly

10 • On ScanMate 5000, (0200 model), connect the ground, (earth) connection from the new driver board to the hardware unit using the 2.5 mm posidrive screw, before mounting the board.
11 • Fit the left hand edge of the driver board underneath the two locating tabs and secure with the two 2.5 mm posidrive screws **A**.
12 • Support the driver board and fit the eight 2.5 mm posidrive screws **B** underneath the hardware unit.
13 • On ScanMate 5000, (0210 model), connect the brass-colored connector on the booster print board to the bar code board, (finger tight only).
Note: on ScanMate 4000, this cable is redundant, therefore strap it as necessary in order to avoid the connector short-circuiting the scanner.
14 • Reconnect connectors J2, J3 and J4.
15 • Reconnect the 2 pin connector (red/black leads) from the cooling fan.
16 • Refit the hardware unit, (section 4•5, steps 7-11).
17 • If no further replacement operations are required, refit the covers removed in step 1 in accordance with section 4•2.

Adjustments and tests required

White calibration in transmission and reflection (section 5•5).
Focus calibration (section 5•4).

Driver Board



PN 960 20 000 50 (4000/5000) PMT Module

Function

The PMT module is common to the ScanMate 4000 and 5000, (both 0200 and 0210 models) and contains three photo multiplier tubes which convert the light to electronic signals. The signal is then transmitted to the control board.

Technical data

Three PMT's, one each for each color channel.

Tools and materials required

1.5 mm allen key for fibre optic cables set screws
2 mm allen key for back cover and hardware unit mounting screws
2.5 mm allen key for PMT module mounting screw

Caution!

☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ If a green colored connector is used in connection J20 on the control board, ensure that is reconnected with the locking tabs on the **right hand side**, viewed from the **back** of the scanner. If reconnected incorrectly, the amplifiers in the PMT module will blow.

☛ Avoid excessive bending or otherwise damaging the fibre optics cables.

PMT Module

How to replace

Removal

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1-2).
2 • Remove the hardware unit, (section 4•5, steps 2-6).
3 • Disconnect connector J20, (green) **or** J21, (black) from the control board.
Note: earlier model scanners use J20, (green)- see the note in step 11.
4 • Loosen the three 3 mm set screws **A** on the sensor module, securing the three RGB fibre optics cables, and carefully remove the cables.
Note: mark the cables as necessary to ensure correct refitment.
5 • Loosen the 3 mm allen screw **B** securing the PMT module to its tray and slide the module out.

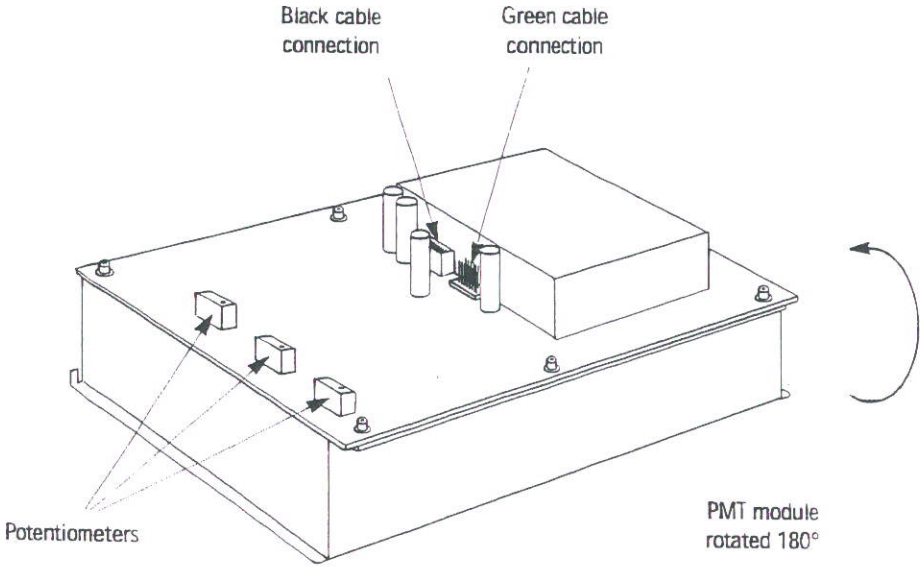
Assembly

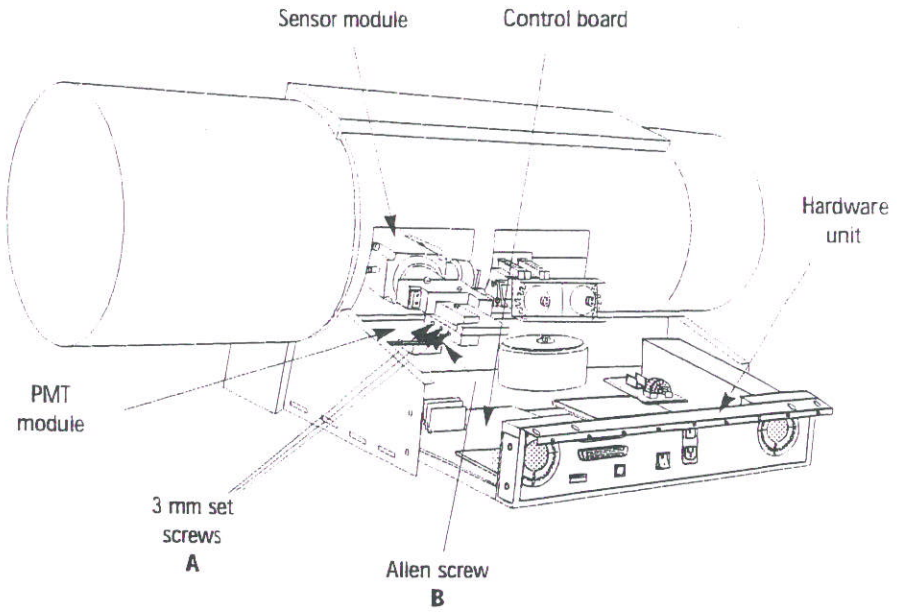
6 • Fit the three fibre optics cables (as marked in step 4) into the sensor module and tighten the 3 mm set screws **A**.
Note: Do not bend the fibre optics cable excessively when fitting.
7 • Connect connector J20, (green) **or** J21, (black) to the control board.
Note: If J20, (green) is used, it is possible to fit it both ways. If fitted incorrectly, it will cause the amplifiers in the PMT module to blow. Ensure that the locking tabs on the connector fit into the locks on the control board, (that is, facing to the **right hand side** viewed from the **back** of the scanner).
8 • Carry out a PMT amplifier gain adjustment, (section 5•6).
9 • Fit the new PMT module by positioning the board onto its tray and carefully pushing in.
10 • Tighten the 3 mm allen screw **B**.
11 • Partially refit the hardware unit, (section 4•5 steps 7-10).
Note: if J20 (green) is used on the control board, ensure that is connected correctly, (see the caution on the previous page, 4•11a).
12 • Carry out the adjustment and test operations specified below, (except PMT amplifier gain as this was carried out in step 8).
13 • Carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws **A** on each side of the unit.
14 • If no further replacement operations are required, refit the covers removed i n step 1 in accordance with section 4•2.

Adjustments required

PMT amplifier gain adjustment, (section 5•6).
White calibration in transmission and reflection (section 5•5).
Register error (section 5•12) and stripes in shadow (section 5•13).

PMT Module


Black cable connection
Green cable connection
Potentiometers
PMT module rotated 180°


Sensor module
Control board
Hardware unit
PMT module
3 mm set screws
A
Allen screw
B

PN 960 20 000 70 (4000 and 5000) Indicator Display

Function

The indicator display is common to the ScanMate 4000 and 5000, (both 0200 and 0210 models) and combines selection touch-switches with the status lights.

Technical data

Tools and materials required

2.5 mm allen key for internal protection cover.
3 mm allen key (T-handle) for left and right hand drum cover mounting screws.
3 mm allen key for end plate
Isopropylalcohol

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Indicator Display

Now to replace

Removal

1 • Remove the following covers:
Right hand end plate **C**, right hand drum cover **D**, left hand end plate **E** and left hand drum cover **F**, (section 4•2 steps 3 and 6).
2 • Remove the four 3 mm allen screws **A**, (two each side of the drum), securing the internal protection cover.
3 • Slide the cover to the right, (viewed from the front of the scanner), in order to give access to the back of the indicator display.
4 • Carefully pull the display ribbon cable away from its adhesive pad and disconnect the connector.
5 • Using a small screwdriver or other suitable tool, peel the indicator display away from the scanner.

Assembly

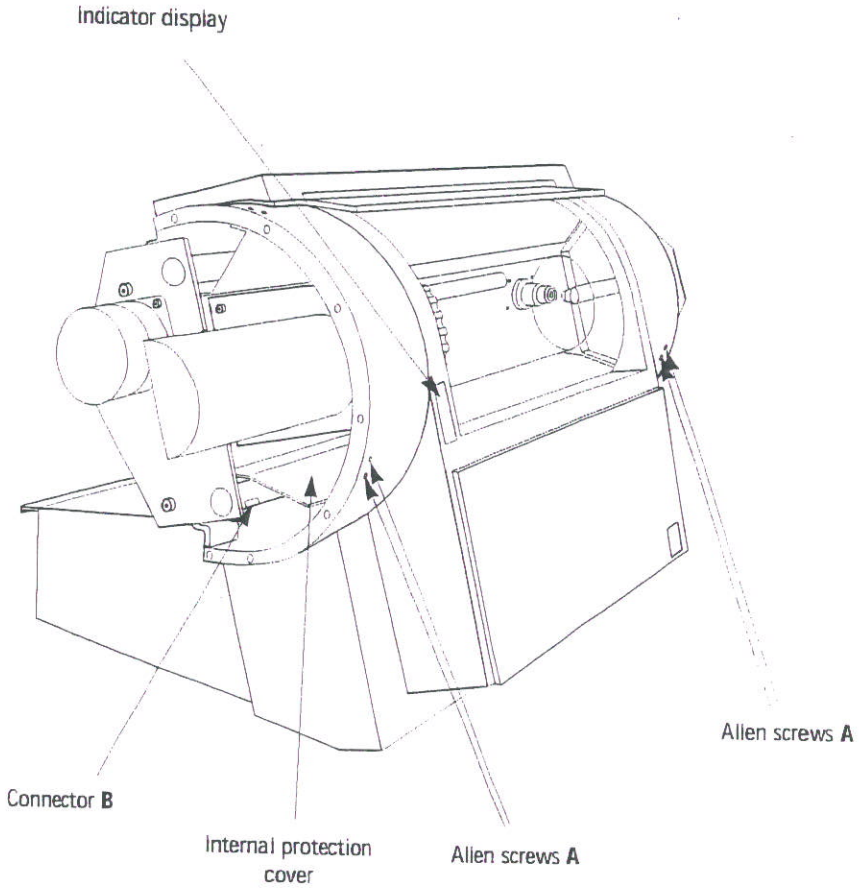
6 • Clean the area on the cabinet where the new display is to be fitted, with isopropyl alcohol.
7 • Peel the protective paper from the back of the new display, feed the ribbon cable through the opening in the drum and firmly press the display into place.
8 • Reconnect the connector and press the ribbon cable down onto the adhesive pad.
9 • Position the internal protection cover and secure it with the four 3 mm allen screws **A**, (two each side of the drum).
10 • If no further replacement operations are required, refit the covers removed in step 1 in accordance with section 4•2.

Adjustments required

No adjustments are necessary.

Indicator Display

ScanMate 5000 shown
(SM 4000 is identical)



PN 960 85 000 40 (4000 and 5000) Fluorescent Light Tube

Function

The fluorescent light tube illuminates the drum area and/or the spare drum compartment.

The ScanMate 4000 and 5000 (0210 model), have a light tube in the main compartment.

The ScanMate 5000 (0200 and 0210 models), have an extra light tube which illuminates the spare drum compartment underneath the main compartment.

Technical data

8W fluorescent tube

Tools and materials required

Small screwdriver for light cover.

Caution!

- Turn off power **before** replacing the light tubes
- Access is limited to the light tubes, therefore take care not to damage the fittings during replacement.

Fluorescent Light Tube

How to replace

Removal - main compartment, 4000 and 5000, (0210 model)

1 • Open the front cover and remove the drum, if mounted.
2 • Remove the plastic cover by pulling it away from its two retaining magnets. (It may be necessary to very carefully use a screwdriver under one edge).
3 • Rotate the tube 90° (in either direction), lift upwards and remove.

Assembly - main compartment, 4000 and 5000, (0210 model)

4 • Mount a new tube and rotate it 90° (in either direction) to the locked position.
5 • Refit the plastic cover.

Removal - auxilliary compartment, 5000, (0200 and 0210 model)

1 • Open the hinged cover and remove the spare drum, if mounted.
2 • Remove the plastic cover by holding in the middle and carefully pulling away from the two end flanges.
3 • Rotate the tube 90° (in either direction), lift upwards and remove.
Note: it may be necessary to use a small screwdriver between the fitting and the tube (between the two pins on the tube), in order to rotate the tube. However we recommend that this method is only used if rotation cannot be carried out by hand.

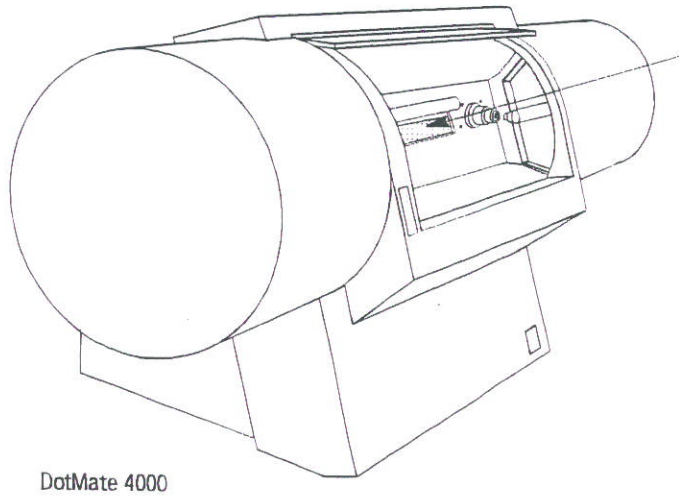
Assembly - auxilliary compartment, 5000, (0200 and 0210 model)

4 • Mount a new tube and rotate it 90° (in either direction) to the locked position.
5 • Refit the plastic cover.

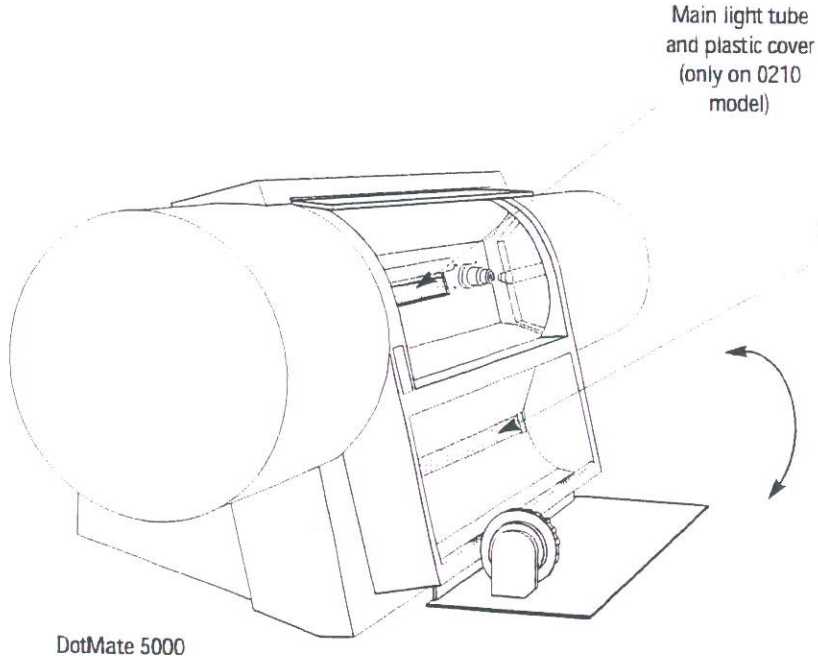
Adjustments required

No adjustments are required.

