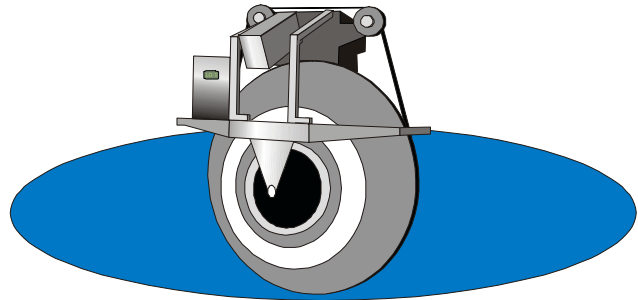




Series



THREE
MECHANISM

Series 3
Mechanism
Service Manual

Version 3

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1. INTRODUCTION

This manual contains information on the range of Sound Leisure equipment designed around the Series 3 electronics equipment.

Although the information in this manual was correct at the time of printing, the manufacturer reserves the right to change it without prior notice.

The contents of this manual may not be copied in part or full without prior consent from Sound Leisure Ltd.

2. SYSTEM FEATURES

70 Disc Carousel
Up to 2100 Track Selections
Adjustable Track Running Time
Adjustable Consecutive Track Plays
Selections Played in Numerical Order
Adjustable B.G.M. Disc Band
Adjustable Foreground Disc Band
7 Day 24 Hour Real Time Clock
6 Individual Timers
Individual Start & Stop Times for each Timer
Each Day, Every Day, or Certain Days Enable for each Timer
Programmable B.G.M.*
Programmable Coin Lock Out*
Automatic Music Fader
Adjustable B.G.M. to Foreground Volume
Manual Enable for B.G.M. Operation
Random Play
Programmable Price of Play
Programmable Happy Hour Price of Play*
Programmable Free Credit Vending*
Auto Logging of Machine Running Times*
Full Data Retrieval System*
Data Interrogator*
Mechanical Cash Meter Facility under Software Control
Microphone Input with Separate Volume, Treble & Bass, and
Voice Over Activation
Auxiliary Input Socket with Foreground & Microphone Audio Sense Enable
600 Ohm Slave Output Point with Gain Pre-set
Provision to install an Additional Twin Channel Amp giving Four Channels in Total

** The use of a programming display unit will be required for these functions.*

NOTE:

The alphanumeric display (for programming timers etc.) is an extra and is not included in the purchase price of a jukebox/hideaway.

3. INSTALLATION REQUIREMENTS

After unpacking the equipment, the following guide should assist you in achieving a trouble free installation.

3.1 JUKEBOX/HIDEAWAY

Place the jukebox/hideaway in the position in which it will be finally installed.

Ensure the location is dry and the equipment is set level.

There must be a mains supply socket within two metres of the equipment.

We recommend an earth continuity test is carried out on the mains supply socket prior to use.

Unscrew the transit securing wing nuts located at each corner underneath the play mechanism. These wing nuts should be unscrewed sufficiently to completely clear the underside of the play mechanism mounting when the mounting springs are fully extended.

NOTE: We would like to bring to your attention that, since 1992, portable appliance testing is required and a certificate of compliance issued.

3.2 WALLBOX

Firmly affix the wall box hanging bracket so that on completion the coin input slot is of a height that can be reached with ease.

The wall box once hung on the bracket is anchored with two bolts.

The holes in the wall box are oversized to facilitate the levelling of the wall box.

3.3 SYSTEM CONNECTION DETAILS

There are three/four individual wall box connectors in the jukebox/hideaway system. These are located on a small circuit board labelled Wall Box Distribution Board.

Only one wall box may be fitted to each connector on this board.

There are five functional connection terminals to each wall box connector. Each wall box should be individually wired back to the jukebox/hideaway unit.

3.4 CABLE REQUIREMENTS

The connection between individual wall boxes and a jukebox/hideaway unit is done via five core cable/s.

Connectors are located within each piece of equipment. These connectors are labelled terminal 1, 2, 3, A and B.

Cables connected to terminals 1, 2 and 3 must have a minimum conductor core diameter of 1mm when connecting wall boxes up to 50 metres away and 1.5mm when the wall box is up to 100 metres away.

Terminals 1, 2 and 3 handle the wall box low voltage supply. This voltage is supplied at the hideaway/jukebox as (14-0v-14)V A.C. Terminal 2 is common ground return.

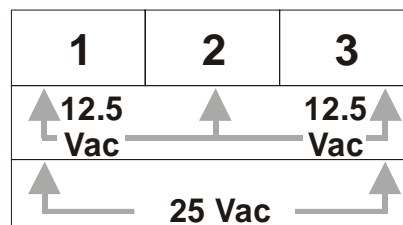
Terminals 'A' and 'B' are used for data transition. These cables require a conductor core diameter of 0.5mm. This should be more than adequate as the current drawn is nominal.

Terminal 'A' is data transmission heading away from the jukebox/hideaway while Terminal 'B' handles data heading towards the jukebox/hideaway. These two cables are signal lines and are not required to handle any great power, therefore much lighter gauge wire may be used.

Note: A minimum of 25Vac should be measured at each wall box to avoid any power supply problems see Fig. 1.

Terminals:

Fig 1.



3.5 METERS

A 12V DC meter (without internal diode) may be connected to any C.D. wall box or any jukebox.

3.5 a) SERIES 3 WALLBOX

Connect the meter to the two pin plug labelled MTR on the ACS1043 board plug CON5 (see note).

3.5 b) SERIES 2 WALLBOX

Locate the sentinel coin interface board. A meter may be connected to the two pin plug located on this board (see note).

3.5 c) SINGLE JUKE BOX BOARD (ACS1056)

Connect the meter to the two pin plug labelled MTR on the ACS1056 board plug PL10 (see note).

NOTE: The meter leads are not polarised therefore will connect either way round.

3.6 INSTALLATION OF COMPACT DISCS

When standing in front of the C.D. play mechanism place the C.D's into the carousel with the picture face, facing the right hand side and the clear face, facing the left hand side

