

CRAZY FRUITS

**QPS INTERACTIVE
MERKUR HOUSE
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1. GAME INFORMATION

REELS

The game consists of three reels which contain fruit symbols for normal wins and superimposed number and a Hi/Lo reel (positioned in the centre of the inner board) which contains the numbers 1 to 12, for moving around the feature board and gambles.

Feature entry is accessed by completing the nine stage trail or achieving reel wins.

Four manual nudges can be awarded at the end of a losing game, on a random basis.

Wins are obtained directly from the reels. Any win, except the jackpot, can be Hi/Lo gambled, collected or exchanged for the feature.

AWARD STRUCTURE:

Price of play	5/10/20/ 25/30p	5p
Cherries	£1	20p
Oranges	£1.20	30p
Lemons	£1.60	40p
Plums	£2	60p
Pears	£3	80p
Strawberries	£4	£1
Melons	£5	£2
Bars	£6	£3
Bells	£15	£5

The player moves around the feature trail by use of the hi- lo reel. The player has the option to collect any active awards (nudges, features, cash and shots) or continue around the feature grid. The feature is terminated if the player collects or achieves the jackpot.

CRAZY FRUITS FEATURE DECALS:

SHOTS MATRIX:

Price of play	5/10/20 25/30P	5p
Jackpot	£15	£5
	£1	20p
	£1 + REP.CH	20p + REP.CH
	£2	60p
	£2 + REP.CH3	60p + REP.CH
	£3	80p
	£4	£1
	£5	£2
	JACKPOT	JACKPOT

The player can go on to complete the matrix and be awarded the jackpot.

2. TEST SEQUENCES

A test facility is provided to check the machines inputs and outputs.

During test, the button panel or front door must remain open, the machine must not be in credit and the counters will not operate.

To enter the test routines open the front door of the machine and press the green test switch once. The LED will step through each of its segments. If an alphanumeric fitted, a display test will be carried out.

The following rules apply to all tests:

1. To step forward through tests press the right hand button.
2. To step backwards through tests press the left hand button and right hand button simultaneously.
3. To select any test press the second button from the right.
4. To exit from any test press the right hand button.

If an alphanumeric is available it can be used to read the tests, otherwise each test is identified on the LED as below:

t1	Coin Flow Test
t2	Reel Test
t3	Lamp Test
t4	Switch Test
t5	Display Test
t6	Meter Test
t7	RS 232 Test
t8	Game Data Test
t9	Coin Data
tA	Error Data

COIN FLOW TEST (t1)

To start this test it is advisable to have the top door open and the button panel closed.

The hoppers are controlled by the hold buttons

No 1 Hold - £1 Hopper

No 2 Hold - 20p Hopper

Pressing and releasing a button causes a coin to be paid out. This does not affect the coin count.

Holding a button down for more than two seconds causes the machine to dump that individual hopper. The coin count for that hopper will be set to the amount dumped. (This is only expected to be used on installation only to set a new float level).

Pressing and holding down Stop will reject any coins inserted. This can be confirmed by entering coins via the acceptor rundown with the door open. (N.B. Cash in the RHS of the rundown. Tokens in the LHS of the rundown.)

At this point the button panel should be lowered and the display door closed.

During this next part of the test, coins can be inserted through the acceptor to test coin acceptance. If the coin has been successfully accepted, an indication on the alphanumeric display will appear, -

£2 COIN IN
£1 COIN IN
50p COIN IN
20p COIN IN
10p COIN IN
5p COIN IN.

REEL TEST (t2)

On entering this test, 'Reel Test' will be displayed in the alphanumeric, t2 on the LED. The reels will spin to position 1. To step down the reels press the appropriate hold button directly below the reel and in the case of the feature reel, press the stop button. An audio bleep will be heard once the paddle on the reel is situated in the optic. To step the reels up hold the 'Exchange for feature button and press the appropriate hold button.

LAMP TEST (t3)

LED - (if no alphanumeric fitted)

On entering this test all lamps will start to flash. This is cancelled by pressing the second button from the left. Each lamp can be tested individually by stepping through the 'Strobe' and 'Data' lines by use of the button panel. The button 2nd from the left selects the strobes. The button 4th from the left selects the data.(see Lamp Equates Page 37 for Strobe and Data information).

The button 3rd from the left selects illumination of all lamps, and 8.8. will be displayed on the LED.

Complete Strobe lines can be checked by pressing the button 4th from the right.

The 'Strobe' line is identified by the left hand digit of the LED and runs from 0 to F.

Note: A = Strobe 10

B =	"	11
C =	"	12
D =	"	13
E =	"	14
F =	"	15

The 'Data' line is identified by the right hand digit of the LED and runs from 0 to F.

Note: A = Data 10

B =	"	11
C =	"	12
D =	"	13
E =	"	14
F =	"	15

Alphanumeric

The button 3rd from the left selects illumination of all lamps. 'All Lamps' will be displayed on the alphanumeric.

SWITCH TEST (t4)

Operating any switch will display the strobe (left digit) and data (right digit) of that switch in the 2 digit LED (see Switch Details Page 33 for Strobe and Data information).

Alternatively if an alpha-numeric is fitted, the complete Strobe and Data is displayed.

To test DIL switches, operate the Refill switch (the switch strobe and data will be displayed). After a period of time the display will clear and operating any DIL switch will then illuminate a segment of the LED (NOTE DIL switches 1 and 9 not used), alternatively operate any DIL switch with Refill closed and its strobe and data will be displayed on the LED.

Alternatively if an alpha-numeric is fitted, an indication is given as to whether the DIL switch is selected :

"1" - SELECTED

"0" - NOT SELECTED

DISPLAY TEST (t5)

On entering this test the LED's will start to step through each of their segments, an alphanumeric will display all 16 elements as 0's then X's then +'s.

Pressing the second button from the left will display the target percentage.

METER TEST (t6)

On entering this test with the refill key turned off, information with regards to the number of meters detected and failures (if any) is available on the alphanumeric.

On entering this test with the refill key turned on, each mechanical meter shall pulse once and information with regards to the number of meters detected and failures (if any) is available on the alphanumeric.

Four (or two) of the mechanical meters are located behind the outer cashbox door. The fifth meter is located to the left of the acceptor.

RS 232 TEST (t7)

For this test an RS 232 input is required. One of the following messages will be displayed:-

	<u>Alpha</u>	<u>LED</u>
PASS	"DATA PORT PASSED"	OH
FAIL	"DATA PORT FAILED"	US

GAME DATA (t8)

LED - (if no alphanumeric fitted)

On entering this test the number of games played and actual payout percentage will be displayed in the LED.

Press the second button from the left and -- will be displayed on the LED (this denotes the following is the 'Actual percentage').

A second press will display the first two digits (i.e. Tens and Units) of the 'Actual' percentage will be displayed on the LED.

The third press will display the remainder of the 'Actual' percentage (i.e. that after the decimal point) will be displayed on the LED.

The fourth press will display __ on the LED (this denotes the following is the number of games played).

The number of games played is an 8 figure number and two digits at a time are displayed on the LED with each press of the left hand button, read the number from left to right the final press being the tens and units.

i.e.	1st press	2nd press	3rd press	4th press
	00	00	20	85

Total games = 00002085

Alphanumeric fitted

On entering the test, the target percentage is displayed.

Pressing the second button from the left displays the amount of games played and the actual percentage.

COIN DATA (t9)

LED - (if no alphanumeric fitted)

On entering this test 01 will be flashing on the LED, a flashing code number of the LED denotes the coin meter being read (these are identified below).

Operating the second button from the left will step through the flashing meter codes. To step through each set of data press the fourth button from the right.

- | | | |
|--------------|--------------------|------------------------|
| 01. - 5p in | 05. - £1 in | 09. - £1 out |
| 02. - 10p in | 06. - £2 in | 10. - 20p token out |
| 03. - 20p in | 07. - 20p token in | 11. - 20p refill |
| 04. - 50p in | 08. - 20p out | 12. - £1 refill |
| | | 13. - 20p token refill |

After each flashing code number an 8 figure number displays the value for that particular meter. The 8 figure number is displayed 2 digits at a time with each press of the right hand button, this reads from left to right with the Tens and Units being displayed on the fourth press.

i.e.	1st press	2nd press	3rd press	4th press
	00	00	20	85

Meter Total = 00002085

The next press of the second button from the left selects the next flashing code number. Then repeat the above procedure.

Alphanumeric fitted

On entering the test, the alphanumeric displays the total 5p in. Pressing the button 2nd from the left steps the display through the following sequence:

- | | | | |
|--------------|--------|--------------|------------|
| Enter test - | 5p in | 7th press - | 20p out |
| 1st press - | 10p in | 8th press - | £1 out |
| 2nd press - | 20p in | 9th press - | 20p token |
| | | out | |
| 3rd press - | 50p in | 10th press - | 20p refill |

4th press - £1 in
5th press - £2 in

11th press - £1 refill
12th press - 20p token

refill

6th press - 20p token in

ERROR DATA (tA)

An error buffer has been provided that records the last 16 machine errors. The second button from the left will allow you to cycle through the error codes, with the latest error being displayed first. The LED display will show FF to indicate the end of the buffer ('No More Errors' on alphanumeric displays).

To erase the Error Buffer, turn the refill key to the ON position. 'CL' will be displayed on the LED ("CLEAR ERRORS" on the Alphanumeric), the Hold buttons will illuminate and should be depressed in order, left to right. 'AC' will now be displayed on the LED ("ERRORS CLEARED" on the Alphanumeric). The Hold lamps will now have been extinguished and the machine will automatically step to (t1).