Fluorescent Light Tube



DotMate 4000



DotMate 5000

PN 960 20 000 90 (4000 and 5000) Spindle Step Motor

Function

The spindle step motor is common to the ScanMate 4000 and 5000 (both 0200 and 0210 models), and rotates the spindle which moves the drum to its left (park), right (zero) and lock positions. The speed of spindle rotation is dependent on the resolution of the actual scan.

Technical data

VEXTA single shaft PH265 step motor.
6 V, 0.85 current per phase.

Tools and materials required

3 mm allen key (T-handle) for left hand drum cover
3 mm allen key for end plate and motor mounting screws
Loctite 222 or equivalent for motor shaft mounting screw
4 mm lock washer

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Spindle Step Motor

How to replace

Removal

1 • Remove the following covers:
Left hand end plate **E** and left hand drum cover **F**, (section 4•2 steps 5 and 6).
2 • In order to give access to the spindle step motor, move the drum to the zero position, turn on power and access the service program, (section 3•5).
3 • Select **1**, (**Move spindle**) and **Z**, (**Set drum in zero position**). Turn off power.
4 • Disconnect the connector to the step motor.
5 • Manually rotate the spindle until the head of the 4 mm dome head allen screw **A** securing the step motor to the spindle is accessible and remove the screw and lock washer.
6 • Remove the four 4 mm allen screws **B** retaining the step motor to its mounting bracket and lift the motor away.

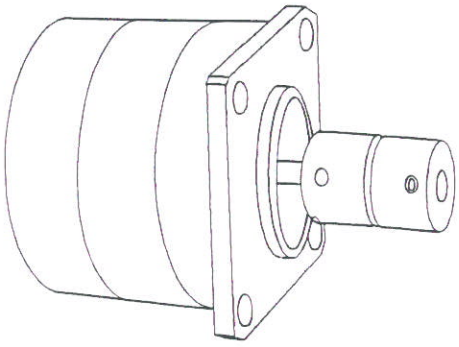
Assembly

7 • Mount a new step motor and refit the four 4 mm allen screws.
8 • Align the holes in the step motor shaft and spindle and refit the 4 mm dome head allen screw and new lock washer.
9 • Reconnect the connector to the step motor.
10 • Carry out the adjustment and test operations specified below.
11 • If no further replacement operations are required, refit the covers removed in step 1 in accordance with section 4•2.

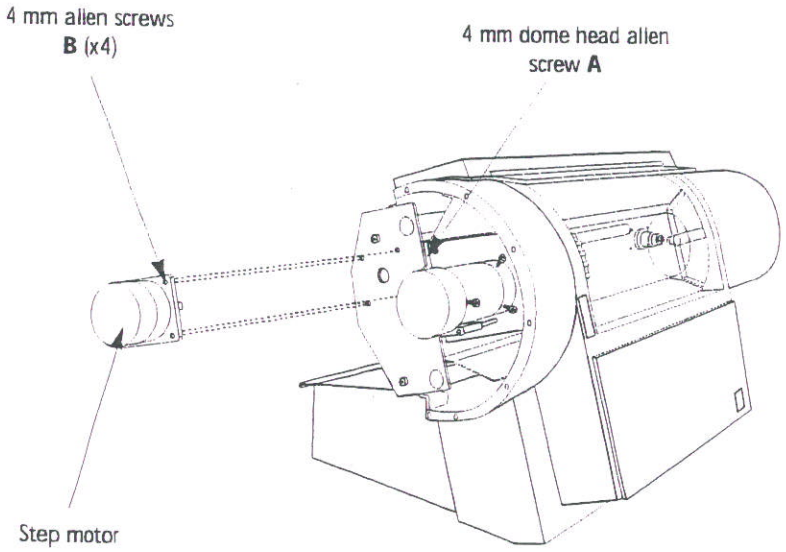
Adjustments required

White calibration in transmission and reflection (section 5•5)
Register error (section 5•12).

Spindle Step Motor



Step motor



ScanMate 5000 shown
(SM 4000 is identical)

PN 960 20 000 80 (4000 and 5000) DC Motor

Function

The DC motor is common to the ScanMate 4000 and 5000 (both 0200 and 0210 models). It rotates the drum and feeds position data back to the control circuits.

Technical data

24V Maxon DC motor, with Stegmann encoder giving 1 sync pulse/rev. and 5000 clock pulses/rev.

Tools and materials required

4 mm set screws (2)
1.5 mm allen key (new or re-ground) for motor set screws
2.5 mm allen key for DC motor covers mounting screws
3 mm allen key (T-handle) for left hand drum cover mounting screws
3 mm allen key for drum end plate and motor mounting screws
Loctite 243 or equivalent for set screws
Tape for sealing set screw access hole

Caution!

☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ A 1.5 mm allen key in good condition is essential for removal and fitting of the two motor shaft set screws as they are in a difficult position to remove if they become rounded. (If the holes become rounded, a 1/16" allen key may help to remove them).

DC Motor

How to replace

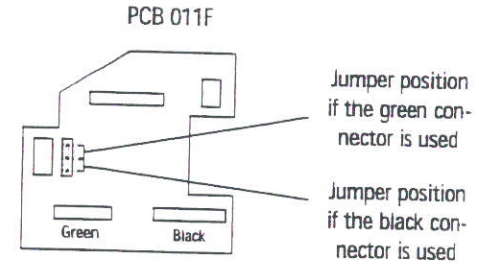
Removal

1 • Remove the left hand end plate **E** and left hand drum cover **F**, (section 4•2).
2 • Turn on power and access the service program, (section 3•5).
3 • Select **1**, (**Move spindle**) and **L**, (**Set drum to lock position**).
4 • Remove the two 2.5 mm dome-headed allen screws **A** from the motor outer cover and pull the cover away to the left, as viewed from the front of the scanner.
Note: earlier model scanners were retained by two studs instead of allen screws. With this version, pull the cover to the left, away from the studs.
5 • Select **Z**, (**Set drum to zero position**) and turn off power.
6 • Remove the two allen screws **B** from the motor inner cover and remove the cover.
7 • Disconnect the DC motor and encoder connectors from the connector PCB and remove the tape securing the leads to the motor.
8 • Remove the tape over the access hole to the shaft attachment set screws **C**.
9 • Manually rotate the drum until one of the two 4 mm set screws **C** retaining the motor shaft to the drum is accessible.
10 • Remove and discard the set screw, rotate the drum 180° and remove and discard the second 4 mm set screw.
11 • Remove the two 4 mm allen screws **D** attaching the motor to the drum sleeve and remove the motor.

Assembly

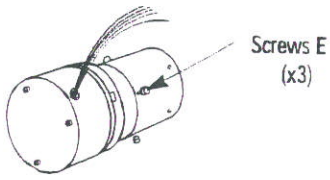
Note: rotate the motor shaft so that one of the flat faces will be visible in the access hole when the motor is fitted.
12 • Loosen the three 4 mm allen screws **E** securing the outer sleeve of the new motor, mount the motor and push it firmly against the drum sleeve.
13 • Check that the flat face on the motor shaft is positioned correctly in the access hole and using loctite 243, fit a **new** set screw **C**.
14 • Rotate the drum 180° and using loctite 243, fit the second **new** 4 mm set screw **C**.
15 • Push the outer sleeve of the motor up against the drum sleeve, tighten the three 4 mm allen screws **E**, fit the two 4 mm allen screws **D** and seal the hole with tape.
16 • Reconnect the motor and encoder connectors to the connector PCB and position the jumper as per the note below. Secure the leads to the motor with tape.
Note: for ScanMate 5000 (0200 and 0210 models), if the green connector is used, connect the jumper to the upper position on the board. If the black connector is used, connect the jumper to the lower position, (fig. 1).
17 • Carry out a zero point vertical, (section 5•8).
18 • Carry out a white calibration in transmission and reflection, (section 5•5) and register error, (section 5•12).
19 • Refit the motor inner panel using the two allen screws **B** and mount the motor outer panel ensuring that the stud on the inside of the panel locates in the elongated hole of the inner panel.
Note: for earlier model scanners, push in to the right to lock the two studs in the end of the panel. For later model scanners, refit the two allen screws **A**.
20 • Refit the covers removed in step 1 in accordance with section 4•2.

DC Motor



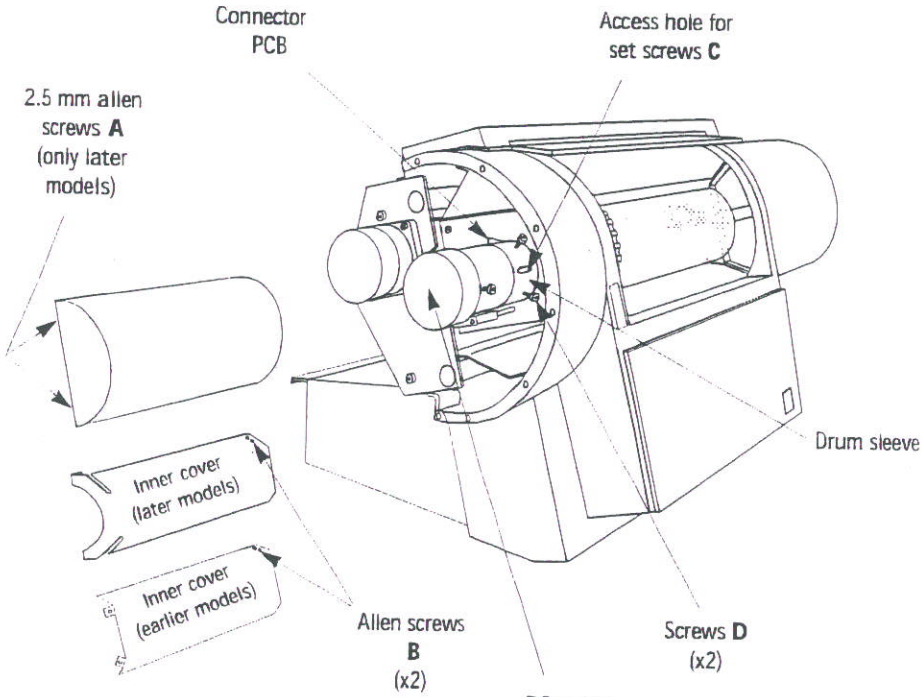
There are two different types of board, (PCB011D and PCB 011F), however the jumper positioning is the same

Fig. 1



DC motor

Fig. 2



ScanMate 5000 shown (SM 4000 is identical)

Fig. 3

PN 960 21 001 00

Drum

Function

The drum is common to both the ScanMate 4000 and 5000 (both 0200 and 0210 models), and is of acrylic plastic construction on which is mounted originals to be scanned.

Technical data

Drum material:	acrylic
Dimensions:	100 x 314 mm

Tools and materials required

No tools or materials required

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Drum

How to replace

Removal

Note: avoid touching the acrylic surface of the drum during removal and installation.

1 • Turn power on.
2 • To lock the drum, press the **drum lock** symbol on the display indicator.
Note: for the ScanMate 5000 (0210 model), hold the button down for 3-4 seconds.
3 • Wait until the lock lamp remains lit.
4 • Slowly rotate the drum until a click is heard. The drum is now locked.
5 • Remove the drum by holding on the metal sleeve, rotating in the direction as shown in the diagram, and lift away.

Assembly

Note: for ScanMate 4000 and 5000 (0200 model), mark the drum with a number between 1 and 10.
6 • Position the drum with the horizontal line uppermost (fig. 1).
7 • Mount the drum on the studs of the drum platform and turn in the direction as shown in the diagram.
8 • Repeat step 2 and wait for the lock lamp to stop flashing.

Adjustments and tests required

White calibration in transmission and reflection (section 5•5).
Focus calibration (section 5•4).

Drum

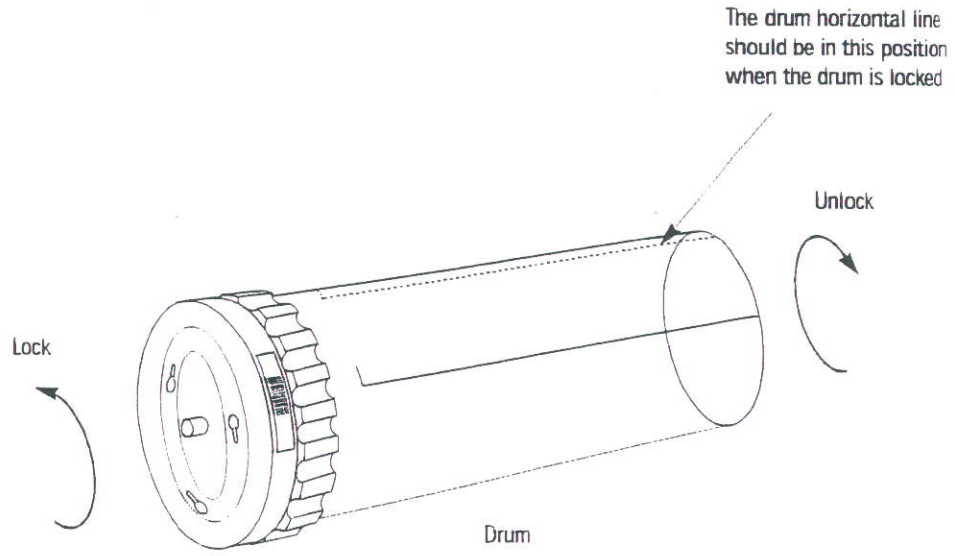

The drum horizontal line
should be in this position
when the drum is locked
Unlock
Lock
Drum

Fig. 1

Contents

Adjustment

Testing

Light Tube

Function

Light tube adjustment sets the mechanical alignment of the optical system (light source and sensor).

Technical data

TP46	- test point
TP100	- ground

Tools and equipment required

C-spanner for light unit lock ring
2 mm allen key for lamp cover and back cover mounting screws
2.5 mm allen key for focus motor mounting screws
3 mm allen key (T-handle) for right hand drum cover mounting screws
Extension board (part of the service kit)
Voltmeter with probes

Caution!

- Turn off power
  - **Before** connecting or disconnecting cables.
  - **Before** carrying out service operations.
- When the hardware drawer is partially removed and power turned on, ensure that the open side of the heat sink on the driver board is covered, with, for example a piece of cardboard or paper, in order that cooling is still effective.

Light Tube

How to adjust

1 • If access is not already available, remove the lamp cover **A**, back cover **B**, right hand end plate **C** and right hand drum cover **D**, (section 4•2 steps 1-4).
2 • Remove the two 2.5 mm countersunk screws from each side of the hardware unit and carefully slide the unit partially out.
3 • Insert the back plane extender onto connector J1 on the driver board and carefully push the hardware unit back in.
4 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC or Mac.
5 • Set the Dip switch to 8, (on).
6 • Cover the side of the heat sink on the driver board, (see the "caution" on the previous page).
7 • Turn on the PC and scanner and access the service program main menu (section 3•5).
8 • Select **1**, (**Move drum Z/P/L/.**), then **.**, ("dot" allows setting your own drum position parameters) and move the drum far enough to the right to give access to the light tube locking ring. (No further than that shown in fig. 1). Finally select **q**, (**utility end**).
9 • Select **0**, (**Toggle lamps**) to turn on the transmission light.
10 • Check that the transmission light is centered as closely as possible on the sensor lens. If centering is required, loosen the light tube lock ring (fig. 1), enough so that the tube can be rotated or moved horizontally as necessary.
11 • Switch off the transmission light, (press **0** twice).
12 • Select **9**, (**Calibrate aperture**).
13 • Repeat step 8.
14 • Select **0**, (**Toggle lamps**) to turn on the transmission light again.
15 • Connect a voltmeter to TP46 and TP100 (ground) on the control board (fig. 2), select **2**, (**Adjust PMT gain**) and then **T**, (**Transmission**) and adjust the gain value to approximately 3 volts. Select **q**, (**done**) when complete.
16 • Loosen the light tube lock ring and adjust on the light tube until the maximum voltage on TP46 is reached.
Note: it may be necessary to return to step 14 and adjust the gain up or down as required.
17 • Tighten the lock ring, taking care not to move the light tube. As a precaution, it is recommended to double check that the maximum voltage reading has not changed.
18 • Carry out a white calibration in transmission and reflection (section 5•5).
19 • Remove the voltmeter and the cover over the driver board heat sink.
20 • Remove the driver board extender, carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws on each side of the unit.
21 • If no further adjustment or replacement operations are required, refit the covers removed in step 1, in accordance with section 4•2.

