



# V91 DLT/LTO

## DLT & LTO TAPE DEGAUSSER



**VS SECURITY PRODUCTS LTD**

**V91 DLT/LTO  
DLT & LTO Tape degausser**

**OPERATING MANUAL  
PRODUCTION STANDARD**

**ZZ009161 - 110-115v 60Hz  
ZZ009178 - 220-240v 50Hz**



**WARNING**

**THIS UNIT EMITS A STRONG MAGNETIC FIELD. REMOVE WRIST WATCHES BEFORE USE. PERSONNEL FITTED WITH A CARDIAC PACEMAKER SHOULD NOT STAND WITHIN 2 METRES OF THE UNIT. OPERATING PERIODS IN EXCESS OF SPECIFIED DURATION WILL RESULT IN EXTERIOR SURFACES BECOMING VERY HOT.**

**TO HELP MINIMISE THE POSSIBILITY OF ELECTRICAL SHOCK HAZARDS UNDER NO CIRCUMSTANCES SHOULD ANY PANELS BE REMOVED.**

**CAUTION**

**IT IS RECOMMENDED THAT MAGNETIC STORAGE MEDIA IS KEPT AT LEAST 2 METRES (6 FEET) FROM THE DEGAUSSER**

**IMPORTANT**

**THE POWER ON/OFF SWITCH USED ON THIS EQUIPMENT IS NOT AN ISOLATING SWITCH. IT IS RECOMMENDED THAT THIS EQUIPMENT SHOULD BE OPERATED FROM A SEPARATE SWITCHED ISOLATOR WHICH SHOULD BE LOCATED CLOSE TO THE UNIT AND WITHIN REACH OF THE OPERATOR.**

**COPYRIGHT**

**THIS DOCUMENT IS THE PROPERTY OF VS SECURITY PRODUCTS LTD AND IT MAY NOT BE REPRODUCED, COPIED OR EXHIBITED TO A THIRD PARTY WITHOUT THE WRITTEN PERMISSION OF VS SECURITY PRODUCTS LTD.**

**VS SECURITY PRODUCTS LIMITED**

Unit 17, Pegasus Court

North Lane

Aldershot

Hampshire - GU12 4QP

United Kingdom

Tel: +44 (0) 1252 333577

Fax: +44 (0) 1252 333448

Email: [sales@vssecurityproducts.com](mailto:sales@vssecurityproducts.com)

**VS AND ASSOCIATES**

3160 Texas Hill Road

Placerville

California

95667

United States of America

Tel: 530-626-6924

Fax: 530-626-6989

Email: [ussales@vssecurityproducts.com](mailto:ussales@vssecurityproducts.com)

# CONTENTS

SECTION	PAGE
1. SPECIFICATION	4
2. INTRODUCTION TO THE V91 DLT/LTO TAPE DEGAUSSER	5
3. INSTALLATION	5
4. OPERATION	6
5. INDICATORS / FEATURES	7
6. MAINTENANCE / SERVICE	7
7. TABLES	8
8. PARTS LIST	9

This document refers to V91 DLT/LTO part no's;