3. DEMONSTRATION MODE

With the front door open press the Start button and 5 credits will be displayed on the LED or alphanumeric display.

On entering the Demonstration mode a number of options are available:-

- a) The game can be played normally.
- b) By holding down the cancel button and any hold button the reel relating to the hold button can be stepped down to any position. All the reels will then be held for the next game. The reels can also be stepped up by holding down the cancel and collect button simultaneously and then the relative hold button.

4. REFILL KEY OPTIONS

- a) Turn the key and the machine will enter normal refill mode. Any coins entered in refill mode are added to their respective level counter. It is possible to refill above the float level and coins will only divert into the cash box if the high switch on the hopper is made.
- b) With the key still turned press the start button once and the last bank will be displayed.

This is refreshed by the next game.

- c) Press the start button again and the last win will be displayed
- d) Press the start button again will allow the volume level to be set.

On entering this mode a tune will be played and two buttons will illuminate. To increase the volume press the 3rd button from the left, to decrease press 2nd button from the left.

Once the desired volume has been reached turn the refill key and the sound level is now set.

5. HOPPER FLOAT AND DUMP

Active coin divert

There is a float level associated with each hopper.

	£5 jackpot	£15 jackpot
5p	£50 in £1 £20 in 20p	£125 in £1
10p	£125 in £1	£125 in £1
20p	£125 in £1	£125 in £1
25p	£125 in £1	£125 in £1
30p	£125 in £1	£125 in £1

When the float level is reached all further coins are diverted into the cashbox. The hopper is equipped with a high level switch which is made when the hopper contents exceeds the preset float levels. Should the switch be made then all further coins are diverted into the cash box regardless of the coin level count. In theory the high switch should never be made as coins will divert when the float level is reached. However, if the high switch is made then the level counter is set to the float level providing the front door is closed (thus

safeguarding against accidental activation during refill via the front door)

Initial Hopper Float Procedure

a) With full float levels

£1 Coins - £125 / £50

20p Coins - £20 (if required)

Open button panel and top door place the appropriate value of coins in the hoppers turn refill key and **REFILLED £XXX.XX** will appear on the display, press the Top Up button situated at the side of the hopper tray, a bleep will sound and **RESET FLOATS** flashes on the display followed by **1 POUND £125 / £50** confirming £1 coin count is set to its level. press No 1 hold button an **20P £20** will appear on the display confirming 20p coin count is set to its level). Close all doors and the machine will re-initialise and the floats will be set at the full level.

b) Not with full float levels

Open button panel and top doors, place in hoppers the value you require to float machine with. Close button panel door and open outer and inner cashbox doors and turn refill key, press dump switch located on the left hand side of the cashbox **DUMP FLOAT** will flash on the display then **DUMP 1 POUND** will appear. Press the start button and the machine will dump the value of the £1 coins placed in the hopper, replace these back into the hopper, press start button and **DUMP 20P** will appear on the display press again and the tokens will be dumped, replace these back into the hopper)

DO NOT PRESS THE HOPPER TOP UP BUTTON.

Close all doors and the machine will re-initialise and the coin count will be set at the value placed in the hoppers.

NOTE! Any £1 play coins or 20p's entered into the machine will go into the hopper until the true hopper floats have been achieved.

2. COLLECTION/HOPPER FLOAT AND DUMP PROCEDURE

DURING THE COLLECTION PROCEDURE IT WILL BE NECESSARY TO CHECK, AND IF REQUIRED REFILL THE HOPPERS TO SPECIFIED FLOAT LEVELS.

£1 Hopper = £125 / £ 50

20p Hopper = £20 (if required)

a) CHECK HOPPER LEVELS

Ensure machine is powered up. Turn refill key and open outer cashbox door. **1 POUND £XXX.XX** (showing the value in the hopper) appears on the display. To see 20p press No 1 hold button **20P £XX.XX** appears on the display. If the float level is lower than the true float and you want to refloat obtain the necessary coins required. With the refill key still turned feed the coins through the acceptor until the required level is reached.

IMPORTANT - IF A COIN JAM OCCURS THE HOPPER WILL HAVE TO BE RE-FLOATED AS THE MACHINE THINKS THE HOPPER IS EMPTY

b) COLLECTING CASH, VERIFYING HOPPER FLOAT

Ensure machine is powered up. Turn refill key and open outer and inner cashbox doors. The display will show **1 POUND £XXX.XX** (Showing the value in the hopper).

Press the dump switch located on the left hand side inside the cashbox area. The display shows **DUMP 1 POUND**.

Press the start button and the machine will attempt to payout the total float.

When the hopper stops the display will alternate between either

ACTUAL £XXX.XX and SHORT BY £XXX.XX

Showing the value dumped and the amount the float was short by,

or **DUMPED £125 / £50(Float Level) and DUMP EXCESS**

Showing full float value dumped.

Pressing the start button again the hopper will attempt to dump any excess coins.

If there are any excess coins after paying them out the following will be displayed.

EXCESS OF £XXX.XX and ACTUAL £XXX.XX Total of both dumps.

If token fitted press the start button again to repeat the same process for token dump.

NOTE ! £XXX.XX indicates a value that will depend on the machine status.

6. STAKES AND PRIZE SELECTIONS

This machine can be set to various stake and prize values. In order to configure the machine to the required values the following procedures should be followed.

1. Fit the relevant decals for the required prize level. (Refer to the win plan in the manual)
2. Fit the relevant decals for the required stake level.
3. Fit the appropriate Prom (see below).
All others selectable from table overleaf.

The stake key position is located on a pcb inside the cabinet on the left, 200mm down from the top.

STAKE ****5P PLAY £5 JACKPOT USE DEDICATED PROM****

DIL 7	DIL 6	DIL 5	Play Value
Off	Off	Off	5p
Off	On	Off	10p
On	Off	Off	20p
On	On	Off	25p
Off	Off	On	30p

PRIZE:

£15 PROM : 5p 10p 20p 25p 30p switchable stake

£5 PROM : 10p 20p 25p switchable stake

£5 PROM : 5p play DEDICATED PROM (NO STAKE KEY REQUIRED)

8. D.I.L. SWITCH SETTINGS & FUNCTIONS

There is a bank of DiL switches on the MPU board, set horizontally, numbered 1 to 16 from left to right.

Their functions are as follows:

		SWITCH SETTINGS	
		OFF	ON
1		
2	Credit on Reset	Retained	Lost
3	Attract Sound	On	Off
4	Bank Payout	Paid into Bank	Paid Out
5	Refill Hopper Full	Lock Out	Accept
6	All Coins Play	Multicoin	Single Coin
7	Coin Switch Low	Lock Up	Continue To Pay
8	Bank Limit	5 x Jackpot	£10
9		
10	Coin Jam Alarm	On	Off
11	Static Attract Mode	Off	On
12		
13		
14	Reset Alarm	On	Off
15		
16		

Percentages are set by the variable % key.

The standard settings for our machines will be with all 16 switches OFF. However, this can be varied to suit local conditions, as follows:

1. Not used.
2. Credit on Reset

3. Attract Sound

When switched the sound is removed from the attract mode and stops the feature reel spinning.

4. Bank Payout

With DIL switch off, wins will accumulate in the bank and only paid out if the player collects or the bank reaches its set limit.

5. Refill Hopper Full

With the refill key turned and the switch off, the machine locks out coinage on the hopper weight switch only. Turning the switch on will lock out coinage on the hopper weight switch or float level setting.

6. All Coins Play

The standard setting allows coins to be inserted up to 96 credits; if required, single coin play can be selected by moving this switch ON. When this occurs, only one coin can be inserted, all further coins being locked out until the credits return to zero.

7. Coin Switch Low

The machine can be switched to lock up or continue to pay when hopper levels reach the low switch.

8. Bank Limit

This switch allows a choice of Bank Limit, 5 times the jackpot or £10, before the bank pays out automatically.

9. Not used.

10. Coin Jam Alarm

With the switch in the OFF position when a coin jams the following will occur:

- i. An alarm noise sounds continually.
- ii. The alphanumeric displays a **COIN ERROR** code to indicate the coin causing the problem:
1 = £1; 2 = 50p; 3 = 20p; 4 = 10p; 5 = token; 6 = 5p.

OR

The alphanumeric displays **COIN FRAUD** (strim detected), the alarm will sound for 10 seconds and the machine will remain locked up for 20 seconds. After 30 seconds the alarm will sound again until the machine is reset.

- iii. The machine will stop and be unplayable. Because this may happen during a game it is possible that other lamps may flash.

The only way to stop the alarm is to switch the machine off and then on again. If the alarm continues it means the coin jam has not cleared.

With DIL switch 10 ON, when a coin jams the following will occur:

- i. All coins will be locked out.
- ii. The coin causing the problem will not be metered nor credited.
- iii. Existing credits can be played normally.
- iv. The alphanumeric displays **COIN FRAUD** (strim detected), the alarm will sound for 10 seconds and the machine will remain locked up for 20 seconds. After 30 seconds the machine will be ready to play again.

11. **Not Used**

12. Token Play

The standard setting allows tokens to be inserted up to a maximum of 96 credits, single token play can be selected by moving this switch to the ON position. Under this condition only 1 token may be inserted (1 Credit) all further tokens being locked out.

13. Alarm Sounds

With the DIL switch in the **ON** position, the alarm sounds are **disabled**.
With the DIL switch in the **OFF** position, the alarm sounds are **enabled**.

