

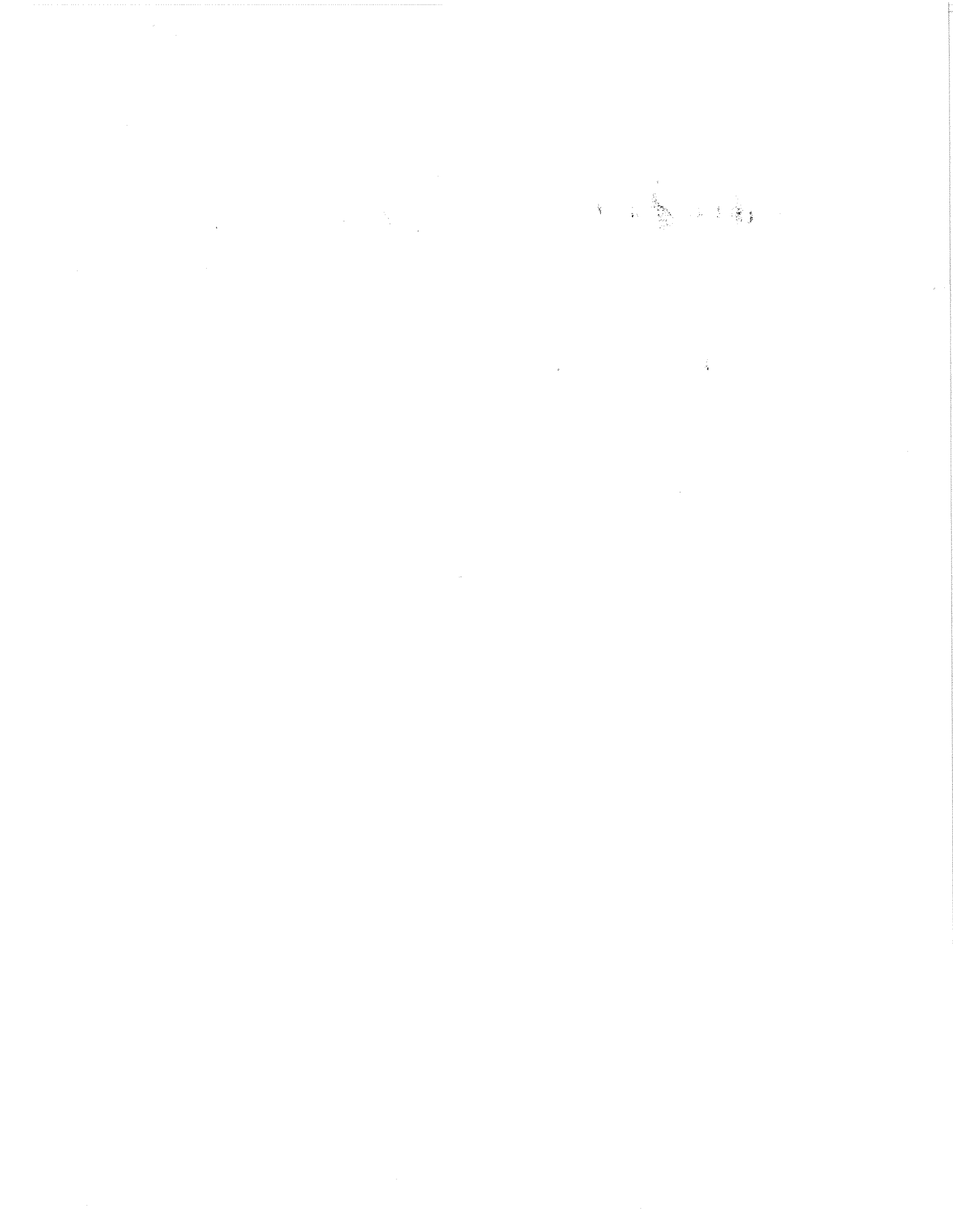
Barney's Fun2Learn Express

OPERATORS MANUAL



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Operators Manual

INDEX

Page	Description
1.	Initial Inspection / Initial Operation / Prior to siting the ride
2.	Siting the ride / Copyright & Trademark notices
3.	Normal Ride Operation - Coin Mechs. / Coin Meter / Warning Stickers
4.	Inspections - Mechanical / Electrical
5.	Inspections continued
6.	How to adjust the standard operation of the ride
7.	Care of - Fibreglass / Mechanical Parts / Electrical Parts
8.	Fault Finding
9.	Removal of - Ride Toy / Character
10.	Spare Part Ordering / Technical Specification
11.	Wiring Colour Codes
12.	Main Harness Wiring
13.	Spare Parts List - Mechanical
14.	Spare Parts List - Electrical
15.	Hardware List
16.	(Infill page)
Appendix A	AS1 Base Unit
Appendix B	Coin Controls - C220 Mech. Specification
Appendix C	Coin Controls - S1 Mech. Specification
Appendix D	Main Processor Specification
Appendix E	Diagram
Appendix F	Log Book Example / Notes page (for your assistance)

INITIAL INSPECTION

Upon arrival of the machine it is important that the following items are checked:

- a. Damage to external packing.
- b. Physical damage to the ride.
- c. Correct operators' manual and documentation.
- d. Serial number.
- e. Correct mains' voltage rating.
- f. Coin mechanism currency.

Any damage or discrepancies should be reported to your supplier immediately.

INITIAL OPERATION

- a. Read the operators manual fully prior to operating the ride.
- b. Prior to connecting the machine to the mains supply, ensure that it corresponds to the supply rating stated on the serial number plate at the rear of the ride and that the mains supply plug is of the correct type.
- c. Connect the ride to the mains supply and switch on the power.
- d. Upon connection of supply, the ride lights will flash and the message " the self test is complete" should be heard. Insert the correct coinage for the operation of the ride after which the ride lights will stop flashing, the start button will commence to flash and the message "please press the start button" will be heard.
- e. Press the start button and the ride will begin to operate, all lights will flash in sequence and the background music begin to play. Press each of the feature buttons in turn and the appropriate interaction will take place (NB each feature must have completed its cycle before another feature can be activated.)
- f. Whilst the ride is in operation ensure that there are no unusual noises or vibrations and that the ride operates correctly. When the ride has operated for the preset ride duration time approximately 67 seconds), the ride will then stop, the lights will stop flashing and the farewell voice message will be heard. The ride lights will then return to flashing in sequence and the ride is once again ready to accept coins.

PRIOR TO SITING THE RIDE.

Before siting the ride, make a note of the machine serial number. This is situated on the silver manufacturers plate at the rear of the machine. The serial number gives access to essential manufacturing details of your ride and is vital for tracing parts, manufacturing detail and spares back up.

SITING THE RIDE.