**ZZ009161 110-115v 60Hz**  
**ZZ009178 220v-240v 50Hz**

## SECTION 1: SPECIFICATION

<b>MEDIA HANDLING</b>	All backup tapes including: DLT, S-DLT, LTO1, 2, 3, 4, 5, 6 & 7, 3480/3490/3490e, 3590, 9840, T9940 & T10000 tape. Ultrium & Redwood SD-3 tape & cartridges. Mammoth 1 & 2, 8mm, AIT1 & 2, M2 tape. DDS 1, 2, 3, 4 & 5, DD-2, ½" Computer Tape, Diskettes (Single & Boxed), DC 600 & 2000, TK50, 70 & 85, 4mm & 8mm, Exabyte, Travan, DAT, ZIP Disk, HDCam, 1" Tape on Reels up to 14" in diameter.
<b>ERASURE DEPTH</b>	-75db on 1500 Oe tape -90db on 750 Oe tape
<b>DUTY CYCLE</b>	10% - 20% (Dependant on ambient temperature)
<b>RUN TIME</b>	6 minutes typical
<b>ERASURE TIME</b>	12 seconds typical
<b>OPERATING VOLTAGE</b>	110-115v, 60Hz (ZZ009161) 220-240v, 50Hz (ZZ009178)
<b>CURRENT</b>	12 amps typical 110-115v 60Hz 7 amps typical 220-240v 50Hz
<b>CIRCUIT BREAKER</b>	15A (60Hz) / 10A (50Hz)
<b>SECURITY KEY SWITCH</b>	Standard
<b>MOUNTING</b>	Free standing table top
<b>DIMENSIONS</b>	19" x 16.5" x 5" (48cm x 42cm x 15cm)
<b>DIMENSIONS (PACKED)</b>	25.5" x 20.8" x 10.6" (65cm x 53cm x 27cm)
<b>WEIGHT</b>	62 lbs (28kg)
<b>WEIGHT (PACKED)</b>	74 lbs (34kg)



### ENVIRONMENTAL PROTECTION

This product must not be disposed of with household waste. You are responsible for ensuring and financing all costs of collection, treatment, recovery and environmentally sound disposal of the goods in accordance with the WEEE directive.

Registered Producer Number: WEE/JB2622WS

VS Security Products reserves the right to amend or modify the specifications and design criteria applying to these products

## SECTION 2: INTRODUCTION TO THE V91 DLT/LTO TAPE DEGAUSSER

A magnetic recording process is almost always preceded by an erasing process, either by bulk degaussing or by magnetic head erasure. Erasure is a fundamental step in achieving high quality recordings.

Bulk erasure is the preferred method due to the considerable reduction in time involved plus the otherwise use of expensive record/reproduce/erase equipment.

The V91 DLT/LTO degausser uses an alternating magnetic field to erase magnetically stored information on tapes. The frequency of the magnetic field is the same as the mains supply.

The V91 DLT/LTO bulk degausser functions like a large electro magnet, its erasing field originating as leakage flux from a large gap in the field structure, the V91 DLT/LTO structure is basically a U section. The field intensity decreases rapidly as the distance from the degausser surface increases. For example at a distance of approximately 2.75 inches from the degausser's surface a field strength of only 50 oersteds exists. Furthermore, the erasing field present at the front edge nearest the operator is also very low. It is therefore recommended that care should be taken to ensure the entire width of tape to be erased is exposed to the effective field.

Anyone replacing their existing DLT drive with the new DLT1 drive should be aware that their existing DLT tapes will be unsuitable for use with the new drive. However, the problem is easily solved by erasing all existing DLT tapes on VS Security Products' V91 DLT/LTO. The V91 DLT/LTO will erase all old data and formats in 10 seconds leaving the tapes completely clear and ready to use in DLT1 drives.

## SECTION 3: INSTALLATION

**Care should be taken when moving/handling the Degausser.**

### 3.1 Unpacking

The degausser is shipped inside a cardboard packing case. Unpack the degausser carefully by disassembling the packing case and inspect it for signs of physical damage. If damage is apparent, a claim should be filed with the carrier immediately.

Once you have exposed the degausser, you can carefully remove it from the packing box. You should find the following:

- ⇒ V91 DLT/LTO Degausser
- ⇒ Power Cable
- ⇒ User Manual (This document)
- ⇒ Security Key for Key switch

### 3.2 Power Wiring

Check the power supply requirements on the label attached to the back of the equipment with the available supply. The unit is supplied with a flying 3 wire cable which, when connected to a properly wired receptacle, earths the unit. It is essential that a proper earth connection is made to assure safe operation.



**CAUTION:** A good electrical ground must be connected to the degausser. The unit must be connected to the correct power supply. Failure to do so may result in permanent damage.