14. Reset Alarm

DIL 14 - OFF

If the machine is switched off/on within 20 secs of coming out of reset, an alarm counter will be incremented. When this counter reaches 3, stage 1 of the anti cheat alarm comes into action. When the

counter reaches 5 stage 2 comes into action.

Stage 1 gives an audible alarm for 10 secs, Error 03 is displayed, followed by the machine remaining idle for 20 secs. Machine will reset with no loss of credits.

Stage 2 gives an audible alarm for 20 secs, Error 04 is displayed, followed by the machine remaining idle for 2 minutes. Machine will reset with all credits and bank erased.

The counter is cleared if the machine is left clear of resets for 10 minutes. The counter is not affected whilst the back door is open.

DIL 14 - ON

No Reset Count and No Reset Alarm.

15. **Not used**

16. **Not used**

9. REEL STRIPS

Position	REEL 1	REEL 2	REEL 3	REEL 4
1	BAR	BAR	BAR	12
2	ORANGE	STRAWBERRY	STRAWBERRY	11
3	CHERRY 2	BELL	PEAR 2	10
4	PEAR	PLUM 3	ORANGE	9
5	PLUM	BAR	LEMON 1	8
6	LEMON	CHERRY	CHERRY	7
7	PEAR	BANANA	PLUM	6
8	CHERRY 1	ORANGE	PEAR 2	5
9	LEMON	PLUM 1	LEMON	4
10	STRAWBERRY	LEMON	CHERRY	3
11	ORANGE 2	CHERRY	ORANGE	2
12	BELL	ORANGE 2	PLUM 3	1
13	PLUM	PEAR	STRAWBERRY	
14	MELON 1	MELON	MELON	
15	CHERRY	CHERRY	BELL	
16	BELL	LEMON 1	ORANGE	

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3. SAFETY INSTRUCTIONS

3.1 Product Safety

The wide range of components used in the machine are supplied by an equally wide range of manufacturers. It is therefore impracticable for this document to provide comprehensive safety data for each product used. Manufacturers data sheets can be supplied upon request.

All the items contained within the machine are used within their specification limits and in accordance with sound engineering practice.

3.2 Electrical Safety General

All BFM machines are tested for electrical safety prior to being despatched. The tests are for Earth Bond and Insulation. It is recommended that these tests be repeated annually or whenever safety critical parts and connections are replaced.

Earth/Insulation specifications for BFM machines are:-

Insulation > 2 Megohms @ 500V dc.

Earth Bond < 0.25 ohms @ 25 amps.

3.3 Chemical Safety

Attention is drawn to the possible effect of accidental damage to components where they contain chemicals which may be hazardous. Components which fall into this category are:-

Electrolytic Capacitors
Nickel Cadmium Batteries
Semi-Conductors containing Beryllium Oxide and Gallium Arsenide
Opto-Electronic devices using Gallium Phosphide

As the chemicals are corrosive or flammable, particular care must be exercised in case of spillage. Any part of the body which accidentally comes into contact with these chemicals must be thoroughly washed in cold running water. Particularly if the eyes are affected. Medical advice should be sought.

3. SAFETY INSTRUCTIONS

3.4 Fire Safety

Outer casings of the majority of the components used are made of heat resistant material. Excessive electrical overload conditions may generate sufficient heat to ignite chemical substances within the components themselves or adjacent components, harnesses etc..

NOTE: It is imperative that only identical value components are used as replacements for the original equipment supplied and that correct polarity of assembly is observed when applicable.

Materials which fall into the Fire Hazard category are:-

Chipboard – releases Formaldehyde vapour when ignited, causes discomfort to the eyes and mucous membranes

Plastic Laminates – plastic and rubber mouldings , wire insulation etc., release noxious fumes which if inhaled may cause irritation depending on the sensitivity of the individual.

Glass – Extreme heat will cause the glass to crack thereby causing injury

Electrolytic Capacitors and Batteries may explode if subjected to fire.

3.5 Disposal of Hazardous Components

As a general rule, electronic components should not be incinerated due to the possible danger of noxious fumes being released, or components exploding due to a build up of internal pressures created by expanding gases.

3.6 Gas Springs/Struts

Under no circumstances should the gas spring be opened or subjected to excessive tensions.

Gas springs should be disposed of safely and not heated or incinerated.

DO NOT LUBRICATE GAS SPRINGS

4. INSTALLATION INSTRUCTIONS

4.1 General

It is the policy of BFM to ensure that all products are designed, manufactured, tested and released to conform with statutory safety requirements. In support of this policy the Information contained within this manual is intended as a guide to the safe Installation, Reliable working and efficient operation of the machine supplied.

Therefore prior to installation or when servicing, reference to the service manual and all **WARNING LABELS** provided is strongly recommended. Failure to observe any information may result in a safety hazard.

CAUTION: Under no circumstances should any major form of installation, repair, adjustment or maintenance be attempted by any other than qualified personnel.

4.2 Physical Check

Ensure that the machine is positioned on a level stable surface. Open the back door and check that all parts are secure, electrical connectors are correctly mated and that no components or assemblies have been damaged in transit.

4.3 Internal Electrical Connectors

The introduction of insulation displacement connectors (IDC) and the use of lighter cables emphasises the need for care when removing and replacing connectors.

When removing connections, pull on the connector and not the wires; when replacing connections ensure that (i) the harness housing is being connected to the correct wafer (ii) the housing is the correctly oriented (Observe positions of polarising pins).

4.4 Float Levels

The total capacity of the hopper(s) is £125. When a 20p hopper is fitted then the capacity is shared.

£1 hopper only	£1 = £125
£1 and 20p hoppers	£1 = £105 20p = £20
Token Hopper	£95 (lockout occurs at £250 approx.)

4. INSTALLATION INSTRUCTIONS

4.5 Electrical Supply

WARNING: This Apparatus must be EARTHED.

Connect the machine to the mains supply (220V/240V a.c 250 Watts) using an approved plug fitted with a 13 Amp fuse (7A minimum can be fitted if required Any value below this is not recommended due to Transformer surge current experienced during machine reset). The mains lead should be 3 core PVC insulated/PVC sheathed flexible cable (0.75 square mm csa) to British Standard BS6500. The cable length should not exceed 2 metres. The cable should be terminated with a straight IEC type mains socket (10A @ 250V).

IMPORTANT: The wires in the mains lead are coloured in accordance with the following code.

GREEN AND YELLOW	:	EARTH
BLUE	:	NEUTRAL
BROWN	:	LIVE

As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

1. **EARTH:** The wire coloured GREEN and YELLOW must be connected to the terminal marked 'E' or by the safety earth symbol or coloured GREEN, or GREEN and YELLOW.
2. **NEUTRAL:** The wire coloured BLUE must be connected to the terminal marked 'N' or coloured BLACK.
3. **LIVE:** The wire coloured BROWN must be connected to the terminal marked 'L' or coloured RED.

4.6 Dimensions

Height	1690 mm
Width	680 mm
Depth	610 mm
Weight	130 Kg

5. POWER SUPPLY

The Scorpion 4 power supply consists of a mains switched mode power supply providing steady D.C voltages from a mains input supply between 180 – 264vac 50/60Hz.

The mains input is fed via an IEC plug, mains filter and double pole switch and is protected by a 5 Amp anti surge fuse.

5.2 Supply Outputs

The Power Supply outputs are:-

- a) 48vdc +5% -10% This supply is used for the lamps matrix.
- b) 24vdc +/- 10% This supply is used for the hoppers.
- c) 13.5vdc +/- 5% This supplies the MPU, Coin Acceptor and Reel Mechanism.
- d) 5vdc +/- 5% This is the I.C. supply on the MPU.

5.3 Power Supply Removal

To remove the power unit from the machine disconnect the Power Supply harness and the earth ring tags from the stud. Release the clip, lift and slide the unit towards the front of the machine.

CAUTION: Extra care should be taken when finally lifting the power supply from the machine.

When replacing the unit ensure that all the earth ring tags are securely fastened to the stud (identified by means of an earth symbol and that the plug is reconnected.

6. MICROPROCESSOR CONNECTIONS & FUNCTIONS

6.1 General

The microprocessor unit MPU (Designated Scorpion 4) is mounted horizontally on the back panel of the machine. Harnesses to the MPU are generally direct from each assembly and colour coded. Harnesses are terminated by polarised IDC connectors of 0.156 and 0.1"pitch. A colour coded label is provided to assist in harness replacement.

6.2 Additional Functions

Dil Switches 16 Dil Switches are provided and perform various functions outlined in the game manual. A 16 Dil Switch bank is situated between the green test button and the red reset button.

Test/Demo Switch A green button is fitted adjacent to the Dil Switch bank, When pressed once it will transfer the machine into Functional test mode (See Game Manual for details). Two presses will enter the demonstration mode.

Reset LED A red LED indicates the state of the system reset. It will illuminate at power up and extinguish after 2 seconds showing that the system reset has taken place. A red button adjacent to the Dil switches resets the MPU (normally used when bench testing).

Game / Sound Card The game card has both game and sound proms and should be fitted to the 64 way connector Plug Z1 on the Microprocessor. The other 64 way connector Plug Z2 is used for expansion facilities where necessary.

LED Indicators Four green LED's are provided to indicate that the presence of the 48vdc,24vdc,13.5vdc and 5vdc supplies to the MPU.

