Side Winder

VIDEO GAMING MACHINE

ACE COIN EQUIPMENT

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INSTALLATION

CAUTION Do not apply line voltage until the following checks have been performed.

Check that the transformer is wired to the correct tapping for your mains supply.

Check that all connectors and plugs are in place and firmly connected.

Check that the option switches are in the desired position (See Operator Switches).

Check that there is no obstruction to the free flow of air around the power supply heat sink.

Check that the monitor and screen are not damaged.

Wire the mains lead supplied with the machine to a 3 pin plug.

THIS MACHINE MUST BE EARTHED.

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INTRODUCTION

The "Sidewind" video machine is designed to simulate a 4 reel mechanical up/down Nudge machine, an additional feature is the "Sidewind" action which allows the reels to be exchanged to obtain a win, a gamble feature is also included.

The machine is also fitted with a percentage payout stabilizer.

The game electronics is mounted in a metal enclosure on the rear door.

CAUTION: When disconnecting or removing the main logic board or any connectors, always SWITCH OFF the power supply or damage may result to the game electronics.

The electronics include a battery back-up memory, when the battery is fully charged after approximately 80 hours the memory will be retained for at least 3 weeks and normally 3 months, with no power applied to the machine.

The machine is also fitted with two 8 way D.I.P. switches on the main logic board. The top switch bank is not used and only the first four of the lower bank are operative (See Operator Switches).

The power supply and regulator are mounted on an aluminium heat sink fitted to the rear door above the logic board. In use the heat sink may reach a high temperature and requires adequate convection cooling. Do not obstruct the air flow and exercise care when touching the heat sink.

The machine transformers, supply fuses, knocker solenoid and mains switch are mounted on the baseboard.

The opto-relays and speaker are mounted on the rear door adjacent to the logic board, the top two relays are used for the payout solenoids; they are of a low capacitance type.

The payout solenoids are magnetically shielded, on no account remove the shield as picture disturbance will be generated when the solenoids operate.

INTRODUCTION

The "Sidewind" video machine is designed to simulate a 4 reel mechanical up/down Nudge machine, an additional feature is the "Sidewind" action which allows the reels to be exchanged to obtain a win, a gamble feature is also included.

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DESCRIPTION

This is a four reel A.W.P. machine designed for the British market. The stake for 1 play is 10p and payouts range from 20p to £2. The reels, nudge display, gamble system, game credit and other information are displayed on the monitor. A percentage stabilizer is also included.

COIN INSERTS

50p -Insertion of a 50p coin, increments the 50p in meter and the "Plays" display on the monitor. Four 10p coins are given as change.

10p -Insertion of a 10p coin, increments the Cash in meter and the "Plays" display on the monitor.

10p Token -Insertion of a 10p token, increments the Token in meter and the "Plays" display on the monitor.

Any coin which jams in the coin micro-switch will cause the relevant lockout to close until the jam is cleared.

To prevent the illegal use of one coin to obtain more than one play ("Stringing"), any coin which activates the coin switch for more than half a second will be ignored.

COIN LOCKOUTS

The opening and closing of these lockouts are controlled at various points in the machine program as shown below.

MACHINE STATE	COIN LOCKOUT MECHANISM 50p	10p	Token
(1) Waiting for coins either with or without credit. 10p tube level high*	open	open	open
(2) As (1) but 10p tube level low* i.e. no change available.	closed	open	open
(3) Refill switch operated	closed	closed	open
(4) Game in play	closed	closed	closed

*A level switch indicates the 10p tube level status to the computer.

MONITOR DISPLAY

With the machine out of credit an attract mode is provided. The words "INSERT COIN" and "SIDEWINDER" alternately scroll into the message panel and flash.

The "PLAYS" display normally shows two digits, when the play credits exceed 99 the third digit then becomes apparent.

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MONITOR DISPLAY (contd.)

On entering credit "PRESS START" is displayed in the message panel. When the "Start" button is pressed the reels will revolve and "GOOD LUCK" will be displayed in the message panel. The reels will stop in a realistic manner and an audio tone or knocker will sound (See option switches). If holds are allowed "HOLD NOW" will be displayed in the message panel and "HELD" will be displayed below any reels that are held.