### Connections

Wire Colour	60Hz	50Hz
Brown	Hot	Live
Blue	Cold	Neutral
Yellow/Green	Ground	Earth

**IMPORTANT INSTRUCTION:** The mains supply outlet socket should be close to the installed equipment and fully accessible.

**NOTE:** The degaussing coils are powered as part of a tuned resonant circuit. This allows quite high circulating currents to be generated within the degaussing coils, with minimal current consumption from the mains voltage supply. However, this technique requires that the waveform of the supply voltage contains minimal harmonic distortion. A distorted waveform will result in an increase in current consumption. In extreme cases excessive current will trip the circuit breaker making it necessary to use a mains filter to remove the distortion and reduce the current consumption. The typical current consumption figures provided in this manual are when powered from a supply with minimal distortion. Any increase in current consumption due to a distorted waveform will have minimal effect on the degausser's performance, however, excessive current consumption should be avoided for obvious reasons. In the event of unexplained high currents, please consult your supplier.

## SECTION 4: OPERATION



### WARNING!

strong magnetic fields are generated. remove watches before use ensure that the fan operates correctly during use. (After initial warm up period). operating periods in excess of specified duration will result in exterior surfaces becoming very hot.

### 4.1 Turning on the V91 DLT/LTO

The V91HD/DLT degausser has been designed for simplicity of operation in that it consists basically of a flat bed over which the cartridge is passed. Control is via a single on/off switch and indicator. The illuminating on/off power switch is of the latching push button type which energises the degaussing coil.

On units with the key switch option fitted, the power switch will illuminate as normal when switched on but will also require the key switch to be turned clockwise for correct operation.

**NOTE:** Where a security key switch is fitted, the degaussing coil must only be energised and de-energised by using the power switch.

### 4.2 Erasure of DLT and LTO Backup Tapes & Other Cassettes and Cartridges

Following the procedure below will ensure tapes and cassettes are returned to an “as new” condition and ready for reuse.

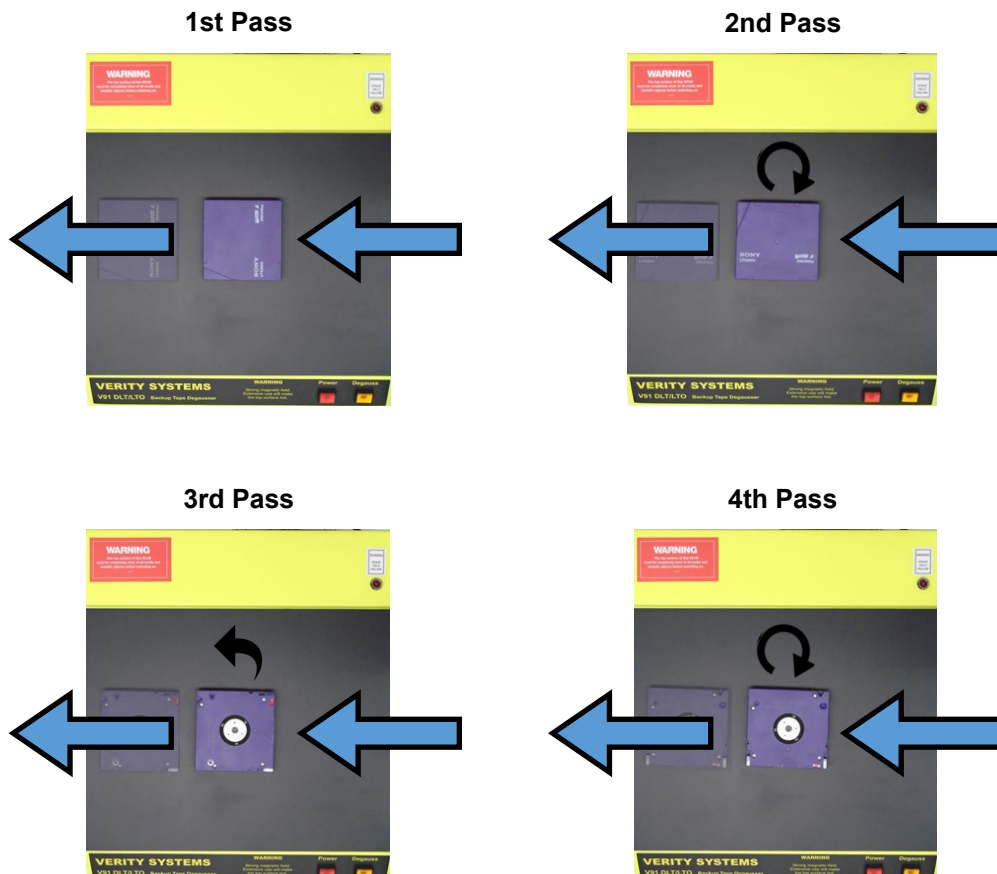
**NOTE:** Some Tapes have a servo track which are written by the manufacture so cannot be reused. (Consult the tape manufacturer for details)

