ROYAL JOKER/ROYAL 20 JOKER

DOOR SWITCH

A switch located in the bottom left-hand corner of the machine informs the control system that the door is open, disenabling the metering system and permitting various test modes to be entered.

TEST ROUTINE

A push button situated on the same panel as the above door switches enable a self-test routine to be entered as follows:

i. Reels spin and locate position 1 on each reel.

ii. Responds with an audio bleep to any switches being pressed or released. Each lamp is turned on in sequence from the bottom of the machine upwards. If a lamp goes short circuit an identifying code will be shown on the 7 segment display.

iii. 7 segment displays sequence through all the segments followed by all the digits.

If the test switch is held depressed then all lamps will flash.

If the start switch is pressed then the installed option link will be displayed on the 7 segment display.

Holding the Payout button depressed will cause the Hopper to payout 10 coins. These 10 coins must be re-inserted through the coin entry before the machine will allow any other action.

Closing the door will terminate the test routine.

TESTING WINS

When the door is opened the machine will display 20 credits to enable the game to be conveniently tested.

To "set up" and test winning combinations a "Win Test" box is required. This box should be plugged into the orange 7 way connector on the left-hand side of the machine. By depressing the three buttons on the box the reels may be stepped to the required combination and automatically "held". The win may then simply be tested by playing a game. The Feature can be induced by holding the start switch pressed throughout the reel spin.

ELECTRONIC METERS

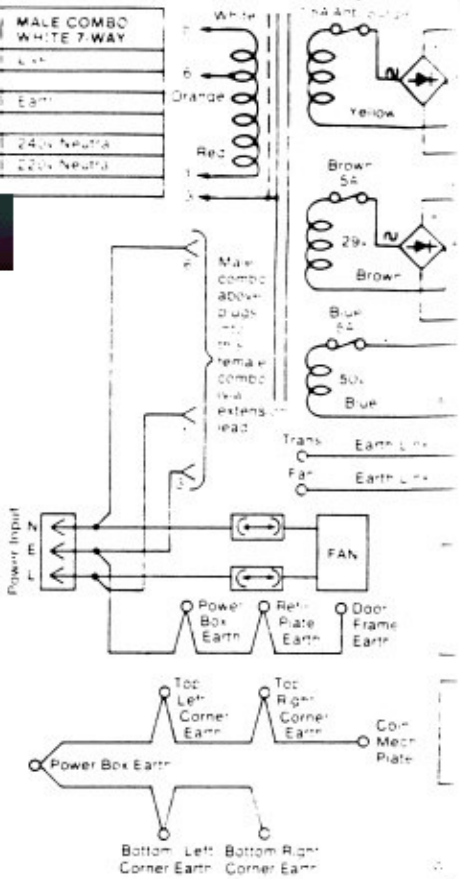
To display electronic metering system open door and operate key switch on left hand side of machine. The number of the meter being displayed is indicated on the Bonus Counter (1 to 10) and its contents on the credit and collect indicators. Their functions are as follows:

METER 1	Games Played
METER 2	Coins In (1Fr. units)
METER 3	Coins Out (1Fr. units)
METER 4	Barkeeper Refill (1Fr. units)
METER 5	Collector Refill (1Fr. units)
METER 6	Coins In Hopper (1Fr. units)
METER 7	Coins In Cash Box (1Fr. units)
METER 8	Number of Door Openings
METER 9	Percentage Payout
METER 10	Long Term Coins In
METER 11	Long Term Coins Out
METER 12	Long Term Coins In Box
METER 13	Long Term Percentage Payout

Each meter may be selected in sequence by depressing and releasing the Start button. Meters 1 to 9 may be cleared by holding the Credit Auszahlen button depressed for a few seconds until a continuous audio tone is heard.

BARKEEPER REFILL FACILITY

If whilst paying out the machine runs dry of coins the operation is halted and the "Call Manager" lamp is flashed. The machine may be refilled by operating the key switch on the left-hand side of the machine.



KEY TO CODES

Various interconnections shown in this diagram refer to coded pin numbers in the connectors used.
The table below shows which code corresponds to which connector:

WT = ORANGE 7 WAY	COMBC CONNECTORS NEAR DOOR HINGE
DX = BLACK 7 WAY	
LH = BLUE 15 WAY	
OP = WHITE 7 WAY COMBO (OPTIONS)	
CH = VIOLET 15 WAY COMBC	
CD = WHITE 4 WAY MOLEX (HOPPER)	
Bu = BLUE 15 WAY	COMBC CONNECTIONS TC CONTROL UNIT
O = ORANGE 15 WAY	
B = BLACK 15 WAY	
W = WHITE 15 WAY	

When the key is removed the machine will continue to payout until the credit is cleared.

COLLECTORS REFILL FACILITY

The machine may also be refilled by operating the key switch on the left-hand side of the machine when the door is open. Each coin inserted is indicated and recorded by the electronic metering (Meter 5.

The machine may also be refilled in 100Fr units by entering hopper adjustment facility. This is done by entering collectors refill holding the start button down and pressing the payout button.