Light Tube

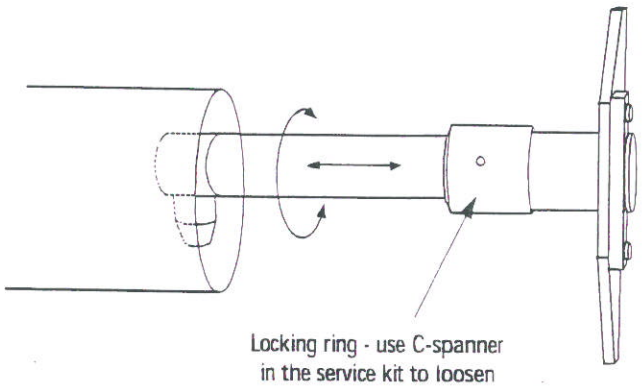


Fig. 1

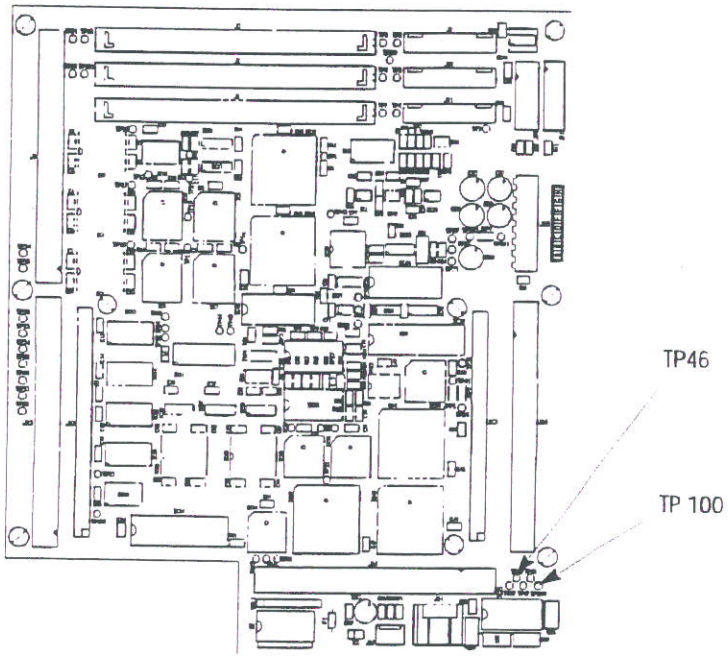


Fig. 2

Focus

Function

Focus adjustment ensures that the focus motor is adjusted to focus or defocus on all types and thicknesses of image.

Technical data

Tools and equipment required

2 mm allen key for lamp cover and back cover mounting screws
2.5 mm allen key for focus motor mounting screws
3 mm allen key (T-handle) for right hand drum cover mounting screws
Focus motor adjustment tool
Photoshop plug-in 2.1.7 or later versions
Extension board (part of the service kit)

Caution!

☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ **Do not** rotate the drum platform while the focus motor adjustment tool is fitted.

☛ When the hardware drawer is partially removed and power turned on, ensure that the open side of the heat sink on the driver board is covered, with, for example a piece of cardboard or paper, in order that cooling is still effective.

Focus

How to adjust

1 • If access is not already available, remove the lamp cover **A**, back cover **B**, right hand end plate **C** and right hand drum cover **D**, (section 4•2 steps 1-4).
2 • Remove the two 2.5 mm countersunk screws from each side of the hardware unit and carefully slide the unit partially out.
3 • Insert the back plane extender onto connector J1 on the driver board and carefully push the hardware unit back in.
4 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
5 • Set the Dip switch to 8, (on).
6 • Cover the side of the heat sink on the driver board, (see the "caution" on the previous page).
7 • Turn on the PC or Mac and scanner and start up Photoshop plug-in.
8 • Carry out a white calibration in transmission (section 5•5).
9 • Access the service program main menu (section 3•5).
10 • Lock the drum by pressing **Lock drum** on the indicator display.
11 • Remove the drum and mount the focus motor adjustment tool (fig. 1) onto the drum platform.
Note: do not rotate the drum platform while the adjustment tool is fitted.
12 • Remove the 3 mm set screw securing the optics holder to the sensor lens and remove the holder (fig. 1).
13 • From the service program main menu, select **H**, (**Set focus to zero**).
14 • Loosen the two 3 mm allen screws **B** (fig. 2) securing the focus motor to the sensor. The motor will now move to the rear under spring pressure.
15 • From the service program main menu, select **1**, (**Move drum Z/P/L/.**), then **.**, ("dot" allows setting your own drum position parameters) and move the drum spindle until the adjustment tool is directly in front of the sensor.
16 • Push the focus motor towards the drum tool until the sensor head and tool touch. The tool should now rotate with light resistance from the sensor head.
17 • Maintain the pressure on the focus motor and tighten the two 3 mm allen screws **B** on the focus motor. (Recheck the resistance on the adjustment tool after tightening the screws).
18 • Select **1**, (**Move drum Z/P/L/.**), then **L** to move the drum back to the lock position and remove the adjustment tool.
19 • Refit the optics holder and tighten the 3 mm set screw.
20 • Make a focus calibration from photoshop plug-in.
21 • Press **Alt** + **Option** in plug-in and read the step values **or** * **Show scanner options** in the service program can be selected and focus values for drums 0-9 will be shown, together with barcode reading information.
22 • Check that these values are within the tolerances of the graph (fig. 3) by reading the diameter on the drum flange.
23 • Remove the cover over the driver board heat sink.
24 • Remove the driver board extender, push the hardware unit fully in and refit the two 2.5 mm countersunkscrews on either side of the unit.
25 • Refit the covers removed in step 1 in accordance with section 4•2.

Focus

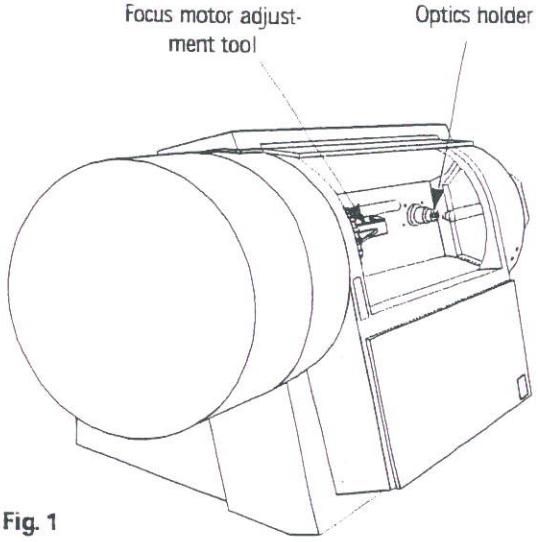


Fig. 1

ScanMate 5000 shown
(the SM 4000 is identical)

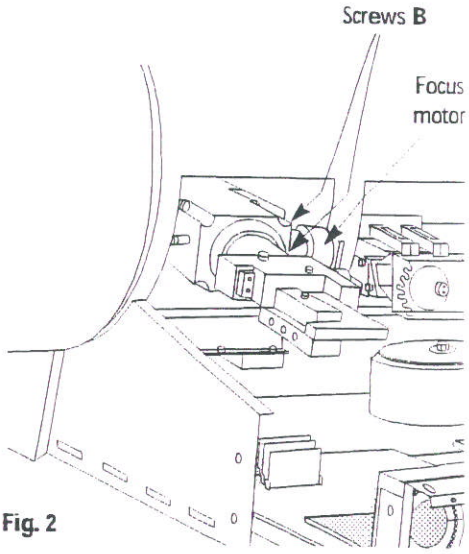


Fig. 2

Adjustment of sensor unit for ScanMate 4000 and 5000

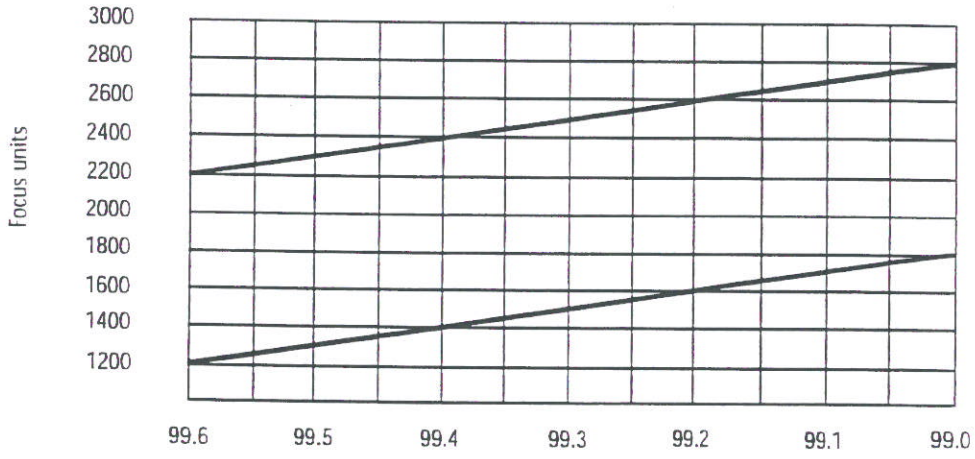


Fig. 3

Focus Calibration

Function

Focus calibration is a calibration of the drum and should be carried out when the scanner is first installed and each time a different drum is mounted.

Technical data

Tools and materials required

Mac or PC (both if possible)
Photoshop plug-in 2.1.7 or later versions
Auto focus adjustment target

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

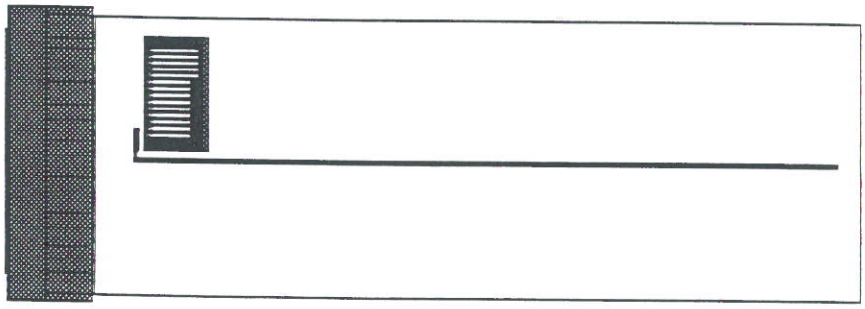
Focus Calibration

How to adjust

Note : Focus calibration should be performed **before** white point calibration if possible.

1 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
2 • Set theDip switch to 8, (on).
3 • Turn on the Mac or PC and access the service program main menu (section 3•5).
4 • Select **S**, (**Turn on SCSI**).
5 • Access Photoshop plug-in.
6 • Mount the auto focus adjustment target on the drum as follows:
For **Transmission** calibration, mount the target on a clear area of the drum.
For **Reflection** calibration, first mount the target on a piece of clean, white paper of about the same thickness and whiteness as the originals that are normally scanned and then mount the paper on the drum.
7 • Make a preview scan of the target, selecting transmission or reflection as applicable.
8 • Crop a square of approximately 20 x 20 mm (1" x 1") in the center of the target.
9 • If the drum is not bar-coded, click on **Options** to open the **Focus & Aperture** dialogue. Choose the desired drum number from the **Drum** menu and click on **OK**.
Note: this step is not necessary if the drum has a bar code.
10 • For Macintosh, hold down the command key so that the **Preview** button in the plug-in window changes to **Focus**, and click on **Focus**.
11 • For PC's, double-click on the **Calibrate** box in the plug-in window so that the **Preview** button changes to **Cal. Focus**. Click on **Cal. Focus** or press enter.
Note: the focus calibration will be stored permanently with the bar code number in the memory of the scanner - only on Scanmate 5000, (0210 model).

Focus Calibration



White Calibration in Transmission and Reflection

Function

A white calibration is used for avoiding colour cast introduced from a scan.

Technical data

Tools and equipment required

Mac or PC (both if possible)
Photoshop plug-in 2.1.7 or later versions
White paper

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

White Calibration in Transmission and Reflection

How to adjust

Note : ScanView recommends that these calibration procedures are carried out every 3 scanning hours and when the transmission or reflection bulbs have been changed.

1 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
2 • Set theDip switch to 8, (on).
3 • Turn on the Mac or PC and scanner and access the service program main menu (section 3•5).
4 • Select **S**, (**Turn on SCSI**).
5 • Access Photoshop plug-in.

Transmission (Fig. 1)

6 • Select **Transmission**.
7 • Make a preview.
8 • Crop a square of approximately 20 x 20 mm (1" x 1") on a clean and clear area of the drum.
9 • Press the **alt** key to access calibrate.
10 • Click on **Calibrate** and the scanner will now calibrate for approximately 3 minutes.
Note: the calibration takes place on the top line of the cropped area.

Reflection (Fig. 2)

11 • Mount a piece of white paper onto the drum.
Note: The same type or whiter than the most frequently used originals.
12 • Select **Reflection.**
13 • Make a preview.
14 • Crop a square of approximately 20 x 20 mm (1" x 1") on the paper.
15 • Press the **alt** key to access calibrate.
16 • Click on **Calibrate** and the scanner will now calibrate for approximately 3 minutes..
Note: the calibration takes place on the top line of the cropped area.

White Calibration in Transmission and Reflection

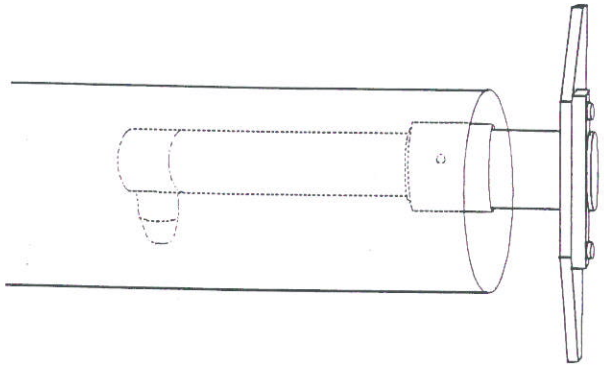


Fig. 1

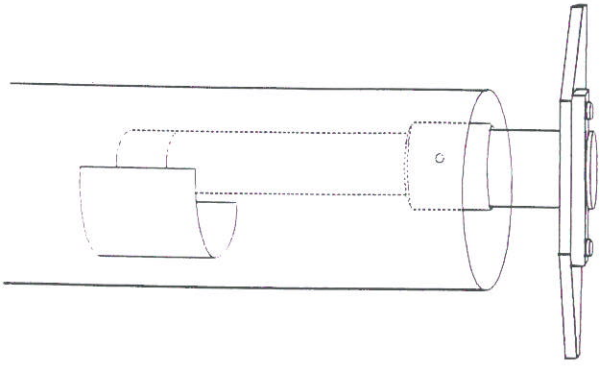


Fig. 2

PMT Amplifier Gain

Function

PMT amplifier gain ensures that the three channels are adjusted equally with each other in order that software calibration can function correctly.

Technical data

Maximum 10% difference between channels.