In a win situation the win line and winning symbols will flash and "A WINNER" will momentarily be displayed in the message panel followed by "COLLECT" and "GAMBLE" which are alternately displayed. Gambling is only possible on 20p, 40p, and £1 wins. If a win of 60p, £1.20, or £2 occurs the payout is direct and a message is displayed below the message panel.

In a nudge situation a panel of 10 numbers from 1 to 10 is displayed together with "SELECT NUDGE" in the message panel and four arrows below the reels. Pressing the "Select Nudge" button will select the number of nudges and "NUDGE NOW" will be displayed in the message panel. The direction of the nudge arrows is selected by pressing the "Select Nudge" button again.

In a Sidewind situation "SIDEWIND NOW" is displayed in the message panel, pressing the "Sidewind" button changes the reels over to produce a win.

PERCENTAGE STABILIZER

The percentage stabilizer is self-compensating system and is stored in R.A.M., it is protected from power supply failure by the Battery Back-Up memory.

It consists of three states:

State 1 is too low a payout
State 2 is medium payout
State 3 is too high a payout

In State 1 the computer will increase the hold percentage and feature occurrence.

In State 2 the computer will normalise the hold percentage and feature occurrence.

In State 3 the computer will decrease the hold percentage and feature occurrence.

The percentage payout may be selected to one of four values, 86%, 82%, 78% or 74% by the option switches on the main logic board. (See Operator Switches).

The state the percentage stabilizer is in can be read on entering the Test Routines.

Note The stabilizer is automatically reset to the medium state (State 2) when leaving the Test mode.

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METERING DISPLAY

The computer keeps a record of events in its memory, it is protected from power failure by the Battery Back-up. The following metering is provided:

METER NUMBER	FUNCTION	UNIT VALUE
1	Total Plays	10p
2	Cash In	10p
3	50p In	50p
4	Token In	10p
5	Not Used	-
6	10p Out	10p
7	Token Out	10p
8	Not Used	-
9	Refill	10p

The meters are automatically isolated when the rear door of the machine is opened. The meters may be displayed by operating the Read Meter keyswitch (See Operator Switches).

MACHINE 50V OUTPUTS

All the machine solenoids are operated via a solid state relay. The payout solenoids are also magnetically shielded.

MACHINE LAMP DRIVE

All the lamps are driven by transistors.

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MACHINE LAMP DRIVE

All the lamps are driven by transistors.

OPERATOR SWITCHES

REFILL

This key switch is located at the front of the machine.

Operating this switch displays the refill meter on the monitor in the top message panel; this mode allows entry of tokens to refill the Token payout tube. The tokens entered at this time are recorded on the refill meter but not on the Token In meter.

MASTER RESET

This push button switch is located on the rear door. Operating the switch will reset the stabilizer to the medium state, clear all credits, reset the monitor display, reset the payline to a non-winning combination. The software meters will not be affected.

TEST

Note Operating this switch will reset the percentage stabilizer to the medium state.

Operating this switch enters the machine into the test mode (See Test Routines and Meter Isolation switch).

METER ISOLATION

This switch is operated by opening the rear door. It is a dual purpose switch; it isolates the machine meters when the rear door is opened and when the rear door is closed it open circuits the test switch.

READ METERS

This switch is located inside the cash box compartment. Opening the cash box door automatically puts the metering display on the monitor.

OPTION SWITCHES

These switches are located on the main logic board. There are two banks of 8 switches, the top bank is not used and only S1, S2, S3 and S4 of the lower bank are used. Their function is shown below:

SWITCH 4 Selects in Meter read mode if the meter titles are displayed or inhibited.

OFF Meter Titles are not displayed
ON Meter Titles are displayed

SWITCH 3 Selects whether a mechanical or electronic tone is generated when the reels are stopped.

ON: Tone is sounded
OFF: Knocker solenoid operates

SWITCH 1 and 2 Selects the percentage payout.

S2	OFF	OFF	ON	ON
S1	OFF	ON	OFF	ON
%	86	82	78	74

OPERATOR SWITCHES

REFILL

This key switch is located at the front of the machine.

Operating this switch displays the refill meter on the monitor in the top message panel; this mode allows entry of tokens to refill the Token payout tube. The tokens entered at this time are recorded on the refill meter but not on the Token In meter.