Hopper Adjustment - Meter 6. the hopper balance is displayed. The hopper may be refilled in 100Fr amounts by placing coins directly into the hopper. Each press of the Start button will add 100Fr to the displayed hopper balance. Pressing the payout button will deduct 100Fr from the balance. Exit is by releasing refill or closing the door.

MEMORY

The machine has a non-volatile memory and is able to return the status of the credit and features when the supply is interrupted. Additionally, when the machine is opened for service or collection closing the door will result in the return of the original status. To clear the memory, open the machine and switch the supply off and on. When the door is then closed the machine will be cleared.

ALARMS

The control system continuously monitors various aspects of the machine. If an error is detected the machine is closed down and the audio alarm is sounded. The primary reason for this condition is indicated by the display of an error code number on the 7 segment displays as follows.

CODE		
0	Coin Alarm	Coin Switch held closed
1	Reel C	Found not to be functioning
2	Reel B	correctly through some fault
3	Reel A	or external influence
4	P1 Eprom	Error detected within PROMS
5	P2 Eprom	
6	P3 Eprom	
7	Characteriser	Error detected within characteriser
8	Clear Hopper	An error in the hopper counting system has been detected
9	Option Key	No option key inserted
10	Locked Alarm	Coin sensed which has been locked out

OPTION SWITCHES

Switch Bank 1

		OFF	ON	
1	Max Hopper Capacity	700	-	ALL SWITCHES OFF = 60
2	Max Hopper Capacity	800	-	
3	Max Hopper Capacity	900	-	
4	Max Hopper Capacity	1000	-	
5	Max Hopper Capacity	1100	-	
6	Max Hopper Capacity	1200	-	
7	Max Hopper Capacity	1300	-	
8	Max Hopper Capacity	1400	-	

Switch Bank 2

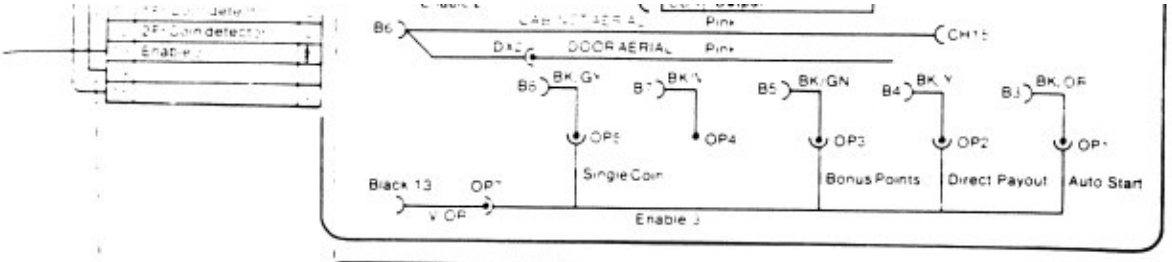
		OFF	ON
1	Not used	-	-
2	Not used	-	-
3	Power up alarm	No	Yes
4	Out of credit display	Yes	No
5	Slow out of credit display	No	Yes
6	Not used	-	-
7	Not used	-	-
8	Not used	-	-

OPTION LINKS (ROYAL 20 JOKER ONLY)

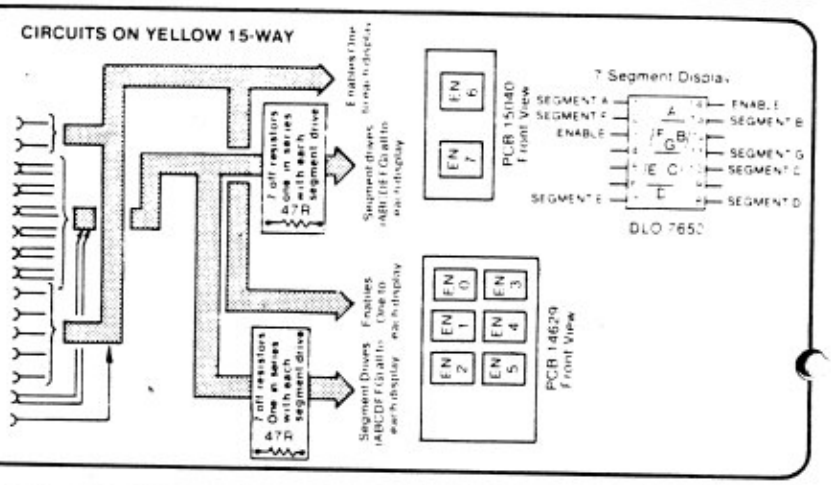
The white 7 way option select plug inside the machine is used to select various options as follows.