The following conditions must be observed when siting the machine:-

- a. The machine must be placed on level ground which is firm and free from any holes etc. The surface that the machine stands on should be non-slip.
- b. The ride is designed for protected locations. The ride should not be sited in any area where it would be subjected to water splash. The ride may be sited outdoors if under a canopy which will protect it from rain.
- c. The machine should be connected to a Residual Current Device (RCD).
- d. The machine should be sited clear from any other obstruction. The manufacturer recommends that the machine is sited a minimum of 1.8 metres from any other obstruction or item of equipment.
- e. The ride should be sited in as close a proximity as possible to the power source and the cable must be safely secured and protected to eliminate any risk of damage or tripping.
- f. The ride should not be sited in an area where it will cause an obstruction.
- g. Always ensure that the mains plug is accessible so that the mains' power may be isolated in an emergency.

COPYRIGHT & TRADEMARK NOTICES

- a. All drawings and designs of the products prepared by us remain our property. The licensed product must not be reproduced or altered in any manner or under any circumstances without our prior written approval.
- b. It is a licensing requirement that the Copyright notice and serial number shall remain permanently affixed to the ride.
- c. It is a licensing requirement that no show exhibiting or trade advertising of this product will be granted without prior written confirmation and approval from the manufacturer.

We reserve the right to alter any of the specifications and/or materials used in the manufacture of this equipment or any alteration in this manual without prior notification and at our discretion.

NORMAL RIDE OPERATION

- * Ensure that the volume knob is set to an appropriate level.
- * Connect ride to mains supply:- Lights should flash and a message should be heard which will state "the self test is complete".

The ride can be fitted with either a mechanical "roll down" coin mechanism or an electronic multi- mechanism. Both types incorporate a separate start button which will flash when the correct coinage has been inserted.

MECHANICAL COIN MECHANISM

The mechanical coin mechanism will accept only one specified type of coin. The electronic timer unit will be pre-programmed to accept a set number of the specified coin to give one ride.

When the correct number of coins have been accepted by the coin mechanism, the start button will begin to flash as a prompt and the message "please press the start button" will be heard. When the start button is pressed, the ride will commence to operate.

Upon completion of the ride cycle (approx. 67 seconds) the ride will stop and the farewell voice message will be heard, after which, the ride is then ready to receive another rider.

ELECTRONIC COIN MECHANISM

Electronic coin mechanisms or multi-mechs are pre-programmed to accept various coinage denominations which will be typical of the local coinage used. The electronic timer unit is pre-programmed to give single or multiples of rides which will correspond to the amount of coinage accepted by the mechanism. The programming also allows for ride discounting (for example: UK Spec 1 ride 50p, 3 rides £1.00 / US Spec 1 ride 50c, 3 rides \$1.00). The coin mechanism will accept recognised coinage until the programmed price is reached.

When a coin is inserted, the lights will freeze until the correct amount of coins for at least one ride have been accepted. The start button will then begin to flash as a prompt and the message "please press the start button" will be heard. When the start button is pressed the ride will commence to operate.

Upon completion of the ride cycle (approx 67 seconds) the ride will stop and the farewell voice message will be heard. If enough coins have been inserted for multiple rides, the start button will again begin to flash and the start message will be heard.

If too little coinage has been inserted to give one ride, the lights will remain frozen until the correct amount of coins have been accepted. If no more coins are inserted, the lights will remain frozen for approximately 2 minutes, after which, the credits will be cleared and the lights will begin to sequence as normal.

ELECTRO-MECHANICAL COIN METER

The ride is fitted with a coin meter which records the number of coins or units accepted by the coin mechanism. The meter is located inside the coin mechanism door.

WARNING STICKERS

Fun 2 Learns rides are provided with comprehensive warning stickers and instruction signage which are applied to the ride at the time of sale. Operators should ensure:-

- * These stickers and signage remain in place.
- * Stickers and signage remain clearly readable and undamaged.
- * Stickers and signage are translated into any commonly used local language and then applied to the machine.

INSPECTIONS

Every time the ride cash box is emptied, check the following:-

- * The mains' cable and mains' plug are in good condition ensuring that the fuse is at the correct rating.
- * All warning stickers and instruction signs are in a clean undamaged condition.
- * That no sharp edges have been caused by broken lenses or damaged fibreglass.
- * Run the machine and check operation is correct.
- * There is no build up of rubbish at the base of the machine.
- * No items on the machine have come loose or are damaged
- * There are no unusual noises or vibrations.

EVERY YEAR CARRY OUT THE FOLLOWING INSPECTION PROCEDURE.

MECHANICAL EXAMINATION

- a. Remove inspection covers (where fitted) or sufficient casing so as to follow a thorough examination of moving parts and any part of the structure which could be conceivably be regarded as vital to the safe running of the ride. (Whenever fibreglass covers are disassembled, workwear gloves should be worn to protect from internal fibreglass raw edges).
- b. Check that all nuts and bolts are tight and fitted with shake proof or spring washers (where appropriate).
- c. Check that all bearings are in good condition and lubricated where necessary.
- d. Check that the couplings, belts and pulleys are in good condition.
- e. Check gearbox and drive train for any signs of damage or oil leaks
- f. Inspect ride base structure for any signs of damage or fatigue.
- g. Carry out any repairs that are deemed necessary.
- h. When confident that all reasonable mechanical checks have been carried out, check for damage or weakness in casings and in the body of the ride.

ELECTRICAL EXAMINATION

- a. Check mains input lead for damage and that correct polarity has been observed. All covers should be removed and terminals checked for tightness and integrity. Any abrasions to sheath or insulation should be noted and cables renewed as required.
- b. Check that any fuses fitted are correct rating and type.
- c. Any metal parts of the machine such as the base, stem or metal parts attached thereto, which could possibly come into contact with, or have any connection to components which are supplied by mains voltage, should be securely earthed. All earth connections should be checked and the earth path to the furthest extreme of the machine manually checked.
- d. Check to ensure good connections and freedom from damp and dirt on connectors and cable runs.
- e. All components must be checked to ensure correct functioning and that no cracks or breakage's have been sustained. In the case of lamps, that the correct wattage is fitted.
- f. Instrument tests should be carried out to verify the comprehensive manual inspection. The test carried out should be:-

EARTH CONTINUITY (bonding) to the requirements of IEE Regulations and Electricity at Work Regulations (that is in the case of children's coin-operated rides 0.3 ohms max. at a test current of 25 amps

INSULATION PROTECTION to the requirements of IEE Regulations and Electricity at Work Regulations (that is 2 magohm at a test voltage of 500-600 volts).

As a whole electrical test envisaged includes a comprehensive visual examination, the instrument test can be regarded as absolute. Reference to the machine history is therefore not necessary.

A portable appliance tester, therefore giving absolute reading only, i.e.; pass or fail, would be satisfactory for such tests. Examples of such instruments are the Seaward PAT 500 or the Metrohom PAT.

If access is restricted when manually checking the earth path of a particular type of ride and manual inspections are not possible, a more elaborate instrument giving full analogue or digital readings may be desirable.

