OXFORD CRYOSYSTEMS

AD51 Dry Air Unit

AD51 DRY AIR UNIT

Operation & Instruction Guide 1.3

Oxford Cryosystems Ltd
3 Blenheim Office Park
Lower Road
Long Hanborough
Oxford OX29 8LN
United Kingdom
Phone +44 1993 883488 • Fax +44 1993 883988
Email: Support@Oxcryo.com

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SPECIFICATION

DRY AIR	Up to 25 litres / minute at less than -60°C dewpoint
DIMENSIONS	Width: 660mm Depth: 300mm Height: 420mm (incl. feet)
WEIGHT	41.5 kg
POWER	**Specified at time of purchase:** 220-240V ac, 50 Hz, 5A **or** 100-115V ac, 50/60 Hz, 11A

INTRODUCTION

The AD51 is a development of the AD41 Dry Air Unit that has seen a total service life of millions of hours. The new benefits are:

EVEN QUIETER RUNNING

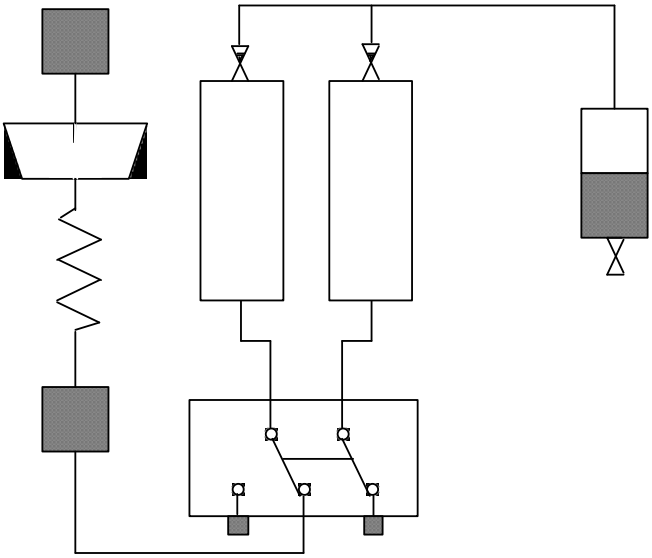
A brand-new quiet compressor has been fitted to almost eliminate any of the operating noise level from the unit.

REDUCED AND IMPROVED MAINTENANCE

The new compressor has significantly improved maintenance intervals due to the new and better quality lifetime of the compressor components. The new compressor design means that service parts can be changed extremely easily and quickly without the need to remove the compressor.

A new internal pipe work design has been fitted to improve the lifetime of some of the components.

BEFORE STARTING



MAINTENANCE AND TROUBLE SHOOTING

The AD51 is designed to be a low-maintenance unit. A useful indication that the unit is functioning correctly is that a brief hiss can be heard at regular (one minute) intervals as the air valves switch the action of the columns.

When the AD51 is used with the Cryostream Cooler to provide the dry air shroud for the nitrogen gas stream, a deterioration in the dryness of the dry air will show up as frost forming evenly all around the cold nitrogen stream delivery nozzle.

PRECAUTIONS

If you have not used the AD51 for some time it may be necessary to run the unit overnight to dry down the columns.

ROUTINE MAINTENANCE

The AD51 is designed to run for more than 15,000 ho

FAULTS

Note: If any trips are activated the cause should be determined, preferably by a qualified technician, before restarting the unit.

A rear panel fuse (T1A, 220-240V or T2A, 100-115V) protects the transformer that drives the power supply, control board, indicator lamps, cooling fan and solenoid valves.

A fuse (T2A) mounted internally on the control board protects the low voltage supply to the control logic circuits.

A rear panel circuit breaker operates if the compressor draws excessive current – push the black button in to reset.

