VERITY SYSTEMS

COMPLETE SOLUTIONS FOR MAGNETIC MEDIA MANAGEMENT

V660 HDD Evo

Hard Disk Drive Degausser

OPERATING & MAINTENANCE MANUAL

Thank you for purchasing a Verity Systems V660 HDD Evo Degausser

OPERATING & MAINTENANCE MANUAL

Document Reference No. M000301

Production Standard

ZZ 009 167 (60 Hz)
ZZ 009 168 (50Hz)

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WARNING!
This unit emits a strong magnetic field. Remove wrist watches before use. Personnel fitted with a Cardiac Pacemaker should not stand within 0.5 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 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.

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SECTION 1: SPECIFICATION

Hard Drives Erased 3½" PC Hard Disk Drives

Power Requirements
(factory set)

	ZZ 009 167	ZZ 009 168
Line Voltage:	220/240v	115v
Line Frequency:	50Hz	60Hz
Current (typical):	10A	14A
Protection Circuit	12A	16A

Erasure Time: 5 seconds typical

Run Time: 10 minutes typical

Duty cycle : Non-continuous. Average 10 minutes.

Mounting: Free standing table top

Overall Dimensions: Depth:19 inches (480mm)
Width: 16.5 inches (420mm)
Height: 6 inches (150mm)

Weight: Approximately 77lbs/35kg

SECTION 2: INTRODUCTION

The V660 HDD Evo degausser functions like a large electro magnet, its erasing field originating as leakage flux from a large gap in the field structure, the V660's 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.

Hard Disk Drives

The vulnerability of information stored on PC hard drives is a recognised security risk. Unlike other PC data storage media the hard drive always stays with the PC. Every time a PC leaves a company's control all the data and company information will go with it.

Even if the hard drive breaks down the storage platters will still contain information which could be read once repaired.

In keeping with our policy of recognising user requirements we have introduced the V660 HDD Evo eraser. The V660 HDD Evo is capable of removing data from PC hard drives in less than 5 seconds. Although in most cases this will render the hard drive inoperative, the cost of a replacement hard drive cannot be compared to the cost to a company if sensitive information can be read by a third party.

SECTION 3: INSTALLATION

3.1 Unpacking

Unpack the degausser carefully, and verify that all parts are present. If there are missing or damaged parts contact Verity Systems or an authorised partner/reseller immediately to correct any miss-packed or missing parts.

You should find the following :

Verity Systems V660 HDD Evo degausser
Infrared remote control switch
Power cable
This user manual

3.2 Power Requirements

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

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

Note:
Degausser Current Consumption
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 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.

The V660 HDD Evo has been designed for simplicity of operation and erases hard disk drives in a single operation. The V660 HDD Evo can be operated locally or remotely via the infrared control

Because of the different types and manufactures specifications of PC hard disk units, Verity Systems only recommends the erasure of hard disk units as a security precaution for the following.

a. Erasure of data from a faulty disk pack before being sent for service/repair.
b. Erasure of data from disk packs before disposal of computer equipment.

Note:
Verity Systems cannot guarantee that a drive will be operational after degaussing.

4.1 Erasure of Hard Drives Locally

1. With the red power switch off, lift the lid on the top of the degausser.
2. Place the hard disk drive into the foam receptacle.
3. Close the lid
4. Ensure the key switch is in the upright position indicating **LOCAL** operation (see image A).
5. Press the red **POWER** switch

Note:
The illuminating on/off power switch is of the latching push button type which energises the degaussing coil.

6. The yellow **DEGAUSS** indicator light will illuminate.
7. After 5 seconds, press the red **POWER** switch to stop erasure
8. Remove the erased hard disk drive

Image A

4.2 Erasure of Hard Disk Drives Remotely

1. Ensure the key switch is turned 90 degrees clockwise indicating **REMOTE** operation (see image B).
2. With the unit switch on, lift the lid on the top of the degausser.
3. Place the hard disk drive into the foam receptacle.
4. Close the lid.
5. Point the remote control at remote control sensor on the degausser (see diagram C) and hold down the large button on the control.
6. The yellow **DEGAUSS** indicator light will illuminate.
7. After 5 seconds, release the button on the remote control to stop erasure.
8. Remove the erased hard disk drive.
9. Switch unit off

Image B

Image C

SECTION 5: INDICATORS/FEATURES

5.1 Indicator

The degauss indicator (large yellow button) 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 considered more reliable being a red LED.