The reason for this would be to establish a history for the machine which would indicate any deterioration or degradation of the machine's integrity from one position to another. Examples of test equipment which would perform this function are the Seaward PAT 100s, PAT 1000x, MEGGAR PAT 2, MEGGAR PAT 3, MEGGAR PAT 101 or METHOHM PAT with digital read out.

- g. Check low voltage to coin mechanism and other devices, e.g. feature buttons etc.
- h. Where rides are sited outdoors or in adverse situations, it is essential that an RCD is fitted. Where such a device is fitted, a check should be carried out for suitability and safe operation of such a device
- i. Ensure that all covers, panels and guards have been securely replaced.

TEST

- a. Finally, test the ride by applying a load slightly in excess of 51 kg (which is the minimum load for a child as laid down by Fairgrounds and Amusement Parks - Guidance on Safe Practice), insert the appropriate coinage and operate the ride. Observe the ride during operation and check for any unusual noises or vibrations.

NOTE

On most modern rides, low voltage (derived from a dual wound isolated transformer) is used on all components e.g. coin slot, feature buttons, lights etc. In such cases, bonding to earth of the metal parts associated with these components and other isolated metal parts, may not be necessary, or indeed, desirable. If in doubt, manufacturers advice should be sought.

This test can only afford general guidelines. The examiner must use discretion and always be aware that the ride safety is the paramount objective. If all checks are found to be correct, fill out and sign the appropriate form. If any defects are found, disconnect the ride and inform the operator or person responsible. Disconnection of the ride should include removal of the fuses or some other means of immobilising the ride prior to informing the operator or person responsible.

Such tests should be carried out at least every fourteen (14) months, but it must be realised that the safety of the ride is essential at all times and failure to keep the ride in good condition, in accordance with the above guidelines and the Fairgrounds and Amusement Parks - Guidance on Safe Practice, could render the operator liable to prosecution under the Health and Safety at Work Act 1974.

All of the above inspections should be carried out by a competent person. All electrical work should be carried out by a qualified electrician.

Fun 2 Learn Children's Rides recommend that a ride maintenance Log Book is kept as a record of all maintenance and servicing work carried out on the machine - see example in Appendix F.

HOW TO ADJUST THE STANDARD OPERATION OF THE RIDE.

Volume Control (All Models)

The volume control knob is fitted to the timer which is situated behind the secured door at the rear of the ride. Opening this door gives access to live mains voltage. Remove power supply, open door, adjust volume, close door and then check that volume level is acceptable.

Ride Time (Integrated Technology Timer)

The ride comes set to a standard ride time of approximately sixty-seven (67) seconds.

Coins per Ride (Integrated Technology Timer)

The cost per ride is set at manufacture, however, these settings can be adjusted as follows:-

- a. Replacing the 8 pin IC4 chip with a new one programmed to the desired credit setting.
- b. By using the micromate programmer to re-programme the chip IC4 to the desired credit setting.

The micromate programmer is an option available at an extra cost.

WARNING

The micromate programmer gives access to vital information on the timers memory. The programmer should only be used by competent persons after consultation with the manufacturers.

CARE OF FIBREGLASS

Fun 2 Learns Children's Rides (not the characters) are manufactured in self coloured GRP. This material can be maintained to a high standard using the following simple instructions.

- a. **Day to Day Cleaning** - Wipe down with hot soapy water and polish with a silicone based polish. Ensure the power supply is disconnected during this process and that water does not come into contact with any electrical items.
- b. **Scratches** - Can be removed using a cutting type of polish. Fun 2 Learn recommend Farecla P315 and P615 cutting compounds for this process. This material should be used in conjunction with the manufacturers instructions. This material is available through Fun 2 Learn or any good automotive supplier.
- c. **Full Refurbishment** - Deep scratches can be removed by using a wet/dry finishing paper. In most cases a 1000 grit should be used. Very deep scratches can be removed with 600 paper. In both cases, use with plenty of water. After rubbing and drying, the fibreglass will look very dull. The gloss surface can be recovered by polishing using Farecla with water and preferably a high speed buffing wheel (approximately 1800 rpm). Fun 2 Learn recommend Farecla G mops for high speed buffing.
- d. **Holes in Fibreglass** - Small holes in fibreglass caused by vandalism etc. can be filled using car body filler, available from any good automotive outlet. This should be rubbed down to a smooth finish using 600 then 1000 grit wet/dry finishing paper. When completed, these holes can be painted with a touch up paint (see paint Pantone reference sheet). If any fibreglass damage causes a weakening of the fibreglass structure, manufacturers advice should be sought prior to carrying out any repair work.
- e. **Care of Painted Parts** - The characters on the rides can be maintained by cleaning with a damp cloth. In the event of damage to the paintwork, this can be retouched by using Fun2Learn touch up paint. (available from the manufacturer, stating required colour). Never apply thinners to the painted surfaces.

CARE OF MECHANICAL PARTS

The mechanism used on all Fun 2 Learn rides is designed for low maintenance. Whenever the ride is stripped for refurbishment, check the following:-

- a. Condition and tension of 'V' belt
- b. Security and condition of pulleys
- c. Lubrication in bearings
- d. Security of nuts and bolts.
- e. Condition of metal structure.
- f. Free play or wear in moving parts.

CARE OF ELECTRICAL PARTS

- a. Check the condition of earth point.
- b. Check the mains cable for signs of wear every time the machine cash box is emptied (maximum of one (1) month).
- c. Check the fuse rating is correct and the mains plug is in good condition every time the machine cash box is emptied (maximum of one (1) month).
- d. Check the condition of the earth bond and earth leakage using a calibrated portable appliance tester every twelve (12) months.
- e. Carry out full electrical inspection every year (see pages 4 & 5)

FAULT FINDING

To be carried out by a competent person. Ensure volume switch is up for testing purposes.

Symptom

Check

No lights/no self test message:-

Mains voltage supply
Mains supply to timer.
Check timer power supply.

Coins do not accept:-

No voltage to coin mech

Coins accept but counter does not turn:-

Check ribbon cable from coin mech. to interface.
Check connections on interface and the interface circuit board.
Check cable that runs to the D connector on the timer unit.
Check timer.
Check counter connectors.

Counter turns when coins inserted but will not flash the start button when the credit reached. Ride will not start:-

Check timer and D plug connections.
Check connections on interface and wiring to the start button.
Faulty timer unit.

When start button is pressed sound operates but no motion occurs:-

Check for mains output to motor from timer when the ride is operating.
Check motor direct to mains.
Check pulley and 'V' belt on the mechanism.

Ride permanently operates:-

Replace relay in timer.
Check if motor is connected direct to supply.