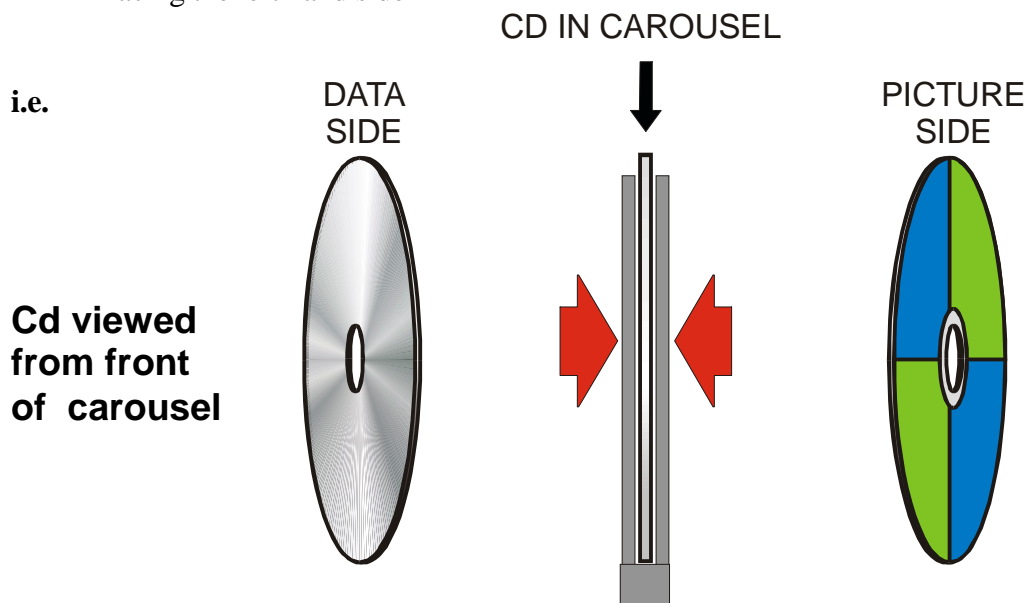
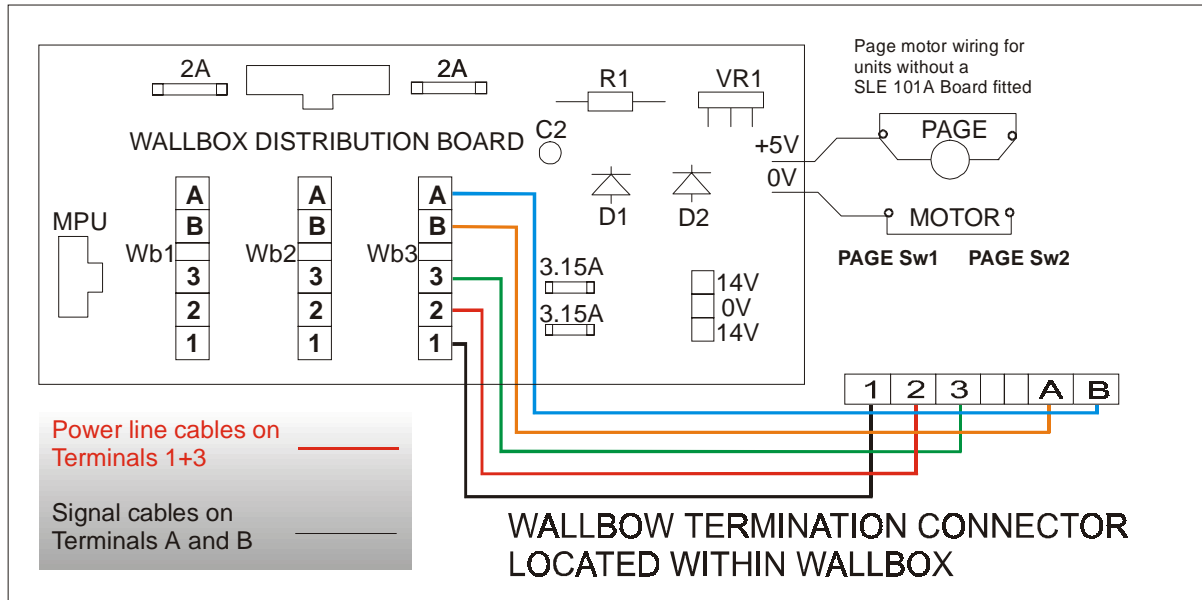


Fig 3.7

JUKEBOX/HIDEAWAY/WALLBOX SAMPLE WIRING



4. IMPORTANT NOTES

4.1 COMPACT DISC CARE

The read out surface is the clear face of the C.D. The compact disc is much more resistant to scratches and dirt than a conventional record, but it is best to be careful not to scratch the read surface and to keep it clean - free from dust, dirt and fingerprints.

Disc Cleaning

If the signal surface becomes dirty, always use the following cleaning instructions:-

When cleaning use a soft cloth. Wipe the cloth from the centre of disc to the edge of the rotating disc until the complete read surface is clean. Do not clean the disc in a circular motion as this can corrupt large amounts of information.

- a) Fingerprints Lightly rub the surface with a soft cloth.
- b) Dust or Dirt Blow lightly on the disc and wipe the dirty part with a soft cloth or clean the dirty part with a damp soft cloth and then wipe dry.
- c) Grease or Oil Clean with a soft cloth dampened with Ethyl Alcohol, then wipe dry.

N.B. Conventional liquids and sprays used to clean records may damage the surface of the disc. Use of such a cleaner is not recommended.

Also, please do not expose the disc to direct sunlight, heat or humidity for a prolonged period of time.

Ensure both sides of the compact disc are damage free. It is important to note that damage to picture side as well as the read side of the disc can result in corrupt data.

4.2 DAMAGE TO LASER TURNTABLE

As the turn-table of the compact disc player is an important and integral part of the set-up procedure, its correct alignment is all important.

In recent times, we have experienced a small amount of players returned that will not play tracks located near the outer edge of the disc.

Our tests have shown that on all of these players, the turn-table shaft has been bent off true.

It is felt that the only way this can happen is impact damage.

Our tests show that such damage would be done if the clamp head was allowed to slam against the turn-table. Normal running conditions protect against this condition. However pulling back the clamp Arm by hand and letting go whilst the mechanism is in the play position could cause this kind of damage.

5. SYSTEM OF OPERATION

Insert the appropriate amount of coins into the jukebox to establish a credit.

Once the jukebox has accepted sufficient coins, the credit lamp will illuminate. The jukebox is now ready to accept your selection.

A selection is entered in two stages. Firstly, you must select the disc you require by entering a three digit number relating to its position in the carousel. Secondly you enter a two digit number of the particular track you wish to be played.

When the disc and track information has been entered, the display will blank momentarily. If no more credits are established the display will show the last played disc and track.

If, however, multiple credits exist, the display will remain blank awaiting a further selection input. If no selection is entered, the display will revert back to showing the last played disc and track while still retaining all credits.

You have now made a selection. The MPU (computer board) responds by energising the scan relay. The scan relay applies power to the scan motor via contacts on the trip relay.

The scan motor is a D.C. motor which can be driven clockwise or anti-clockwise.

When driven anticlockwise, the carousel is allowed to rotate. As the carousel rotates, its position is monitored via the carousel opto unit which is attached to the front of the play mechanism. The output of the opto unit is fed into the MPU. The opto unit outputs two signals:-

- a) Sync signal (occurs once every full cycle of carousel)
- b) Count signal (occurs for every disc location)

Attached to the centre of the carousel is an opto unit disc. This disc has 70 holes evenly spaced around its circumference. One extra hole is added which is used for synchronisation purposes.

Once the sync position is found the MPU monitors the count signal. When the count signal matches the customer's selection, the carousel is halted. This is achieved by energising the trip relay which reverses the polarity to the scan motor. When the trip relay energises, the latch solenoid at the rear of the carousel de-energises.

The action of the latch solenoid when de-energised is to hold the carousel stationary.

This is necessary since the trip relay has reversed the polarity to the scan motor in order to execute a transfer cycle, As we do not want any movement in the carousel at the time when we are transferring a disc from the carousel to the laser player for playing.

When the disc has been placed onto the laser player and clamped successfully, the scan relay de-energises via micro switch MS1, the MPU sits quietly awaiting a handshake signal from the decoder.

The decoder, when activated via micro-switch MS2 located on the left side of the play mechanism follows this sequence of events:-

- a) Two green stationary bars start to flash as the disc is rotated.
- b) When the disc has initialised, the display will show the maximum number of tracks on the disc.
- c) The decoder sends a signal (SI) to the MPU to request track selection information.
- d) The MPU sends the track information as a series of pulses to the decoder, i.e. if track 4 was selected, the MPU would send four pulses on the 'NEXT' signal line.
- e) The decoder responds by counting up to four, at which time the display will read 4:
- f) The MPU then sends out two program pulses. One is sufficient to inform the decoder to play track four only. The display will read 4: - P, - 4 - , 4:00.
- g) The MPU then sends out a PLAY signal to the decoder to start playing the track requested. As the track starts to play, the display will read 4:01, i.e. the two zeros change to a zero and a one.