Data Retrieval An RS 232 'D' connector output is provided on the MPU at the top right hand corner (See following Paragraph 8.1 for connections).

NOTE: FOR SERVICE OR REPAIR THE MPU SHOULD BE RETURNED COMPLETE WITH COVER. THE GAME CARD AND SOUND PROM SHOULD BE REMOVED FROM THE MPU AND FITTED TO THE REPLACEMENT UNIT.

6. MICROPROCESSOR CONNECTIONS & FUNCTIONS

6.2 Microprocessor Connections

PLUG	FUNCTION	CONNECTOR SIZE	NO. PINS	POLARISED PIN
A	Power Supply	0.156	14	4
B	Payout Port	0.156	13	5
C	Data Retrieval	'D'	25	-
D	Display Port	0.1	11	3
E	Divert Port	0.1	14	7
F	Reels A,B,C	0.1	22	8
G	Reels D,E,F	0.1	23	15
H	Acceptor Port	0.1	17	5
J	Comms Port	0.1	12	8
K	Meters	0.1	11	9, 10
L	Reel Optics	0.1	10	3
M	Cabinet Switches	0.1	19	6
N	LED Matrix	0.1	17	6
O	LED Matrix	0.1	18	7
P	Lamp Matrix	0.1	18	2
Q	Lamp Matrix	0.1	17	15
R	Auxiliary Port	0.1	9	6
S	Audio	0.1	10	6
T	Serial Port	0.1	7	2
Z1	Game Card	DIN41612	64	-
Z2	Expansion	DIN41612	64	-

6. MICROPROCESSOR CONNECTIONS & FUNCTIONS

PLUG A - POWER SUPPLY

14 - Way 0.156 Molex

1.	+5vdc	Yellow
2.	0v	Black
3.	0v	Black
4.	Polarised	
5.	+48vdc	Violet
6.	+48vdc	Violet
7.	+13.5v Validator	Grey
8.	0v	Black
9.	+13.5vdc	Red
10.	+13.5vdc	Red
11.	+24vdc	Pink
12.	+24vdc	Pink
13.	+13.5vdc Reels	Red
14.	+13.5vdc Reels	Red

PLUG C - RS232

25 - Way 'D' Connector

1.	0v
2.	Receive Data
3.	Transmit Data
4.	Ready to Send
5.	Clear to Send
6.	-
7.	0v
11.	-13.5v
18.	0v
25.	+13.5vdc

PLUG B - PAYOUT

13 - Way 0.156 Molex

1.	Payout 0	Grey/Red
2.	Payout 1	Grey/Yellow
3.	Payout 2	Grey/Orange
4.	Payout 3	Grey/Brown
5.	polarised	
6.	Input 0	Orange/Pink
7.	Input 1	Orange/Grey
8.	Input 2	Orange/White
9.	Input 3	
10.	0v	Black
11.	+13.5vdc	Red
12.	+24vdc	Pink
13.	Input 4	

PLUG D - ALPHANUMERIC

11 - Way 0.1 Molex

1.	+13.5V	Red
2.	Clock	Yellow/Black
3.	Polarised	
4.	Data	Yellow/Black
5.	Reset	Yellow//Black
6.	0v	Black
7.	+13.5vdc	Red
8.	Clock 2	Yellow/Black
9.	Data 2	Yellow/Black
10.	Reset 2	Yellow/Black
11.	0v	Black

6. MICROPROCESSOR CONNECTIONS & FUNCTIONS

PLUG E - DIVERT/INTERNAL SWITCHES

22 - Way 0.1 Molex

1.	Divert 1	Green/Orange	8.	0v	Black
2.	Divert 2	Green/Blue	9.	Strobe	Orange/White
3.	Divert 3	Green/Violet	10.	Data 0	
4.	Divert 4	Green/Grey	11.	Data 1	Orange
5.	Coin Jam Input		12.	Data 2	Orange
6.	Coin Alarm Input		13.	Data 3	Orange
7.	polarised		14.	Data 4	

PLUG F - REELS A,B,C DRIVES

22 - Way 0.1 Molex

1.	C Phase 0	Brown/Black
2.	C Phase 1	Brown/Black
3.	C Phase 2	Brown/Black
4.	C Phase 3	Brown/Black
5.	C +13.5V	Red
6.	C +13.5V	Red
7.	C +13.5V	Red
8.	Polarised	
9.	B Phase 0	Brown/Black
10.	B Phase 1	Brown/Black
11.	B Phase 2	Brown/Black
12.	B Phase 3	Brown/Black
13.	B +13.5V	Red
14.	B +13.5V	Red
15.	B +13.5V	Red
16.	A Phase 0	Brown/Black
17.	A Phase 1	Brown/Black
18.	A Phase 2	Brown/Black
19.	A Phase 3	Brown/Black
20.	A +13.5V	Red
21.	A +13.5V	Red
22.	A +13.5V	Red

PLUG G - REELS D,E,F DRIVES

23 - Way 0.1 Molex

1.	F Phase 0	Brown/Black
2.	F Phase 1	Brown/Black
3.	F Phase 2	Brown/Black
4.	F Phase 3	Brown/Black
5.	F +13.5V	Red
6.	F +13.5V	Red
7.	F +13.5V	Red
8.	E Phase 0	Brown/Black
9.	E Phase 1	Brown/Black
10.	E Phase 2	Brown/Black
11.	E Phase 3	Brown/Black
12.	E +13.5V	Red
13.	E +13.5V	Red
14.	E +13.5V	Red
15.	Polarised	
16.	D Phase 0	Brown/Black
17.	D Phase 1	Brown/Black
18.	D Phase 2	Brown/Black
19.	D Phase 3	Brown/Black
20.	D +13.5V	Red
21.	D +13.5V	Red
22.	D +13.5V	Red
23.	N.C.	

6. MICROPROCESSOR CONNECTIONS & FUNCTIONS

PLUG J – COMMS PORT

12 – Way 0.1 Molex

1. Data
2. Data 0v
3. /Busy
4. /Busy 0v
5. +13.5vdc
6. 0v
7. /Reset
8. Polarised
9. +5vdc
10. SDA
11. SCL
12. 0v

PLUG H – COIN VALIDATOR

17 – Way 0.1 Molex

1. Coin 6 Input Green/Red
2. Coin 5 Input Green/Red
3. 0v (Output Common)
4. Coin 1 Input Green/Red
5. Polarised
6. Coin 2 Input Green/Red
7. Coin 3 Input Green/Red
8. Select Blue
9. Coin 4 Input Green/Red
10. Coin 4 Inhibit Green/Black
11. +13.5vdc Grey
12. 0v Black
13. Coin 3 Inhibit Green/Black
14. Coin 2 Inhibit Green/Black
15. Coin 1 Inhibit Green/Black
16. Coin 5 Inhibit Green/Black
17. Coin 6 Inhibit Green/Black

PLUG L – REEL MECH OPTICS

10 – Way 0.1 Molex

1. +5vdc
2. 0v
3. polarised
4. Input 1
5. Input 2
6. Input 3
7. Input 4
8. Input 5
9. +13.5vdc
10. Input 6

PLUG K – METER OUTPUTS

11 – Way 0.1 Molex

1. +13.5vdc Red
2. Meter 0 Blue/Black
3. Meter 1 Blue/Black
4. Meter 2 Blue/Black
5. Meter 3 Blue/Black
6. Meter 4 Blue/Black
7. Meter 5
8. Meter 6
9. Polarised
10. Polarised
11. Meter 7

6. MICROPROCESSOR CONNECTIONS & FUNCTIONS

PLUG M - SWITCH MATRIX

19 - Way 0.1 Molex

1.	Input 1	Orange/Black
2.	Input 2	Orange/Brown
3.	Input 3	Orange/Red
4.	Input 4	Orange/Yellow
5.	Input 5	Orange/Green
6.	Polarised	
7.	Strobe 0	
8.	Strobe 1	Orange
9.	Strobe 2	Orange/White
10.	Strobe 3	Orange/White
11.	Strobe 4	Orange/Blue
12.	Strobe 5	Orange/White
13.	Strobe 6	Orange/White
14.	Strobe 7	Orange/Violet
15.	Strobe 8	
16.	Strobe 9	
17.	Strobe 10	
18.	Strobe 11	
19.	N.C.	

PLUG S - AUDIO OUTPUT

10 - Way 0.1 Molex

1.	Output Left	Violet/Black
2.	0v	Black
3.	Output Right	Violet/Black
4.	0v	Black
5.	Dpot Out Left	
6.	Polarised	
7.	Dpot Out Right	
8.	0v	
9.	+13.5V	
10.	+24vdc	

PLUG R - AUXILIARY PORT

9 Way 0.1 Molex

1.		
2.	Output 1	
3.		
4.		
5.	0v	
6.	polarised	
7.	+5vdc	
8.	+13.5vdc	
9.	+24vdc	

PLUG T SERIAL PORT

7 Way 0.1 Molex

1.	+13.5v
2.	polarised
3.	RxD (RS232)
4.	TxD (RS232)
5.	0v
6.	RxD (TTL)
7.	TxD (TTL)

6. MICROPROCESSOR CONNECTIONS & FUNCTIONS

PLUG P - LAMP MATRIX

18 Way - 0.1 Molex

1.	Lamp Data 8	White/Yellow
2.	Polarised	
3.	Lamp Data 9	White/Yellow
4.	Lamp Data 10	White/Yellow
5.	Lamp Data 11	White/Yellow
6.	Lamp Data 12	White/Yellow
7.	Lamp Data 13	White/Yellow
8.	Lamp Data 14	White/Yellow
9.	Lamp Data 15	White/Yellow
10.	Lamp Strobe 8	White/Black
11.	Lamp Strobe 9	White/Black
12.	Lamp Strobe 10	White/Black
13.	Lamp Strobe 11	White/Black
14.	Lamp Strobe 12	White/Black
15.	Lamp Strobe 13	White/Black
16.	Lamp Strobe 14	White/Black
17.	Lamp Strobe 15	White/Black
18.	N.C.	