White 7 way pin no	Function
1	Auto start
2	Direct payout
3	Always present
4	Change
5	Single coin entry
7	Common

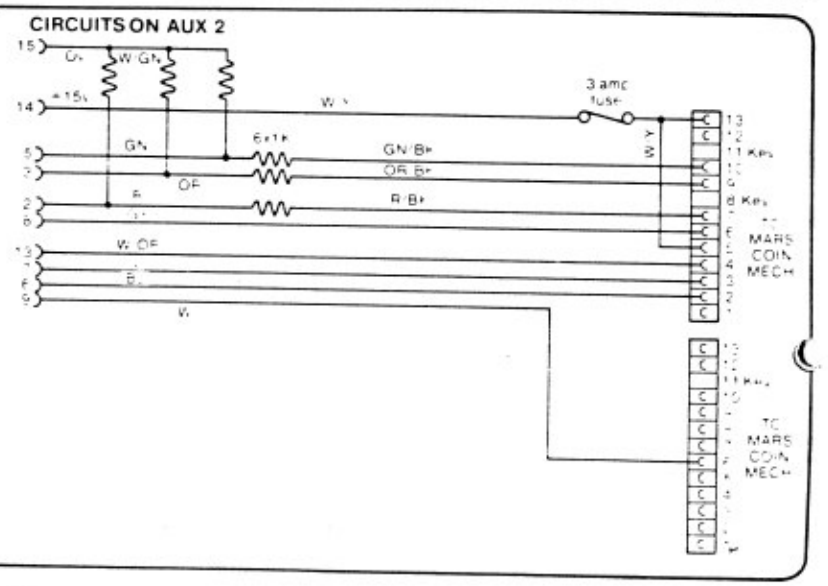
Single coin entry when door is open allows multiple enter coins being alternately diverted to cash box and hopper.



Pin	MALE COMBO YELLOW 15-WAY
1	EN5
2	EN6
3	SEG A
4	SEG B
5	SEG C
6	SEG D
7	SEG G
8	SEG E
9	EN7
10	EN1
11	EN0
12	EN2
13	EN4
14	SEG F
15	EN3