REMOVAL OF THE RIDE TOY

- b. Disconnect the mains power from the ride.
- c. Remove the rear door.
- d. Disconnect the sound and lighting harness plugs from the timer unit.
- e. Disconnect the interface "D" plug from the timer unit.
- f. Remove the nuts and washers from the two locating studs in the rear of the ride.
- g. Open the coin mech door.
- h. Remove the nuts and washers from the two locating studs in the front of the ride.
- i. Gently lift the toy straight up and clear of the ride base assembly. Ensure that the wiring harness' are not snagged or trapped as the toy is raised. Carefully set the toy down onto a soft, non-abrasive surface.

REMOVAL OF THE RIDE CHARACTER

The character is secured by means of five (5) 13 mm head bolts which are located as follows:-

- 2 bolts under the seat
- 2 bolts under the characters left arm
- 1 bolt inside the rear of the dashboard into the sole of the characters foot.

When all five bolts have been removed, lift the character straight up until it is clear of the toy. Carefully place the character onto a soft, non-abrasive surface.

SPARE PART ORDERING

When ordering spare parts, please have available the following information:-

- a. The serial number of the machine.
- b. The part number required and the description.
- c. The supply voltage and coin settings.

TECHNICAL SPECIFICATION

Dimensions (approximate)

Length	1330 mm
Width	860 mm
Height	1330 mm
Weight	120 kg

Cash Box Size 510 mm x 245 mm x 48 mm

Motor:- 180 w Continuously rated dual voltage. Thermal trip fitted.

Gearbox:- 20:1 reduction. Minimum backlash gears

Lighting:- 12 v dc

Fuse Rating:- 230 v models - 7 amp / 110 v models - 10 amp

WIRING COLOUR CODES

Mains Cable:

Size 32 x 0.2mm

230v Models

Brown	-	Live
Blue	-	Neutral
Yellow/Green	-	Earth

110v Models

Black	-	Live
White	-	Neutral
Yellow/Green	-	Earth

Motor Supply Cable

Size 32 x 0.2 mm

Brown	-	Live
Blue	-	Neutral
Yellow/Green	-	Earth

12v Circuit:

Size 16 x 0.2 mm

Start	-	Purple
Start	-	Purple
Counter	-	Red
Counter	-	Red
Lamp 1 (B - Barney)	-	Red/Blue
Lamp 2 (A - Alphabet)	-	Orange/Black
Lamp 3 (C - Choo Choo)	-	White/Black
Lamp 4 (2 Tickets Please)	-	Yellow/Red
Lamp 5 (Steam+Front Headlamp)	-	Blue
Lamp Return	-	Pink/Black
Speaker	-	Orange
Speaker	-	Orange
Sound 1 (Whistle)	-	Pink
Sound 2 (Tickets Please)	-	Grey
Sound 3 (Bells)	-	Green
Sound 4 (A - Alphabet)	-	Brown
Sound 5 (B - Barney)	-	Yellow
Sound 6 (C - Choo Choo)	-	Yellow/Black
Sound 7 (Steam)	-	Green/Brown
Sound Return	-	White/Red

Interface Board Connections: 9 Pin 0.1 inch Molex (C220)

Pin 1 (indicated)	-	Red + 12v
Pin 2	-	Black OV
Pin 3	-	Yellow - Coin Input Line
Pin 4	-	White - Credit Flash
Pin 5	-	Blue - Coin Inhibit
Pin 6	-	N/A
Pin 7	-	Polarising
Pin 8	-	Orange - Coin Input Line
Pin 9	-	Brown - Coin Input Line

2 Screw Connectors (16 x 0.2mm)

Black	-	+ 12v - Credit Lamp
White	-	OV - Credit Lamp

---	Brown	110 v	Black
230 v	Blue		White
---	Blue		Blue
---	Brown		Brown

Live Mains	-		
Neutral	-		
Neutral	-		
Live Motor	-		
Earth	-		
Start	-	Purple	Start Button Switch
Start (OV)	-	Purple	Start Button Switch
Counter	-	Red	Coin Counter
Counter	-	Red	Coin Counter
Lamp 1	-	Red/Blue	Button 'B' Lamp
Lamp 2	-	Orange/Black	Button 'A' and '3' Lamps
Lamp 3	-	White/Black	Button 'C' and '1' Lamps
Lamp 4	-	Yellow/Red	Button '2' Lamp
Lamp 5	-	Blue	Steam Button, Front Headlamp & Mech Lamp
Lamp	-	Pink/Black	Lamp Return
Speaker	-	Orange	Speaker
Speaker -	-	Orange	Speaker
Sound 1	-	Pink	Button '1' (Whistle) Switch
Sound 2	-	Grey	Button '2' (Tickets Please) Switch
Sound 3	-	Green	Button '3' (Bells) Switch
Sound 4	-	Brown	Button 'A' (Alphabet) Switch
Sound 5	-	Yellow	Button 'B' (Barney) Switch
Sound 6	-	Yellow/Black	Button 'C' (Choo Choo) Switch
Sound 7	-	Green/Brown	Steam Button Switch
Sound	-	White/Red	Sound Return
Aux Relay	-	Not Used	
Aux Relay	-	Not Used	
Aux Relay	-	Not Used	

TIMER
UNIT

MAIN HARNESS WIRING

SPARE PARTS LIST - MECHANICAL

Item	Part Number	Description	Quantity
1	F2L 100	Mechanical Base Frame	1
2	F2L 101	Sub-frame	1
3	F2L 102	Front Pivot	1
4	F2L 103	Front Pivot Bearings - RHP 608 27	4
5	F2L 104	Cash Box Drawer	1
6	F2L 105	Cash Box Lock	2
7	F2L 106	Castors	2
8	F2L 107	Base Feet	4
9	F2L 128	1/4 HP Motor (110 v or 230 v)	1
10	F2L 129	Gearbox - 20:1	1
11	F2L 130	Motor Pulley - 2"	1
12	F2L 131	Gearbox Pulley - 4"	1
13	F2L 132	Drive Belt	1
14	F2L 133	Gearbox Crank	1
15	F2L 134	Crank Bearing	1
16	F2L 135	Ride Toy	1
17	F2L 136	Barney Character	1
18	F2L 137	Steering Wheel Assembly	1
19	F2L 138	Lifting Handle	1
20	F2L 139	Floor Plate	1
21	F2L 140	Barney Logo	2
22	F2L 141	Fun2Learn Serial Number Plate	1
23	F2L 142	Child Age Sign (UK spec.)	1
24	F2L 143	Mains Voltage Sign	1