Tools and materials required

Small screwdriver
Photoshop plug-in 2.1.7 versions
2 mm allen key for back cover mounting screws
2.5 mm allen key for lamp cover mounting screws
3 mm allen key for right hand end plate mounting screw
3 mm allen key (T-handle) for right hand drum cover mounting screws
Voltmeter
Extension board (part of the service kit)

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

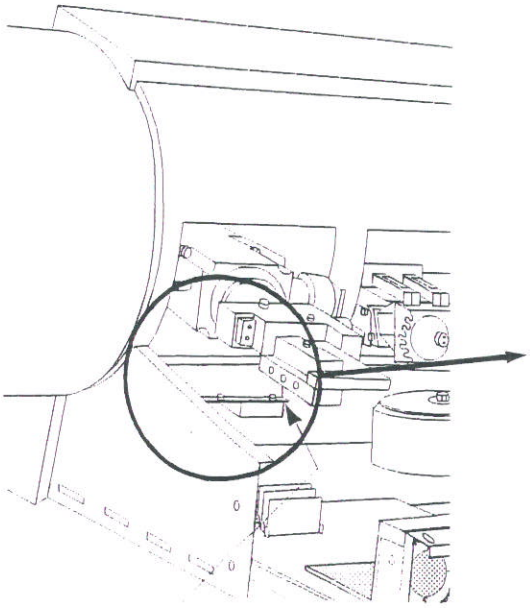
☛ When the hardware drawer is partially removed and power turned on, ensure that the open side of the heat sink on the driver board is covered, with, for example a piece of cardboard or paper, in order that cooling is still effective.

PMT Amplifier Gain

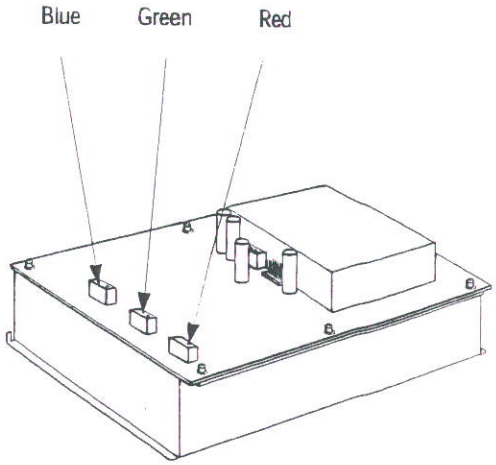
How to adjust

1 • If access is not already available, remove the back cover **B**, (section 4•2 step 2).
2 • Remove the two 2.5 mm countersunk screws from each side of the hardware unit and carefully slide the unit partially out.
3 • Insert the back plane extender onto connector J1 on the driver board and carefully push the hardware unit back in.
4 • Loosen the 3 mm allen screw **A** securing the PMT module to its tray, slide the module out and rest it in a suitable position so that the three potentiometers can be adjusted, (step 13).
5 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
6 • Set the Dip switch to 8, (on).
7 • Cover the side of the heat sink on the driver board, (see the "caution" on the previous page).
8 • Turn on the PC or Mac and scanner and access the service program main menu (section 3•5).
9 • Connect a voltmeter to TP 46 on the control board and record the measurement.
10 • Turn all three potentiometers **A** (fig. 2) counter-clockwise to maximum.
11 • Select **1**, **(Move drum Z/P/L/.)** and then ., ("dot" - allows setting your own drum position parameters) and move the empty drum over the sensor. Finally select **q**, **(utility end)**.
12 • Select **0**, **(Toggle lamps)** to turn on the transmission lamp.
13 • Select **2**, **(Adjust PMT gain)** and then press 2 and adjust the gain value until the lowest voltage measured on TP46, TP47 and TP48 on the control board is 3.0 +/-0.1 volt.
14 • Adjust the three potentiometers and measure the value on TP46, TP47 and TP48 until they are within 10% of each other and between 2.7 to 3.3 volts.
15 • Select **q**, **(done)** when complete.
16 • Carry out a white calibration in transmission and reflection (section 5•5).
17 • Refit the PMT module and tighten the securing screw **A**.
18 • Remove the voltmeter and the cover over the driver board heat sink.
19 • Remove the driver board extender, carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws on each side of the unit.
20 • If no further adjustment or replacement operations are required, remove the voltmeter and refit the back cover **B** accordance with section 4•2.

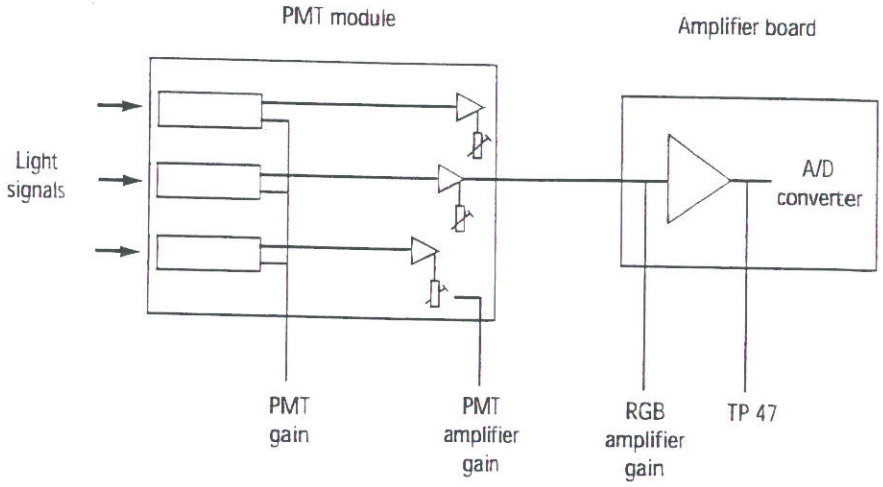
PMT Amplifier Gain



Screw **A**



PMT module rotated 180°



Zero Point Horizontal

Function

Zero point horizontal sets the zero point at the horizontal position in order to obtain the correct area on the monitor when selecting a preview or making a scan.

Technical data

Tools and equipment required

2.5 mm allen key for microswitch adjustment screws
3 mm allen key for right hand end plate mounting screw
3 mm allen key (T-handle) for right hand drum cover mounting screws
A piece of transparent tape
Photoshop plug-in 2.1.7 or later versions.

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Zero Point Horizontal

How to adjust

1 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
2 • Set the Dip switch to 8, (on).
3 • Turn on the PC or Mac and scanner and access the service program main menu (section 3•5).
4 • Mount a piece of transparent tape onto the zero corner of the drum and draw two vertical and two horizontal lines on the tape.
Note: if the horizontal line on the monitor cannot be seen, the lines give an idea of how much to adjust the micro switch if the zero point is not correct.
5 • Select **W**, **(Turn on SCSI in switch seek mode)** to override the step count function and enable SCSI mode.
6 • Access Photoshop plug-in and hold the **D** key down.
7 • Cancel the **LD**, **(Leave drum)** function in plug-in.
8 • Make a preview in the zero corner (10 x 10 mm approximately).
9 • The horizontal line on the monitor (short line), should be visible in the zero position as shown in fig. 1.
Note: The horizontal and vertical lines on the drum need not be shown in full width; half the width of the lines is sufficient.
10 • If incorrect and access is not already available, remove the following panels:
Right hand end plate **C** and right hand drum cover **D**, (section 4•2 steps 3 and 4).
11 • Locate the two holes on the top right hand side of the scanner, (fig. 2) and loosen the two 3 mm allen screws **A** securing the micro-switch bracket to the frame and adjust as necessary.
12 • Repeat steps 8 and 9.
13 • Carry out a white calibration in transmission (section 5•5).
14 • If no further adjustment or replacement operations are required, refit covers **C** and **D**, (section 4•2).

Zero Point Horizontal

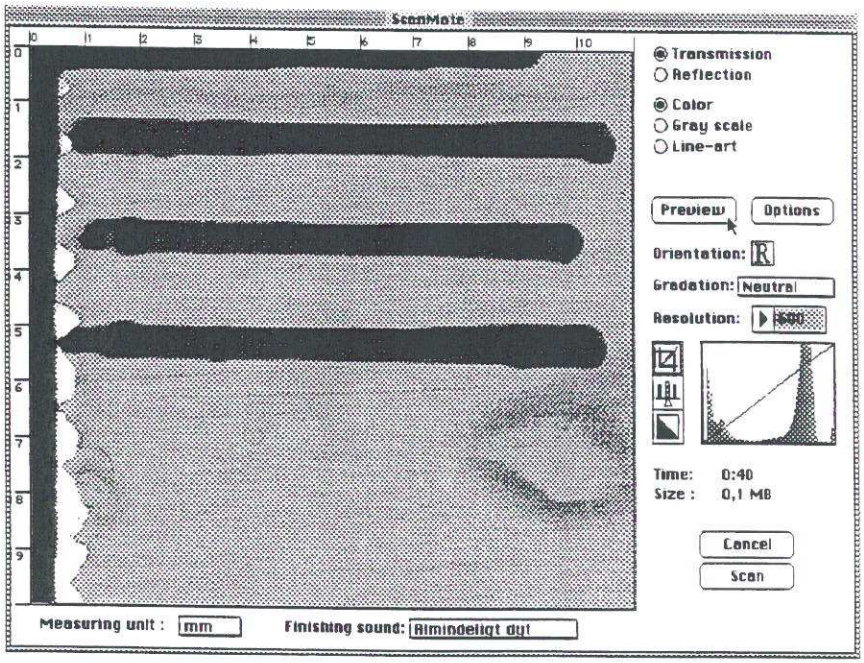


Fig. 1

Access holes
for allen screws
A

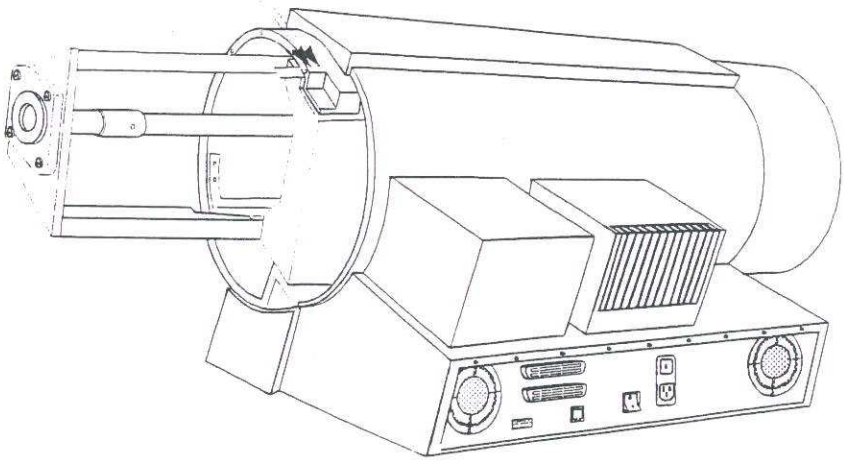


Fig. 2

Zero Point Vertical

Function

The zero point vertical adjustment ensures that the starting point of the scanner is set correctly.

Technical data

Tools and equipment required

2 mm allen key for back cover mounting screws
2.5 mm allen key for DC motor covers and adjustment screws
2.5 mm allen key (long) for lamp cover mounting screws
3 mm allen key for right hand end plate mounting screw
3 mm allen key (T-handle) for right hand drum cover mounting screws
Oscilloscope with 2 channels
Extension board (part of the service kit)

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Zero Point Vertical

How to adjust

1 • If access is not already available, remove the lamp cover **A**, back cover **B**, right hand end plate **C** and right hand drum cover **D**, (section 4•2 steps 1-4).
2 • Remove the two 2.5 mm countersunk screws from each side of the hardware unit and carefully slide the unit partially out.
3 • Insert the back plane extender onto connector J1 on the driver board and push the hardware unit back in.
4 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS232 service cable to the scanner and PC.
5 • Set the Dip switch to 8, (on).
6 • Cover the side of the heat sink on the driver board, (see the "caution" on the previous page).
7 • Turn on the PC or Mac and scanner and access the service program main menu, (section 3•5).
8 • Select **1**, (**Move drum Z/P/L/.**), then **Z**, (**drum to zero position**) to move the drum to the zero position.
9 • Select **1** again and then **.**, ("dot" allows setting your own drum position parameters) and position the drum about 1 cm to the left to ensure that the sensor does not see the horizontal zero line. Select **q**, (**utility end**).
10 • Connect the oscilloscope signal probes to TP46, (use channel 1 as trigger) and TP57, (channel 2) on the control board.
11 • Select **4**, (**Choose aperture**) and choose aperture number 1.
12 • Select **0**, (**Toggle lamps**) to turn on the transmission lamp.
13 • Set the oscilloscope to 2V/div. and 10 mS/div. and trigger on the negative edge on the channel which is coupled to the analog signal (black line on the drum). This gives an overview of the encoder signal position in relation to the zero line.
14 • The pulse on the oscilloscope could as an example appear as shown in fig. 1, (the encoder and amplifier pulses show one revolution of the drum).
15 • If the pulse does not appear on channel 1, select **2**, (**Adjust PMT gain**) and adjust the gain value until approximately 3 V is measured on TP 46. Select **q**, (**done**) when complete.
16 • Remove the two DC motor covers, (section 4•15, steps 4 and 6). Loosen the two 3 mm allen screws **A** securing the motor to the drum sleeve (fig. 4), enough to allow adjustment of the motor.
17 • Gently rotate the motor until the two pulses on the oscilloscope are as shown in fig. 2. This is a rough adjustment and gives a base for the fine adjustment in step 18 below.
18 • Set the oscilloscope to 10µS/div. and fine tune the adjustment until the encoder pulse is within the band of the amplifier pulse as shown in fig. 3.
19 • Tighten the two 3mm allen screws **A** firmly but not overtight, to secure the motor and fit the two covers, (section 4•15, step 19).
20 • Remove the oscilloscope and the cover over the driver board heat sink.
21 • Remove the driver board extender, carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws on each side of the unit.
22 • Refit the covers removed in step 1 in accordance with section 4•2.

Zero Point Vertical

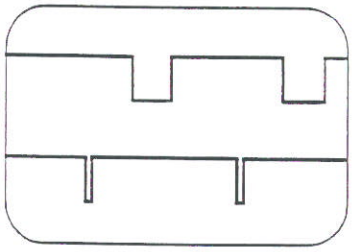


Fig. 1

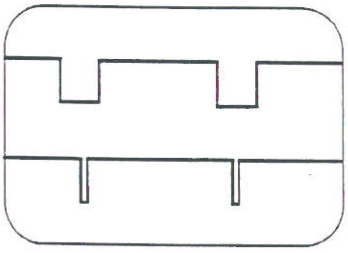


Fig. 2

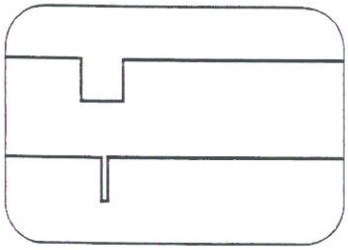


Fig. 3

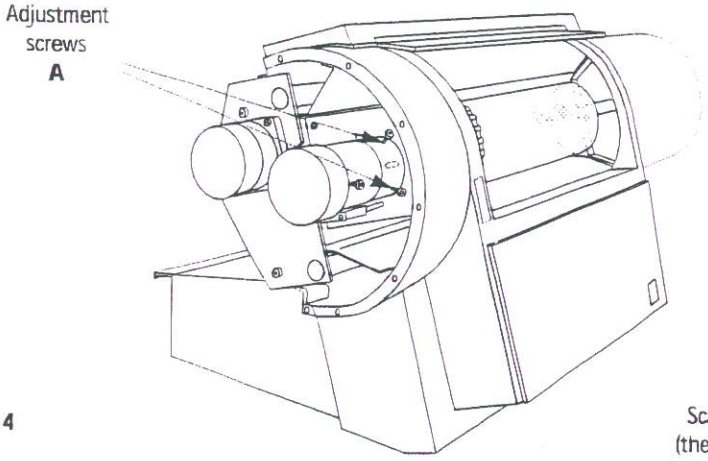


Fig. 4

ScanMate 5000 shown
(the SM 4000 is identical)

Drum Alignment

Function

To check the alignment of the drum after refitment and to adjust as necessary to give optimal focus sharpness.