The media to be erased should be held away from the degausser whilst it is switched on. When switched on the degauss indicator will also illuminate.

The media to be erased should be brought slowly towards the right hand side the degausser’s top surface. Pass the media across middle on the top surface, as shown in the 1st Pass Picture below, in a slow and deliberate movement taking approximately three seconds to traverse the degausser.

The media must be turned through 90 degrees and a second pass made using the same procedure. The media must be turned over and the process repeated, making a total of four passes to ensure complete erasure.

### 4.3 Sequence of Erasure



### 4.3 Erasure of Reels and Pancakes

The media in reel or pancake form to be erased should be brought slowly towards the top surface. The media should be placed on the surface and rotated slowly and evenly taking approximately five seconds to complete a revolution; then remove the media slowly from the degausser before switching off. Reels with tape wider than 1/2" should be turned over then subjected to a second pass.

It is recommended that the degausser is switched off between media erasure as this will reduce the internal heating and increase the operation time.

## SECTION 5: INDICATORS / FEATURES

### 5.1 Indicator

The degauss indicator is provided to give an indication of degausser coil energisation. Certain circumstances can arise when, although the unit is switched on, the degauss coils may not be energised.

### 5.2 Warning indicator

The field failure indicator is provided to give further reassurance that the degauss field is present. The indicator is inhibited by the degaussing magnetic field and is considered more reliable being a red flashing LED.

### 5.3 Overheat Protection

The high energy field developed by the V91 DLT/LTO necessitates the generation of a considerable amount of heat. The degausser coil is monitored for excessively high temperatures and should this condition occur its operation will be inhibited until the coil has cooled sufficiently.

### 5.4 Cooling

A thermostatically controlled cooling fan is provided to extend the continuous operating period to a maximum.

### 5.5 Protection

The unit is protected by a thermal type circuit breaker. The current rating depends on the specified operating voltage.

## SECTION 6: MAINTENANCE /SERVICE

The unit is basically maintenance free but periodic checks should be made to ensure the correct operation of the fan and the good condition of the power cable.

**NOTE:** To reduce the risk of shock hazard disconnect the degausser from the mains voltage supply before carrying out any maintenance or servicing.

### 6.1 Circuit Breaker

To reset the circuit breaker simply 'push in' and 'release' the button.

### 6.2 Bulb Replacement

**NOTE:** Remove Power from the unit before replacing bulbs.

1. Remove the "bulb lens" from the "switch/indicator body" by levering it forwards.
2. Remove the bulb from the rear of the "bulb housing" using a suitable extraction tool.
3. Replace the bulb noting the following:
  - The bulb will fit in only one position in a locating slot. If when fitting this does not occur, remove the bulb and rotate it through 180°.
4. Refit the "bulb lens" to the "switch/indicator body" by gently pushing the lens into the "switch/indicator body" housing.

	Neon Voltage	
Model	Power Switch	Indicator
ZZ009161	115v	240/220v
ZZ009178	220/240v	240/220v

### 6.3 Cooling Fan

The cooling fan is of the conventional axial type powered from the ac voltage supply. The unit is over temperature and over current protected and does not require servicing. However in the event of failure the fan may easily be replaced from the rear of the degausser.