SPARE PARTS LIST - ELECTRICAL

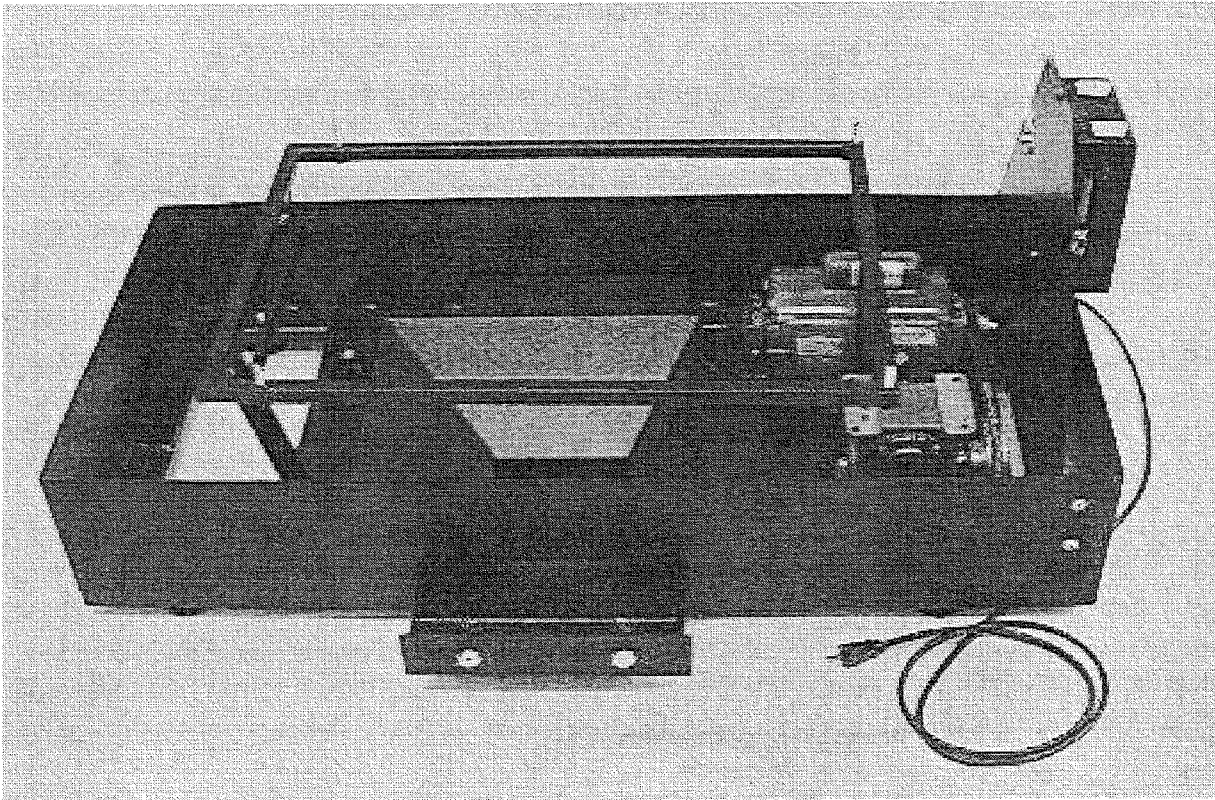
Item	Part Number	Description	Quantity
1	F2L 108	Timer Unit	1
2	F2L 109	Coin Mechanism Interface	1
3	F2L 110	Coin Mechanism - C220	1
4	F2L 111	Coin Mechanism Door	1
5	F2L 112	Coin Mechanism Loom	1
6	F2L 113	Interface Loom	1
7	F2L 114	Mains Loom - Lamps	1
8	F2L 115	Mains Loom - Sound	1
9	F2L 116	Mains Power Lead - 230 vac	1
10	F2L 117	Mains Lead Cable Grip	1
11	F2L 118	Round Button Assembly - 50 mm	4
12	F2L 119	Square Button Assembly	3
13	F2L 120	Steam Button Assembly	1
14	F2L 121	Button Legend Set - Barney	1
15	F2L 122	Coin Meter - 12vdc	1
16	F2L 123	Speaker Assembly C/W Grille	1
17	F2L 124	2.2w Wedge Base Bulb	As required
18	F2L 125	5w Bayonet Cap Bulb	As required
19	F2L 126	Headlamp Assembly	1
20	F2L 127	Headlamp Lens	1
21	F2L 144	Coin Mechanism - Mechanical	1
22	F2L 145	Mains Power Lead - US spec.	1
23	F2L 146	Steering Wheel Bearing - UFL 000	2

HARDWARE LIST

Item	Designation	Description	Quantity
1	Motor Bolts	M8 x 20	4
2	Gearbox Bolts	M8 x 30	4
3	Front Pivot Bolts	M8 x 35	4
4	Castor Bolts	M8 x 70	2
5	Speaker Bolts	M5 x 30 c/sunk Stainless Steel	4
6	Crank Bolt	M12 x 90	1
7	Crank Pinch Bolt	M8 x 50	1
8	Pivot Bearing Bolts	M10 x 40	2
9	Nuts	M10 Lock Nuts	As required
10	Steering Wheel Bearing Bolts	M6 x 30 Stainless Steel Button	2
11	Steering Wheel Bolt	M10 x 70 Button	1
12	Rear Door Bolts	M6 x 40 Stainless Button	4
13	Funnel Bolts	M8 x 30 Nickel Plate Button	4
14	Back Plate Bolts	M8 x 20 Black Button	4
15	Back Plate Earth Bolts	M6 x 20 Stainless Button	3
16	Toy Mounting Nuts	M8 Standard	4
17	Nuts	M8 Lock Nuts	As required
18	Nuts	M6 Lock Nuts	As required
19	Speaker Nuts	M5 Lock Nuts	4

(Infill page)

FUN2LEARN CHILDREN'S RIDES LTD - AS1 BASE UNIT



AS1 BASE UNIT - PARTS LIST

<i>Part No</i>	<i>Description</i>	<i>Quantity</i>	<i>Part No</i>	<i>Description</i>	<i>Quantity</i>
F2L 100	Mechanical Base Frame	1	F2L 132	Drive Belt A25	1
F2L 101	Sub-frame	1	F2L 133	Gearbox Crank	1
F2L 102	Front Pivot	1	F2L 134	Crank Bearing SL12	1
F2L 103	Front Pivot Bearings - 608 2Z	4	F2L 141	F2L Serial Number Plate	1
F2L 104	Cash Box Drawer	1	F2L 144	Back Plate	1
F2L 105	Cash Box Lock	2	Motor Bolts	M8 x 30	4
F2L 106	Castors	2	Gearbox Bolts	M8 x 20 HT	4
F2L 107	Base Feet	4	Front Pivot Bolts	M8 x 35	4
F2L 108	Timer Box Unit	1	Castor Bolts	M8 X 70	2
F2L 116	Mains Power Lead (specify	1	Crank Bolt	M12 x 90	1
F2L 117	Mains Power Lead Cable Grip	1	Crank Pinch Bolt	M8 x 50	1
F2L 128	1/4 HP Motor (110 v or 230 v)	1	Pivot Bearing Bolts	M10 x 40	2
F2L 129	Gearbox - 20:1	1	Earth Warning Sign	Earth Warning Sign	1
F2L 130	Motor Pulley - 2"	1	Back Plate Bolt	CM8 x 20 BZP Button Bolts	4
F2L 131	Gearbox Pulley - 3.3/4"	1	Back Plate Earth	M6 x 20 BZP Bolt	1

COIN CONTROLS

INDIRECT P.C.B.