Technical data

Tools and equipment required

3 mm allen key for right hand end plate mounting screw
3 mm allen key (T-handle) for right hand drum cover mounting screws
5 mm allen key for mounting adjustment screw
Loctite 243 or equivalent for set screw
Oscilloscope with test probes
Photoshop plug-in 2.1.7 or latest version
UGRA test target 1982 to measure the focus value
ScanView focus adjust targets

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Drum Alignment

How to test and adjust

1 • Fit a terminator to one SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
2 • Set the Dip switch to 8, (on).
3 • Turn on the Mac or PC and access the service program main menu (section 3•5).
4 • Perform a focus calibration (Section 5•4) close to the zero point.
5 • Mount the UGRA test target firmly onto the drum approximately 1 cm away from the zero point (first position, fig. 1).
6 • Perform a sharpness/focus test (section 5•11 steps 5-15).
7 • Move the UGRA test target to the opposite end of the drum approximately 16 cm away from the zero position (position 2, fig. 1) and repeat the sharpness/focus test (section 5•11 steps 5-15).
8 • The drum is in alignment when the pixel spread at 6µ is considered to be the same in positions 1 and 2. If the pixel spread is incorrect, proceed with step 9 below.
9 • Mount a ScanView focus adjust target at each end of the drum as shown in Fig. 2 (the same dimensions away from the zero point as the UGRA test target).
10 • Perform a focus test on the left hand test target (section 5•10 steps 11-16) and note the overlap values.
11 • Perform a focus test on the right hand test target (again in accordance with section 5•10 steps 11-16) and compare the overlap values obtained in step 10 above. If the values are not the same, proceed with step 12.
12 • Remove the right hand end plate **C** and right hand drum cover **D**, (section 4•2 steps 3 and 4).
13 • Remove the two DC motor covers, (section 4•15, steps 4 and 6).
14 • Remove the set screw **B** and adjust the mounting/adjustment allen screw **A** (fig. 3) until the overlap values in step 11 are the same as those in step 10.
15 • Repeat step 10 to ensure that the overlap values are the same on both test targets. (After adjusting to the right hand target, it is likely that the left has changed slightly).
16 • It may be necessary to repeat the adjustment on both test targets several times until the overlap values are equal.
17 • Carry out steps 19-21 of section 5•3, (Focus) and if not within the required tolerances, carry out steps 10-21 of section 5•3.
18 • Refit the two motor covers, (section 4•15, step 19).
19 • If no further adjustment or replacement operations are required, refit the covers removed in step 1 in accordance with section 4•2.

Drum Alignment

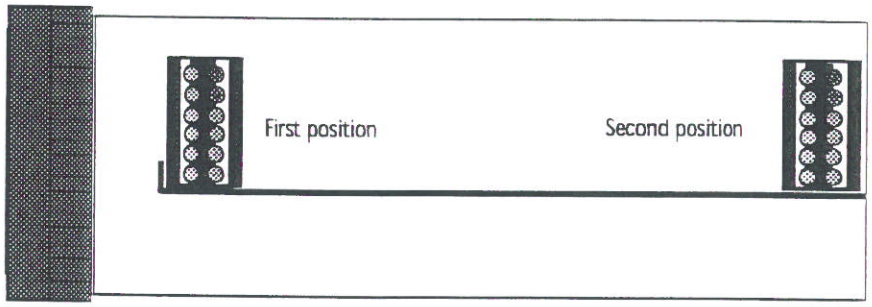


Fig. 1

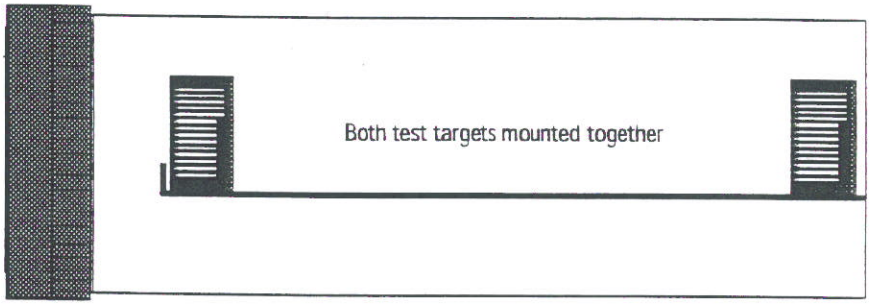


Fig. 2

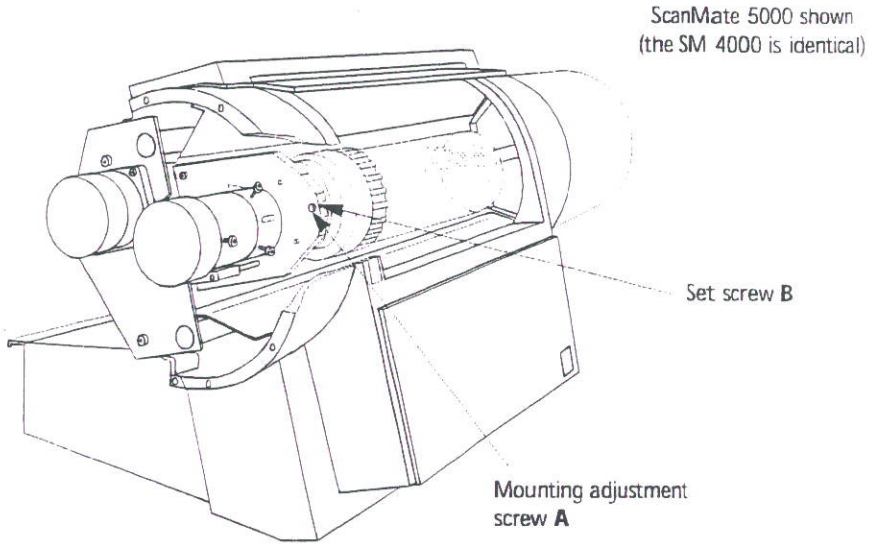


Fig.3

Focus Test

Function

The testing of the focus sharpness checks the alignment of the drum.

Technical data

TP46
TP100
TP57 (trigger)

Tools and equipment required

2 mm allen key for back cover mounting screws
2.5 mm allen key (long) for lamp cover mounting screws
Oscilliscope with test probes
ScanView focus adjust target
Photoshop plug-in 2.1.7 or latest version
Extension board (part of the service kit)

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Focus Test

How to adjust

1 • If access is not already available, remove the following covers: Lamp cover **A** and back cover **B**, (section 4•2 steps 1 and 2).
2 • Remove the two 2.5 mm countersunk screws from each side of the hardware unit and pull the unit partially out.
3 • Insert the back plane extender onto connector J1 on the driver board and push the hardware unit back in.
4 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
5 • Set the Dip switch to 8, (on).
6 • Cover the side of the heat sink on the driver board, (see the "caution" on the previous page).
7 • Turn on the PC or Mac and scanner and start up Photoshop plug-in.
8 • Carry out a white calibration in transmission (section 5•5).
9 • Mount the ScanView focus adjust target firmly on the drum so that the middle of the target is approximately over the horizontal line, (fig. 1).
10 • Access the service program main menu (section 3•5).
11 • Position the target over the sensor lens by selecting **1**, **(Move drum Z/P/L/.)** and then ., ("dot" - allows setting your own drum position parameters). Finally select **q**, **(utility end)**.
12 • Connect the oscilloscope signal probes to TP46, (channel 1), TP100 (ground) and TP57, (use channel 2 as trigger).
13 • Select **0**, **(Toggle lamps)** to turn on the transmission light.
14 • Select channel 1 on the oscilloscope.
15 • Select **4**, **(Choose aperture)** and choose aperture 1.
16 • The maximum focus is now shown on the oscilloscope, (fig. 2).
17 • Remove the oscilloscope and the cover over the driver board heat sink.
18 • Remove the driver board extender, carefully push the hardware unit fully in, (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws on each side of the unit.
19 • If no further adjustment or replacement operations are required, refit the covers removed in step 1 in accordance with section 4•2.

Focus Test

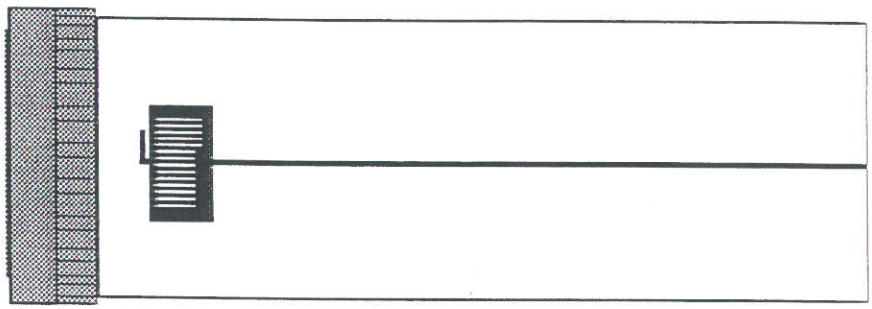


Fig. 1

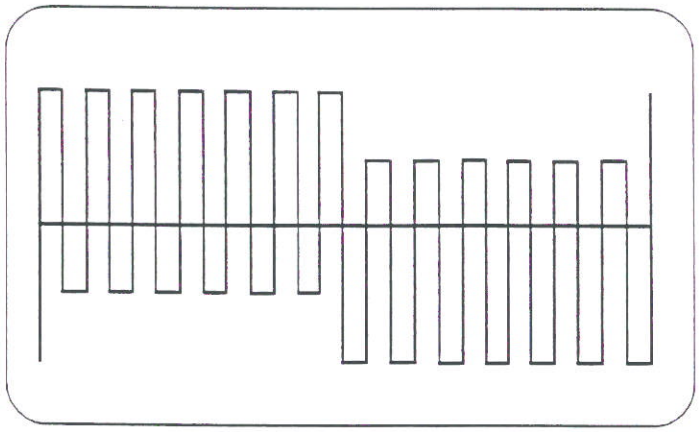


Fig. 2 Maximum focus as shown on oscilloscope

Focus Sharpness

Function

The testing of focus sharpness checks that maximum sharpness is obtained to ensure the best possible focus.

Technical data

Focus: < 6 micron

Tools and equipment required

Photoshop plug-in 2.1.7 or latest version
UGRA test target to measure the focus value.

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

☛ Ensure the UGRA test target is free of dust otherwise false indications are likely.

Focus Sharpness

How to test

1 • Fit a terminator to one SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
2 • Set the Dip switch to 8, (on).
3 • Turn on the PC or Mac and access the service program main menu (section 3•5).
4 • Mount the UGRA test target firmly onto the drum.
5 • Switch on the scanner and start up Photoshop plug-in.
6 • Make a preview of the UGRA test target.
7 • Perform a focus calibration on the target.
8 • Crop an area of the test target with the 12 circles as shown in fig. 1.
9 • Choose the following settings in Photoshop:
Transmission gray scale.
Aperture 1
Neutral gradation curve
Gamma 0.78
600 dpi resolution.
White/black point: max. 255
min. 0
10 • Make a scan of the area.
11 • Select **Adjust levels** in Photoshop image menu.
12 • Define the background of the circles in the **Levels** window by clicking on the white marker **A** and moving it to the right peak of the histogram as shown in fig. 1.
Note: adjustment must be at least 250 for white point.
13 • Select **Map threshold** in Photoshop image menu.
14 • Click on the marker in the **Threshold** window and set a value of 128 (fig. 2).
15 • For correct sharpness of focus, a few pixels should be visible down to at least 6 microns.
Note: Interpretation of pixel saturation is difficult, however fig. 2 gives a guideline of how the spread should appear. Be aware that dust on the test target can give false indications.

Focus Sharpness

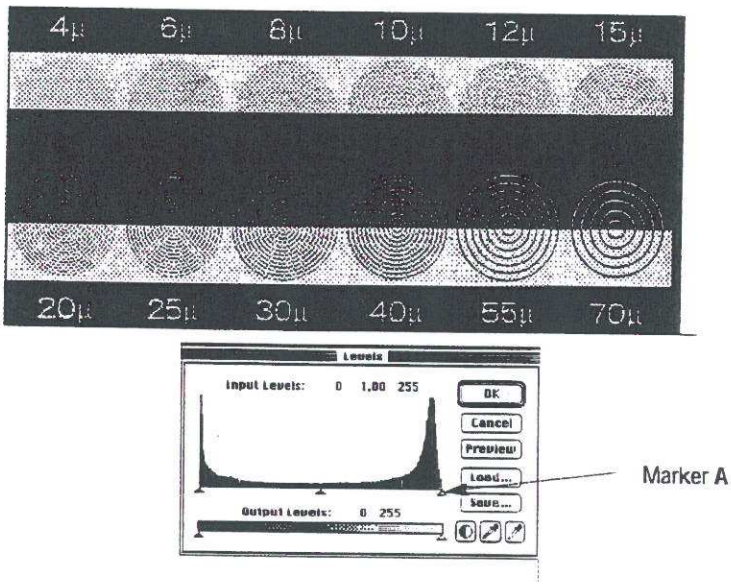


Fig. 1

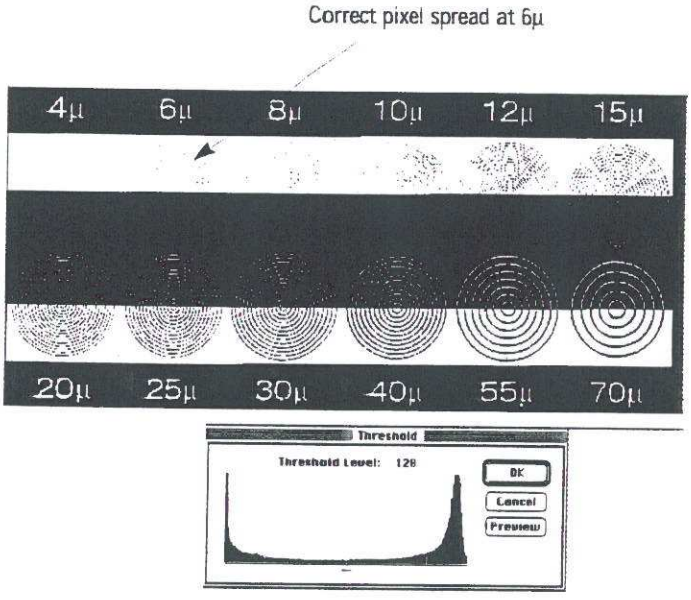


Fig. 2

Register Error

Function

The testing of register error is to check sample precision.

Technical data

Max. 1.5 pixel

Tools and equipment required

ScanView focus adjust target
Anti-static cloth
Photoshop plug-in 2.1.7 or latest version

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Register Error

How to test

1 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC or Mac.
2 • Set theDip switch to 8, (on).
3 • Turn on the PC or Mac and access the service program main menu (section 3•5).
4 • Switch on the scanner and start up Photoshop plug-in.
5 • Carry out a white calibration in transmission (section 5•5).
6 • Clean the drum with an anti-static cloth.
7 • Mount the ScanView focus adjust target firmly on the zero point of the drum, (the junction of the vertical and horizontal lines) so that the first of the thin black lines on the target is on the horizontal line of the drum (fig. 1). Ensure also that the target lines are horizontal with the horizontal line on the drum.
8 • Select the following settings in Photoshop plug-in:
Transmission gray scale
Gamma 1.4
Neutral gradation curve
Max resolution
9 • Select the standard area 24 x 36 mm and make a preview.
10 • Crop an area of 20 x 15 mm that starts approximately 5 mm from the first black line so that three black stripes can be seen (Fig. 2).
11 • Perform a scan and crop an area, **A**, as shown in fig. 2.
Note: the area should be approximately 1000 pixels on the y-axis and 10-20 pixels on the x-axis.
12 • Select **image**, **effects** and then **scale**.
13 • Enlarge the area on the x-axis by a factor of 10 (fig. 3).
14 • Select **threshold** and make a threshold on the enlarged area (fig. 4).
15 • Choose what appears to be the worst area of irregularities in fig. 4.
16 • Zoom in 4:1 and make a crop of the area chosen.
17 • Choose the largest irregularity, select **show info.** and read the **W** value in the window (fig. 5).
18 • Divide this value by 10. The variation should be less than 1 pixel.
19 • If the variation is over 1.5 pixel, contact ScanView's support department.