If the laser system fails to initialise the disc, the MPU will try five times before it is logged as a faulty disc in memory.

When a track has been played successfully, the decoder informs the MPU via the (SI) signal.

The MPU acts upon the state of the (SI) signal and starts a reject cycle.

The MPU starts the reject cycle by energising the scan relay thus applying power to the scan motor. The disc is now taken from the play position and returned to the carousel.

As the lift arm fully returns to its rest position, micro-switch MS3 de-energises the trip relay. If no more selections exist, then the scan relay also de-energises and the MPU awaits further selections.

If, however, further selections exist, the scan relay remains energised and the carousel rotates to find the next selection.

6 KARAOKE

The facility of karaoke can be accomplished by lifting one end of resistor R71 on the MK6 pre amp top board.

This disables the voice over function of the microphone. See amplifier diagram for location of R71.

7. SOUND SYSTEM

7.1 WARNINGS

7.1 a) Damage to the sound fader circuit on the MPU Board may occur if the amplifier is unplugged whilst the machine is switched on.

7.1 b) **Warning B**

The Sound Leisure amplifier is not suitable for connection to a 100V line system.

7.2 MK6 PRE AMPLIFIER

Number of Inputs Three (180° Din sockets)

Input 1, **CD** Jukebox 2nd priority input with automatic signal activated auto fade. Mono input split to two channels each with pre set gain, treble and bass controls.

Input 2, **Aux** BGM auto fade in approximately 45 seconds after last track played.

Input suitable for signals from line level (0.5V to 1V).

Input 3, **Mic** Mic input is 1st priority input with automatic voice activated auto fade. Preset gain control independent treble and bass controls.

Suitable for high or low impedance mics.

Volume

The independent control of each channel is possible via a twin 22k log slider volume control.

The volume control circuit is of the D.C. type and may be run over long distances without the use of screened cable.

7.3 **SLAVE OUTPUT**

This is taken from Pin T3 on pre amp board. The signal return (ground) for new Sound Leisure amps can be picked up on the chassis of the MK6 amp. The slave output is controlled via VR12.

Slave output range (600mV to 3V) peak to peak.

7.4 **POWER AMPLIFIER**

The power output stage is overload protected, short circuit protected and low impedance protected.

Frequency Range 15 hz to 100 khz flat response.

Output impedance 4 ohms min

Power output 60 watts R.M.S. per channel into 4 ohms.

NOTE:

When fitting a Sound Leisure slave amplifier it is necessary to upgrade the amplifier power supply fuses from 3.15A to 4A.

Therefore change F1 from 3.15A to 4A

Change F2 from 3.15A to 4A.

These fuses are located on the main MPU board.

7.5 SPEAKER WIRING

The optimum impedance of the Sound Leisure amplifier is 4Ω . Try to keep as close to this as possible - do not go below.

All examples assume 8Ω speakers are used.

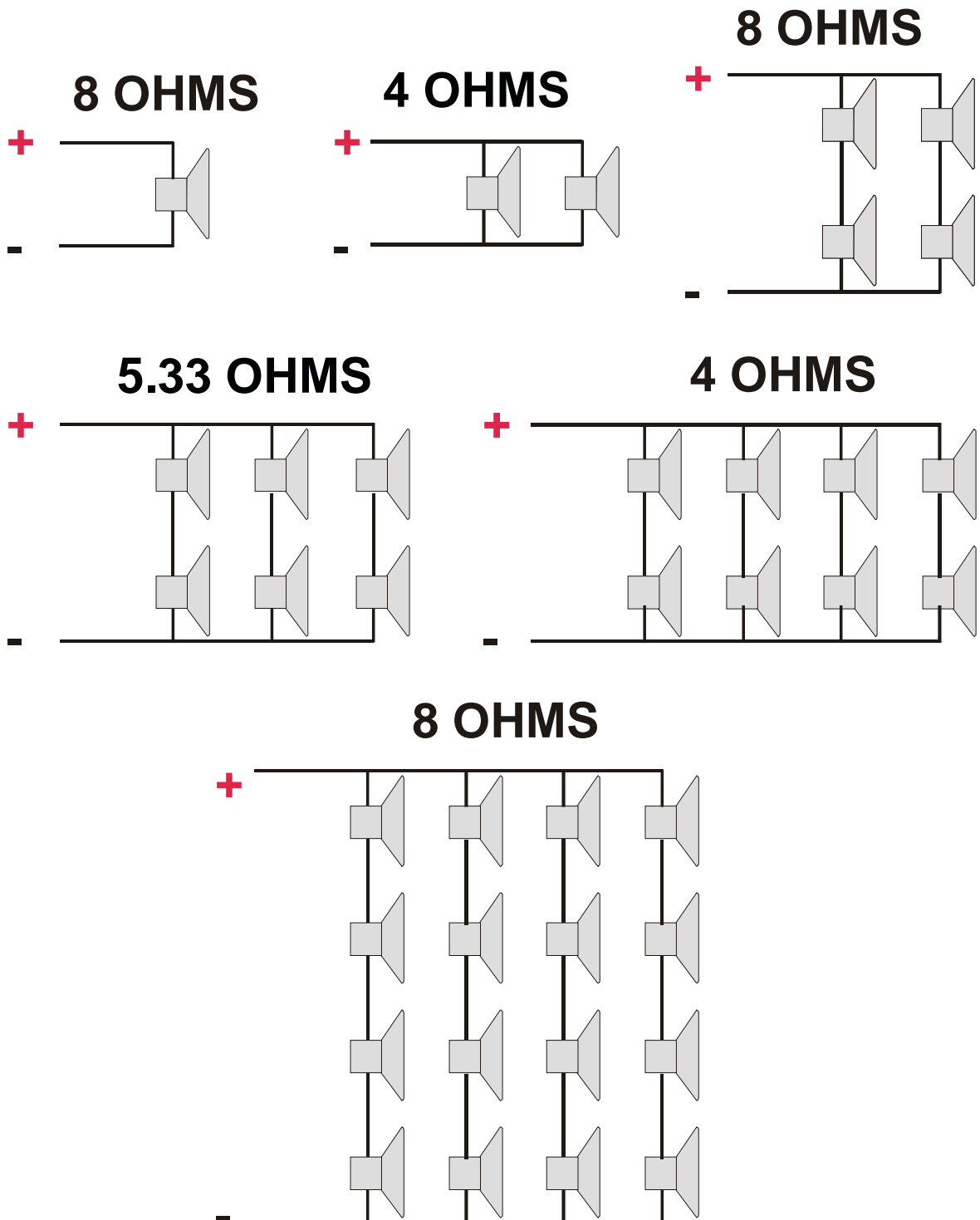


Fig 7.6

Mk6 CONTROLS

EXTERNAL VOLUME CONTROL CONNECTIONS VIA MAIN M.P.U.