EXPLODED DIAGRAM - C200 SERIES.

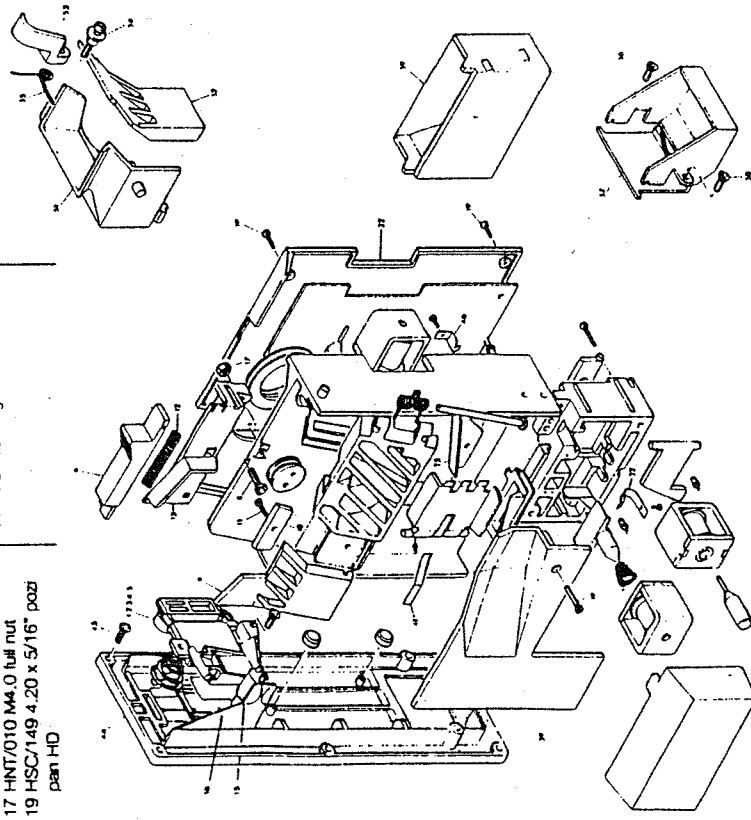
FIG. 2

Parts List

- 1 PBL/402 Coin entry and button housing
- 2 PBL/403 Button
- 3 PBL/404 Button lid
- 4 SPR/045 Button cone spring
- 5 LAB/900 Button label - state coinage
- 6 PBL/411 Quick release latch
- 8 HSC/293 M4.0 x 16.0 pozi pan HD screw
- 9 PBL/424 Front entry gate piece
- 10 MEJ/001 Gate snubber
- 11 HSC/150 4.20 x 3/8" pozi CSK screw
- 12 SPR/038 Quick release latch spring
- 13 PBL/426 Front entry
- 15 LAM/003 Bulb
- 16 LAM/022 Lamp holder
- 17 HNT/010 M4.0 full nut
- 19 HSC/149 4.20 x 5/16" pozi pan HD

The parts listed opposite are the only user serviceable components available. All units requiring additional work should be returned to a Coin Controls group company or approved service centre.

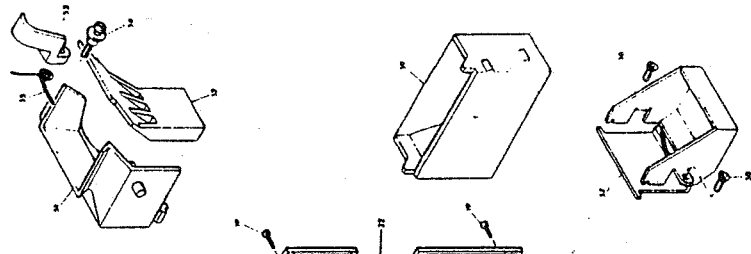
NOTE
Tampering will invalidate the warranty.



COIN CONTROLS

The parts listed opposite are the only user serviceable components available. All units requiring additional work should be returned to a Coin Controls group company or approved service centre.

NOTE
Tampering will invalidate the warranty.



SERVICING

3.0

3.1 Removal and Refitment to Machine

3.1.1 Front Entry
To remove the body from the frontplate, first unplug the parallel interface connector, and the Sorter Divertor cable if fitted. Pull back catch (6) and lift the body upwards. When the stop position is reached the body can be withdrawn.
When reassembling, line up keyhole slots in body with retainers on frontplate. Push body forward and downwards. When in position, catch (6) will click into the locking slot. Re-connect cables to the mechanism.

3.2 Servicing - Main Components

3.2.1 Accept Gate
To detach the accept gate, first slide gate spring (41) towards rear of mech and remove. Pull gate forward and downward to remove. Care must be taken not to damage the spring on refitment.

3.2.2 Reject Button
To replace the reject button it is necessary to remove the button assembly. This is achieved by removing screws (45). When reassembling, ensure cone spring is in correct position.

3.2.3 Direct Reject
By removing screws (58) the reject cup and flap can be detached.

5.4 Environmental Conditions

5.4.1 Operating Conditions
Temperature range : 0°C to 50°C ambient
Relative humidity : 5% to 80% non-condensing

5.4.2 Storage Conditions
Temperature range for storage is -10°C to +80°C.
The humidity levels for storage is 10% to 95% non condensing. If storage is outside the environmental limits specified for operation, the C250 should be allowed to return to within operating limits before use.

5.5 Orientation
The C200 series is designed to operate vertically with a maximum angle of operation of +/-2 degrees from the vertical in any plane.

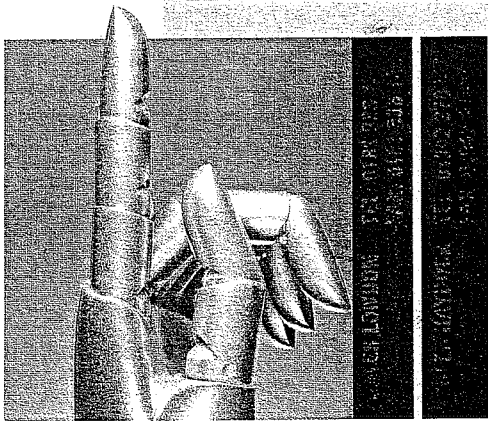
3.4.2 Fault Finding

The following information is presented for customer's guidance in determining a suspected fault and does not cover all possible causes. All mechanisms with electronic faults should be returned to Coin Controls Ltd. or to an approved service centre for repair.