Register Error

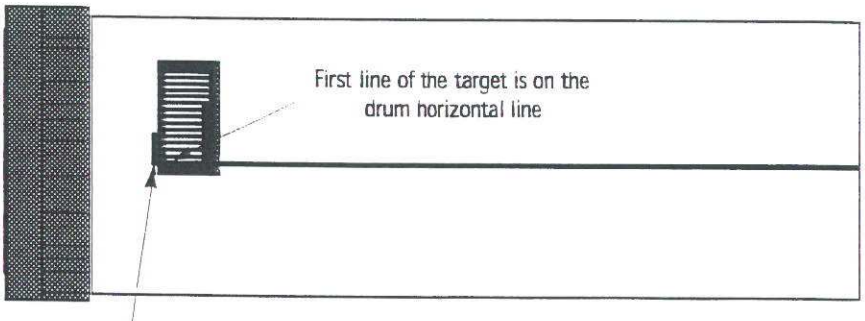


Fig. 1

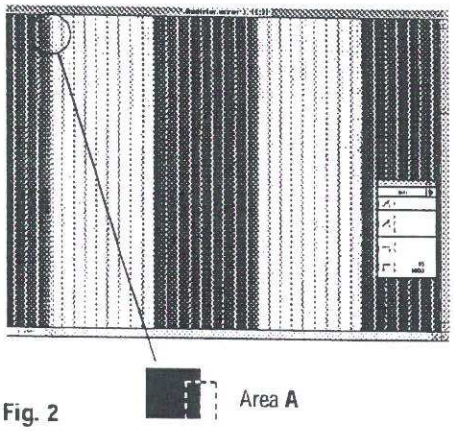


Fig. 2

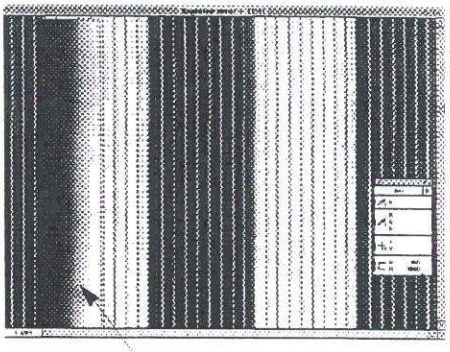


Fig. 3

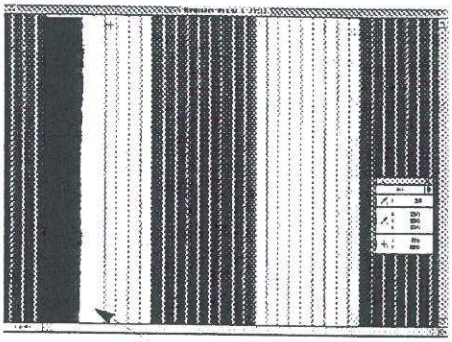


Fig. 4 Zoom in 4:1

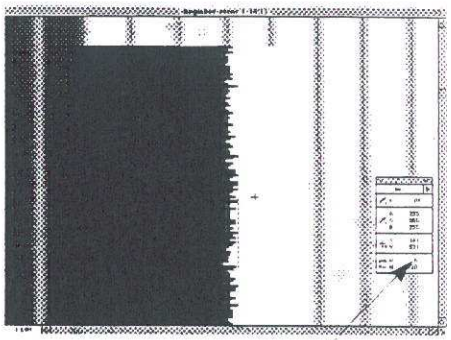


Fig. 5 Value should be less than 1.5 pixel.

Stripes in Shadow

Function

Testing for the presence of stripes on a dark image.

Technical data

Max. 2 levels

Tools and equipment required

A piece of aluminium foil

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Stripes in Shadow

How to test

1 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
2 • Switch on the scanner in the SCSI mode.
3 • Start up Photoshop plug-in.
4 • Mount a piece of aluminium foil onto the drum.
5 • Select the following settings in Photoshop:
Transmission color
Gamma 1.4
Neutral gradation curve
1200 dpi resolution
White/black point: max. 255
min. 0
6 • Scan an area of approximately 20 x 20 mm in the middle of the aluminium foil, without making a preview first.
7 • Select **adjust level** and move the left hand (black) marker to the right until level 2 is obtained (fig. 1).
8 • Now move the right hand (white) marker to the left until level 4 is obtained.
9 • Check the image and ensure that there are no stripes on the screen, (fig. 1).
10 • Fig. 2 shows an example of stripes in shadow when the black marker level is between 0 and 1. If there are stripes on the screen after steps 9 and 10, contact ScanView´s support department.

Stripes in Shadow

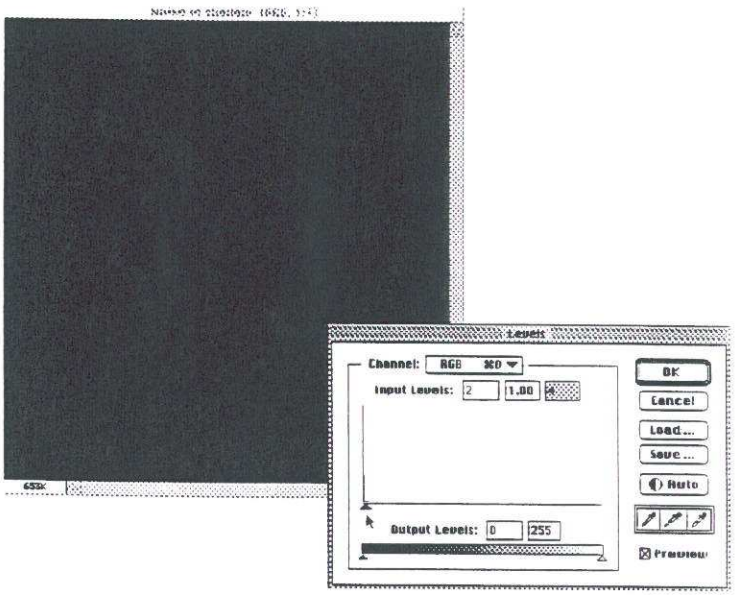


Fig. 1

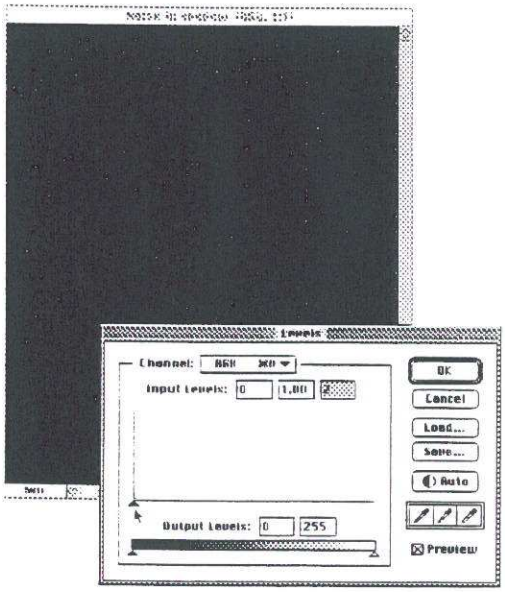


Fig. 2

Noise in Highlight

Function

Testing for the presence of dots or stripes on a white image.

Technical data

Max. standard deviation of 5

Tools and equipment required

Caution! ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out service operations.

Noise in Highlight

How to adjust

1 • Fit a terminator to a SCSI connector on the scanner and SCSI cable to the scanner and PC.
2 • Switch on the scanner in the SCSI mode.
3 • Ensure that the drum is thoroughly clean at the end where the scan is to be performed.
4 • Start up Photoshop plug-in and select the following settings:
Transmission color
Gamma 0.78
Neutral gradation curve
600 dpi resolution
White/black point: max. 255
min. 0
5 • Scan an area of approximately 20 x 20 mm at the end of the drum, without making a preview first.
6 • Select **Image** and then **Histogram** and check that the standard deviation in gray, red, green and blue is not greater than 5 (fig. 1).
7 • If the standard deviation is greater than 5, contact ScanView´s support department.

Noise in Highlight

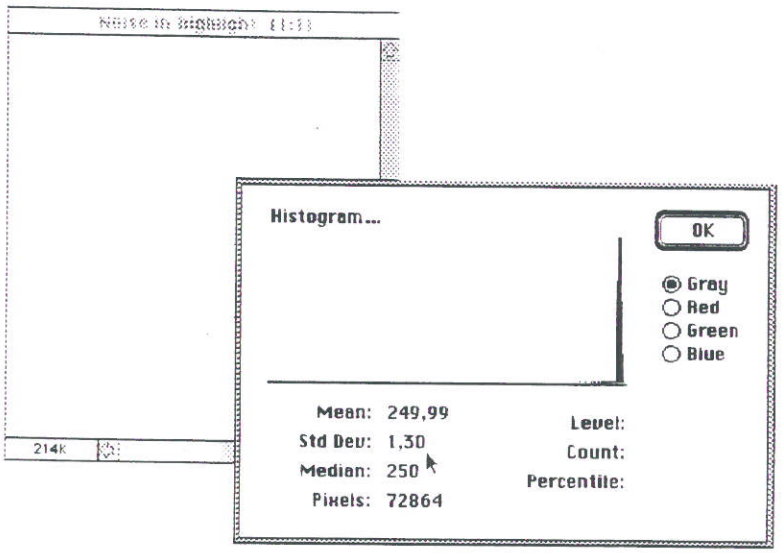


Fig. 1

Contents

Schedules

Frequency	Operation	Page Reference
As required	Drum cleaning	6•3
As required	Spindle lubrication	6•4
As required	Drum guides lubrication	6•4
As required	Clean the hardware unit and mechanical parts	6•6
Every 6 months	Clean the sensor optics	6•7

Cautions ☛ Turn off power
- **Before** connecting or disconnecting cables.
- **Before** carrying out maintenance operations.

☛ **Do not** lubricate any bearings in the ScanMate 4000 and 5000.

Drum cleaning

Tools and material required:

Liquid drum polish and cloth, (ScanView service kit)
Anti-static cloth, (ScanView service kit)

Operation:

Note: the drum must be handled with the utmost care to avoid scratches.

1 • Using the service program (section 3•5), position the drum in the park position.
2 • Using the drum polish and cloth supplied in the service kit (or non-abrasive repro wipes and graphic arts drum cleaner), carefully

clean the outer surface of the drum.
Note: Do not use any chemicals or cleaning fluids that are not specifically sold as scanner drum cleaners. Be careful when using anti-Newton spray or bottled air. **Do not** let the propellant get onto the drum surface as the extreme cold produced may damage the drum.

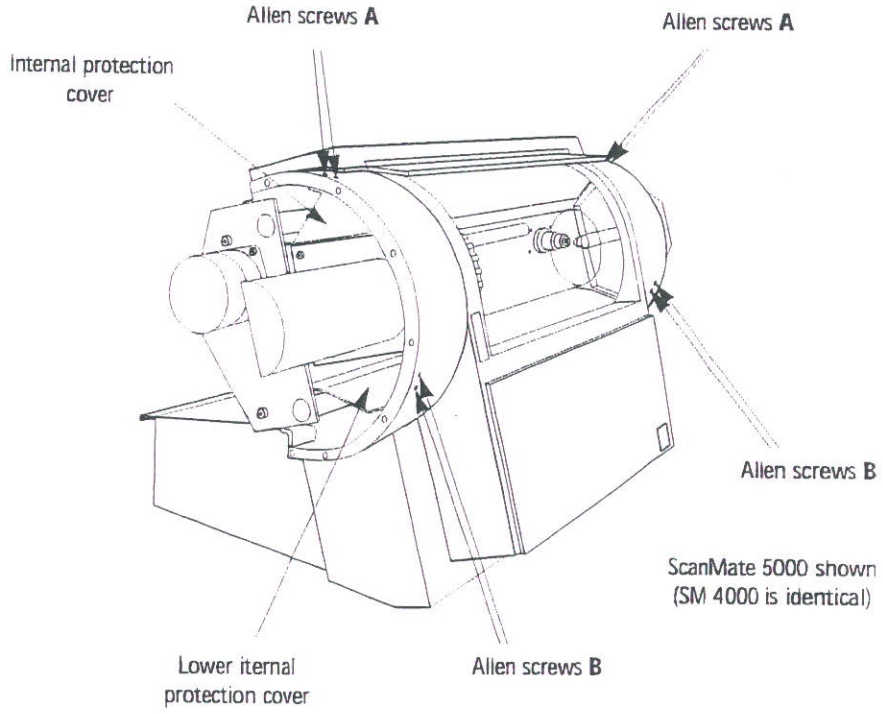
Spindle/drum guides lubrication

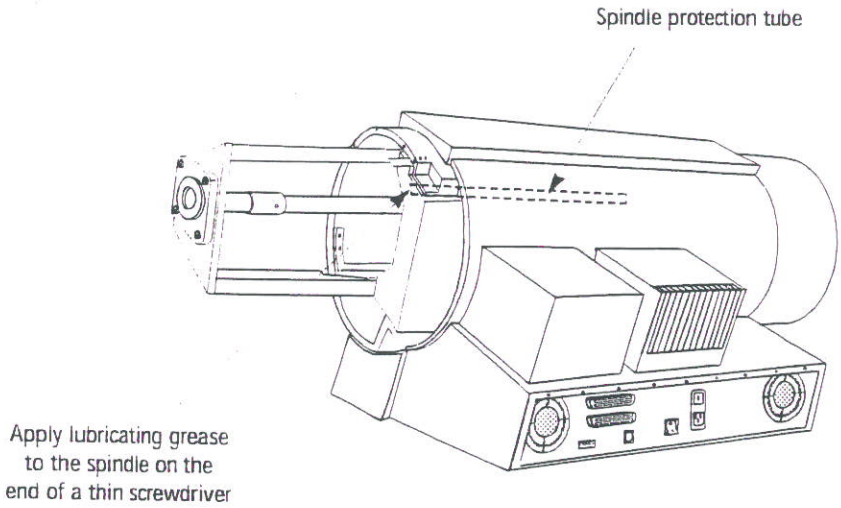
Tools and material required:

3 g. tube lubricating grease, (ScanView service kit)
Lint-free cloth

Operation:

1 • Remove the right hand end plate **C**, right hand drum cover **D**, left hand end plate **E** and left hand drum cover **F**, (section 4•2 steps 3-6).
2 • Remove screws **A** and **B** that secure the upper and lower internal protection covers and remove the covers, (fig. 1 on the following page).
3 • Fit a terminator to a SCSI connector on the scanner and SCSI cable and RS 232 service cable to the scanner and PC.
4 • Set the dip switch to 8, (on).
5 • Turn on the PC or Mac and access the service program (section 3•5).
6 • Switch on the scanner, select **1**, (**Move drum Z/P/L/.**) and then **Z**, (**zero**) (the drum moves to the the zero position - this gives access to the full length of the spindle and the drum guides to enable cleaning and lubrication to carried out).
7 • Using a lint free cloth, clean the spindle and drum guides before applying a thin film of lubricating grease.
Note: in order to avoid corrosion on the drum guides, do not touch with the bare hands.
8 • In order to apply lubricating grease to the spindle where it runs through the spindle protection tube, use a thin screwdriver with grease on the blade and gain access as shown in fig. 2 on the following page.
Note: only a thin film of grease is required - **do not** over-lubricate.
9 • Select **q**, (**utility end**).
10 • Refit the upper and lower internal protection covers using screws **A** and **B**.
11 • Refit the covers removed in step 1 in accordance with section 4•2.