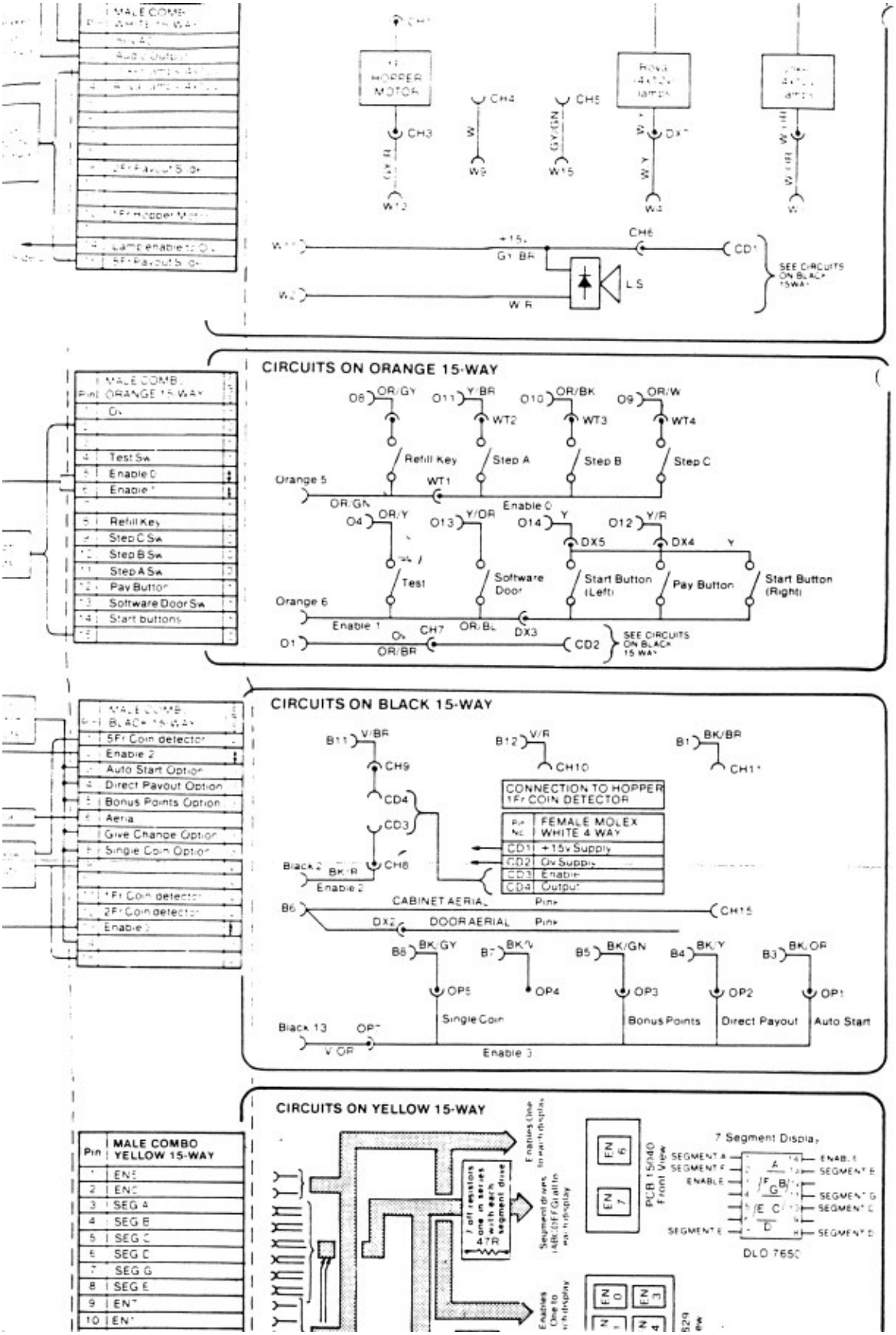


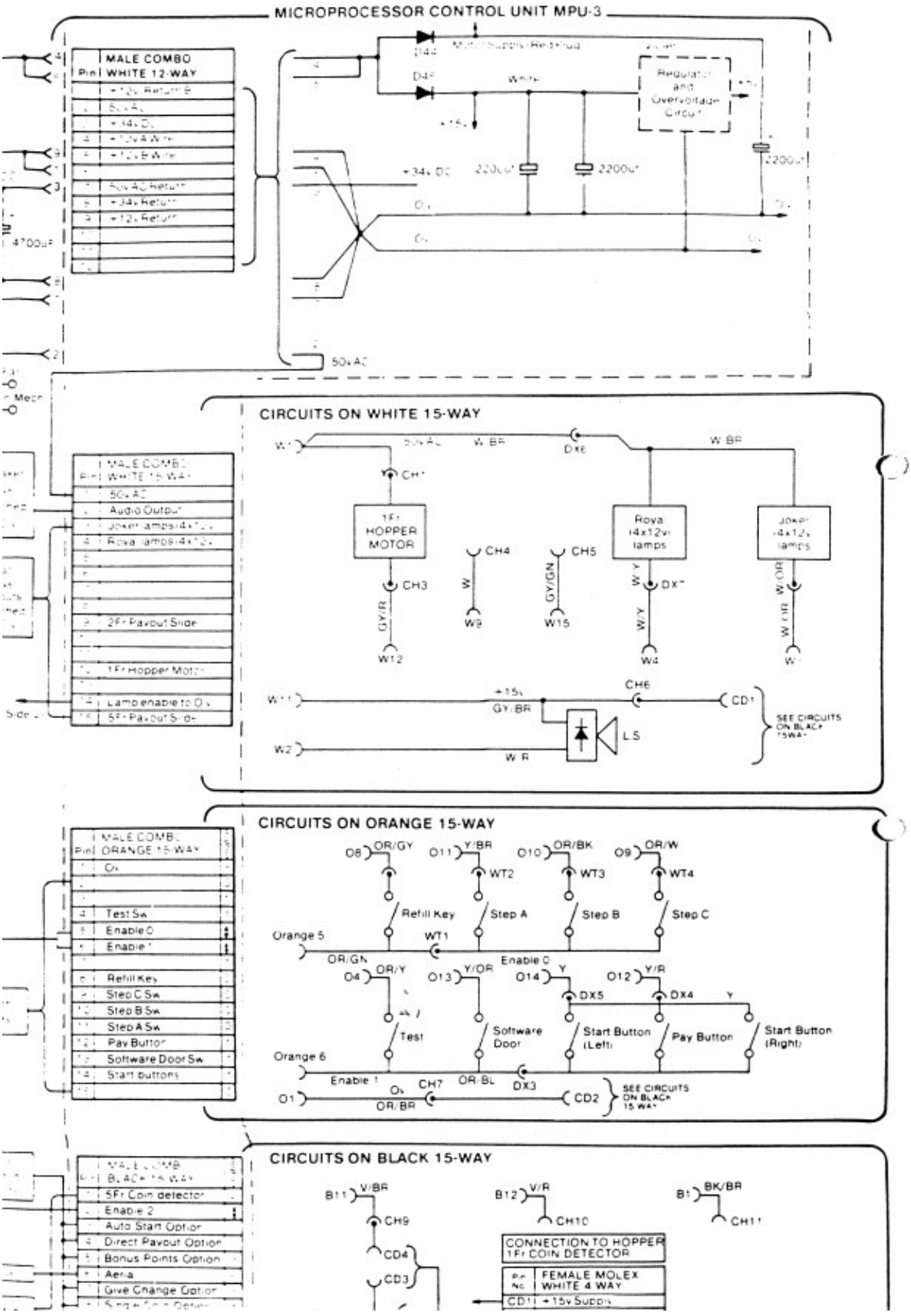
Pin	AUX 2 MALE MOLEX BLACK 15-WAY
1	
2	5Fr Coin
3	2FR Coin
4	
5	1Fr Coin
6	1Fr Enable
7	2Fr Enable
8	5Fr Enable
9	1Fr Divert Output
10	Key Way
11	
12	
13	0v (Power Zero)
14	+15v
15	0v (Logic Zero)



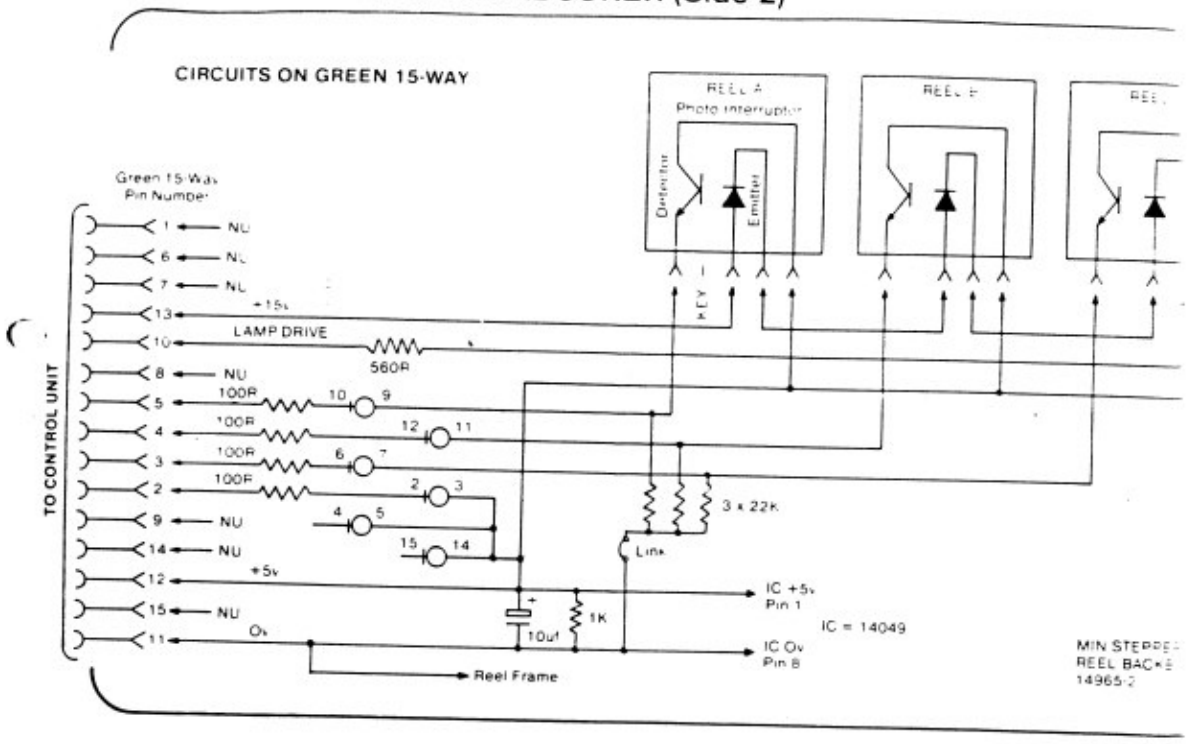
WIRE COLOUR CODES

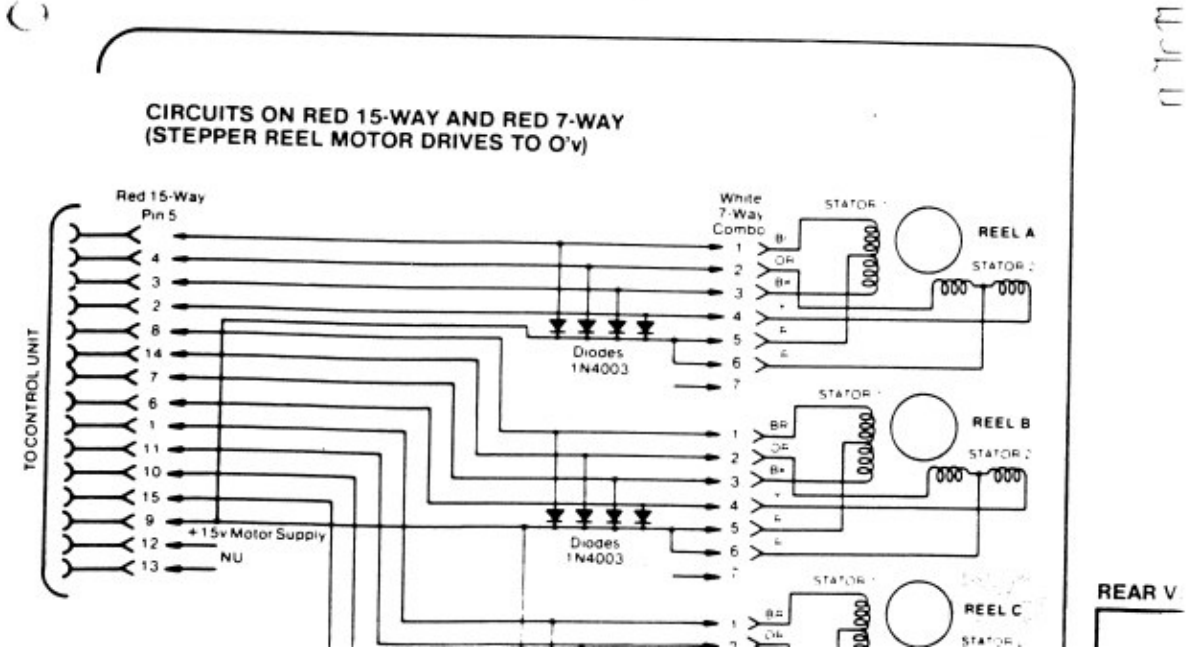
WIRING DIAGRAM OF ROYAL JOKER (Side 1)