### 6.4 Internal Components

Most of the internal components are replaceable, i.e. the solid state relay, toroidal transformer and the thermal switches mounted on the degausser coil. However the tuning capacitors and the degaussing coil are not spares items and if found to be faulty the unit should be returned to VS Security Products for repair. To access the components inside the degausser the laminate cover must be removed. This entails breaking the adhesive seal using a sharp blade.

#### 6.4.1 Solid State Relay Replacement

A thermally conductive compound should be used to ensure adequate heat dissipation from the relay to the metal case.

#### 6.4.2 Thermal Switch Replacement

Care must be exercised when replacing either of the switches on the degausser coil. The switches are fitted using an epoxy resin and it is recommended that the new switch be fitted in a new position on the coil and the old switch be left in place. The wire connections are of the 'push on' spade type and are easily transferred to the new switch. A high temperature epoxy resin part no. EA 200 001 should be used to secure the new switch.

#### 6.4.3 Cover replacement

The laminate cover should be cleaned of old adhesive before refitting, using the sealant part no. EA 100 007.

## SECTION 7: TABLES

### 7.1 Basic Fault Finding Table

The table below assists fault finding down to component levels. However, should the degaussing coil or tuning capacitors be found to be faulty it is recommended that the unit be returned to VS Security Products for repair.

Function	Symptoms	Possible Fault	Location
Fails to degauss media	Circuit breaker CB1 repeatedly tripped	Incorrect supply voltage / frequency Faulty degauss coil L1 and / or tuning capacitors C1-C4	User source Inside centre and left-hand side
Power lamp	Fails to illuminate	Loss of mains supply Tripped circuit breaker Faulty switch Faulty neon	User source Rear panel Front panel Front panel
Degauss lamp	Fails to illuminate / flashes	Extensive use of degausser caused overheating. Allow unit to cool (Not a fault) Faulty Neon Faulty solid state relay R1 Faulty thermal switch SW2 Faulty filter / transformer TX1	Front Panel Inside on front end of degaussing coil Inside on front end of degaussing coil Inside front on left hand side
Cooling Fan	Fails to operate	Faulty thermal switch SW3 Faulty Fan M1	Inside on front end of degaussing coil Rear panel



## 7.2 Current Monitor Test Points

The following table contains typical current values to be measured at specific points in the equipment. The values given are in amperes and may differ slightly from those actually measured due to component tolerance plus effects due to operating temperature.

Model	Voltage / Frequency	Current monitor test points (refer to circuit diagram)					
		1	2	3	4	5	6
ZZ009161	110-115v 60Hz	13	8	70	39	29	0.19
ZZ009178	240-220v 50Hz	7	N/A	68	30	37	0.09

**NOTE:** The degaussing coils are powered as part of a tuned resonant circuit. This allows quite high circulating currents to be generated within the degaussing coils, with minimal current consumption from the mains voltage supply. However, this technique requires that the waveform of the supply voltage contains minimal harmonic distortion. A distorted waveform will result in an increase in current consumption.

The typical current consumption figures provided in this manual are when powered from a supply with minimal distortion. Any increase in current consumption due to a distorted waveform will have minimal effect on the degausser performance, however, excessive current consumption should be avoided for obvious reasons. In the event of unexplained high currents, please consult your supplier.