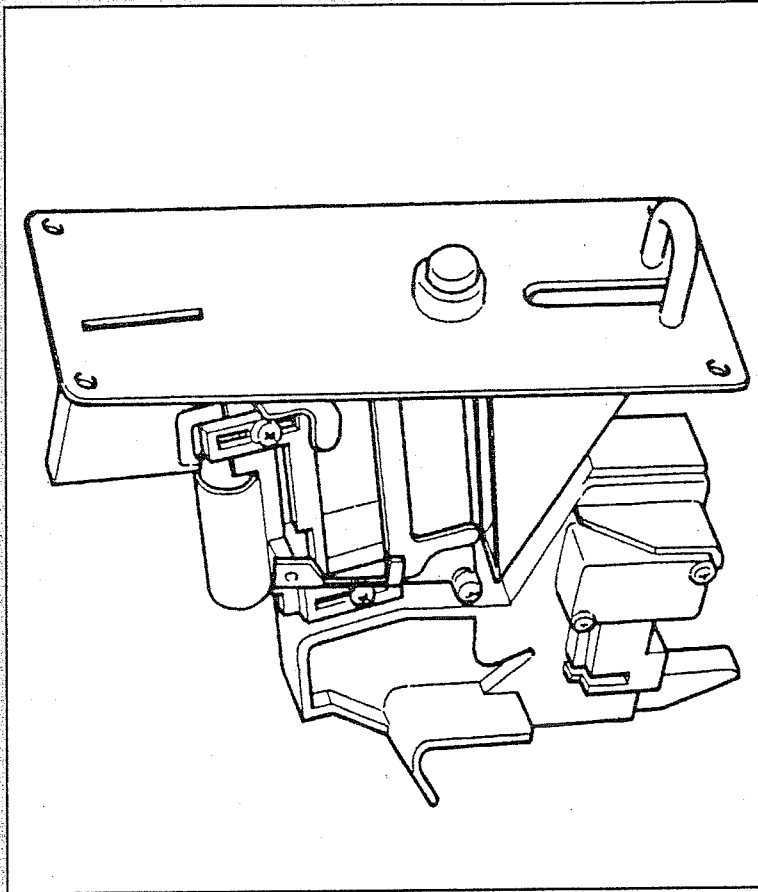
Symptom	Investigate	Possible Cause
(a) Mech does not work (all coins reject)	Connector Power Supply	Poor contact Ribbon cable damaged Not Switched On Incorrect voltage Inadequate power, power supply rise time too slow.
(b) True coins reject too often	Inhibit Inputs Accept Gate Accept Channel Reject Action Power Supply	Mech inhibited Gate not free or dislocated Obstruction in channel Reject gate not fully closed Voltage less than 10V (NB voltage drop when solenoid activated)
(c) Coins stick or jam in mech.	Accept Gate Connector Run/Down	Gate not free, or dislocated Loose Dirty
(d) One of the true coins always rejects	Run/Down, Accept Channel, Reject Channel, Accept Gate Parallel Interface (if connected)	Dirt or mechanical damage/destruction Bent or broken connection pin Wrong inhibit input voltage V in (enable) <1.2V
(e) Coins in wrong cashbox	Sorter Main unit	Dirty, damaged or obstructed Solenoid failure or broken wire Incorrect sorter paths programmed
(f) No accept signal	Connector Accept channel	Connector loose or broken Dirty or obstructed (mech timeout)

5.0 SPECIFICATIONS

5.1 Power Supply
5.1.1 Voltage
a) C220/C235
Nominal : 12V d.c. to 24V d.c.
Absolute max : 10V d.c. to 24V d.c.
Rise time : 200 milliseconds max.
b) C250/C255
Nominal : 12V d.c. to 24V d.c.
Absolute max : 10V d.c. to 30V d.c.
Rise time : 200 milliseconds max.
5.1.2 Current
a) C220/C235
100mA nominal standby consumption.
650mA peak accept current, 200 msec. max.
1.65A peak sorter current, 600 msec. max. (C235)
b) C250/C255
60mA nominal standby consumption
600mA peak accept current (at 12V d.c.) 200 msec. max.
520mA peak accept current (at 24V d.c.) 200 msec. max.
1.55A peak sorter current (at 12V d.c.) 600 msec. max.
1.60A peak sorter current (at 24V d.c.) 600 msec. max.
During the above load demands, the voltage must not be allowed to deviate outside the range defined under VOLTAGE above.