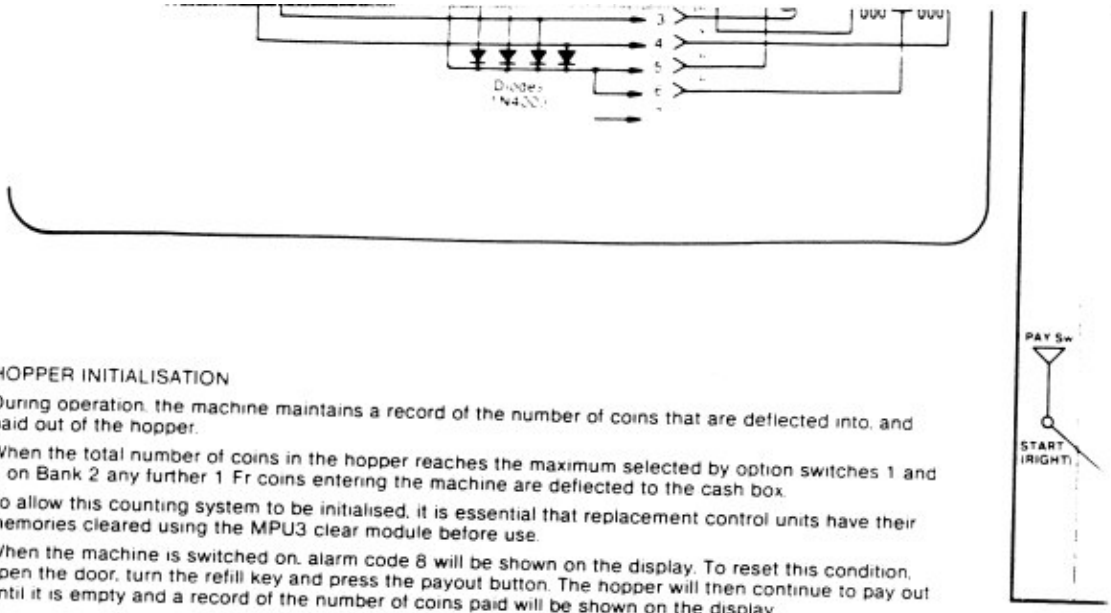

MALE COMBO
Pin ORANGE 15-WAY
Test Sw
Enable 0
Enable 1
Refill Key
Step C Sw
Step B Sw
Step A Sw
Pay Button
Software Door Sw
Start buttons
CIRCUITS ON ORANGE 15-WAY
O8 OR/GY
O11 Y/BR
O10 OR/BK
O9 OR/W
WT2
WT3
WT4
Refill Key
Step A
Step B
Step C
Orange 5
WT1
OR/GN
Enable 0
O4 OR/Y
O13 Y/OR
O14 Y
O12 Y/R
DX5
DX4
Test
Software Door
Start Button (Left)
Pay Button
Start Button (Right)
Orange 6
Enable 1
O1
CH7
OR/BL
DX3
CD2
OR/BR
SEE CIRCUITS ON BLACK 15 WAY
MALE COMBO
Pin BLACK 15-WAY
5Fr Coin detector
Enable 2
Auto Start Option
Direct Payout Option
Bonus Points Option
Aeria
Give Change Option
Single Coin Option
1Fr Coin detector
2Fr Coin detector
Enable 3
CIRCUITS ON BLACK 15-WAY
B11 V/BR
B12 V/R
B1 BK/BR
CH9
CH10
CH11
CD4
CD3
CONNECTION TO HOPPER 1Fr COIN DETECTOR
FEMALE MOLEX WHITE 4 WAY
CD1 +15v Supply
CD2 0v Supply
CD3 Enable
CD4 Output
Black 2
BK/R
CH8
Enable 2
B6
CABINET AERIAL
Pink
CH15
DX2
DOOR AERIAL
Pink
B8 BK/GY
B7 BK/V
B5 BK/GN
B4 BK/Y
B3 BK/OR
OP5
OP4
OP3
OP2
OP1
Single Coin
Bonus Points
Direct Payout
Auto Start
Black 13
OP7
V/OR
Enable 3
CIRCUITS ON YELLOW 15-WAY
Pin MALE COMBO YELLOW 15-WAY
1 EN5
2 EN6
3 SEG A
4 SEG B
5 SEG C
6 SEG D
7 SEG G
8 SEG E
9 EN7
10 EN4
7 off resistors one in series with each segment drive
47R
Segment drives. Enables One to nine displays
Enables One to nine displays
EN 6
EN 7
EN 0
EN 3
PCB 15040 Front View
7 Segment Display
SEGMENT A
SEGMENT F
ENABLE
SEGMENT E
ENABLE
SEGMENT G
SEGMENT C
SEGMENT D
DLO 7650


MICROPROCESSOR CONTROL UNIT MPU-3
MALE COMBO
WHITE 12-WAY
Regulator and Overvoltage Circuit
+34v DC
50v AC
CIRCUITS ON WHITE 15-WAY
1Fr HOPPER MOTOR
Rova 14x12v lamps
Joker 14x12v lamps
+15v
LS
SEE CIRCUITS ON BLACK 15WAY
CIRCUITS ON ORANGE 15-WAY
MALE COMBO
ORANGE 15-WAY
Refill Key
Step A
Step B
Step C
Test
Software Door
Start Button (Left)
Pay Button
Start Button (Right)
Orange 5
Orange 6
Enable 0
Enable 1
SEE CIRCUITS ON BLACK 15 WAY
CIRCUITS ON BLACK 15-WAY
5Fr Coin detector
Enable 2
Auto Start Option
Direct Payout Option
Bonus Points Option
Aerial
Give Change Option
CONNECTION TO HOPPER 1Fr COIN DETECTOR
FEMALE MOLEX WHITE 4 WAY
+15v Supply

WIRING DIAGRAM OF ROYAL JOKER (Side 2)







HOPPER INITIALISATION

During operation, the machine maintains a record of the number of coins that are deflected into, and paid out of the hopper.