PLUG Q - LAMP MATRIX

17 Way - 0.1 Molex

1.	Lamp Data 0	White/Yellow
2.	Lamp Data 1	White/Yellow
3.	Lamp Data 2	White/Yellow
4.	Lamp Data 3	White/Yellow
5.	Lamp Data 4	White/Yellow
6.	Lamp Data 5	White/Yellow
7.	Lamp Data 6	White/Yellow
8.	Lamp Data 7	White/Yellow
9.	Lamp Strobe 0	White/Black
10.	Lamp Strobe 1	White/Black
11.	Lamp Strobe 2	White/Black
12.	Lamp Strobe 3	White/Black
13.	Lamp Strobe 4	White/Black
14.	Lamp Strobe 5	White/Black
15.	Polarised	
16.	Lamp Strobe 6	White/Black
17.	Lamp Strobe 7	White/Black

PLUG N - LED MATRIX

17 Way - 0.1 Molex

1.	LED Data 0	White/Yellow
2.	LED Data 1	
3.	LED Data 2	White/Yellow
4.	LED Data 3	White/Yellow
5.	LED Data 4	White/Yellow
6.	Polarised	
7.	LED Data 5	White/Yellow
8.	LED Data 6	White/Yellow
9.	LED Data 7	White/Yellow
10.	LED Strobe 0	White/Black
11.	LED Strobe 1	White/Black
12.	LED Strobe 2	White/Black
13.	LED Strobe 3	White/Black
14.	LED Strobe 4	White/Black
15.	LED Strobe 5	White/Black
16.	LED Strobe 6	White/Black
17.	LED Strobe 7	White/Black

PLUG O - LED MATRIX

18 Way - 0.1 Molex

1.	LED Data 8	White/Yellow
2.	LED Data 9	White/Yellow
3.	LED Data 10	White/Yellow
4.	LED Data 11	White/Yellow
5.	LED Data 12	White/Yellow
6.	LED Data 13	White/Yellow
7.	Polarised	
8.	LED Data 14	White/Yellow
9.	LED Data 15	White/Yellow
10.	LED Strobe 8	White/Black
11.	LED Strobe 9	White/Black
12.	LED Strobe 10	White/Black
13.	LED Strobe 11	White/Black
14.	LED Strobe 12	White/Black
15.	LED Strobe 13	White/Black
16.	LED Strobe 14	White/Black
17.	LED Strobe 15	White/Black
18.	N.C.	

7. ERROR CODES

7.1 Error Codes

In order to assist the Service Engineer a system of error codes exists to locate faults. On an alphanumeric display this is shown as a flashing 'Error Message' or on an LED display as a flashing 'Code' number, interpreted as follows:

<u>Code</u>	<u>Fault</u>	<u>Action</u>
03	Reset Error – <5 Resets	See over page
04	Reset Error – >4 Resets	See over page
10	Coin Error 0	Anti-Strim Alarm
11	Coin Error 1	£1 Coin Fault
12	Coin Error 2	50p Coin Fault
13	Coin Error 3	20p Coin Fault
14	Coin Error 4	10p Coin Fault
15	Coin Error 5	Token Fault
16	Coin Error 6	5p Coin Fault
18	Coin Error 8	Hopper Error
19	Coin Error 9	Coin Feed Error
21	Reel 1 index error	Check reel optics
22	Reel 2 index error	"
23	Reel 3 index error	"
24	Reel 4 index error	"
25	Reel 5 index error	"
26	Reel 6 index error	"
31	Lamp Fault Multiplex	Check Strobe Line
44	Perkey Error	% Key faulty/missing
45	Key Error	Fit S & P Key
46	Key Error	Fit correct S & P Key
51	Sum Check Error	Check Eprom/Game Card
53	Ram Error	Check Battery
54	No Sound Prom	
55	Sound Prom Faulty	
56	Wrong Sound Prom Fitted	
57	Incorrect Number Sound Samples	

7. ERROR CODES

61	Meter 1 Fault	Check Meter 1
62	Meter 2 Fault	Check Meter 2
63	Meter 3 Fault	Check Meter 3
64	Meter 4 Fault	Check Meter 4
65	Meter 5 Fault	Check Meter 5
66	Meter 6 Fault	Check Meter 6
67	Meter 7 Fault	Check Meter 7
68	Meter 8 Fault	Check Meter 8
71	Data Comms Failure	'D' Connector
81	Reel 1 index error	Check reel optics
82	Reel 2 index error	"
83	Reel 3 index error	"
84	Reel 4 index error	"
85	Reel 5 index error	"
86	Reel 6 index error	"
92	Trace Buffer Frozen	Contact BFM Commercial Dept.
96	Payout Unit not fitted	

Reset Alarms...An audible alarm sounds for 10 seconds then silent for 20 seconds for Error 03 or 2 minutes for Error 04.

To clear this alarm keep the machine closed and switched on for 10 minutes to erase recorded resets.

Anti-Strim Alarm....This alarm will sound for 10 seconds then lockout for up to 5 minutes according to the number of interferences.

To clear this alarm close the machine and allow the alarm to time itself out. The Audio plug S may be disconnected during this time.

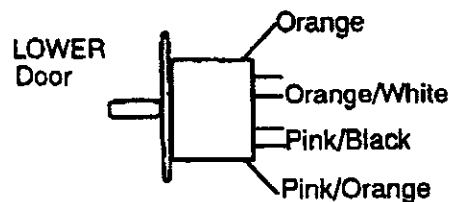
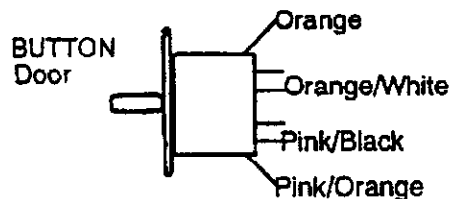
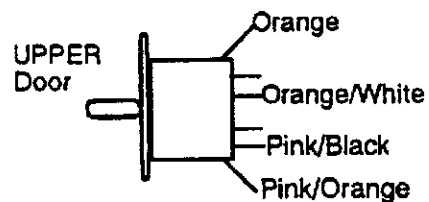
8. DATA RETRIEVAL

8.1 Data Retrieval

All connections for Data Retrieval are fitted in the machine. Data is transmitted via the "D" connector on the MPU. Harness connections are made direct to the door switches as indicated on the diagram below and on the back door label. **The wiring connections are configured for Datapack.** If electronic coin data is required when the front door is opened then the wiring to all door switches should be modified as for Newtek.

In order to make use of your Data Retrieval system, the Protocol version of the PROM card supplied is required. To obtain this, please quote your existing game card number stating that you require the PROTOCOL version of it, from your Distributor.

Datapack System



9. COIN VALIDATION

The machine may be fitted with either Mars Cashflow or Coin Controls C435A coin validators with the facility to accept £2 coins and the new 50p coin when available.

The machine is capable of operating in either binary or parallel mode dependant on the select line on the Scorpion 4 MPU plug H pin 8 (0vdc for binary).

9.1 Mars ME129 Cashflow Validator & Separator

Coins are fed through a Mars ME 126 Dual Coin Entry (DCE) Bezel to a run down chute, and are processed by the ME126 Cashflow validator/separator system. The 22-way routing plug determines the coin paths.

9.2 Coin Controls C435A

Coins enter the run down chute into the top entry of the validator where the coins are processed. A 20 way routing plug determines the coin paths.

Validated payout coins are routed to the respective hoppers until full then to the cash box. Non payout coins are routed directly into cashboxes via rigid chuting. Invalid coins/tokens are routed to the paytray.

NOTE: If it becomes necessary to change either unit, it is essential that the routing plug is transferred to the new unit to ensure correct coin routing.

9.3 Cleaning & Preventative Maintenance

There are no user adjustments, electrical or mechanical.

It is recommended however, that the unit is cleaned once every 100,000 coin entries or every 3 months (which ever is least).

For routine cleaning, you should remove the unit from the machine as described in Paragraph 9.3. Normally it is sufficient to clean the visible parts with a damp cloth or cotton bud. In areas where dirt build up is difficult to remove a soft bristled brush or mild foam cleaner may be used. Always apply the cleaner to the cloth and not directly to the unit.

CAUTION: Under no circumstances should cleaning agents which incorporate either solvents or abrasives be used as these may permanently damage the plastic.

10. COIN PAYOUT ASSEMBLIES

10.1 Payout Assemblies

The Hopper payout assembly is mounted alongside the reel mechanism assembly. A £1 cash Hopper is fitted as standard. A token hopper may be fitted if required.

10.2 Removal

To remove the hopper unit, open the machine, release the plunger at the left hand side of the unit then pull the hopper assembly forwards. The hopper assembly may be partially removed for filling or completely removed for service as required. Services to the hopper assembly are made via a self connecting AMP plug/socket at the rear of the unit.

10.4 Hopper Capacities

The coin count into the respective hoppers is maintained by the RAM. The capacity of the £1 hopper is £125. £1 coins will be diverted to the cash box when the float level is reached. the token hopper capacity will be dependant upon the setting of the hopper weight switch which will lockout tokens being inserted when activated.