## SECTION 8: PARTS LIST

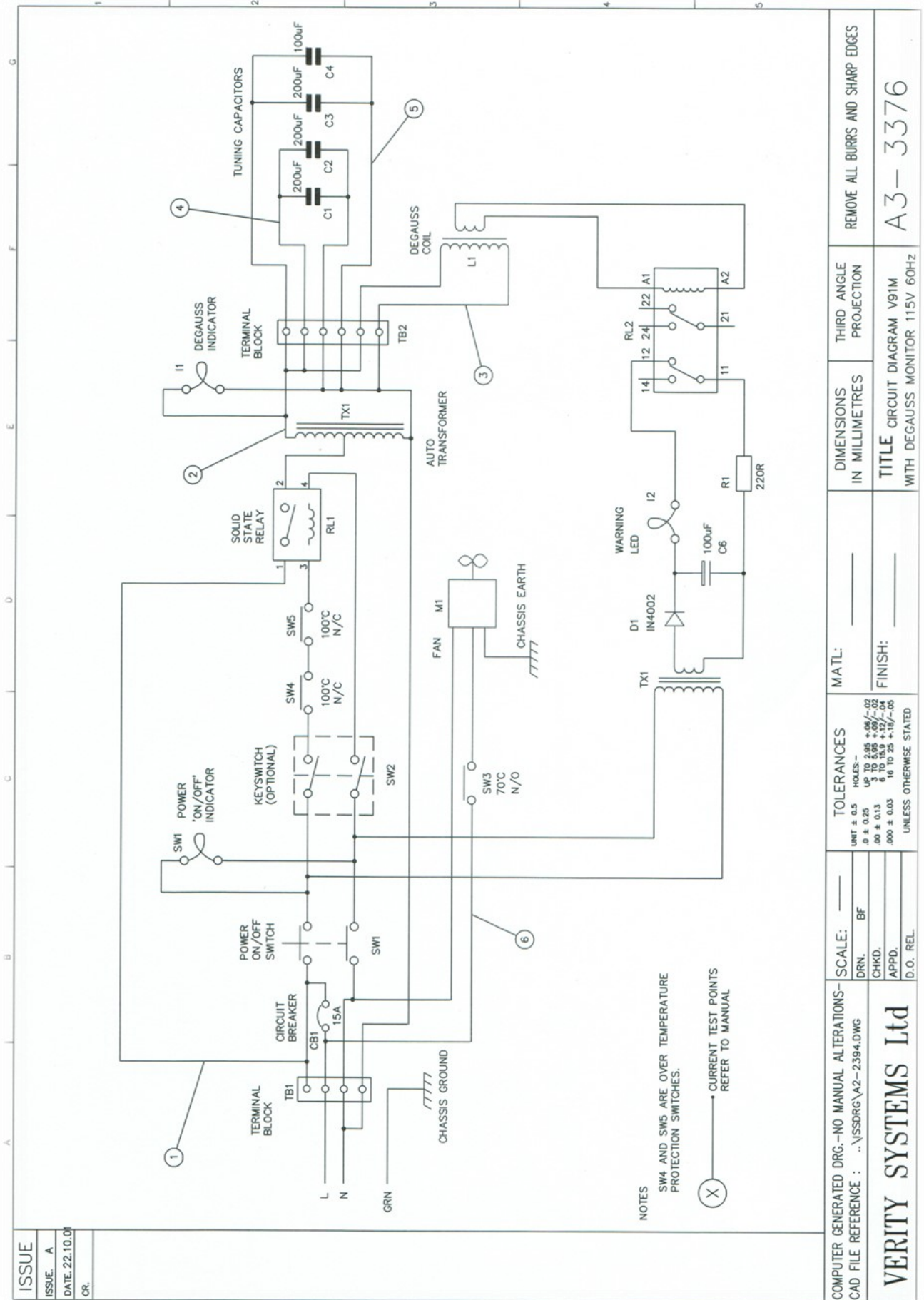
### 8.1 ZZ009161 Parts List

ZZ009161 (110-115v, 60Hz)			
Designation	Part No.	Quantity	Description
	CA100005	1	Cable gland 16mm
TB2	CG200001	1	Terminal Block
TB2	CG200002	1	End Cover
TB2	CG200003	1	Jump Bar
TB1	CM100023	1	Terminal Block
	FM100033	1	Guard 120mm metal
M1	FM100042	1	Fan 120mm
	HS100101	4	Feet
Ind 1	OI100031	1	Neon
SW1	OI100030	1	Neon
RL1	RS100010	1	Relay
	SH100150	1	Relay Cover
SW3	SP100002	1	Temperature Sensor
SW2	SW100016	2	Thermal Switch
CB1	SW100017	1	Circuit Breaker 15A
SW1	SW100123	1	Red lens
SW1	SW100125	1	Switch Body
SW1	SW100126	1	Switch Contacts
IND1	SW100121	1	Yellow Lens
IND1	SW100124	1	Indicator Body
IND1	SW100127	1	Dummy Socket
TX1	TX100030	1	Auto Toroid Transformer
	MP003065	1	Fan Plate
SW4	SW100070	1	Security Key Switch
Ind2	OI100017	1	Flashing Led
R1	RP200013	1	220 ohm Resistor
RL2	RS100076	1	Relay Base
RL2	RS100077	1	24v ac Relay
D2	SD100025	1	Rectifier Diode
TX1	TX100069	1	Transformer