When the total number of coins in the hopper reaches the maximum selected by option switches 1 and 2 on Bank 2 any further 1 Fr coins entering the machine are deflected to the cash box.

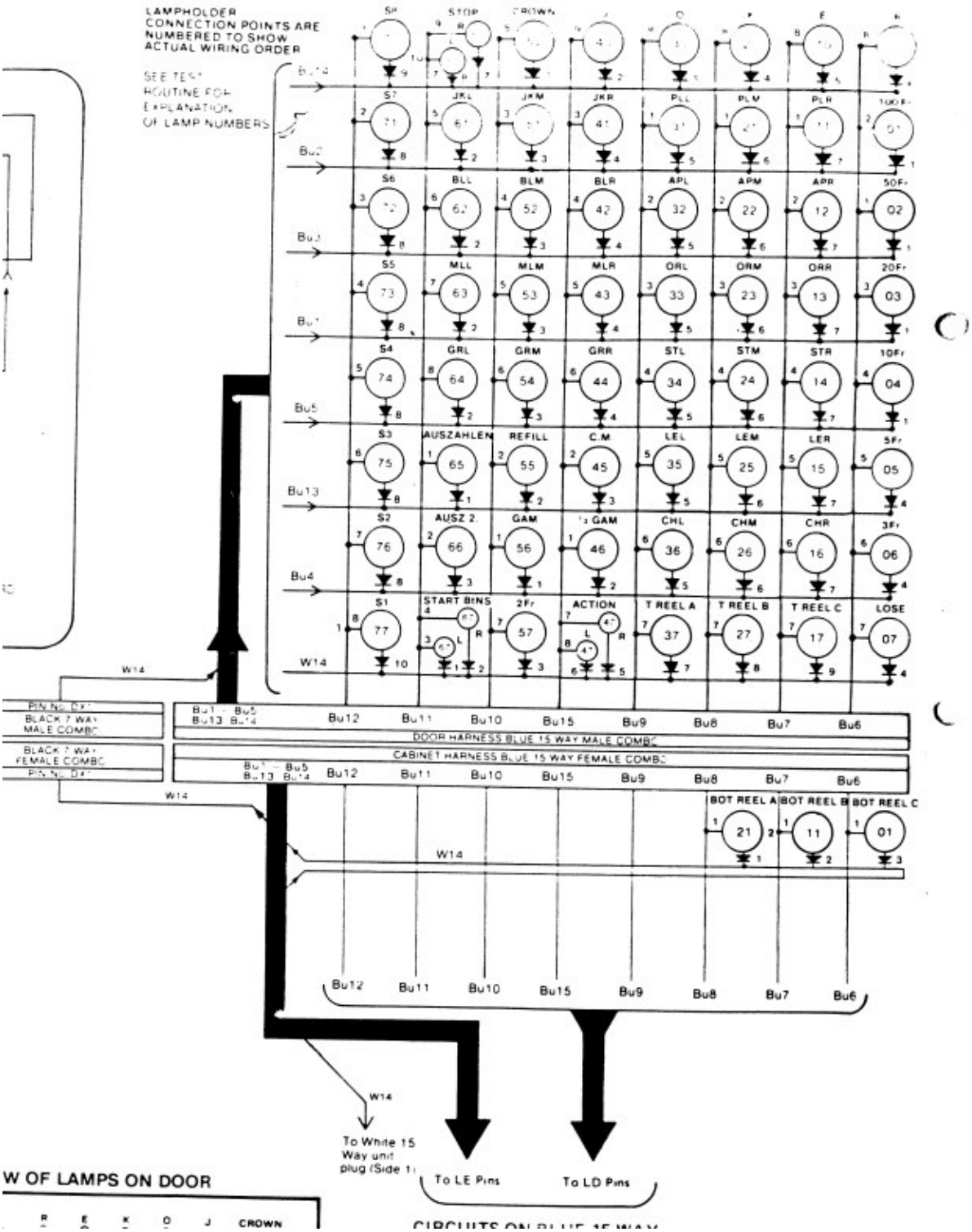
To allow this counting system to be initialised, it is essential that replacement control units have their memories cleared using the MPU3 clear module before use.