5.3 IR Transmitter

The infrared transmitter LED illuminates when the remote control is in operation.

5.4 Overheat Protection

The high energy field developed by the V660 HDD Evo 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.

5.5 Cooling

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

5.6 Protection

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

SECTION 6: MAINTENANCE/SERVICING

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.

6.2.1
Remove the "bulb lens" from the "switch/indicator body" by levering it forwards.

	Neon Voltage	
Model	**Power Switch**	**Indicator**
ZZ 009 167	220-240v	220-240v
ZZ 009 168	115v	220-240v

6.2.2
Remove the bulb from the rear of the "bulb housing" using a suitable extraction tool.

6.2.3
Replace the bulb noting the following:

Note:
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°.

6.2.4
Refit the "bulb lens" to the "switch/indicator body" gently pushing the lens into the "switch/ indicator body" housing.

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 (60Hz only) and the thermal switches mounted on the degausser coil. However the tuning capacitors and the degaussing coil are not spared items and if found to be faulty the unit should be returned to Verity Systems 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 and high temperature tape, Part No. HS100143

SECTION 7: TECHNICAL SUPPORT

You should first attempt to get technical assistance from your dealer or authorised partner/reseller.

Verity Systems support personnel can be reached at:

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APPENDIX A – BASIC FAULT TABLE

The table 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 Verity Systems for repair.

Function	Symptoms	Possible Fault	Location
Fails to erase drive	Circuit Breaker CB1 repeatedly tripped	Incorrect supply voltage.frequency	User source
and		Faulty degauss coil L1 and /or tuning capacitors C1-C4	Inside centre, left hand side
Power Lamp	Fails to illuminate	Loss of mains supply.	User source
		Tripped circuit breaker	Rear panel
		Faulty switch	Front panel
		Faulty Neon	Front panel
Degauss lamp & Warning Lamp	Fails to illuminate	Extensive use of degausser caused overheating. Allow unit to cool (not a fault).	
		Faulty neon	Front panel
		Faulty solid state relay R1	Inside on right hand side
		Faulty thermal switch SW2	Inside on front end of degaussing coil
		Faulty transformer TX1 (115v 60 Hz only)	Inside front on left hand side
Cooling Fan	Fails to Operate	Faulty thermal switch SW3	Inside on front end of degaussing coil
		Faulty Fan M1	Rear Panel

Note:

Degausser Current Consumption

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.

APPENDIX B: 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.