C6	CC100025	1	100 µf Capacitor
	XX003064	1	V91 Top

8.2 ZZ009178 Parts List

ZZ009178 (240-220v, 50Hz)			
Designation	Part No.	Quantity	Description
	CA100005	1	Cable gland 16mm
TB2	CG200001	1	Terminal Block
TB2	CG200002	1	End Cover
TB2	CG200003	1	Jump Bar
TB1	CM100023	1	Terminal Block
	FM100033	1	Guard 120mm metal
M1	FM100027	1	Fan 120mm
	HS100101	4	Feet
Ind 1	OI100031	1	Neon
SW1	OI100031	1	Neon
RL1	RS100010	1	Relay
	SH100150	1	Relay Cover
SW3	SP100002	1	Temperature Sensor
SW2	SW100016	2	Thermal Switch
CB1	SW100049	1	Circuit Breaker 10A
SW1	SW100123	1	Red lens
SW1	SW100125	1	Switch Body
SW1	SW100126	1	Switch Contacts
IND1	SW100121	1	Yellow Lens
IND1	SW100124	1	Indicator Body
IND1	SW100127	1	Dummy Socket
	MP002325	1	Filter
	XX001118	1	Fan Plate
SW4	SW100070	1	Security Key Switch
Ind2	OI100017	1	Flashing Led
R1	RP200013	1	220 ohm Resistor
RL2	RS100076	1	Relay Base
RL2	RS100077	1	24v ac Relay
D2	SD100025	1	Rectifier Diode
TX1	TX100069	1	Transformer
C6	CC100025	1	100 µf Capacitor
	XX003064	1	V91 Top