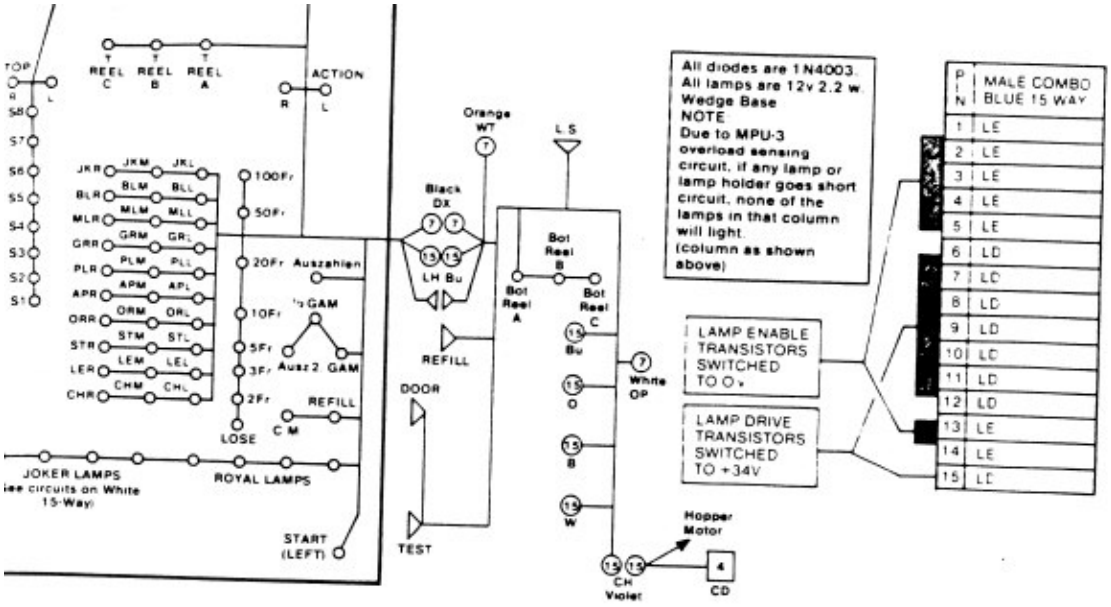
When the machine is switched on, alarm code 8 will be shown on the display. To reset this condition, open the door, turn the refill key and press the payout button. The hopper will then continue to pay out until it is empty and a record of the number of coins paid will be shown on the display.

The machine then automatically enters hopper adjustment.

If, during normal payout, an error with the counting system is detected, the machine will show alarm code 8 on the display when the door is next opened. If this occurs, then the hopper should be cleared as above.

N.B. On direct payout machines the payout button is replaced by a button on the inside of the machine for functions other than payout.


LAMPHOLDER CONNECTION POINTS ARE NUMBERED TO SHOW ACTUAL WIRING ORDER
SEE TEST ROUTINE FOR EXPLANATION OF LAMP NUMBERS
S7
JKL
JKM
JKR
PLL
PLM
PLR
100Fr
S6
BLL
BLM
BLR
APL
APM
APR
50Fr
S5
MLL
MLM
MLR
ORL
ORM
ORR
20Fr
S4
GRL
GRM
GRR
STL
STM
STR
10Fr
S3
AUSZAHLEN
REFILL
C.M
LEL
LEM
LER
5Fr
S2
AUSZ 2.
GAM
GAM
CHL
CHM
CHR
3Fr
S1
START BtNS
2Fr
ACTION
T REEL A
T REEL B
T REEL C
LOSE
BOT REEL A
BOT REEL B
BOT REEL C
W14
Bu1 - Bu5 Bu13 Bu14
Bu12
Bu11
Bu10
Bu15
Bu9
Bu8
Bu7
Bu6
DOOR HARNESS BLUE 15 WAY MALE COMBC
CABINET HARNESS BLUE 15 WAY FEMALE COMBC
BLACK 7 WAY MALE COMBC
BLACK 7 WAY FEMALE COMBC
To White 15 Way unit plug (Side 1
To LE Pins
To LD Pins
W OF LAMPS ON DOOR
CROWN


TOP
S8
S7
S6
S5
S4
S3
S2
S1
REEL C
REEL B
REEL A
ACTION
R
L
JKR
JKM
JKL
BLR
BLM
BLL
MLR
MLM
MLL
GRR
GRM
GRL
PLR
PLM
PLL
APR
APM
APL
ORR
ORM
ORL
STR
STM
STL
LER
LEM
LEL
CHR
CHM
CHL
100Fr
50Fr
20Fr
10Fr
5Fr
3Fr
2Fr
LOSE
Auszahlen
½ GAM
Ausz 2 GAM
REFILL
C M
JOKER LAMPS
(see circuits on White 15-Way)
ROYAL LAMPS
START (LEFT)
Orange WT
7
Black DX
LH Bu
REFILL
DOOR
TEST
L S
Bot Reel A
Bot Reel B
Bot Reel C
15 Bu
15 O
15 R
15 W
7 White OP
15 CH Violet
Hopper Motor
4
CD
All diodes are 1N4003.
All lamps are 12v 2.2 w Wedge Base
NOTE
Due to MPU-3 overload sensing circuit, if any lamp or lamp holder goes short circuit, none of the lamps in that column will light.
(column as shown above)
LAMP ENABLE TRANSISTORS SWITCHED TO O.
LAMP DRIVE TRANSISTORS SWITCHED TO +34V
PIN
MALE COMBO BLUE 15 WAY
1 LE
2 LE
3 LE
4 LE
5 LE
6 LD
7 LD
8 LD
9 LD
10 LD
11 LD
12 LD
13 LE
14 LE
15 LD