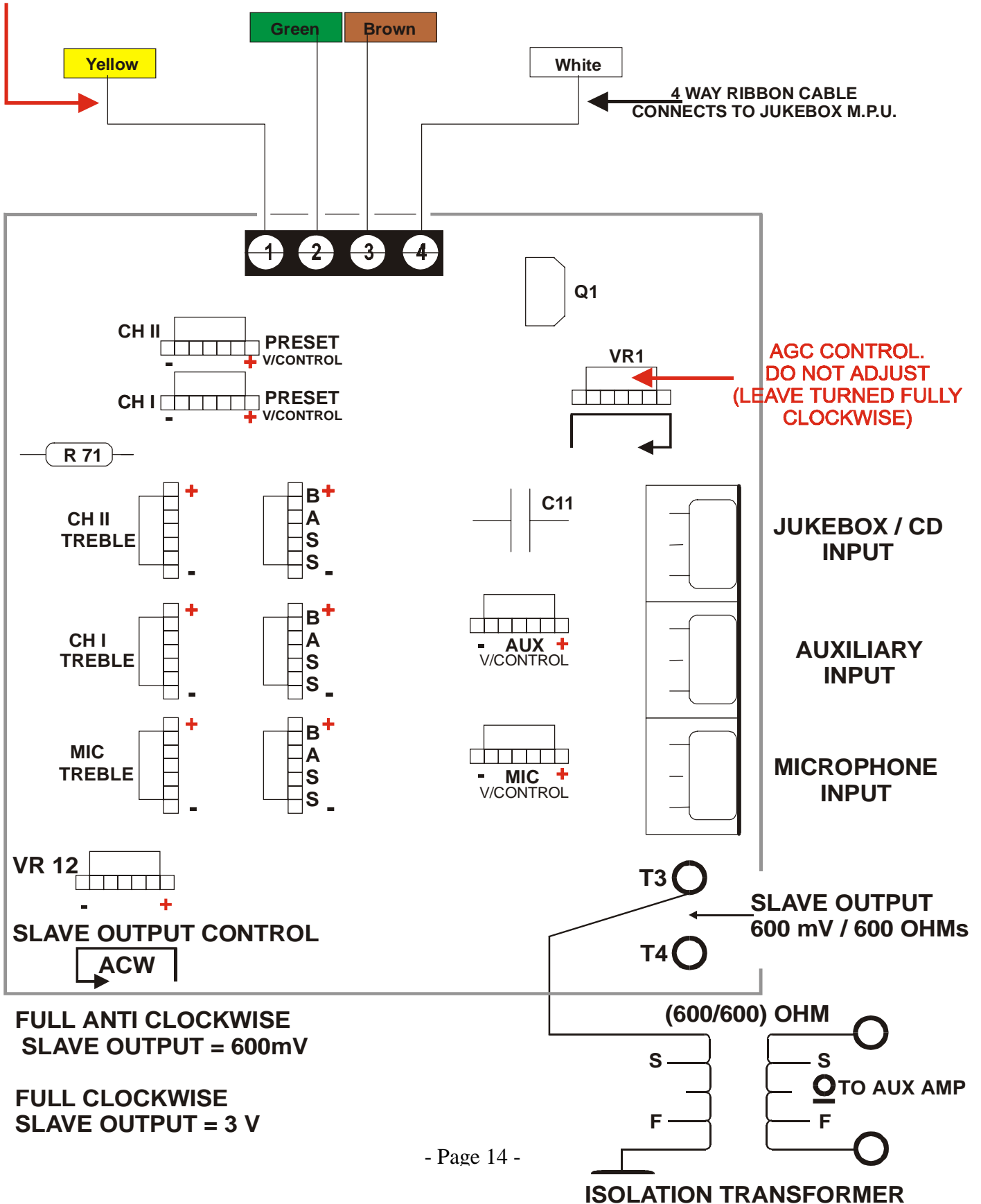
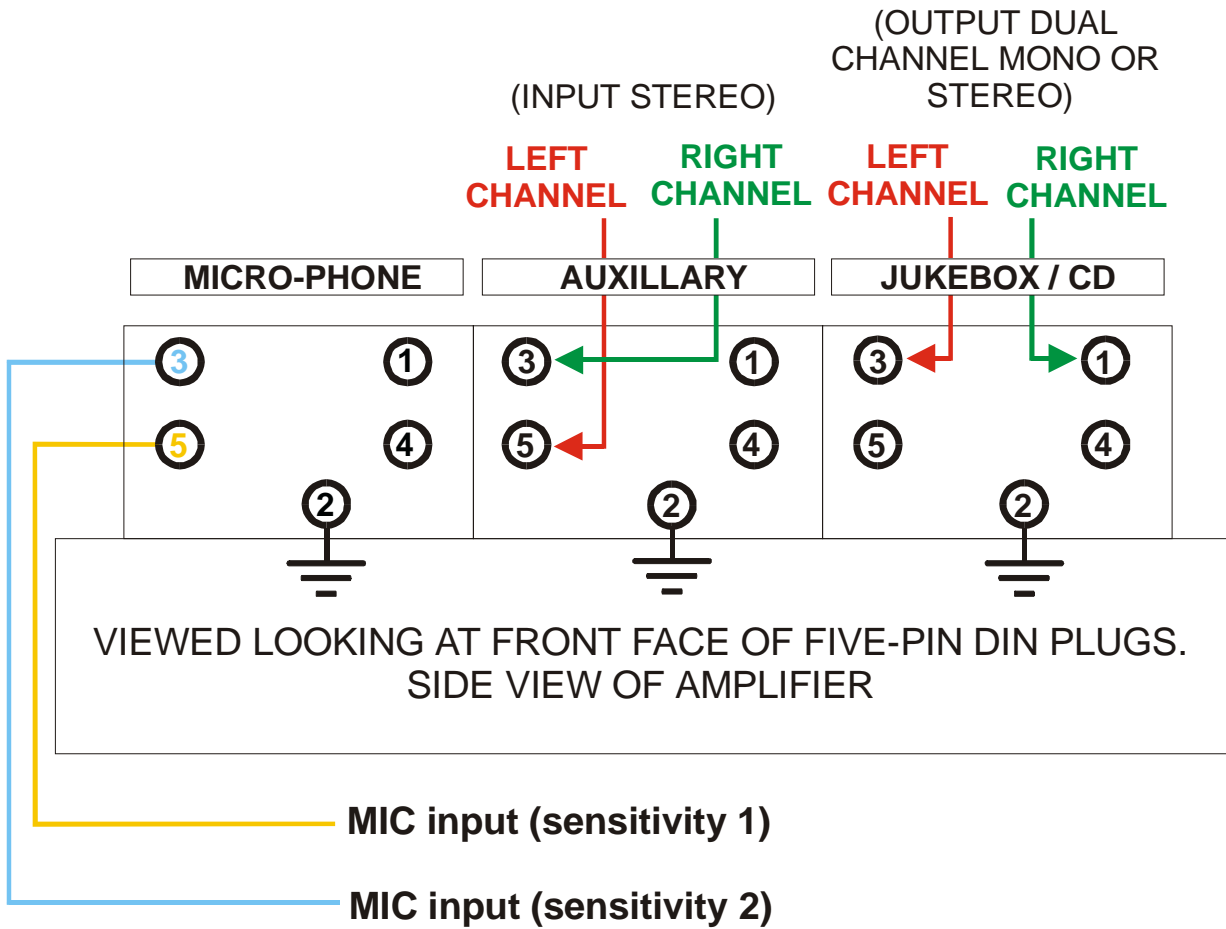


Fig 7.7

MK 6 INPUT CONNECTIONS



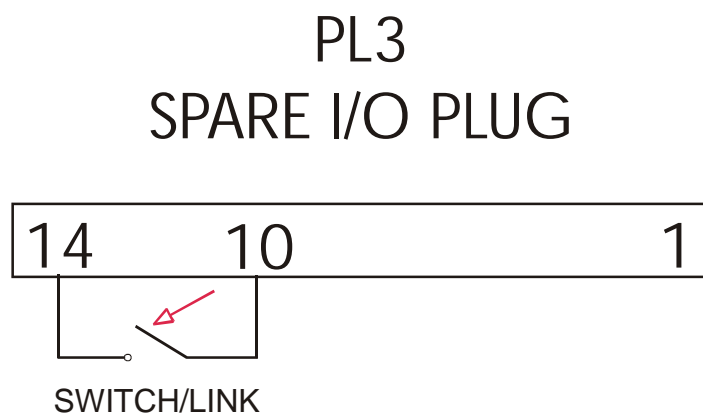
8. BACK GROUND MUSIC (BGM)

Sound Leisure offers two ways to use BGM.