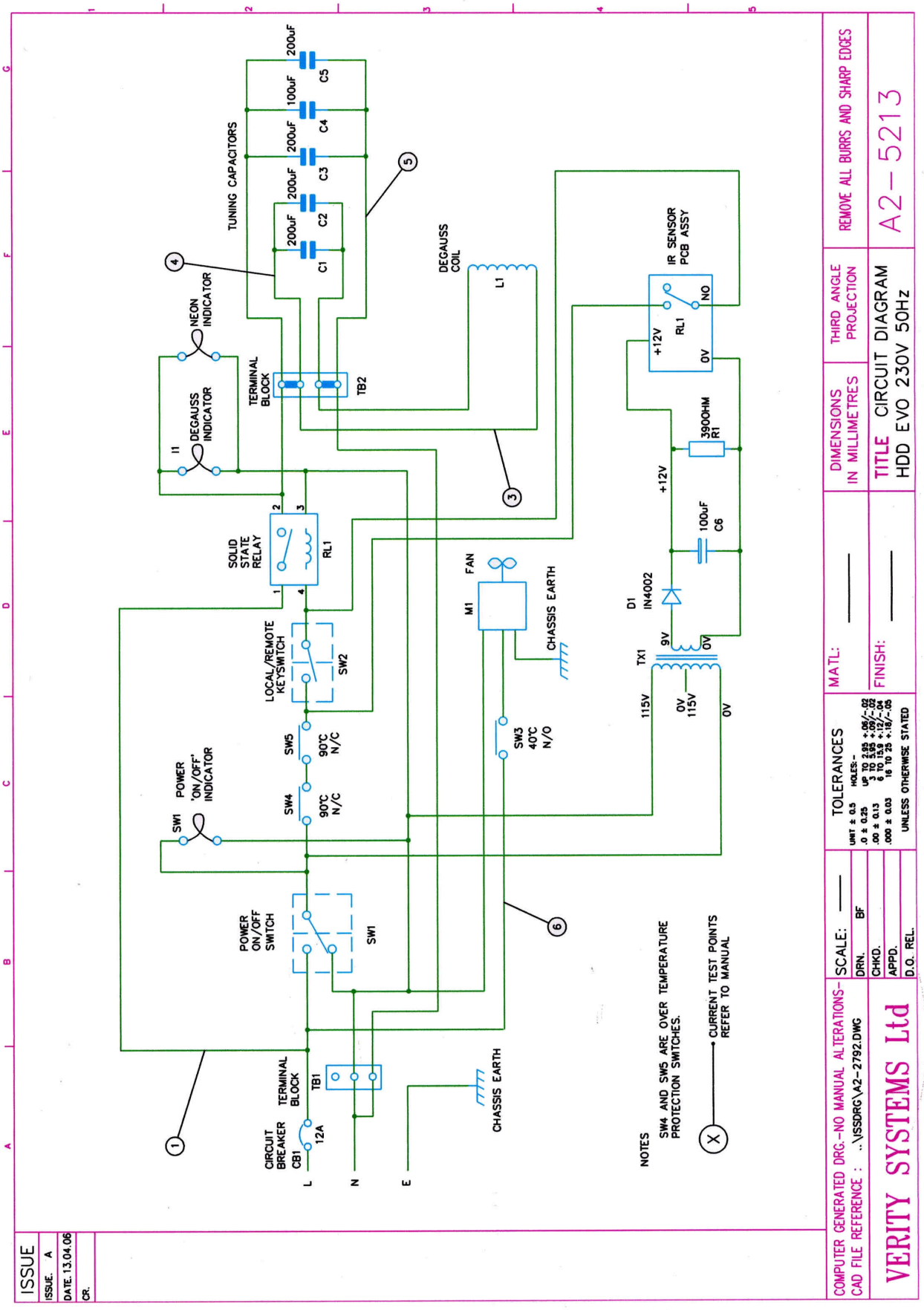
Model	Voltage/Frequency	Current Monitor Test Points					
		1	**2**	**3**	**4**	**5**	**6**
ZZ 009 167	220v-240v 50 Hz	10	N/A	71	30	37	0.09
ZZ 009 168	115v 60 Hz	14	8	72	39	29	0.19

APPENDIX C: PARTS LIST– ZZ 009 168 (115V 60Hz)

Designation	Part No.	Quantity	Description
	CA 100 005	1	Cable gland 16mm
TB2	CG 200 001	4	Terminal Block
TB2	CG 200 002	1	End Cover
TB2	CG 200 003	0.4	Jump Bar
TB1	CM 100 023	0.25	Terminal Block
	FM 100 033	1	Guard 120mm metal
M1	FM 100 042	1	Fan 120mm
	HS 100 101	4	Feet
Ind 1	OI 100 031	1	Neon
SW1	OI 100 030	1	Neon
RL1	RS 100 010	1	Relay
SW3	SW 100 061	1	Temperature Sensor
SW2	SW 100 060	2	Thermal Switch
CB1	SW 100 0143	1	Circuit Breaker 16A
SW1	SW 100 123	1	Red lens
SW1	SW 100 125	1	Switch Body
SW1	SW 100 126	1	Switch Contacts
IND1	SW 100 121	1	Yellow Lens
IND1	SW 100 124	1	Indicator Body
IND1	SW 100 127	1	Dummy Socket
TX1	TX 100 030	1	Auto Toroid Transformer
	XX 003 065	1	Fan Plate
SW2	SW 100 070	1	‘Mode’ Key Switch
Ind2	OI 100 064	1	Led Indicator
R1	RP 200 035	1	390 ohm Resistor
RL2	XX 005 219	1	IR Sensor
D1	SD 100 025	1	Rectifier Diode
TX1	TX 100 069	1	Transformer
C6	CC 100 071	1	100 µf Capacitor
	XX 005 274	1	Fixed top
	XX 005 276	1	Hinged lid
	XX 005 218	1	IR Transmitter