MASTER RESET

This push button switch is located on the rear door. Operating the switch will reset the stabilizer to the medium state, clear all credits, reset the monitor display, reset the payline to a non-winning combination. The software meters will not be affected.

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S2	OFF	OFF	ON	ON
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TEST ROUTINES

NOTE When leaving the test routine the percentage stabilizer is automatically reset to the medium state.

The test routine is entered on activation of an internal test switch. On entry the test routine listing is displayed, the machine will also display the current state of the stabilizer and the selected percentage setting. The switch settings may be changed in this test mode and the machine will display the new percentage setting. All meters are disabled in the test mode.

TEST 1 - LAMP TEST

To enter Test 1 press the "1st Hold" button, all lamps will cycle repeatedly until the "Cancel" button is pressed. Pressing the "1st Hold" will re-enter Test 1.

TEST 2- LOCKOUT AND SOLENOID TEST

To enter Test 2 press the "2nd Hold" button, all lockouts and solenoids will cycle repeatedly until the "Cancel" button is pressed. Pressing the "2nd Hold" button will re-enter Test 2.

TEST 3 - MONITOR TEST

To enter Test 3 press the "3rd Hold" button, a crosshatch pattern is generated and displayed. The colour of the pattern may be changed by pressing the "Hold" buttons.

Hold 1	WHITE
Hold 2	RED
Hold 3	GREEN
Hold 4	BLUE

Note The blue colour generated is not true blue but is the colour selected for plums.

To exit from Test 3 press the "Cancel" button.

TEST 4 - FACTORY TEST ONLY

TEST 5 - PAYOUT TEST

To enter Test 5 press the "Start" button, the machine will display the normal play image without the credit display. Any win line may be set by nudging the reels using the corresponding "Hold" buttons. The nudge direction may be changed by pressing the "Nudge Select" button, and is indicated by the "Nudge Arrows". To test the win line press the "Start" button, if a win is present the normal Collect/Gamble, Payout, Nudge, or Sidewind features are implemented.

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TEST ROUTINES (contd.)

The "Start" button may have to be pressed repeatedly to obtain a Sidewind feature due to its random occurrence. To exit from Test 5 press the "Cancel" button.

Deactivating the test switch will return the machine to normal play at any time, the stabilizer is reset to medium, and the reels are reset to a non-winning combination (Plum, Plum, 7/Nudge, Ace). Pre-test credit value will be restored.

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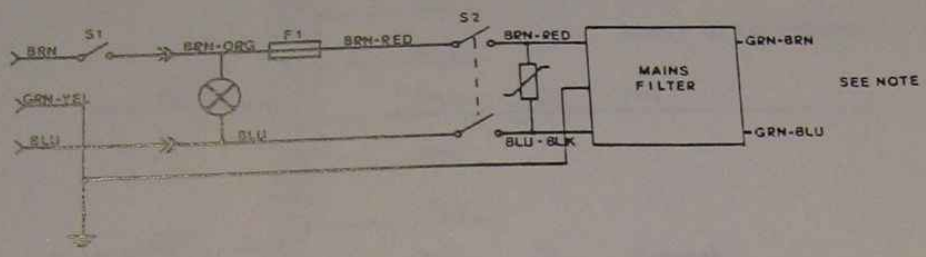
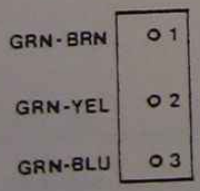
MAINS WIRING



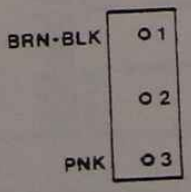
Note 240V To Transformers
240V For 240V Monitor
240V For Ba-Gauss input on 110V Monitor