Allen screws A
Allen screws A
Internal protection cover
Allen screws B
ScanMate 5000 shown (SM 4000 is identical)
Lower iternal protection cover
Allen screws B


Spindle protection tube
Apply lubricating grease to the spindle on the end of a thin screwdriver

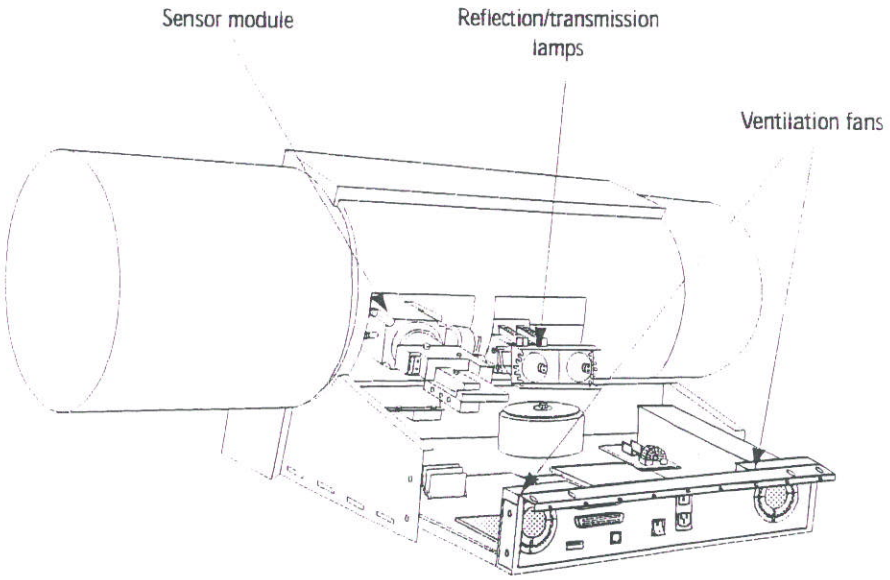
Clean the hardware unit and mechanical parts

Tools and material required:

Vacuum cleaner

Operation:

1 • Remove the following covers:
Lamp cover **A** and back cover **B**, (section 4•2 steps 1 and 2).
2 • Remove the two 2.5 mm countersunk screws on each side of the hardware unit and carefully slide the unit partially out.
3 • Very carefully, vacuum clean the inside of the hardware unit, paying particlarly attention to the area around the ventilation fans.
4 • Vacuum clean carefully around the sensor module and transmission and reflection lamps.
5 • Slide the hardware unit fully in (connector J1 on the driver board mates with the backplane) and fit the two 2.5 mm countersunk allen screws on each side of the unit.
6 • Refit the covers removed in step 1 in accordance with section 4•2.



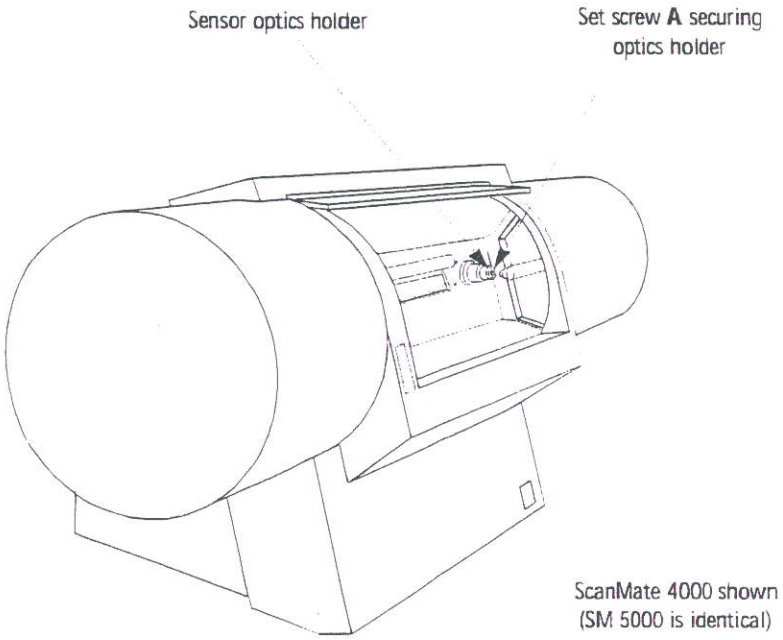
Clean the sensor optics

Tools and material required:

Cotton swab or lint free cloth

Operation:

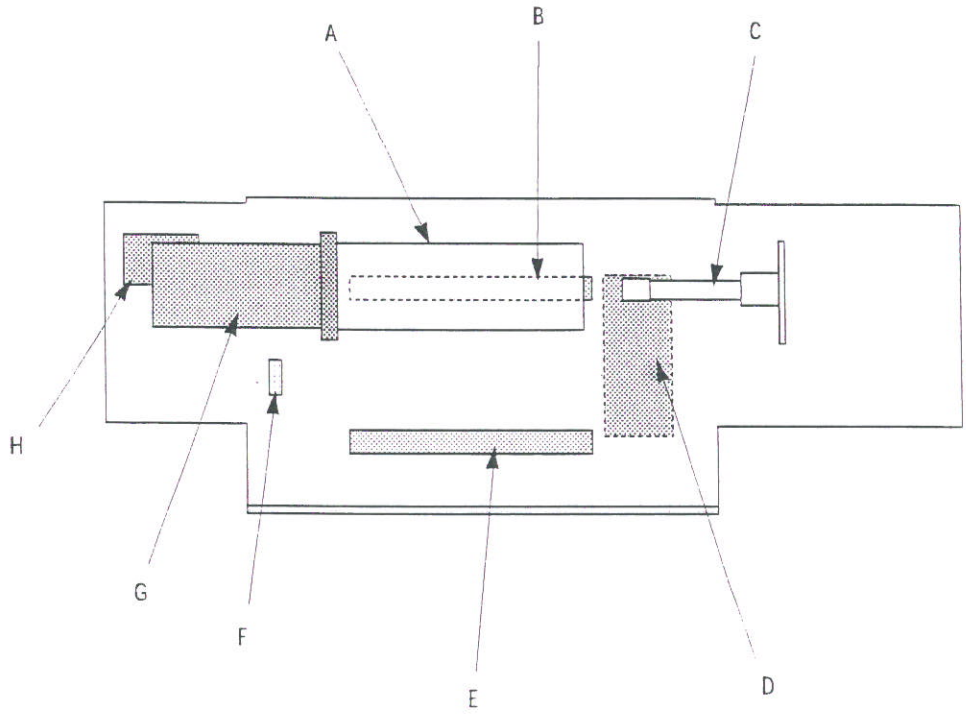
1 • Remove the drum.
2 • Loosen the 3 mm set screw **A** securing the sensor optics holder over the lens of the sensor and remove the holder.
3 • Using a **dry** cotton swab, (or lint free cloth), carefully clean the optics on both sides.
4 • Refit the optics holder to the sensor lens and tighten the 3 mm set screw **A**.



ScanMate 4000 shown
(SM 5000 is identical)

Contents

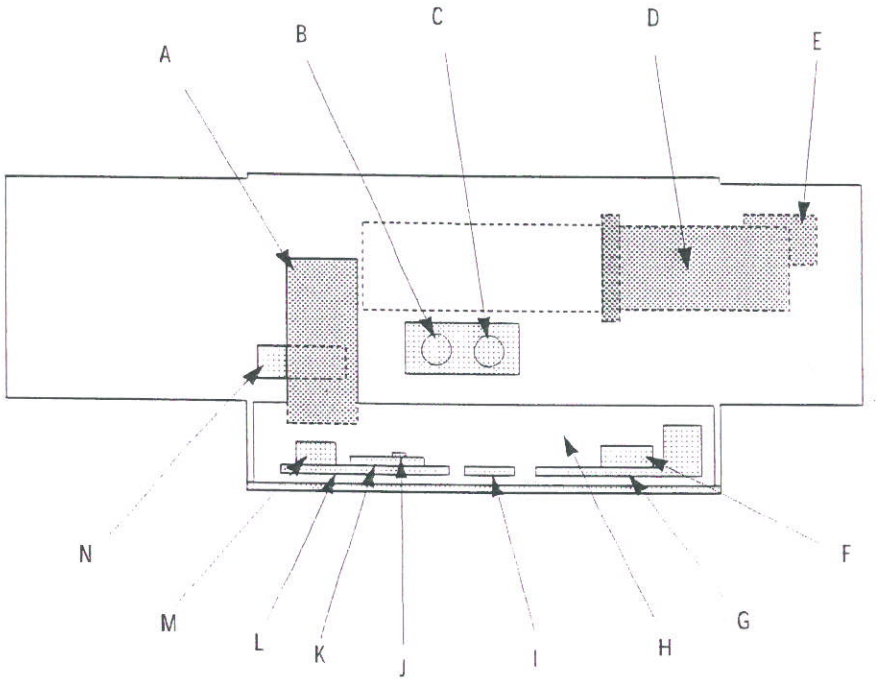
Component Placement Diagram, Front



Scanner viewed from the front

A	Drum
B	Fluorescent tube, main compartment
C	Light tube
D	Sensor module
E	Fluorescent tube, auxilliary compartment
F	Indicator display
G	DC motor
H	Spindle step motor

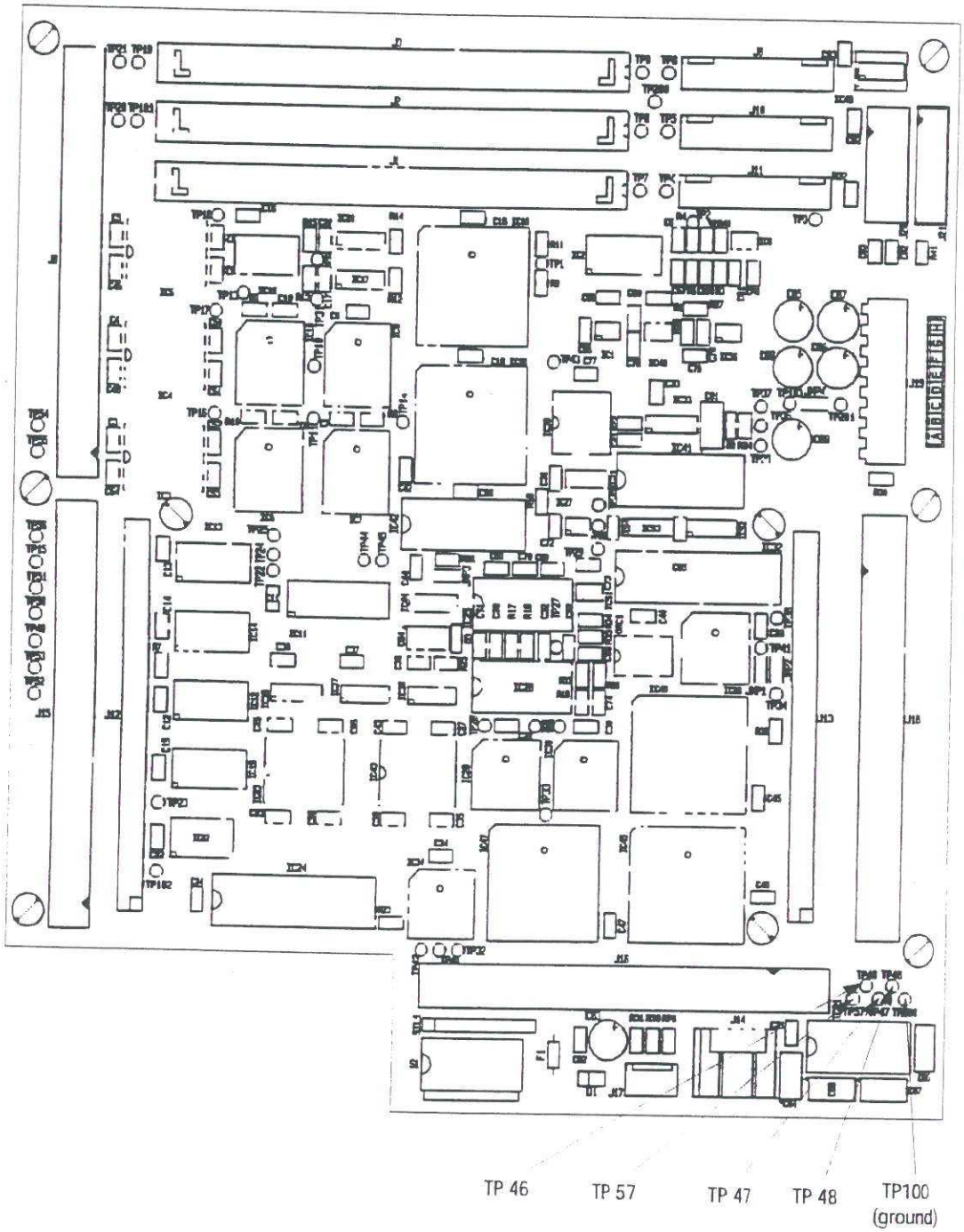
Component Placement Diagram, Back



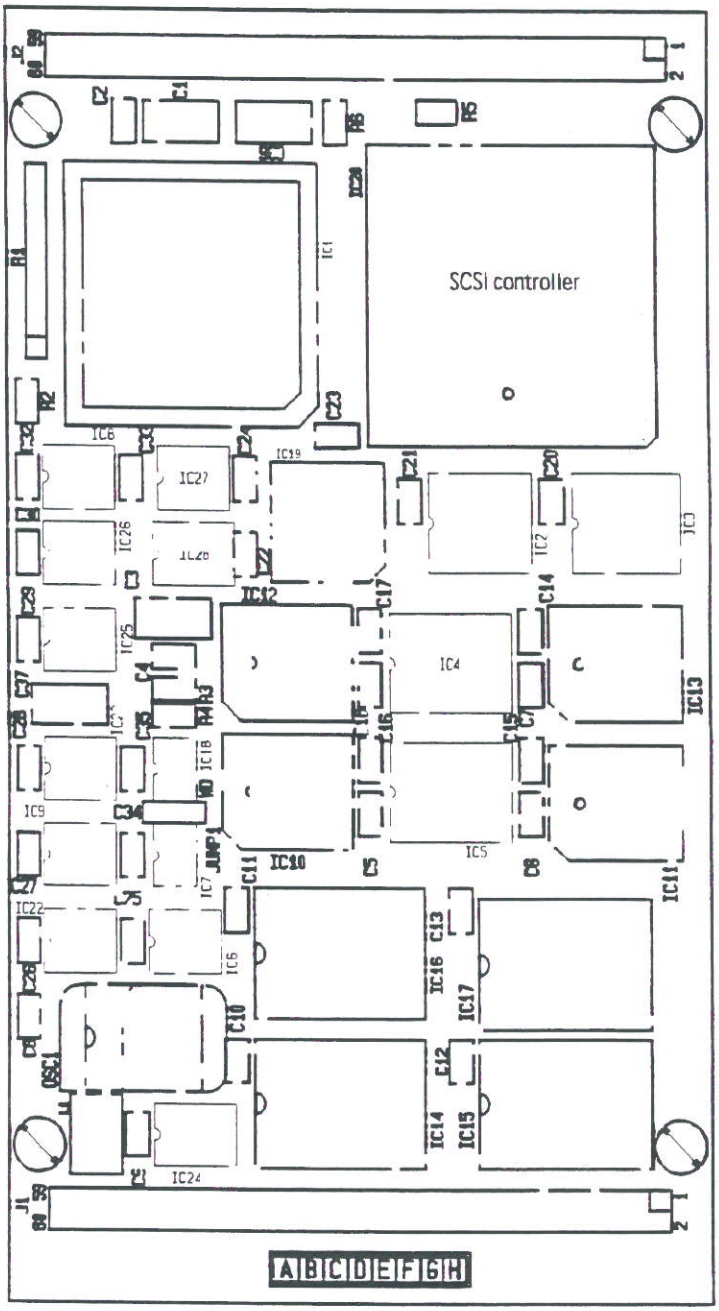
Scanner viewed from the back

A	Sensor module
B	Reflection lamp
C	Transmission lamp
D	DC motor
E	Spindle step motor
F	Booster print board, SM 4000 and SM 5000, (0210 model only)
G	Driver board
H	Hardware unit
I	Bar code board, SM 5000, (0210 model only)
J	SCSI controller
K	CPU board
L	Control board
M	Amplifier board (x3)
N	PMT module