PARTS LIST – ZZ 009 167 (220-240V 50Hz)

Designation	Part No.	Quantity	Description
	CA 100 005	1	Cable gland 16mm
TB2	CG 200 001	4	Terminal Block
TB2	CG 200 002	1	End Cover
TB2	CG 200 003	0.4	Jump Bar
TB1	CM 100 023	0.25	Terminal Block
	FM 100 033	1	Guard 120mm metal
M1	FM 100 027	1	Fan 120mm
	HS 100 101	4	Feet
SW1 & Ind 1	OI 100 031	2	Neon
RL1	RS 100 010	1	Relay
SW3	SW 100 061	1	Temperature Sensor
SW2	SW 100 060	2	Thermal Switch
CB1	SW 100 066	1	Circuit Breaker 12A
SW1	SW 100 123	1	Red lens
SW1	SW 100 125	1	Switch Body
SW1	SW 100 126	1	Switch Contacts
IND1	SW 100 121	1	Yellow Lens
IND1	SW 100 124	1	Indicator Body
IND1	SW 100 127	1	Dummy Socket
	XX 003 065	1	Fan Plate
SW4	SW 100 070	1	‘Mode’ Key Switch
Ind2	OI 100 064	1	Led Indicator
R1	RP 200 035	1	390 ohm Resistor
RL2	Xx 005 219	1	IR Sensor
D1	SD 100 025	1	Rectifier Diode
TX1	TX 100 069	1	Transformer
C6	CC 100 071	1	100 µf Capacitor
L1	MP 002 325		Filter
	XX 005 274	1	Fixed Top
	XX 005 276	1	Hinged Lid
	XX 005 218	1	IR Transmitter