A Level switch operated by the weight of coins in excess of the float will also put coins into the cashbox thus preventing the hopper being overloaded.

10.5 Refill

A key operated refill switch mounted below the button panel allows the machine to be refilled from the front via the coin acceptor, recording the amount refilled on one of two electro-mechanical refill meters mounted inside the upper door. The Cash refill facility is selected by DIL switch 11 on the mpu. Coins and tokens may be refilled without metering through the coin unit by opening the outer cash door.

11. METERS

11.1 Mechanical Meters

Coin information is recorded on both mechanical and electronic meters (provided that the back door is shut).

There are five 7 digit mechanical meters, four of which are mounted on a shelf above the cashbox viewed with the cashbox door open. The meters are labelled:-

'Cash In 10p Units' , 'Cash Out 10p Units', 'Tokens In' and 'Tokens Out'.

The fifth Meter is the Cash refill meter and is viewed through the display glass.

NOTE: If any of the meters are disconnected the machine will not initialise and an error code appropriate to that meter will be displayed on either the credit LED or Alphanumeric. (refer to Paragraph 7.1)

11.2 Electronic Meters

The Electronic metering are accessed when the machine is out of credit either in the test sequence or, if data retrieval not fitted, by opening the cash box door (back door shut). All electronic meters can now be read. To step through each meter code press the second button from the left. The meters step through in the following order:-

01 - 5p In	08 - 20p Out
02 - 10p In	09 - £1 Out
03 - 20p In	10 - £2 Out
04 - 50p In	11 - 20p Refilled
05 - £1 In	12 - £1 Refilled
06 - £2 In	13 - Tokens Refilled
07 - Token In	

NOTE 1: Electronic meters are invalid if the MPU is replaced, MPU battery failure occurs, becomes disconnected or short circuited.

NOTE 2: If EDC is fitted then the electronic metering is available in Test 9 Coin Data (see game manual)

12. REEL MECHANISM

12.1 Reel Mechanisms

This machine incorporates Starpoint reel mechanism modules designated 17RM (grey frame).

Each consists of a reel or a disc attached to a direct drive stepper motor. Connections from the motor and lamps are via a 15 way molex connector to the MPU. The microprocessor instructs each motor to drive to a certain position and checks the optic tab is at the index position.

As each reel module can be removed individually, the identity and position is shown on the back of the reel strips, 'A' corresponding to the left hand end reel and letters 'B', 'C', 'D' moving to the left (when viewing the front of the machine).

To remove a reel module, disconnect the harness and lift the clip holding the rear. Slide the module out. To replace, slide the module in, ensuring the front foot locates in its moulding and the locating peg on the rear clip locates in the hole on the rear foot of the moulding. Reconnect the harness.

12.2 Fault Finding

1. Faulty Drive

If a motor does not drive or drives with difficulty then exchange reel modules to check whether the problem is with the motor or MPU.

2. Faulty Optic

Whenever the machine is initialised the reels are spun to check the optics. If the signal from the optic is not seen either on machine initialisation or during play then a reel alarm will be generated or the reel(s) will continue to spin, refer to 12.4 a,b. Rotate the reel and check that the LED illuminates then extinguishes as the tab passes through the optic. Replace the optic if necessary or check the harness.

3. If the symbols are not correctly positioned on the winline, check the following, in order and adjust accordingly:-

- a) The reel strip is correctly positioned on the reel
- b) The motor is correctly positioned in the moulding.

12. REEL MECHANISM

12.3 Motor Replacement

When a motor has to be changed the following procedure should be followed:

- a) Ensure machine is turned off at the mains.
- b) Disconnect the reel mechanism harness from the reel module.
- c) Remove unit to be repaired, noting its position with respect to the remaining modules.
- d) Remove circlip and washer retaining reel. Remove reel from the motor drive pin. Remove the two front self-tapping screws and pull the motor forward to remove it from the housing. Remove the stepper motor wires from the molex connector.

To replace the stepper motor reverse the above procedure. Refer to paragraph 12.4 to set the stepper motor.

12.4 Motor/Paddle Setting Procedure 17RM

- a) Connect the reel module to the reel mech harness.
- b) Press the green test switch, turn on the mains – keeping the switch pressed until the reel modules are driven.
- c) Turn the reel module by hand until the optic tab is situated as near to the centre of the optic as possible.
- d) Release the screws securing the motor in the moulding and turn the motor so that the paddle is now situated in the centre of the optic. Tighten the screws.
- e) Replace the reel module on the mechanism shelf, secure the reel assembly to mechanism shelf.
- f) Switch the machine off. On switching on again the machine is now ready for use.

12. REEL MECHANISM

12.5 Reel Strip Replacement

The Starpoint reel mechanism uses a plastic reel strip which can be cleaned whilst mounted on the reel. If this is not sufficient a new reel strip should be fitted.

The reel strip is removed by carefully pulling it away from the drum.

Identification of the reel strip can be found on the reverse side, this is in the form of an abbreviation of the machine name followed by the last three digits of the part number and finally by a letter e.g. A. The letter depicts the reel the reel strip is to be fitted on i.e. A = 1st reel, B = 2nd Reel, C = 3rd Reel, D = 4th Reel.

On the reel strip, above the first fruit symbol, are two black lines. These lines should be aligned with the number engraved on the right hand side of the reel drum which corresponds with the number printed on the back of the reel strip. The reel strip is attached to the supporting drum on the reel module by using two pieces of double backed tape measuring 85mm x 45mm (3.4 ins x 2.75 ins). When replacing the reel strip, the top part of the reel strip (i.e. the part with the black lines) must be attached first.

12.6 Reel Illumination

3 lamps are provided to illuminate the win line and positions above and below. The lamp array and motor are housed in the same moulding. The position is set according to the information printed on the reel band.

13. WIRING DIAGRAMS

MPU
PLUG H

ACCEPTOR

1	Green/Black	5p Coin Output	1
2	Green/Brown	Token Output	2
3	Black	Output Common	3
4	Green/Pink	£1 Coin Output	4
5		Polarised	5
6	Green/Red	50p Coin Output	6
7	Green/Orange	20p Coin Output	7
8	Blue	Select	8
9	Green/Blue	10p Coin Output	9
10	Green	10p Coin Inhibit	10
11	Grey	+12 vdc	11
12	Black	0 volts	12
13	Blue/Black	20p Coin Inhibit	13
14	Green/Grey	50p Coin Inhibit	14
15	Green/Violet	£1 Coin Inhibit	15
16	Blue/Red	Token Inhibit	16
17	Red/Black	5p Coin Inhibit	17

MPU
Plug E

SEPARATOR

1	Green/Orange (Mars)	5
2	Green/Blue (Mars)	4
3	Green/Violet (C435A)	8
4	Green/Grey (C435A)	9
5		
6		
7	polarised	2
8	Black	1
9	Orange/White	
10		
11	Orange	Lower Door
12	Orange	Upper Door
13	Orange	Dump Switch
14	Orange	Button Door

CASHFLOW ROUTING PLUG (view from wire side)

21	19	17	15	13	11	9	7	5	3	1
22	20	18	16	14	12	10	8	6	4	2

CONNECT AS FOLLOWS

1 to 20, 2 to 5, 3 to 16

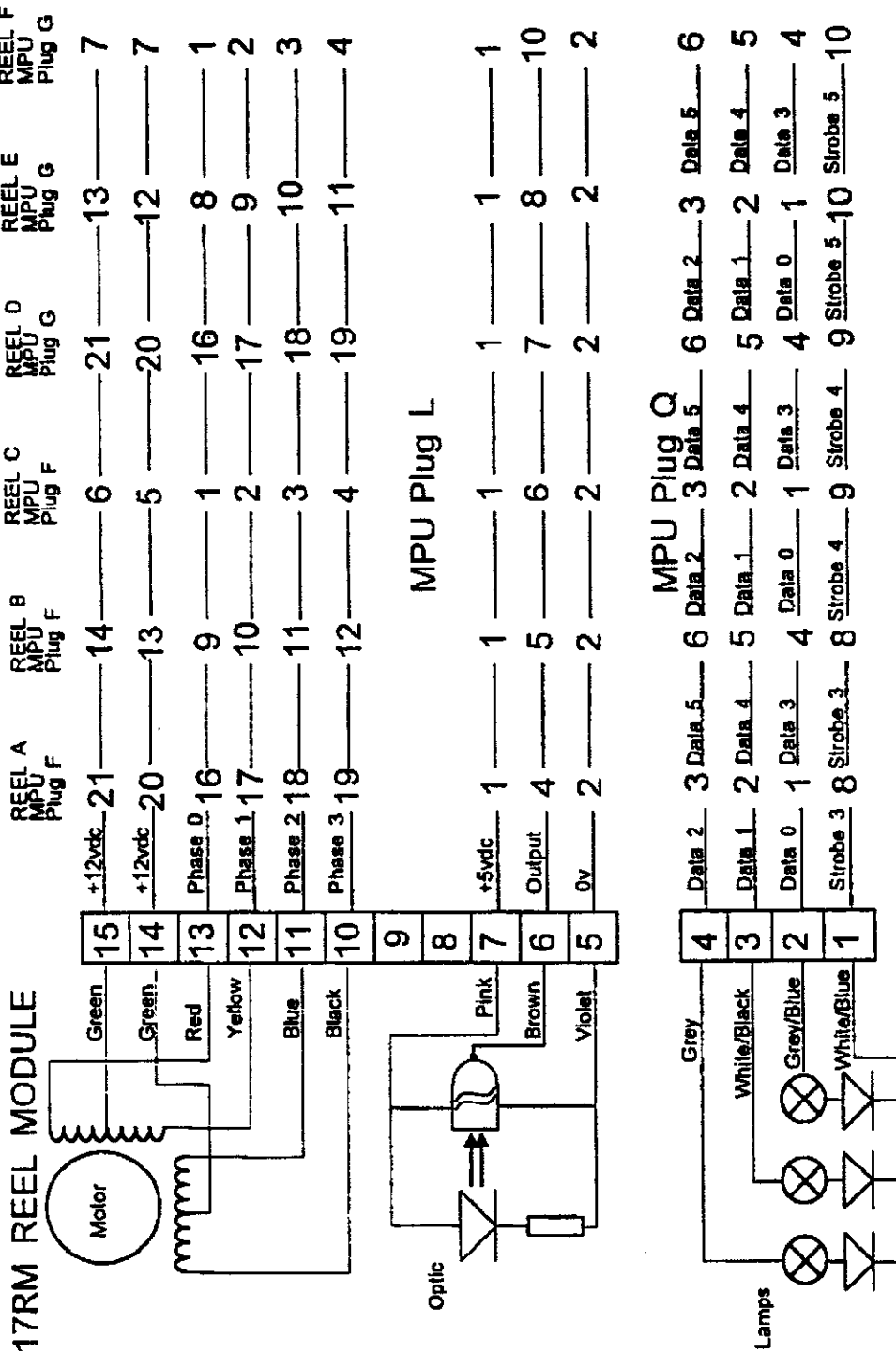
C435A ROUTING PLUG (view from wire side)