Control Board

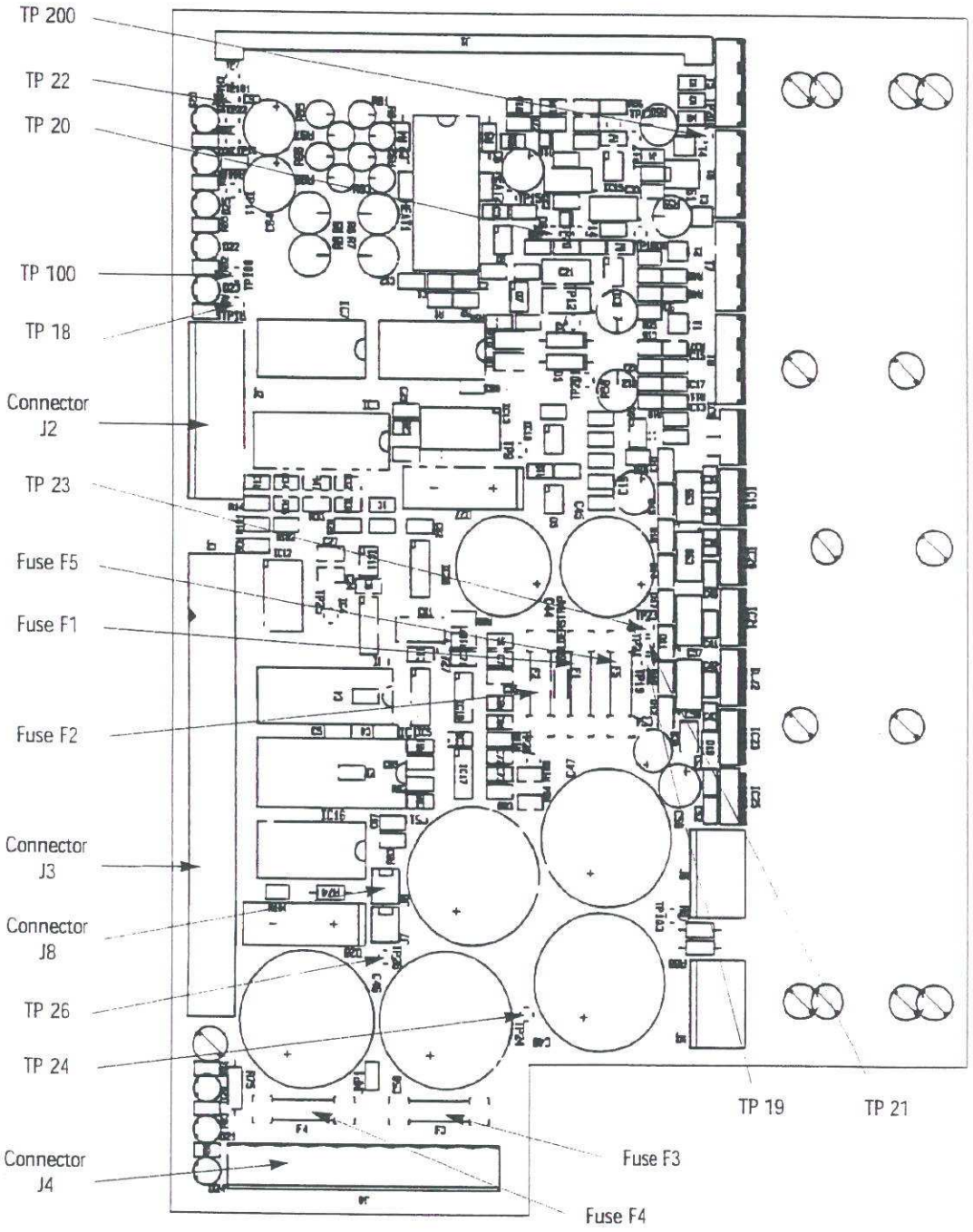


CPU Board


SCSI controller
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
JUMP1
OSC1
A B C D E F G H

Contents

Driver Board



Problem	Possible Cause	Solution
Scanning problems		
White scan in transmission.	1. Transmission bulb blown. 2. Scanner not white calibrated.	☛ Change bulb. ☛ Perform white calibration in transmission. ☛ Contact ScanView support
No light in reflection scan.	1. Relection bulb blown. 2. Cables loose.	☛ Change bulb. ☛ Secure cables. ☛ Contact ScanView support
No light in transmission scan.	1. Transmission bulb blown. 2. Cables loose.	☛ Change bulb. ☛ Secure cables. ☛ Contact ScanView support
Scan out of focus.	1. Defective sensor or focus motor.	☛ Replace sensor module.
Color cast in scan.	1. Calibration required	☛ Carry out white calibration
Register error.	1. DC motor bearings noisy	☛ Replace DC motor.

Caution! ☛ Turn off power on both the scanner **and** computer before connecting or disconnecting the SCSI cable or Control board, otherwise the SCSI controller may be damaged.

Problem	Possible Cause	Solution
General		
Monitor program is not running	1. Dip switch setting incorrect.	☛ Set Dip switch to 8.
Calibration fails	1. Aperture plate out of adjustment.	☛ Calibrate aperture (see section 3•8).
No ready light.	1. Defective park position switch.	☛ Replace switch ☛ Contact ScanView support.
No lights on front panel.	1. Cable faults. 2. Defective power supply.	☛ Replace cable(s). ☛ Replace power supply. ☛ Contact ScanView support.
Nothing is working.	1. Fuse in the scanner blown.	☛ Change the fuse. ☛ Contact ScanView support.
SCSI.	1. Dip switch setting incorrect.	☛ Set Dip switch to the SCSI number that is required. ☛ Contact ScanView support.

SCANMATE ERROR REPORT

ScanView dealer: _____

Contact person: _____ Date: _____

ScanMate Ser. nr. _____ Hardware problem? ____ Software problem? _____

Spare part nr. _____ Module Ser. nr. _____ SIF nr. _____

Hardware problem: Mechanical ___ Controller ___ Power supply ____ PMT ___ _____

Sensor unit _____ Light source _____ Communication _____ Other _____

Action taken to correct error:

White calibration succeeded? _____ If no, please attach calibration log with this report

Equipment exchanged to correct error? _____ What was changed _____

_____ Checked for loose cables? _____ Adjusted focus? _____

Adjusted light transmision? _____ Adjusted PMT? _____

Description of the error:

(If scanning is possible. please supply an RGB image indicating the problem - preferably on diskette)

ScanMate software version: _____ Calibrated when cold _____

System Configuration: _____

(This block for ScanView use)

Description:

Warranty ___ **Warranty exchange** ____ **Service** _____ **Service exchange** ____

CRN _____

SCANMATE SOFTWARE REPORT (SCANNER/ PC)

ScanView dealer: _____

Contact person: _____ Date: _____

Error description:

Last action taken before error:

Scanner ser. nr. _____
Equipment - PC type: ISA ( ), EISA ( ), PCI ( ), or Vesa LB ( )
SCSI adaptor type: _____
RAM: _____ MB
Video card: _____ MB
Available hard diskspace: _____ MB

Operating system: _____ Version _____
Windows type: _____ Version _____
Apidriver _____ Version _____

ScanView software: _____ Version _____
Version _____
Other software: _____ Version _____
Network software: _____
Other devices on the same SCSI: _____

Windows memory: _____ MB
Windows resources (system) _____ %

Is it possible to reproduce the error? _____
Material supplied as documentation on:

Resolution _____ dpi
Film _____
SyQuest _____
Diskette _____
Proof _____
Other _____

Remarks:

SCANMATE SOFTWARE REPORT (SCANNER/MAC)

ScanView dealer: _____

Contact person: _____ Date: _____

Error description:

Last action taken before error:

Scanner serial number _____ Equipment - Mac type _____
Rocket card? Yes __ No __

Operating system: _____ Version _____

ScanView software: _____ Version _____
Version _____
Version _____
Version _____

Memory assigned: _____ System _____ MB
ScanProc _____ MB
SepProc _____ MB
ColorQuartet _____ MB
Photoshop _____ MB
Free _____ MB
Total available memory: _____ MB
Other devices on the same SCSI: _____

Is it possible to reproduce the error? _____ Resolution _____ dpi
Material supplied as documentation on: Film _____
SyQuest _____
Diskette _____
Proof _____
Other _____

Remarks:

ScanView Parts List

Some ScanView scanners are serviced by TSI Depot Repair

Contact the International Logistics Center or call 1 (800) 225-8414 prompt 2

Alternate Numbers 610-925-1682 or Fax 610-925-1619

We Buy Used Equipment! or call 1 (800) 755-2470 prompt 2

All prices shown are list price, a discount for volume purchase, specific types of contract customers, business partners, and dealers is customary

All parts subject to availability - Prices may change without notice

TSI is not responsible for price posting errors

Revised: August 20, 2001

Agfa Parts
DuPont DWP Parts
ECRM Parts
Screen (D.S.A.) Parts
Ultre Parts
Howtek Parts
Crosfield Parts 1
Crosfield Parts page 2
Lino Parts
Frequently Ordered Parts
Lamps and Filters Online
TSI Monthly Parts Specials

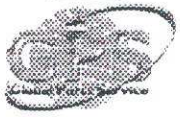
Part Number	Description	List Price
9202000020	LAMP HALOGEN 75W	33.45
9202000050	LAMP HALOGEN 75W	23.54
9202000060	LAMP FLUORESCENT 11W 6500K	76.18
9202000070	LAMP FLUOR 20W	45.25
9603210130	LAMPDRIVER EXCHANGE	1379.71
9603200280	FILTER ELEMENT X10	19.57
9202000080	LAMP FLUOR 20W	50.8
9602010050	PMT MODULE, EXCHANGE	5447.62
9202000040	LAMP HALOGEN 50W	43.27
9601300120	GREASE F. SPINDLE	4.93
9602110040	DRIVER MODULE W/ BOOST, EXC	1638.12
9603210110	CONTROL BOARD EXCHANGE	2434.78
9603210140	POWER SUPPLY EXCHANGE	1374.64
9602010010	CONTROL MODULE	1981.01
9603211010	CONTROL BOARD F8+ 0321, EXC	2724.64
9604501660	WORM WHEEL F. DRYER	77.15
9604502027	GEAR T=16, M=1,5 M.Y3,5 HU	8.7
9604502029	WORM GEAR, LEFT	26.23

	9604502033	GEAR FOR ROLLERS	15.6
	9604502037	WORM GEAR Z=28 M=1,5	51.3
	4930100090	TARGET FOCUS TRANS/REFLECT	10.44
	6401408400	HINGE TOP COVER LH/RH F8+	191.11
	9602000030	AMPLIFIER BOARD	876.54
X	9602010020	CPU MODULE, EXCHANGE	576.23
	9602010110	SENSOR MODULE, EXCHANGE	1858.55
	9602810020	CONTROL BOARD, SM11000 EXCH	4127.54
	9602810070	COVER ASSEMBLY, SM11000 EXC	1436.03
	9604000150	SENSOR (TYPE RP452)	13.48
	9604510070	POWERSUPPLY 5/12 V. EXCHANG	215.36
	9605500320	DRIVE BELT KNIFE OUTPUT MOD	75.36
	9605511020	OUTPUT/KNIFE, EXCH. DM7500	4699.28
	9608710020	POWER SUPPLY, 80,270,400 EX	576.03
	4930100100	FOCUS TARGET TRANSMISSION	14.48
	9202000010	75W TRANSMISSION LAMP	36.23
	9202000090	LAMP FLUORESCENT 11W 6500K	89.85
	9602000070	FOIL-DISPLAY	73.33
	9602000100	FLOURESCENT LAMP, 8W	18.05
	9602110010	CONTROL MODULE, EXCHANGE	2026.09
	9602800020	CONTROL BOARD, SCANMATE1100	4127.54
	9603200180	STEP MOTOR ALL	156.52
	9603210415	MOUNTING PLATE COMPL. COATE	797.1
	9604000200	STEP MOTOR DM4000/4900	133.62
	9604501100	DRIVE MOTOR	339.71
	9604501490	UV LIGHT TUBE X4	318.84
	9604501740	GREASE TUBE	20.16
	9604502036	GEAR Z=14 M=1,5	52.17
	9605500270	MEDIA GUIDE STRAIN GAUGES	377.78
	9605500490	SPRING TENSION HELICAL	15.66
	9605510160	DRIVER BOARD EXCHANGE	2347.83
	9605510220	CONTROL BOARD DM7500 EXCHAN	4260.87
	9605511220	CONTROL BOARD,EXCH. DM7500P	4470.87
	4930100150	FOCUS TARGET	3.17
	6300402200	FIBER OPTIC CABLE-REFL	325
	6400408400	HINGE	191.11
	6610157900	COVERSWITCH SM3000	80.44
	6610242000	CABLE J4 TO PANEL	80.58
	6702700170	DRUM LOCK ASSY	191.3
	6704000310	SENSOR SWITCH	238.11
	9602000080	DC MOTOR	1852.9
	9602000160	SCSI-CONTROLLER	94.2
X	9602010040	DRIVER MODULE, EXCHANGE	711.02
X	9602100010	CONTROL MODULE	2026.09
X	9602100040	DRIVER MODULE W/ BOOSTER	1638.12
	9602510010	CONTROL MODULE, EXCH.	1812.17
	9602810030	DRIVERBOARD, SM11000 EXCH.	1783.48
	9603200130	LAMP DRIVER	1379.71
	9603200215	SWITCH CARRIAGE	11.59
	9603200290	TEMP/LAMP CONTROL BOARD F8	88.41
	9603200520	SPRING FOR F8 LID	39.15
	9603200550	SCANNER TRAY SAFETY UNIT, A	398.55
	9603201030	SWITCH LENS COVER	23.19
	9603202110	MOTOR/SPINDLE COUPLER F8	65.85
	9603211050	CCD BOARD, F8 +, 0321 EXCHA	5176.81
	9603212010	CONTROL BOARD, F8+, 0322 EX	2681.16
	9603212050	CCD BOARD, F8 +, 0322 EXCHA	5176.81
	9603410010	CONTROL PCB F6	1777.78
	9604000140	SENSOR (TYPE 59210-0209)	21.74
	9604010010	CONTROL BOARD DM4/49/5000 E	4808.7

9604500670	SCSI CABLE W. LOGO 5M.	175.36
9604501095	SILVER RECOVERY UNIT REPAIR	89.13
9604501110	MOTOR ENCODER	94.93
9604501200	AIRFLOW DETECTOR BOARD	265.07
9604511240	RA INTERFACE BOARD EXCH	1272.61
9605500280	DC MOTOR, CASS. INPUT	423.91
9605500330	SENSOR	240.58
9605501010	INPUT MODULE	3923.19
9605501380	KNIFE UNIT	195.24
9605510080	BACKPLANE, EXCHANGE	304.35
9605510170	POWER SUPPLY 24V EXCHANGE	920
9605510400	HARDWARE UNIT	16666.67
9608500040	FLUORESCENT TUBE 24W	33.33
9608710030	PMT MODULE, SM3000 EXCHANGE	5174.93
9608710080	CONTROL MODULE SM3000 EXCHA	1974.2
AHA-2944UW	PCB PCI-TO-SCSI DIFFERENTIAL	675
SV1100-PKG	CRATE FOR SV1100 SCANNER	2000

These lists represent the parts most commonly requested from our Global Parts Service
They represent less than .01% of our inventory, so if you don't see what you need, please ask!
Contact the International Logistics Center or call 1 (800) 225-8414 prompt 2

TOP



How May We Better Serve You?
Please forward your comments and suggestions here.