MONITOR CONNECTIONS

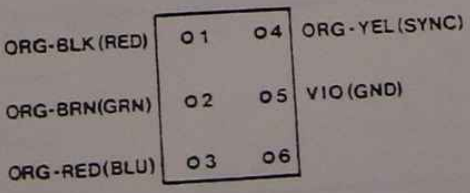
240 V CONNECTOR



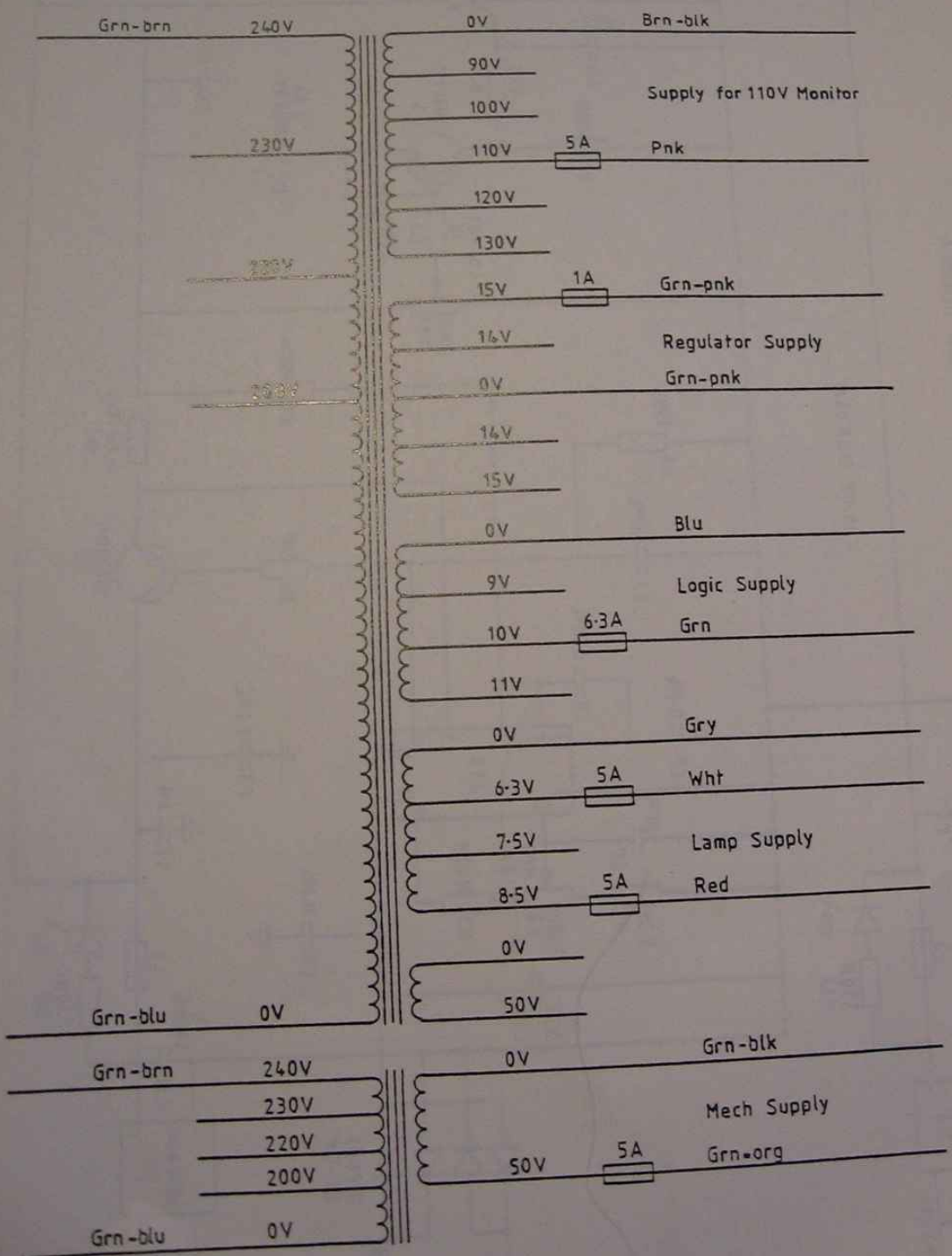
110 V CONNECTOR



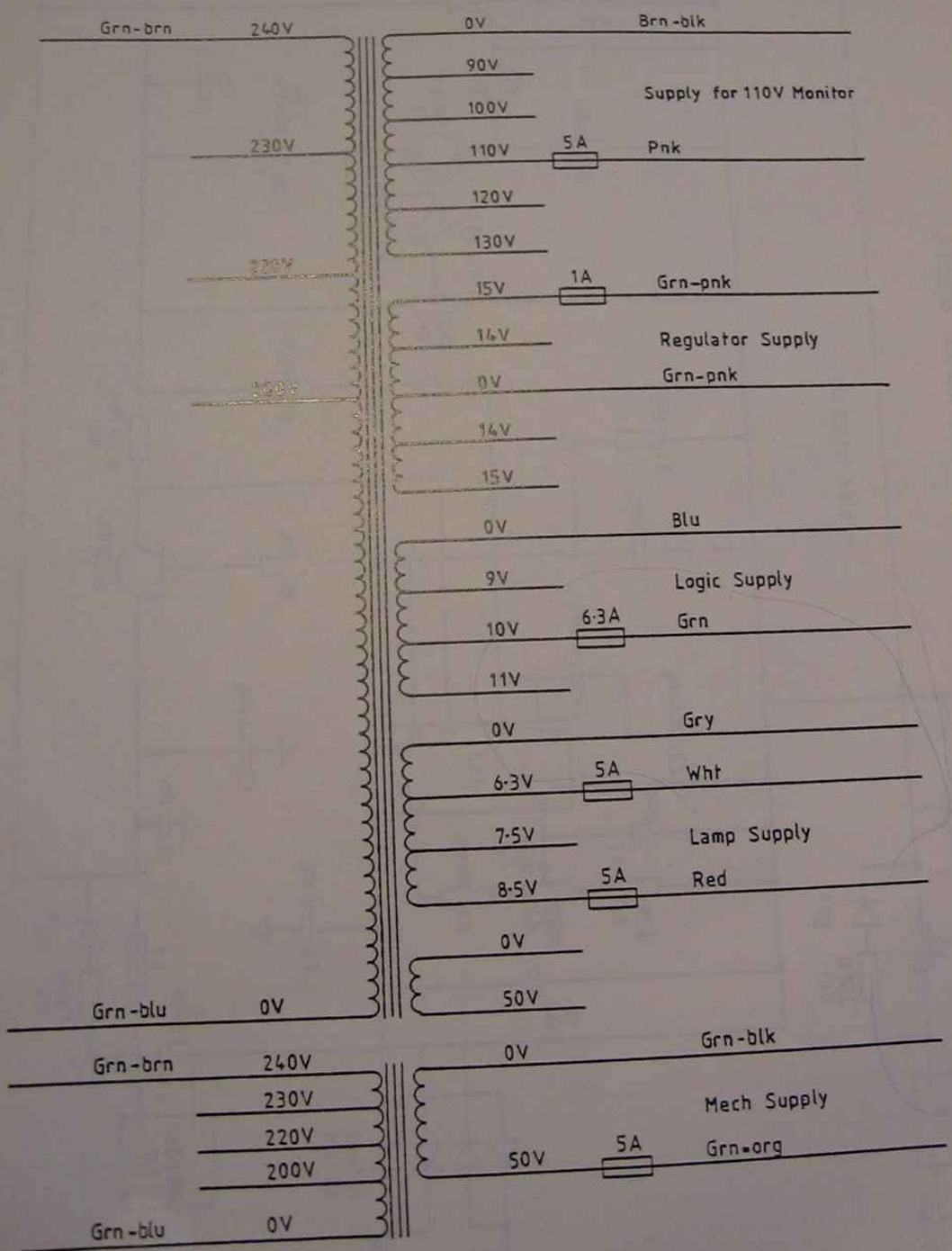
VIDEO CONNECTOR