17	15	13	11	9	7	5	3	1
18	16	14	12	10	8	6	4	2

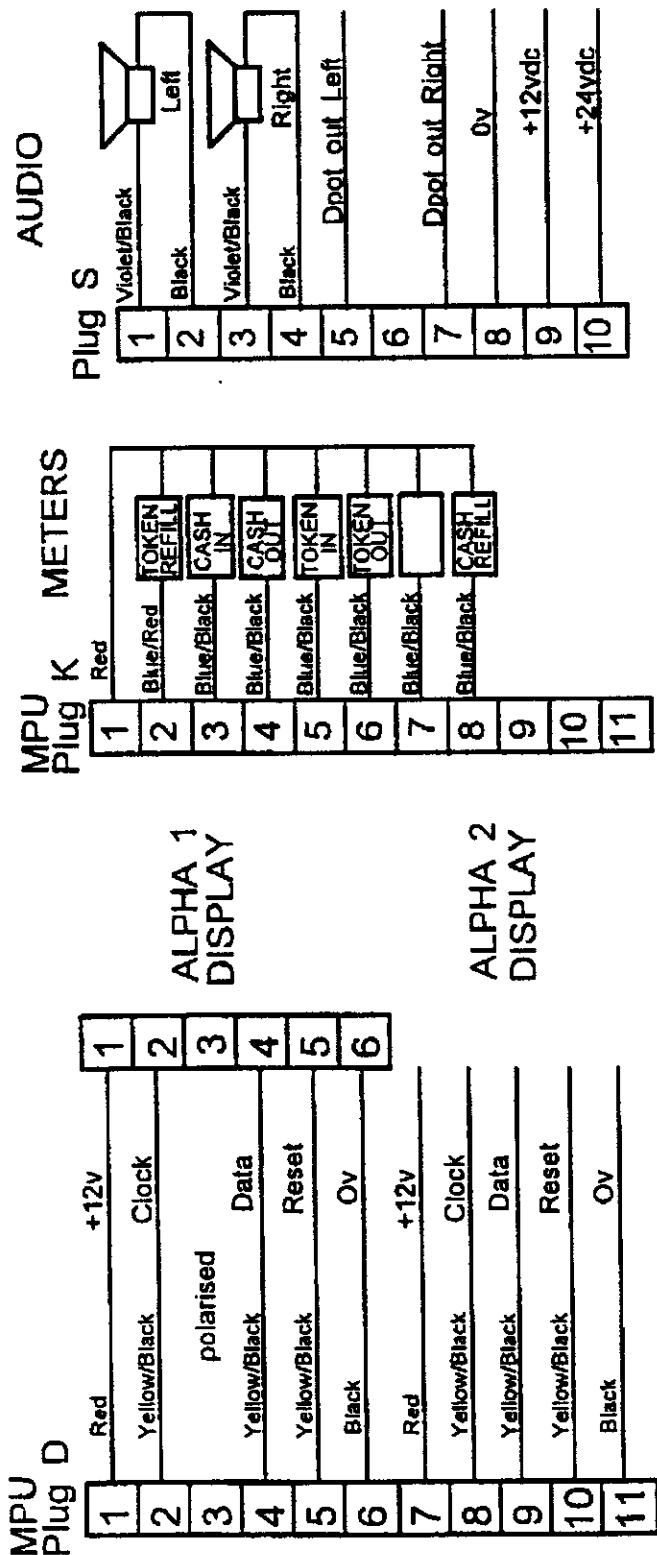
CONNECT AS FOLLOWS

7 to 18, 8 to 13 & 15

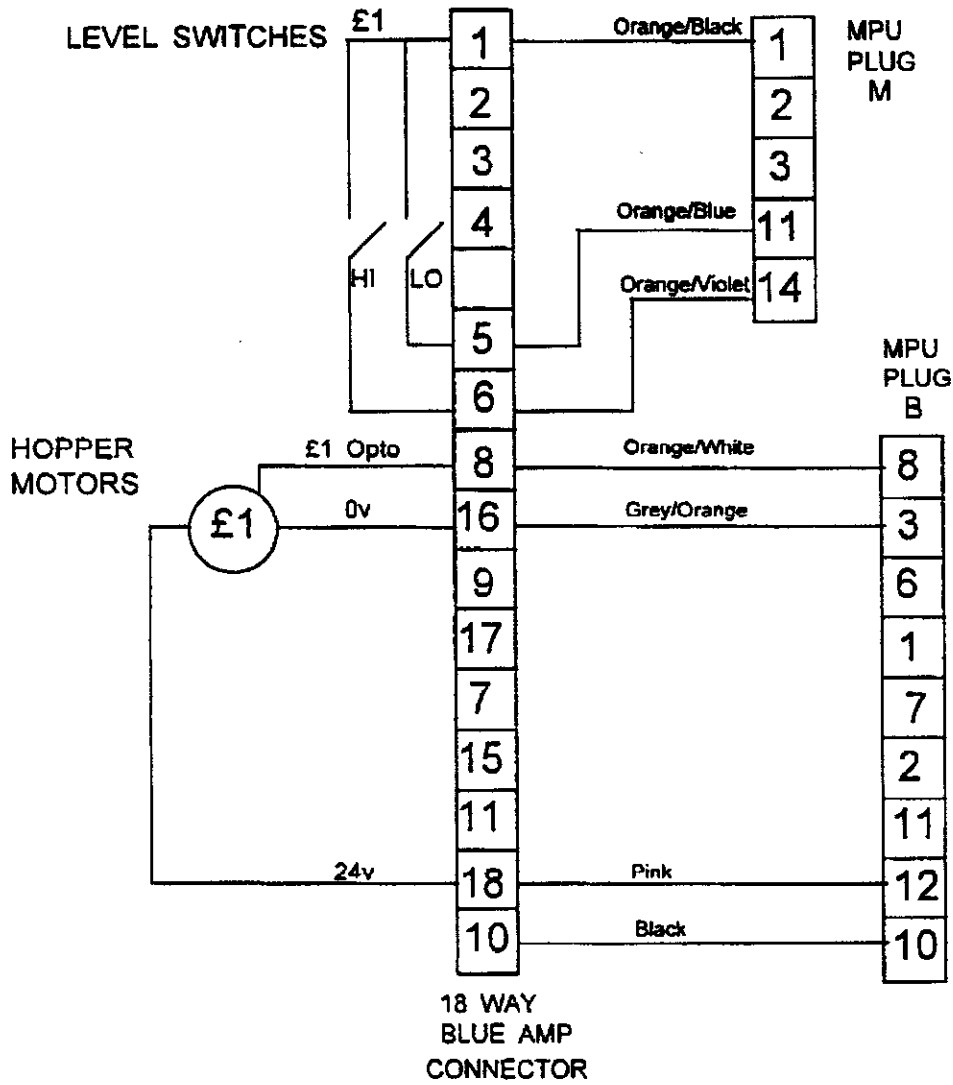
13. WIRING DIAGRAMS



13. WIRING DIAGRAMS

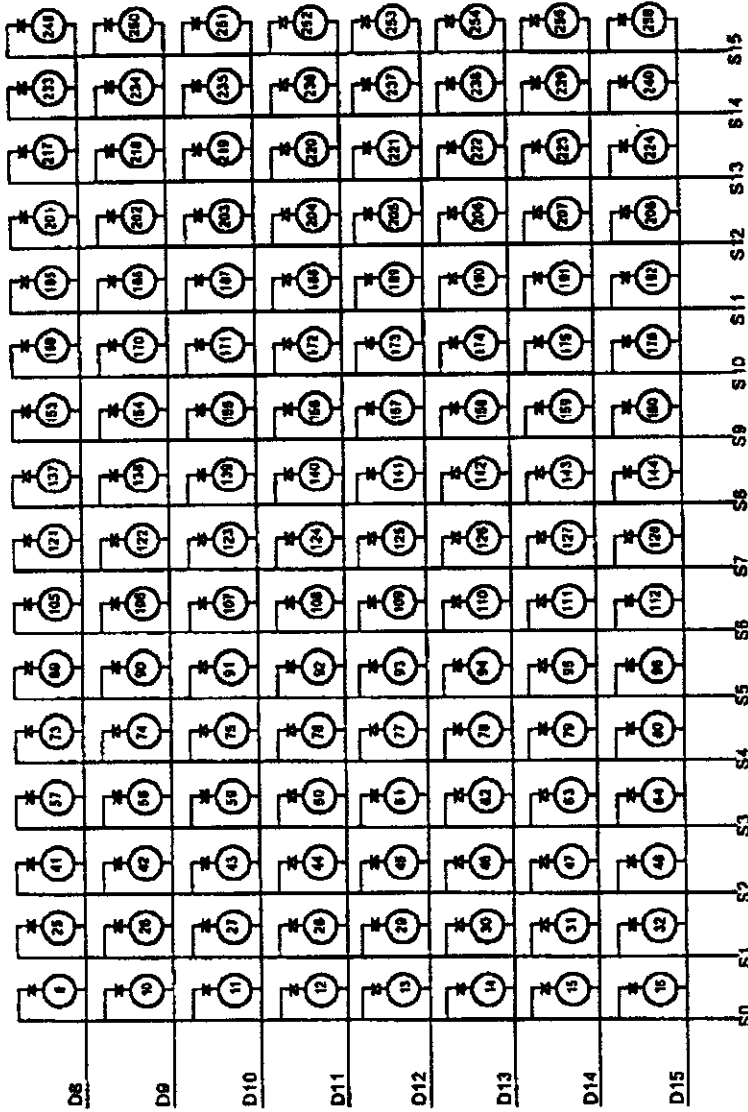


13. WIRING DIAGRAMS



HOPPER WIRING

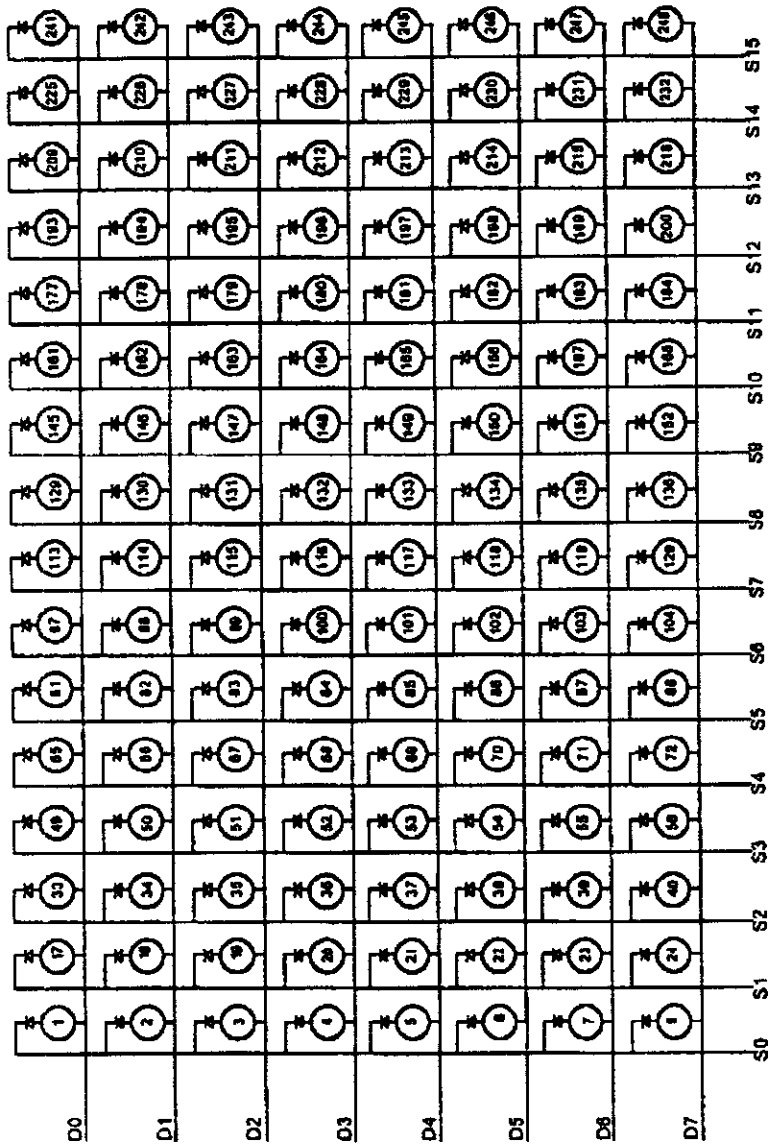
13. WIRING DIAGRAMS



PLUG P	
Pin	Connections
PIN 1	DATA 8
PIN 2	Polarised
PIN 3	DATA 9
PIN 4	DATA 10
PIN 5	DATA 11
PIN 6	DATA 12
PIN 7	DATA 13
PIN 8	DATA 14
PIN 9	DATA 15
PIN 10	STROBE 8
PIN 11	STROBE 9