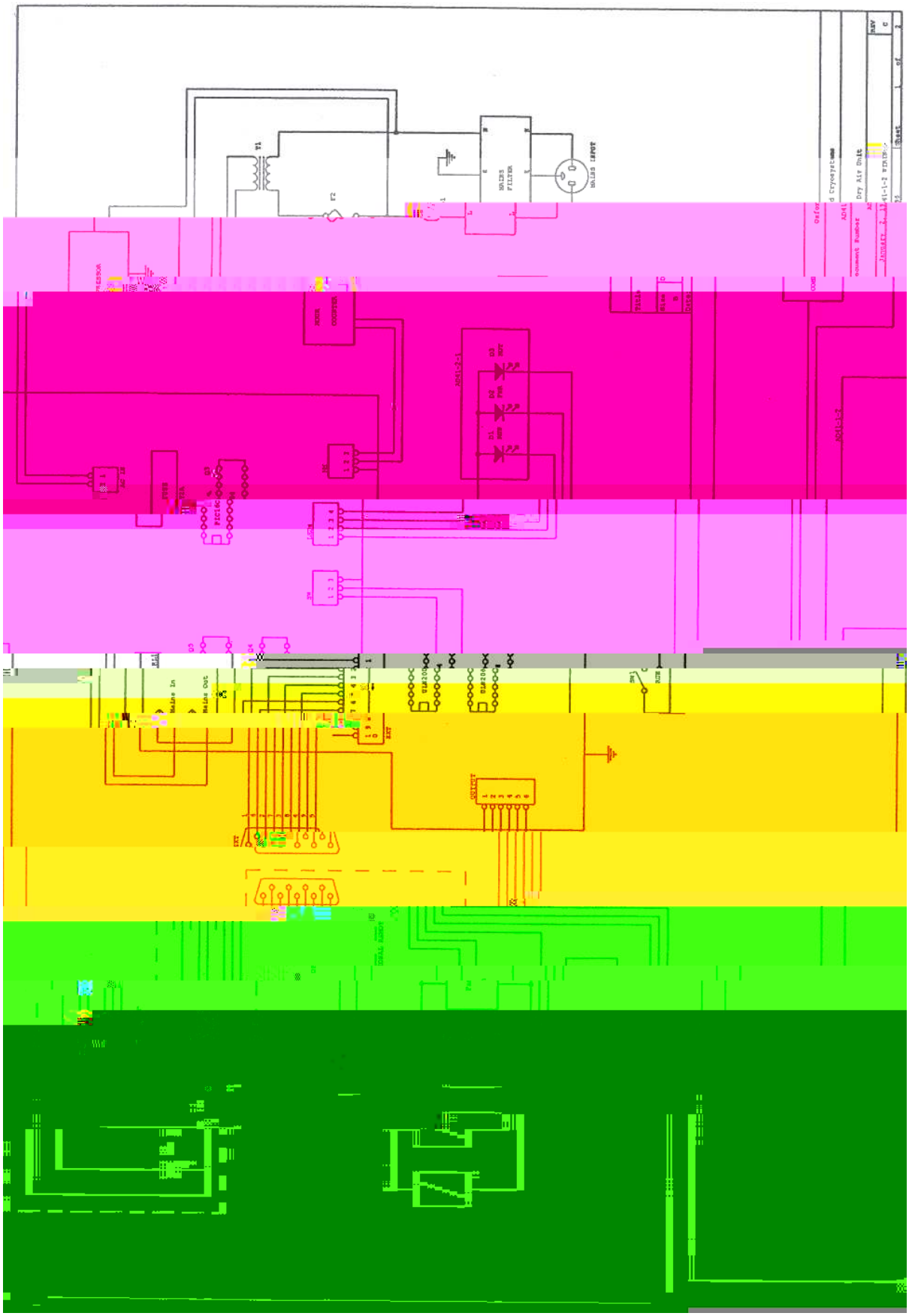
A manual reset thermal switch operates if the temperature inside the quiet box rises excessively for any reason. If an overheat occurs the **HOT!** lamp will flash until the thermal switch is reset. The thermal switch is mounted in the compressor compartment (see Fig 4 (M)) - press the red button to reset.