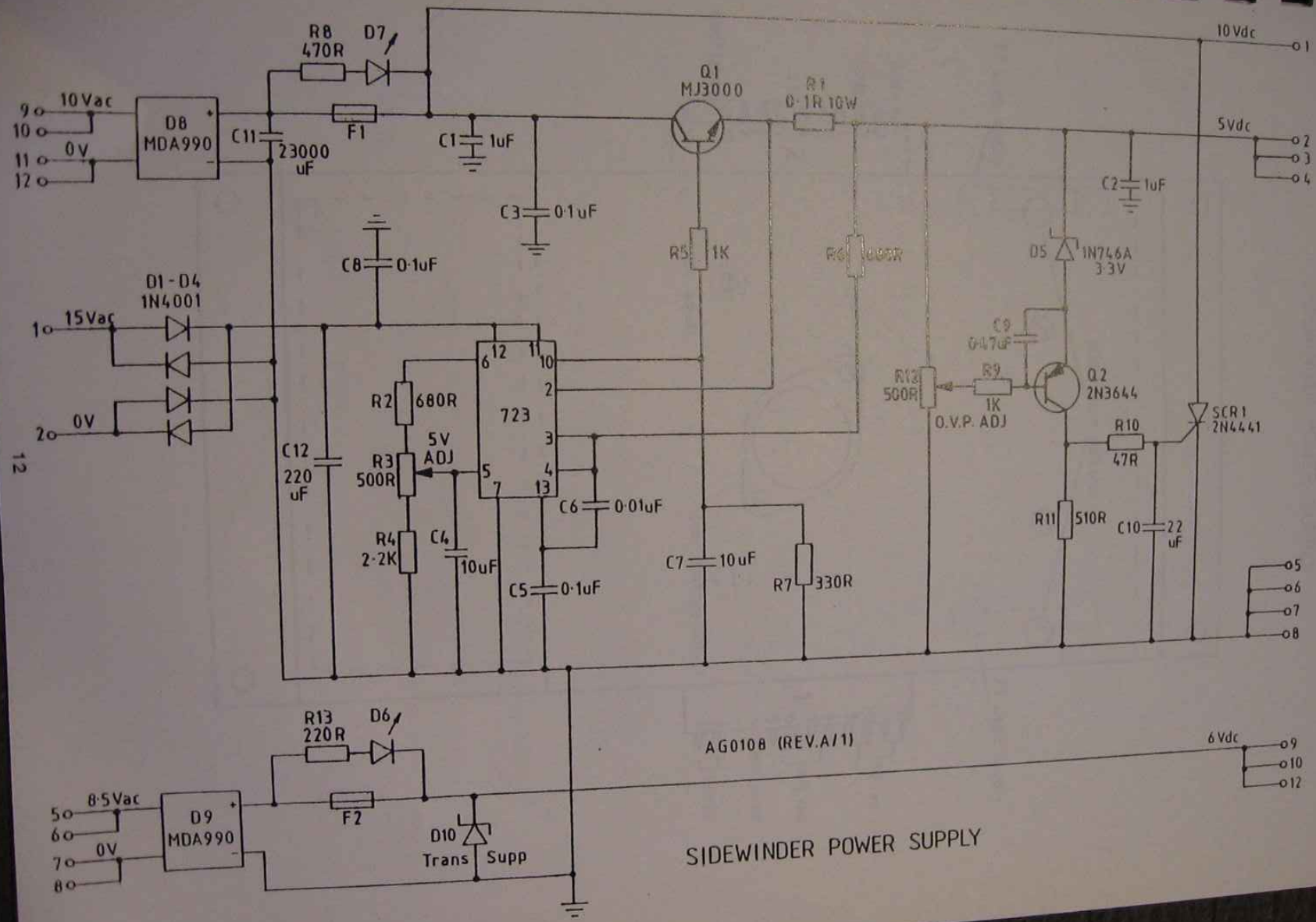


SIDEWINDER TRANSFORMERS



SIDEWINDER TRANSFORMERS




R8
470R
D7
10 Vdc
1
Q1
MJ3000
R1
0·1R 10W
9
10 Vac
10
11
0V
12
D8
MDA990
C11
23000
uF
F1
C1 1uF
5Vdc
2
3
4
C2 1uF
C3 0·1uF
C8 0·1uF