S1 COIN MECHANISMS

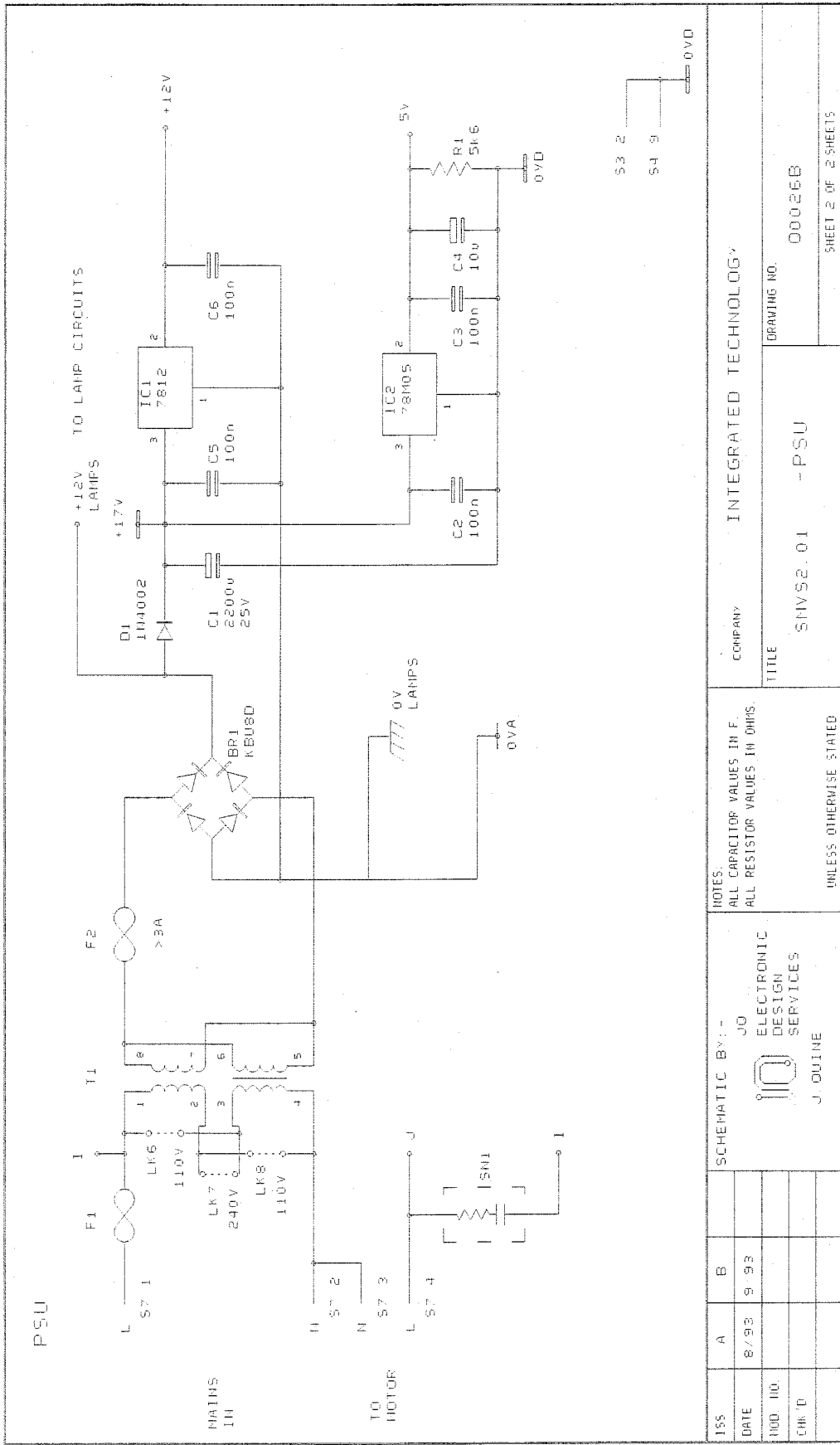


The world's most widely used "Roll Down" ACCEPTOR incorporates the MARINYL CRADLE ASSEMBLY (Fitted as standard).

KEY TO ABBREVIATIONS FOR S1 COIN MECHANISMS

STD F/P	STANDARD FRONT PLATE	115mm x 60mm	DIRECT REJECT	COIN REJECTS THROUGH FRONT OF MECHANISM
HANKE F/P	HANKE FRONT PLATE	120mm x 60mm	INDIRECT REJECT	COIN REJECTS THROUGH CASH TRAY
L/F/P	LONG FRONT PLATE	146mm x 60mm		
L/O	LOCKOUT COIL (12V DC, 24V DC)			

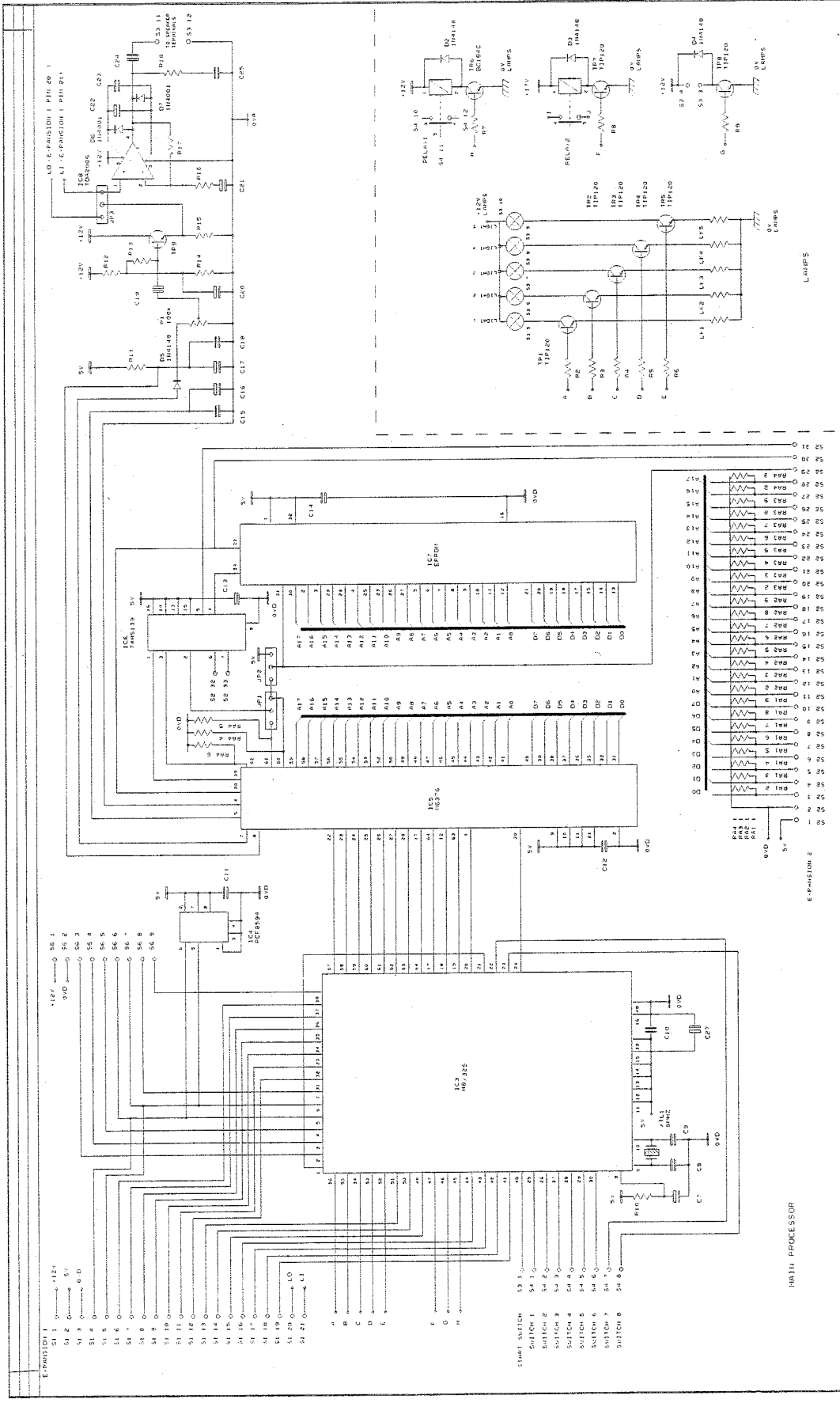




ISS	A	B	SCHEMATIC BY: J.O.		NOTES: ALL CAPACITOR VALUES IN F. ALL RESISTOR VALUES IN OHMS. UNLESS OTHERWISE STATED.	COMPANY	INTEGRATED TECHNOLOGY
DATE	8/93	9/93	ELECTRONIC DESIGN SERVICES			TITLE	SNVS2.01 - PSU
POD NO.			J. O'QUINE			DRAWING NO.	00026B
CHK'D						SHEET 2 OF 2 SHEETS	



100



REV	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
DATE																											
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INTEGRATED TECHNOLOGY
 SHEET NO. SHV-SE-01
 DRAWING NO. 000-258
 SHEET 12 OF 15

IC 74180 (MS 1023-G)
 IC 74139 (MS 139-139-5V)
 ALL CAPACITORS UNLESS NOTED OTHERWISE
 ALL RESISTOR VALUES IN OHMS
 UNLESS OTHERWISE SPECIFIED

REL-0.1
 REL-0.2
 REL-0.3
 LAMPS
 E-EXPANSION E
 E-EXPANSION D

LOG BOOK

DATE:	DETAILS:	SIGNED BY:	PRINT:

LOG BOOK

DATE:	DETAILS:	SIGNED BY:	PRINT:

