

# 5100 FICHE SCANSTATION

## Field Service Manual

---

**Part Number**  
8100022

**Revision information**  
Issue 1.0 1 April 2001  
Issue 2.0 12 March 2002

---

# SAFETY INFORMATION NOTICE

There is safety related information contained in several places in this document. It is important that all Users and Service Technicians read and understand these notices and carefully comply with the warnings and procedures contained therein.

## Copyright

The SCANFICHE software and all information in this document are the property of Wicks and Wilson Limited. The software and the documentation are provided under the terms of a licence agreement. Neither the software nor the documentation may be copied in whole or in part, except as permitted by the licence agreement, without the prior written consent of Wicks and Wilson Limited.

© 2000 Wicks and Wilson Limited. All rights reserved.

## Trademarks and registered trademarks

MS-DOS and Windows are trademarks of Microsoft Corporation.

All trademarks and registered trademarks are fully recognised.

## Radio frequency interference

This equipment has been designed for compliance with FCC Part 15 Subpart J, Class A and VDE 0871 Class B requirements. The equipment has also been designed in compliance with the German Zentralamt fuer Zulassungen im Fernmeldewesen (ZZF) regulations Vfg 1046 and is radio interference suppressed.

The equipment incorporates various design features to minimise both conducted and radiated emissions. In the case of radio or TV interference, the following points should be checked and corrected where necessary:

- (i) The equipment covers must be properly closed in normal operation.
- (ii) Control and data interface cables as supplied use shielded cable and connectors, and have ferrite beads for additional protection against unwanted radiation. User-supplied cables need to be similarly constructed if interference is to be minimised.
- (iii) Experience has shown that in the majority of instances, the host PC is the predominant radiator of interference. In critical installations, care should be taken to select a model which is qualified to FCC/VDE standards.
- (iv) The siting of the radio/TV receiver and/or its antenna should be carried out so as to maximise the wanted signal and minimise interference.
- (v) If the radio/TV receiver is mains powered, it is advisable to use a separate AC socket outlet from that used for the aperture card equipment.
- (vi) The equipment must be serviced only by qualified personnel, as otherwise repairs could be made which appear to work but which lead to excessive interference.

**WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been designed to meet the limits for a Class A computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.**

# Contents

## Chapter 1 Introduction

- 1.1 General description
- 1.2 Using the field service manual
- 1.3 Machine safety features
- 1.4 The scanner power supply
- 1.5 Power cord
- 1.6 Power supply and environmental requirements
- 1.7 Scanner safety features and override facilities
- 1.8 General safety warnings (English, German and French)
- 1.9 Safety labelling

## Chapter 2 Technical description and theory of operation

- 2.1 **Functional description - mechanical and optical**
  - 2.1.1 The power supply unit
  - 2.1.2 Operation
  - 2.1.3 Actuators and sensors
- 2.2 **The optical scanning system**
  - 2.2.1 The Illuminating LEDs
  - 2.2.2 The Diffuser
  - 2.2.3 The Fiche film Cartridge
  - 2.2.4 The Motorised Main Lens
  - 2.2.5 The 16mm Mirror Assembly
  - 2.2.6 The Camera Card
- 2.3 **Functional description - electrical and electronic**
  - 2.3.1 The Differential Cable Driver Card 471
  - 2.3.2 SMARTSCAN 7 Image Processing Card 475
  - 2.3.3 PC Interface Card 478
  - 2.3.4 CCD Fast Camera Card 490
    - 2.3.4.1 Z Stepper Motor
    - 2.3.4.2 Card 261 Z Home Sensor
  - 2.3.5 Controller Card 492
    - 2.3.5.1 Scan motor (MT1)
    - 2.3.5.2 Other sensor and drive functions
  - 2.3.6 Illuminator Card 493
  - 2.3.7 Sensor Board Card 494
- 2.4 **Other useful information**
  - 2.4.1 Imaging - Fundamental parameters

## Chapter 3 Diagnostics

- 3.1 **Fiche Diagnostics**
- 3.2 **System Configuration**
- 3.3 **Tests**
  - 3.3.1 Actuator Tests
  - 3.3.2 Sensor Test
  - 3.3.3 Z and Y Motors
  - 3.3.4 Scan Motor
  - 3.3.5 Exit Hopper Motor
  - 3.3.6 Input Hopper Motor
- 3.4 **COMMS Test**
  - 3.4.1 Lowlevel.exe
- 3.5 **Initialisation**
- 3.6 **Help**

## Chapter 4 Detailed test procedures

- 4.1 Setting the hardware to work**
  - 4.1.1 Initial inspection checks
  - 4.1.2 LEDs
  - 4.1.3 Drive belts
  - 4.1.4 Link and switch settings
  - 4.1.5 Power supply set-up
  - 4.1.6 Check the RS232 communications
  - 4.1.7 Check actuators
  - 4.1.8 Check operation of sensors
  - 4.1.9 Set up of sensors
  - 4.1.10 Set the motor speed
  - 4.1.11
- 4.2 Adjust the light balance**
- 4.3 Set the machine offset**
- 4.4 Focus**
  - 4.3.1 Focus Adjustment Speed (35mm) Mode
  - 4.3.2 Focus Adjustment Quality (16mm) Mode
- 4.5 Alignment and skew**
- 4.6 Set the machine scaling**
  - 4.6.1 Setting up Frame Sizes
  - 4.6.2 Scaling - Speed (35mm)
  - 4.6.3 Scaling - Quality (16mm)
- 4.7 PC interface card**
- 4.8 Functional testing**
  - 4.9.1 Image performance testing
  - 4.9.2 Transport testing
  - 4.9.3 File transfer testing
  - 4.9.4 Print testing

## Chapter 5 Maintenance

- General maintenance warning**
- 5.1 Cleaning**
  - 5.1.1 The illuminator lens
  - 5.1.2 The CCD, lens and mirrors
  - 5.1.3 The fiche cartridge guide rollers
  - 5.1.4 The cabinet
- 5.2 Component Replacement**
  - 5.2.1 Removing the Rear Cover
  - 5.2.2 Removing the Front Cover
  - 5.2.3 Removing the Illuminator Cover
  - 5.2.4 Removing the Output Hopper Side Plate
  - 5.2.5 Removing the Output Hopper
  - 5.2.6 Replacing the Output Hopper Platen Drive Motor
  - 5.2.7 Replacing the Output Hopper Platen Leadscrew
  - 5.2.8 Replacing the PSU
  - 5.2.9 Removing the 45° Mirror
  - 5.2.10 Removing the Y Carriage Assembly
  - 5.2.11 Replacing the Dual Optics assembly
  - 5.2.12 Replacing the Z Axis Drive Motor
  - 5.2.13 Replacing the Focusing Lens
  - 5.2.14 Replacing the Y Axis Drive Motor
  - 5.2.15 Replacing the Camera Card 490
  - 5.2.16 Replacing the Controller Card 492
  - 5.2.17 Replacing the Smartscan Card 475
- 5.3 Mechanical adjustments**
  - 5.3.1 Belt tensions

## Chapter 6 Fault Finding & Troubleshooting

- 6.1 Fault identification**
- 6.2 Problem analysis**

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.