R5 1K
R6
D5
1N746A
3·3V
D1 - D4
1N4001
1
15Vac
2
0V
C9
0·47uF
R13
500R
R9
1K
O.V.P. ADJ
Q2
2N3644
SCR1
2N4441
R10
47R
R2 680R
723
R3
500R
5V
ADJ
C12
220
uF
C6 0·01uF
R4
2·2K
C4
10uF
C5 0·1uF
C7 10uF
R7 330R
R11 510R
C10 22
uF
5
6
7
8
12
R13
220R
D6
AG0108 (REV.A/1)
6Vdc
9
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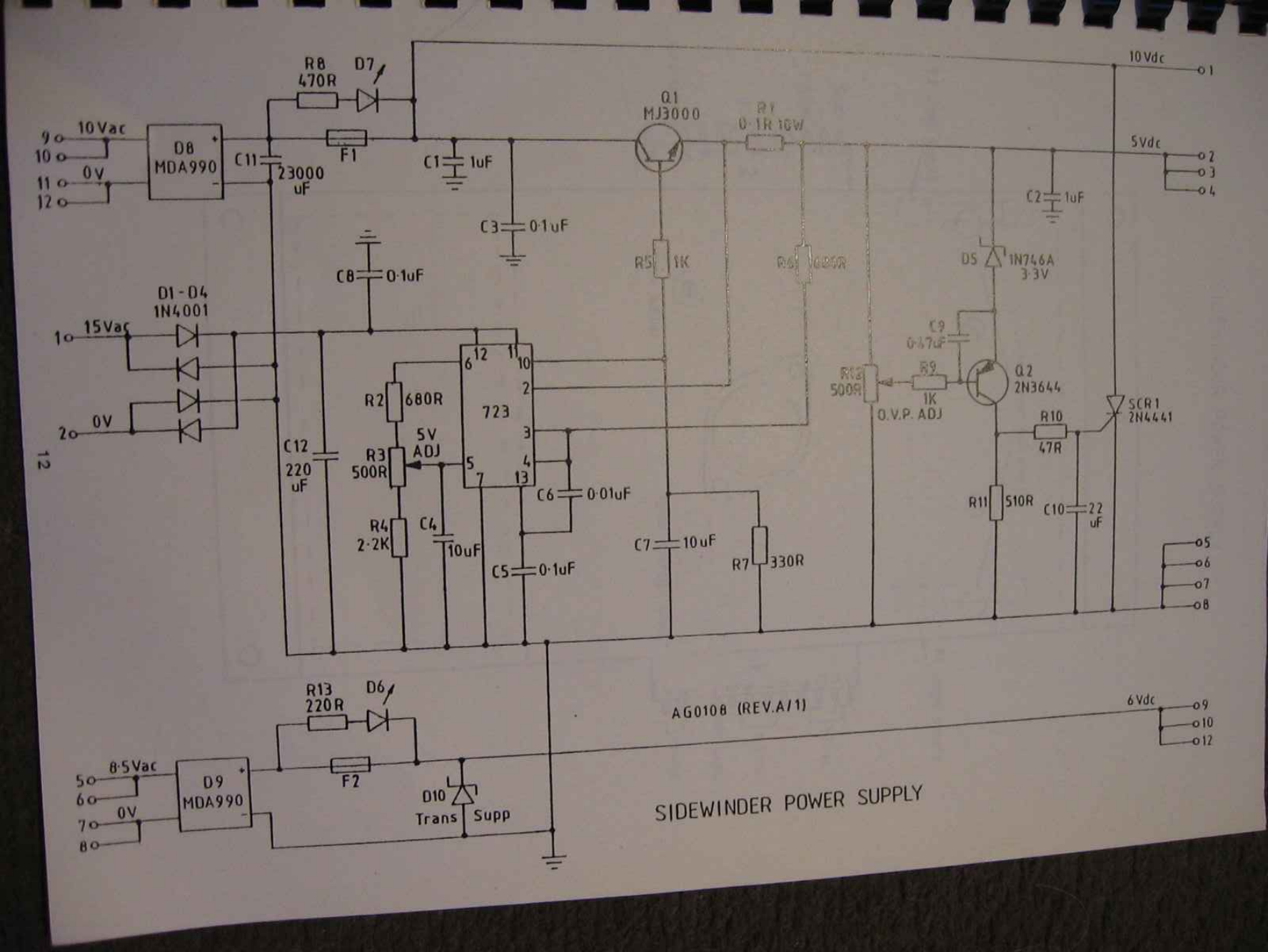
7
8
D9
MDA990
F2
D10
Trans Supp
SIDEWINDER POWER SUPPLY