PIN 12	STROBE 10
PIN 13	STROBE 11
PIN 14	STROBE 12
PIN 15	STROBE 13
PIN 16	STROBE 14
PIN 17	STROBE 15
PIN 18	N.C.

LAMP MATRIX PLUG P

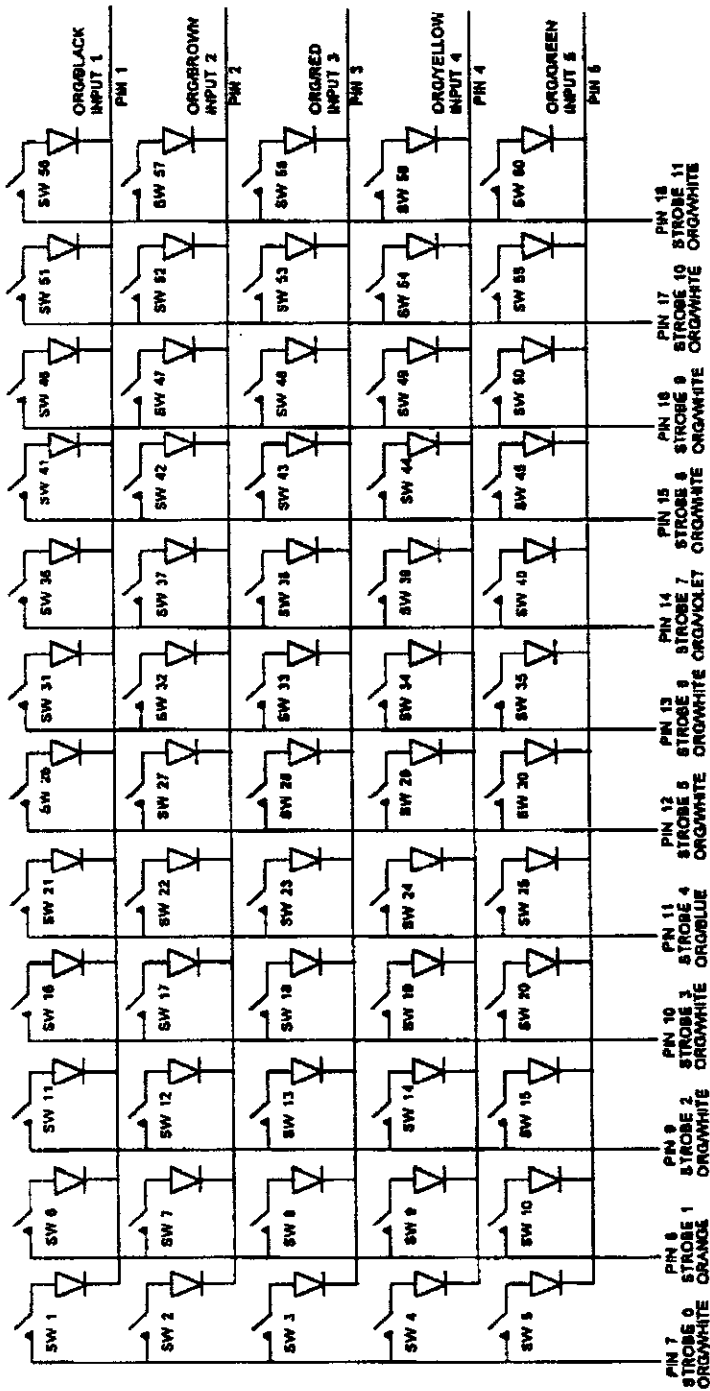
13. WIRING DIAGRAMS



LAMP MATRIX PLUG Q

PLUG Q	
Pin	Connections
PIN 1	DATA 0
PIN 2	DATA 1
PIN 3	DATA 2
PIN 4	DATA 3
PIN 5	DATA 4
PIN 6	DATA 5
PIN 7	DATA 6
PIN 8	DATA 7
PIN 9	STROBE 0
PIN 10	STROBE 1
PIN 11	STROBE 2
PIN 12	STROBE 3
PIN 13	STROBE 4
PIN 14	STROBE 5
PIN 15	Polarised
PIN 16	STROBE 6
PIN 17	STROBE 7

13. WIRING DIAGRAMS



SWITCH MATRIX
PLUG M