FACTORY OVERHAUL/SERVICE

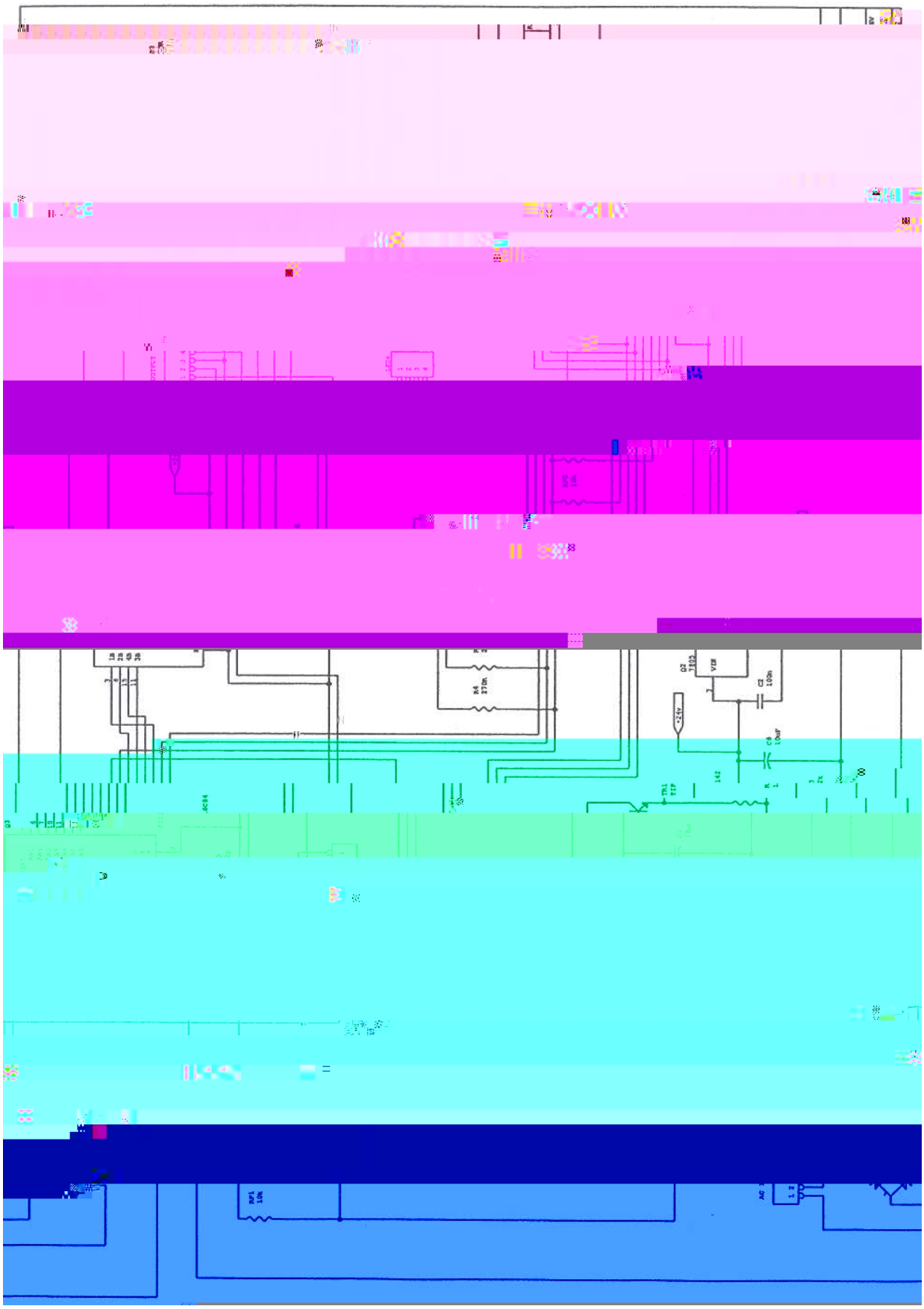
After extended running you may consider it desirable for the AD51 to have a complete factory service and full recommissioning procedure. Please contact your agent or Oxford Cryosystems to discuss this type of service if required.

LIST OF APPENDICES

APPENDIX 1 - GENERAL CIRCUIT DIAGRAM



APPENDIX 2 - CONTROL BOARD CIRCUIT DIAGRAM



APPENDIX 3 - COMPRESSOR DELIVERY FILTER REPLACEMENT

1. Switch off the AD51 and disconnect the electrical power.

2. Remove the AD51 top cover by lifting the four white plastic plugs and unscrewing the four M5 socket caphead screws with the 4mmA/F hexagon balldriver provided.

3. The Compressor Delivery Filter (A) is a square grey unit mounted just under the top cover near the control panel end of the AD51. Unscrew the four M6 socket caphead screws on the lid of the filter with the 5mmA/F hexagon key provided.

4. Lift off the lid and disconnect the 8mm nylon tube if necessary. Lift out the top anodised aluminium mesh (B), the filter disc (C) and the bottom anodised aluminium mesh (B).

5. Discard the dirty filter disc and clean the meshes.

6. Clean the sealing 'O' ring on the lid and the part of the body on which it seals.

7. Fit one mesh into the filter body, lay a new filter disc on top of the mesh with an equal overlap all round and fit the second mesh on top. Re-connect the 8mm nylon tube, replace the filter lid and tighten down the four M6 socket caphead screws evenly in sequence.

8. Run the AD51 overnight to dry down the columns.