R8
470R
D7
Q1
MJ3000
R7
0·1R 10W
10Vdc
1
10Vac
9
10
0V
11
12
D8
MDA990
C11
23000
uF
F1
C1
1uF
5Vdc
2
3
4
C2
1uF
C3
0·1uF
R5
1K
R6
680R
D5
1N746A
3·3V
C8
0·1uF
D1-D4
1N4001
15Vac
1
0V
2
C9
0·47uF
R8
500R
R9
1K
O.V.P. ADJ
Q2
2N3644
SCR1
2N4441
R10
47R
R2
680R
723
5V
ADJ
R3
500R
C12
220
uF
C6
0·01uF
R4
2·2K
C4
10uF
C5
0·1uF
C7
10uF
R7
330R
R11
510R
C10
22
uF
5
6
7
8
AG0108 (REV.A/1)
6Vdc
9
10
12
R13
220R
D6
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8
D9
MDA990
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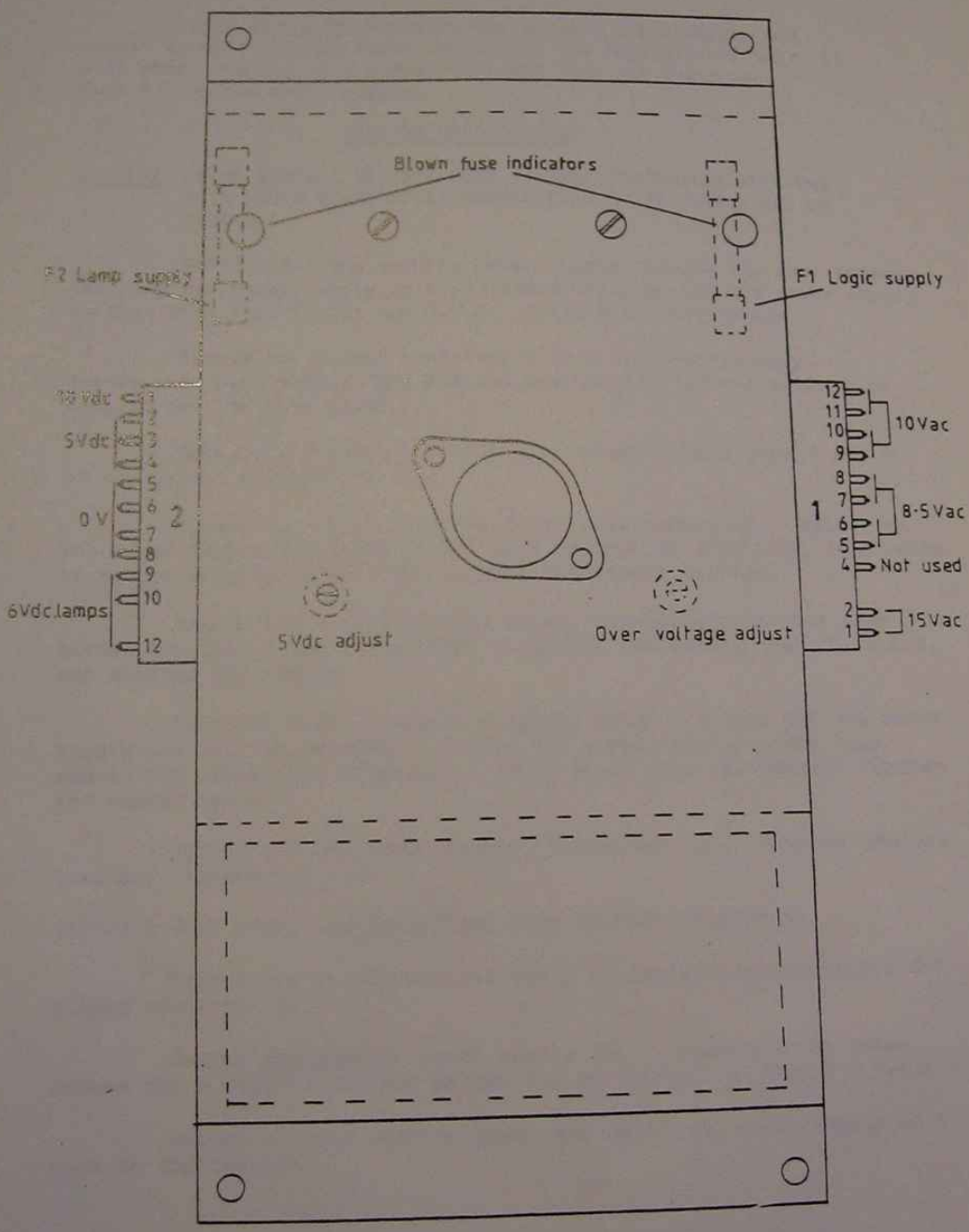
Trans
Supp
SIDEWINDER POWER SUPPLY

SIDEWINDER POWER SUPPLY