1. Timed (see pages 43, 44 and 51).
2. Constant

CONSTANT BGM

Constant BGM is achieved by a switch/link across pins (10 to 14) on the MPU plug PL3. See Fig 2.



BGM

When the switch is closed the jukebox will play BGM on a permanent basis until the switch is opened again. The discs selected for BGM play will be the band of discs previously programmed into Menu 5 at levels 3 and 4.

9. DIL SWITCH SETTINGS

9.1 WALLBOX SWITCHES ALSO 1056 COMBI BOARD (SW2) SWITCHES

Coin Lockout enable (see Timer 1) : 1 : On :
Coin Lockout disable : 1 : Off :

Happy Hour enable (see Timer 5) : 2 : On :
Happy Hour disable : 2 : Off :

Timed Free Credit enable (see Timer 6) : 3 : On :
Timed Free Credit disable : 3 : Off :

Not used : 4

Popularity enable (depends on installed software) : 5 : On :
Popularity disable : 5 : Off :

6

Dil Switch 7 is operated in conjunction with the operate switch located on the front of the play mechanism.

N.B. Only operate dil switch 7 in **one wall box** on multi-wall box sites.

Programming enable (see Program Section) : 7 : On :
Normal operation : 7 : Off :

Free Credit enable : 8 : On :
Free Credit disable : 8 : Off :

N.B. SW2 refers to Switch Bank 2 on 1056 combi boards.

9.2 HIDEAWAY SWITCHES ALSO 1056 COMBI BOARD (SW1) SWITCHES

For Eproms V1.3J and V1.5J Onwards

For other Eprom Version Dil Switches 1 & 2 may differ in their time settings.

Dil Switches 1 & 2

Dil Sw 1		Random Play	:	
		: Dil Sw 2	:	
No Random Play	:	OFF	:	OFF
05 Minutes Random Play	:	ON	:	OFF
:				
10 Minutes Random Play	:	OFF	:	ON
15 Minutes Random Play	:	ON	:	ON

Dil Switches 3 & 4

Track Length	:	Dil Sw 3	:	Dil Sw 4	:
Full Length	:	OFF	:	OFF	:
4 Minutes	:	ON	:	OFF	:
5 Minutes	:	OFF	:	ON	:
6 Minutes	:	ON	:	ON	:

Dil Switches 5 & 6

B.G.M. Volume	:	Dil Sw 5	:	Dil Sw 6	:
Normal	:	OFF	:	OFF	:
Low	:	ON	:	OFF	:
Middle	:	OFF	:	ON	:
High	:	ON	:	ON	:

Note: A BGM volume kit is available to the operator which provides the user with two slider controls for the BGM volume. This kit is normally used where the BGM volume level required is outside the range of the switch settings.

Dil Switch 7

Factory use only	:	ON	:
Normal operation	:	OFF	:

Dil Switch 8

Site Number Enable (via programming unit)	:	ON	:
Normal Operation	:	OFF	:

N.B. SW1 refers to Switch Bank 1 on 1056 combi boards.

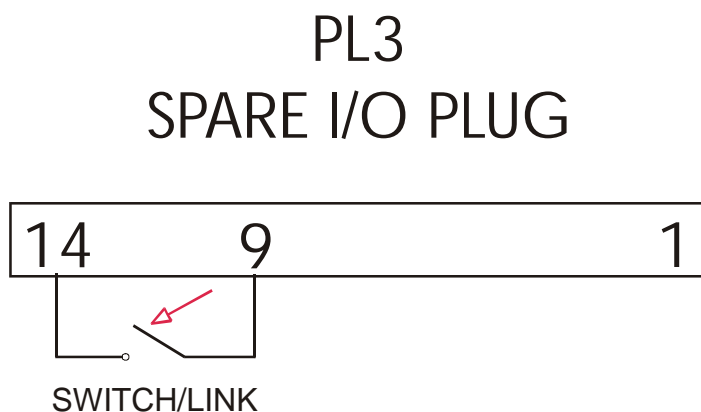
10. GMT/BST CLOCK ADJUSTMENT

You should be aware at the start of British summer time we advance all our clocks one hour.

If the jukebox you are operating uses any of the timed facilities, a timing error could occur when BST arrives if the RTC (Real Time Clock) is not reset to the new BST.

An easy method to change the RTC is to fit a switch/link onto plug PL3 on the main MPU see Fig 3.

Fig 3



Switch closed GMT (clock = minus one hour)

Switch open BST (clock = plus one hour)

11. SETTING THE REAL TIME CLOCK

Locate the 25 way 'D' type connector in your machine. Plug in your Alpha Numeric Display Unit.

- a) With the alphanumeric display connected, press and hold simultaneously the *DISC UP* and *CLEAR MEM* buttons.
- b) Now switch the mechanism service switch from *OPERATE* to the *OFF* position with the buttons still held (i.e. *DISC UP* and *CLEAR MEM*).
- c) The display will now show *SOUND LEISURE* followed by *SITE NUMBER XXXX* then *REAL TIME CLOCK*. At this point the buttons can be released and the display will show the time and date in the following format.

e.g. SU 18/08/94 1640

11.1 DAY, DATE, TIME

The time and date can now be set as follows.

Press and release the *DISC DOWN* button to start alterations and the day displayed will start to flash.

Use the *TRACK UP* button to display the next day or use the *TRACK DOWN* button to display the previous day.

Now repeat the above two steps for date, month, year, hours and minutes. When the minutes have been altered, pressing and releasing the *DISC DOWN* button will return you to the start with the day flashing.

Pressing *DISC UP* at any point will advance you to the next step which is setting the timers. If you have altered the time then the new time will be set, otherwise the time will not change.

11.2 TIMERS (T1 - T6)

The timers are set as follows:-

Once you have pressed *DISC UP* the first timer start and finish times will be displayed as follows.

e.g. T1. S. 0000 F. 0000

Press *DISC DOWN* to make the start hours flash. Now use *TRACK UP* and *TRACK DOWN* to alter the start hours.

Use Disc Down to advance to start minutes.

Do the same for start minutes, stop hours and stop minutes.

Pressing *DISC DOWN* when stop minutes are flashing will display the days as follows and allow you to alter them.

e.g. T1. DAYS *****

The first asterisk will be flashing. This is the flag for Every day. If you require this timer to be in operation Every day then press *TRACK UP* button and the display will show.

T1. DAYS ESMTWTFS

Use *DISC DOWN* to advance to different days and press *TRACK UP* to set the day or *TRACK DOWN* to clear the day.