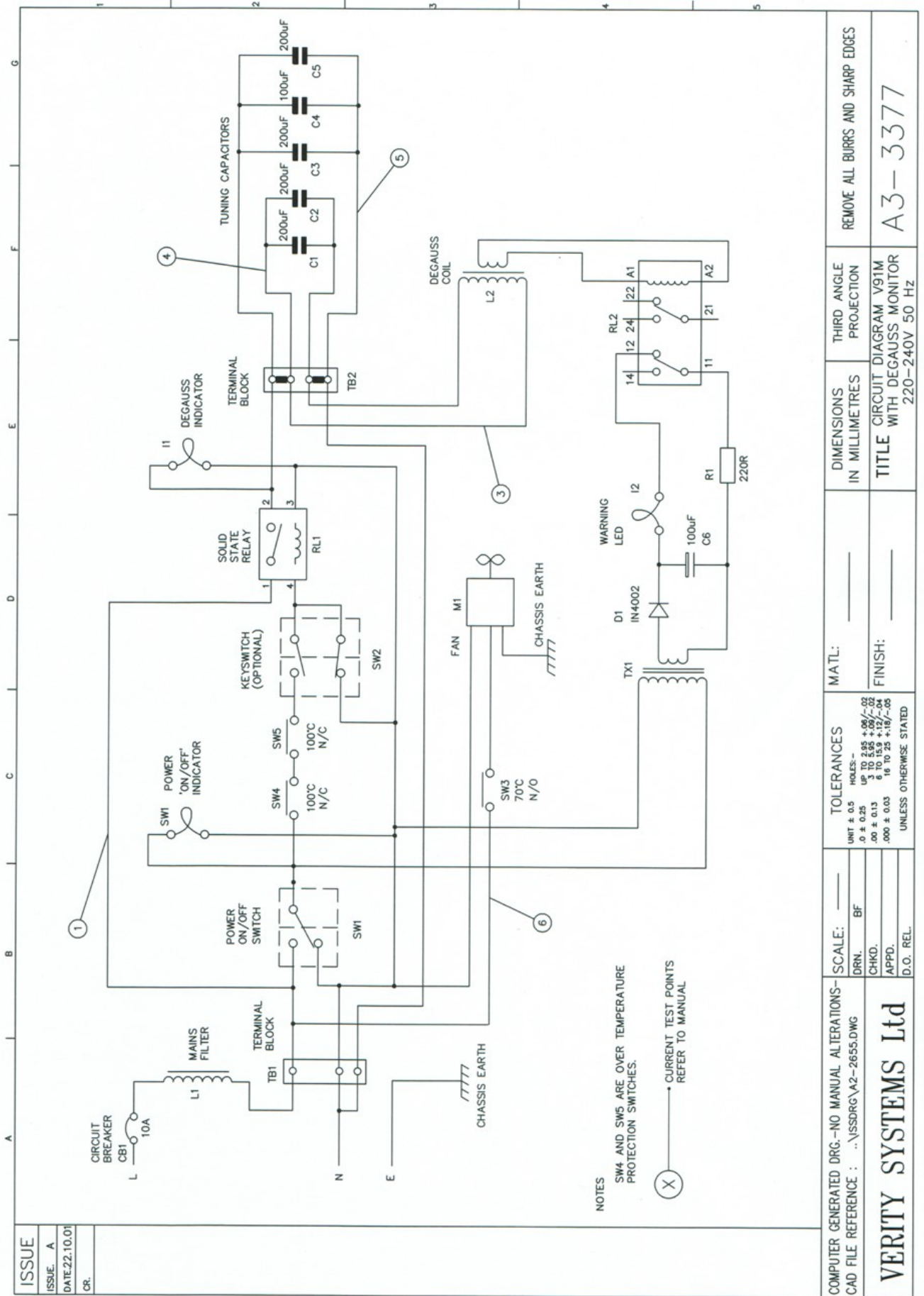
### 8.3 Circuit Diagram (ZZ009161)



ISSUE	
ISSUE A	
DATE: 22.10.01	
CR.	

COMPUTER GENERATED DRG.-NO MANUAL ALTERATIONS-	SCALE: _____	TOLERANCES	MATL:	DIMENSIONS	THIRD ANGLE	REMOVE ALL BURRS AND SHARP EDGES
CAD FILE REFERENCE : ..\SSDRG\A2-2394.DWG	DRN. BF	UNIT ± 0.5 HOLES:-		IN MILLIMETRES	PROJECTION	
	CHKD.	0 ± 0.25 UP TO 2.95 ± 0.0/-0.02				
	APPD.	3 TO 5.95 ± 0.0/-0.04				
	D.O. REL.	6 TO 15.9 ± 0.12/-0.04				
		16 TO 25 ± 0.16/-0.05				
		UNLESS OTHERWISE STATED				
<b>VERITY SYSTEMS Ltd</b>		TITLE		CIRCUIT DIAGRAM V91M		A3-3376
		WITH DEGAUSS MONITOR 115V 60HZ				

8.4 Circuit Diagram (ZZ009178)





**VS SECURITY PRODUCTS LIMITED  
UNIT 17, PEGASUS COURT  
NORTH LANE  
ALDERSHOT  
GU12 4QP  
UK**



**VS AND ASSOCIATES  
3160, TEXAS HILL ROAD  
PLACERVILLE  
CALIFORNIA  
95667  
USA**