TUNING CAPACITORS
200uF C5
100uF C4
200uF C3
200uF C2
200uF C1
NEON INDICATOR
DEGAUSS INDICATOR
I1
TERMINAL BLOCK
TB2
DEGAUSS COIL
L1
IR SENSOR PCB ASSY
RL1
NO
+12V
0V
3900HM R1
100uF C6
D1 IN4002
TX1
9V
0V
115V
0V
115V
0V
SOLID STATE RELAY
RL1
FAN
M1
CHASSIS EARTH
LOCAL/REMOTE KEYSWITCH
SW2
SW5
90°C N/C
SW4
90°C N/C
SW3
40°C N/O
POWER 'ON/OFF' INDICATOR
SW1
POWER ON/OFF SWITCH
SW1
TERMINAL BLOCK
TB1
CIRCUIT BREAKER CB1
12A
L
N
E
CHASSIS EARTH
NOTES
SW4 AND SW5 ARE OVER TEMPERATURE PROTECTION SWITCHES.
CURRENT TEST POINTS REFER TO MANUAL
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ISSUE. A
DATE. 13.04.06
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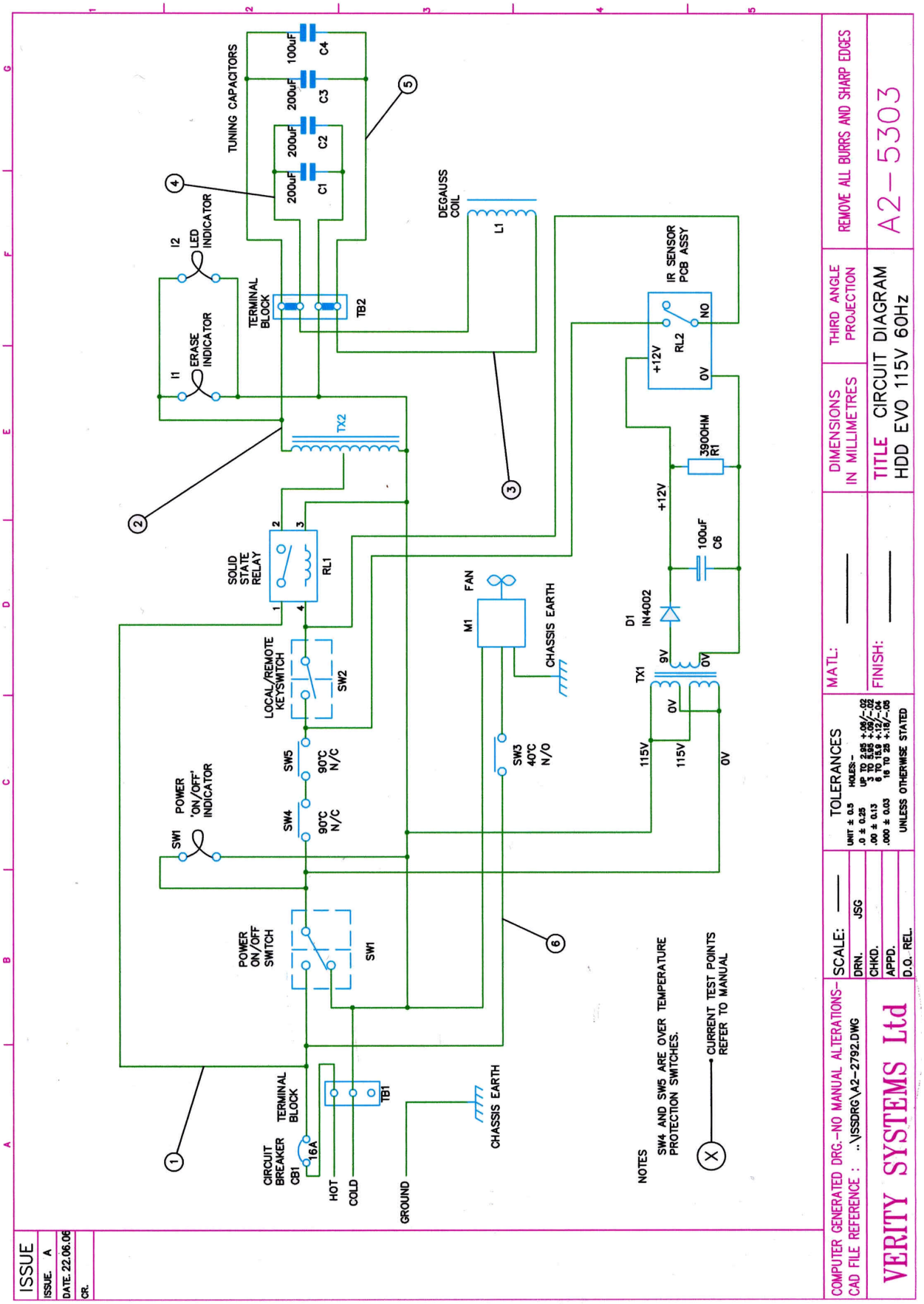
COMPUTER GENERATED DRG.-NO MANUAL ALTERATIONS-
CAD FILE REFERENCE : ..\VSSDRG\A2-2792.DWG
VERITY SYSTEMS Ltd
SCALE: —
DRN. BF
CHKD.
APPD.
D.O. REL.
TOLERANCES
UNLESS OTHERWISE STATED
MATL: —
FINISH: —
DIMENSIONS IN MILLIMETRES
THIRD ANGLE PROJECTION
REMOVE ALL BURRS AND SHARP EDGES
TITLE CIRCUIT DIAGRAM
HDD EVO 230V 50Hz
A2-5213


TUNING CAPACITORS
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IR SENSOR PCB ASSY
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0V
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SW4 90°C N/C
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DIMENSIONS IN MILLIMETRES
THIRD ANGLE PROJECTION
REMOVE ALL BURRS AND SHARP EDGES
TITLE CIRCUIT DIAGRAM
HDD EVO 115V 60Hz
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