Pressing *DISC DOWN* on the last day will return you to the beginning with the start hours flashing on the current timer.

Pressing *DISC UP* at any stage will set the timer and move you on to the next timer.

Timers are used for the following purposes:-

Timer 1	BGM or Coin Lockout.
Timer 2	BGM Timer
Timer 3	BGM Timer
Timer 4	BGM Timer
Timer 5	BGM or Happy Hour
Timer 6	BGM or Free Credit

11.3 **EXITING**

NOTE: Before exiting, step once through all timers to ensure all changes made via the programming unit to day / date / time / timer are accepted.

Turn service switch on front of play mechanism from 'OFF' position to 'OPERATE'. The system will show 'SYSTEM EXIT'.

Wait until the time is displayed before removing the programming unit from the machine.

12. PROGRAMMING

When entering into the program mode the following two steps must be carried out:-

1. Turn 'ON' Dil Switch 7 on one wall box only.

Note: Dil Sw 7 can be found on switch bank two (SW2) on 1056 board.

2. Turn the service switch, located at front of play mechanism to the 'OFF' position.

Once the machine has entered the program mode it responds by displaying two zeros as shown below:-



A minimum of 5-menus may be entered with an option of up to nine depending on installed software.

Each menu is 4-levels deep.

12.1 Menu Hierarchy

On the following chart:

Int-md = Intermediate

HH = Happy Hour

Option	1	2	3	4	5	6	7	8	9
LEVEL	Plays	Coins	Int-md Plays	Int-md Coins	Factory Settings	HH Plays	HH Coins	HH Bonus Plays	HH Bonus Coins
Level 1									
Level 2									
Level 3									
Level 4									

When the display shows two zeros, any menu may be entered. This is achieved by pressing the menu number (1-9).

The menu number entered will be displayed in between the two zeros.

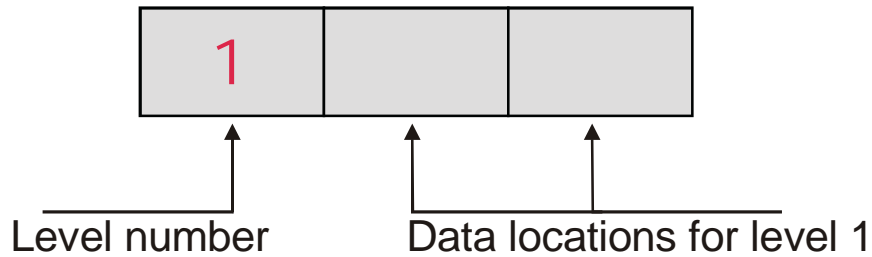
Example

Menu 2 selected



When a menu number is pressed it will be displayed for a short while before the display changes to show the contents of the first level in the menu.

i.e.



12.2 MOVING THROUGH LEVELS

Levels can be stepped through by pressing the level numbers (1-4).

12.3 EDITING MENU

Assuming you are in the correct menu and level, follow the steps shown below:-

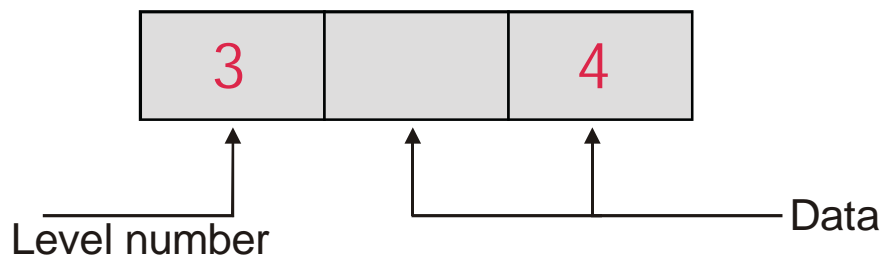
Step 1: Press 'C' key to overwrite old data.
(The middle to right displays will blank)

Step 2: Enter new data.

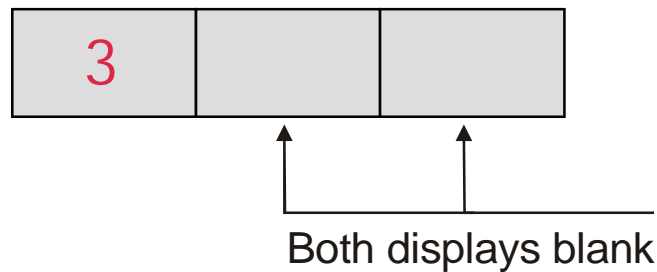
Step 3: Press 'C' key to lock new data into memory.

Example

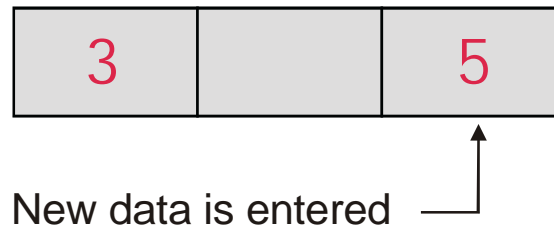
Assume we are in menu 2, level 3, and the data at this level requires changing from 4 to 5.



Step 1: Press 'C'



Step 2: Press 5



Step 3: Press 'C'

The display will now blank totally for a short while and reappear. (New data is now loaded into memory).

12.4 EXITING A MENU

Once all the editing has finished and you are ready to leave the menu, simply press the 0 key. This will return the display to two zeros.

You are now in a position to exit the program mode or enter a menu.

12.5 MENU FORMAT

Menu 1 (Plays)

Decide on the number of plays you require for 10p, 20p, 50p & £1 and insert these values into the appropriate levels of menu 1.

Note: The number of plays for the lowest coin value must be entered into the lowest level first.

Example: Suppose we require the following:-

0 plays - 10p
0 plays - 20p
2 plays - 50p
5 plays - £1

These values are entered into menu 1 as follows:-

	Menu 1	Plays Menu
Level 1	0	Plays for 10p
Level 2	0	Plays for 20p
Level 3	2	Plays for 50p
Level 4	5	Plays for £1

Menu 2 (Coins)

Sound Leisure coin mechanism accept four coins, i.e. 10p, 20p, 50p and £1.

These coin values must be entered into menu 2 in 10p units with the lowest value entered into level 1, next lowest into level 2, etc.

Example:

	Menu 2	Coins Menu
Level 1	1	10p level
Level 2	2	20p level
Level 3	5	50p level
Level 4	10	£1 level

Remember, when deciding on what plays you require for a specific coin value, menu 1 and menu 2 are related to each other via their levels, i.e. menu 1, level 1, relates to menu 2, level 1, etc.

Menu 3 (Intermediate Plays)

Menu 3 is used in conjunction with Menu 4. Please read Menu 4 before proceeding with Menu 3.

We use Menu 3 to obtain plays for intermediate pricing levels.

An example of intermediate plays would be those we require for 30p, 40p, 60p, £2, etc. Those which are not catered for in Menu 1 (are not single unit coins of the realm).

Example: Assume we have already set the number of plays required for our standard coin values in menu 1, and we require two other pricing levels.

1 play 30p, 11 plays £2

Enter the number of plays required into menu 3, levels 1 and 2 as follows:-

	Menu 3	Intermediate Plays Menu
Level 1	1	First Intermediate Play
Level 2	11	Second Intermediate Play
Level 3	0	Third Intermediate Play
Level 4	0	Fourth Intermediate Play

Menu 3 and menu 4 are related to each other in the same way as menu 1 and menu 2.

Menu 4 (Intermediate Coins)

Menu 4 enables you to generate values for which there is no coin, e.g. 30p, 40p, 60p, etc.

Following on from our previous example:-

1 play - 30p
11 plays - £2

Enter the intermediate prices into menu 4, levels 1 and 2 as shown below:-

Remember they must be in 10p units, i.e. £2 = 20 x 10p units, etc.

	Menu 4	Intermediate Pricing Menu
Level 1	3	First Intermediate Price
Level 2	20	Second Intermediate Price
Level 3	0	Third Intermediate Price
Level 4	0	Fourth Intermediate Price

Menu 5 (Factory Settings)

Having set up menus 1 to 4, you can now turn your attention to menu 5 as shown below.

	Menu 5	Factory Setting
Level 1	70	Maximum number of discs selectable from the keyboard.
Level 2	3	Maximum number of tracks played consecutively from any one disc
Level 3	60	BGM/Random Disc Band (Start)
Level 4	69	BGM/Random Disc Band (Finish)

The data shown in menu 5 is called default settings and are set in production at final test. All these values may be changed to suit a particular installation.

Level 1 You may not wish to install a full 70 C.D's in your machine. Therefore, decide on the number of C.D.'s which you intend to install. This number should then be entered into level 1 of menu 5.

Note: Entering the correct number of discs into level 1 ensures that discs cannot be selected outside the range of those installed.

Level 2 This level holds the maximum number of tracks you will allow to be played from any disc consecutively.

Example If this level is set to 4, and a customer selects six tracks from a particular disc, four of the tracks will be played consecutively before the carousel rotates 360 degrees playing other selections as it rotates, then returning to play the remaining two tracks selected.

Level 3 Decide where in the carousel you wish to locate your background music (BGM)/random discs.

These discs 'must' be kept grouped together and not spread throughout the carousel.

Assume you wish to use ten discs for BGM/random, located in the carousel between 100 and 109 (10 locations), you need to enter the start location where these discs are located into Level 3.

Example Location 100 is entered as 0

Level 4 As with Level 3, where you entered the start location of your BGM/random discs, you also need to enter the end location into Level 4.

Example Location 109 is entered as 9.

Therefore, Level 3 - 0
 Level 4 - 9

The above example will allow ten discs to be used for BGM/random.

12.6 **EXITING PROGRAM MODE**

Turn the service switch on the front of the mechanism back to the 'OPERATE' position.

Note Wait one full minute before Dil Switch 7 is returned to the 'OFF' position. Failure to wait one full minute could result in your program changes not being accepted.

12.7 **HAPPY HOUR**

The Happy Hour function is not available on all machines. It depends upon the software installed in your machine.

All upright jukeboxes manufactured with single jukebox boards, i.e. 1056 Combi Boards, are equipped with the Happy Hour software, i.e.

If installed, it allows the price of play to be changed to a more favourable price of play for a given time.

Example A

Assume the normal price of play is:-

0 plays for 10p
0 plays for 20p
2 plays for 50p
5 plays for £1

with 1 play for 30p (Intermediate Level)

Example B

Under Happy Hour conditions you may have:-

0 play for 10p
1 play for 20p
3 plays for 50p
7 plays for £1

with 15 plays for £2 (Intermediate Level)

The amount of time Happy Hour is active for depends upon the setting of Timer 5 (*see Setting the Timers*).

Once Timer 5 has been set, you need to enable this function by turning Dil Switch 2 'ON'.

Dil Switch 2 is located in the wall box for HAU system and on Switch Bank 2 for 1056 combi system (i.e. upright machines).

The Happy Hour price of play has to be set up using menu's 6 to 9. These menu's are set in the same way you would set menu's 1 to 4 respectively.

Example:

Assume we require a price of play for happy hour as follows.

0 Play - 10p
1 Play - 20p
3 Plays - 50p
7 Plays - £1

With an intermediate level of £2 (15 plays)

Menu's 6 - 9 would be set as follows.

	Menu 6	Menu 7	Menu 8	Menu 9
Level 1	0	1	15	20
Level 2	1	2	0	0
Level 3	3	5	0	0
Level 4	7	10	0	0

When happy hour is active via timer 5, the computer looks to menu's 6 to 9 for it's price of play. When timer 5 has timed out the computer reverts back to looking at menu's 1 to 4 for it's normal price of play.

12.8 COIN LOCKOUT

Coin lockout is as its name implies - coins are rejected by the machine when this facility is activated. Coin lockout is available on all free standing upright machines fitted with the 1056 Combi MPU.

However, when this feature is required on a wall box, the wall box must be fitted with Eprom Version 9.04.

Choose one of the examples below for your particular system.

Example A (1056 Combi Upright Machines)

1. Turn 'ON' Dil Switch 1 on Switch Bank SW2.
2. Program Timer -1 with alphanumeric display.
3. Remove link LK3 on 1056 board if fitted.

See section on Setting the Timer for programming Timer -1.

Example B (Series 2 Wall box)

1. Remove the four inhibit wires attached to the sentinel wall box interface board. These wires originate from the sentinel coin mech 15 way connector strip:-

Pins: 8 - 11 - 12 and 13

After removing these four wires from this interface board, short all four wires together and connect via one lead to the Terminal -1 on the wall box processor 10 way terminal strip.

2. Replace all wall box Eproms for 9.04.
3. Turn on Dil Switch one in wall box.
4. Program Timer -1 with fluorescent pack.
5. Make sure Terminal 1 on w/b processor(s) are screwed down tightly.
6. If Series 2, replace H/A prom with P39.
7. If Series 3, replace H/A prom with V1.3J onwards.

Example C (Series 3 Wall box)

1. Replace Eprom for 9.04

2. Turn 'ON' Dil Switch 1 in wall box.
3. Program timer one with alphanumeric display.
4. Remove link LK1 on wall box board.

See section on Setting the Timers for programming Timer -1 .

12.9 **FREE CREDIT**

Free credit can be established in two ways:-

1. Constant.
2. A programmed number of credits (timed).

1. **Constant**

Constant free credit can be established via Dil Sw 8, i.e.

Example A (1056 Combi)

Turn 'ON' Dil Sw 8 on switch bank SW2.

Example B (Series 2 & 3 Wall boxes)

Turn 'ON' Dil Sw 8.

2. **A Programmed Number of Credits (Timed)**

A programmed number of credits is different to constant free credit because a pre-determined number of free credits can be made available at a particular time. This time is governed by the setting of Timer -6.

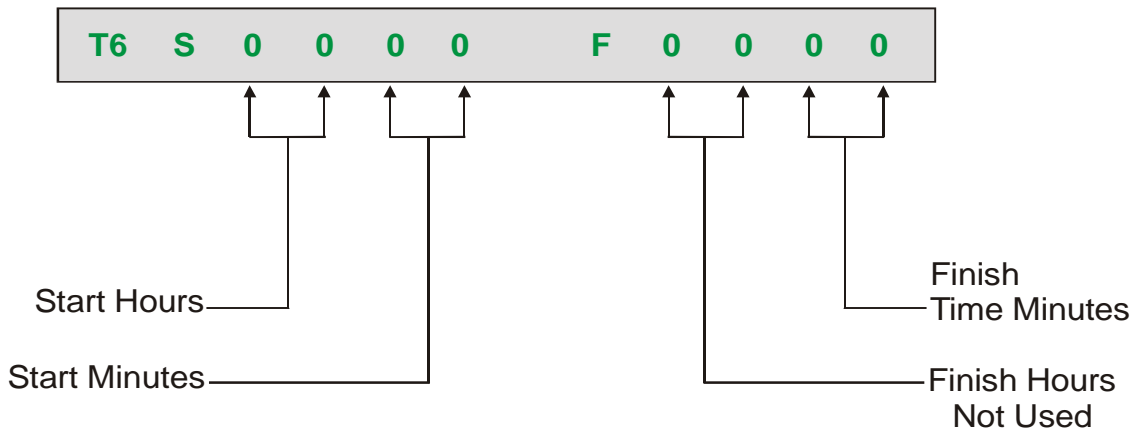
Example

Suppose we require 10 credits at 5.30 p.m. on certain days of the week.

Set your alphanumeric display unit to show Timer 6

NOTE: Timers are set using the 24 hour format.

Timer 6

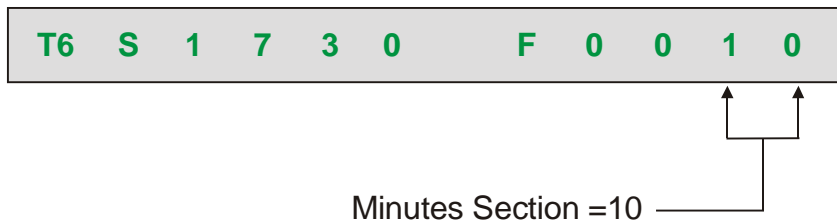


Set the start time to 5.30 pm



Enter the number of free credits you wish to give into the Finish Time Minutes section.

i.e. Assume you wish to give 10 free credits at 5.30 p.m., Timer T6 would be set as shown below.



Once Timer 6 has been set, you need to enable this function by turning Dil Switch 3 'ON'.

Dil Switch 3 is located in the wall box for a HAU system and on Switch Bank 2 (SW2) for 1056 Combi system (i.e. upright machines).

All you have to do now is set the days of the week you require the timed free plays for.

Note

Once a programmed number of free credits are available, the Finished Minute section of Timer 6 acts as a counter, decreasing its count as each selection is made until the Finished Minutes section is zero at which time no more free credits are available.

13. POPULARITY RETRIEVAL **(VIA SELECTION BUTTONS)**

UPRIGHT JUKEBOX (1056 Combi)

Turn 'ON' Dil Switches 5 & 7 on Switch Bank SW2.

WALLBOX

Turn 'ON' Dil Switches 5 & 7 on wall box MPU. (Wall box Eprom must be V9.05)
(HAU Eprom must be V1.3B or later).

NOTE

You need only turn 'ON' Switches 5 & 7 on either the wall box or the jukebox, not both.

PROCEDURE

Turn service switch on front of play mechanism to the 'OFF' position.

Press 0 when the display shows '0 0'.

Do not press and hold the button. To activate any of the functions below press and release the button.

The display will start to flash, displaying the least played C.D. followed by the number of times it has been played.

Press key no:-

1. The display advances towards the most popular C.D., one location at a time.
2. The display steps back towards the least popular C.D., one location at a time.
3. As Key No. 1, only ten locations at a time.
4. As Key No. 2, only ten locations at a time.
5. Instant display of the most popular C.D.
6. Instant display of the least popular C.D.
8. Reset popularity.

14. DATA RETRIEVAL SYSTEM **(VIA ALPHA NUMERIC DISPLAY UNIT)**

Upon opening the carousel's cabinet, locate the 25 way D socket and plug the display in. Press and hold the *DISC UP* button and switch the jukebox from operate mode to collector mode whilst still holding the *DISC UP* button. The display will show as follows:-

<u>Display</u>		<u>Comments</u>
SOUND LEISURE.		1.5 seconds
SITE NUMBERxxxx		Display site number. At this point release the <i>DISC UP</i> button to display the <i>10P PERIOD</i> .
10P PERIOD	x	This displays the number of 10P coins taken by all wall boxes in the system from the last collection up until the present collection. Press and release <i>DISC UP</i> to display the next item.
10P METER=	x	This is a running total of the number of 10P coins taken by the whole system. The number displayed in <i>10P PERIOD</i> is not included in this total. Press and release <i>DISC UP</i> to display next item.
20P PERIOD=	x	Press and release <i>DISC UP</i> to display next item.
20P METER=	x	Press and release <i>DISC UP</i> to display next item.
50P PERIOD=	x	Press and release <i>DISC UP</i> to display next item.
50P METER=	x	Press and release <i>DISC UP</i> to display next item.
£1 PERIOD=	x	Press and release <i>DISC UP</i> to display next item.
£1 METER=	x	Press and release <i>DISC UP</i> to display next item.
TOTAL= £	x.xx	This is the total cash amount taken by the system in the current period. At this point, press and release <i>DISC UP</i> to display <i>10P PERIOD</i> again or press and release <i>DISC DOWN</i> to go on to shown disc and track play information.

DSC.100 TOTAL x

This shows the disc number and the total number of times that it has been played. By pressing *DISC UP* or *DISC DOWN* you can step through the discs displaying the different totals. Stepping through will take place automatically if either buttons are held down. Stepping down will stop if disc 100 is reached and stepping up will stop if disc 169 is reached. If a disc was logged as faulty this will be displayed next to the disc number with the letter 'F'.

DSC.100 TRK.1 x

By using *TRACK UP* and *TRACK DOWN* you can display the individual number of times that each track from the current disc has been played. Stepping up will stop if track 30 is reached and stepping down will stop if track 1 is reached.

MEMORY SORTED

To sort the discs into order press *SORT MEMORY* until the message on the left appears. If this is not pressed for long enough or pressed by accident the message *SORT ABORTED* will appear. When sorted the discs are in order of least popular first. Pressing *DISC DOWN* or *DISC UP* will return to displaying discs. The sorted table can be searched using *DISC UP*, *DISC DOWN*, *TRACK UP* and *TRACK DOWN*. Stepping down through discs will stop when the least popular disc is reached and stepping up will stop when the most popular disc is reached.

MEMORY CLEARED

To clear the memory press *CLEAR MEMORY* until the message on the left appears. If this is not pressed for long enough or pressed accidentally then the message *CLEAR ABORTED* will appear. Clearing the memory sets all disc and track play counters to zero and updates the coin meters.

N.B. Only use when collecting money.

SYSTEM EXIT

This will be displayed when the collector switch is returned to its normal operating position. This may be at any point during the data retrieval session. The display may now be disconnected.

14.1 CHANGING THE SITE NUMBER

To change the site number Dil switch -8 must be turned 'ON' before the service switch is turned from operate to the OFF position. Dil switch 8 can be found on the (1037) board on Hideaway Units or on switch bank one (SW1) on 1056 board.

To change the site number DIL SWITCH 8 must be ON before collector mode is entered. If this switch is ON then the display will pause at *SITE NUMBER* allowing the user to alter the site number.

Site numbers 0000 to 9999 are allowed.

DISC UP changes the thousands digit.

DISC DOWN changes the hundreds digit.

TRACK UP changes the tens digit.

TRACK DOWN changes the units digit.

Pressing and releasing of a button increments the associated digit. Incrementing a 9 digit returns the digit to 0.

Locate the 25 way 'D' type connector in your machine. Plug in your Alpha Numeric Display Unit.

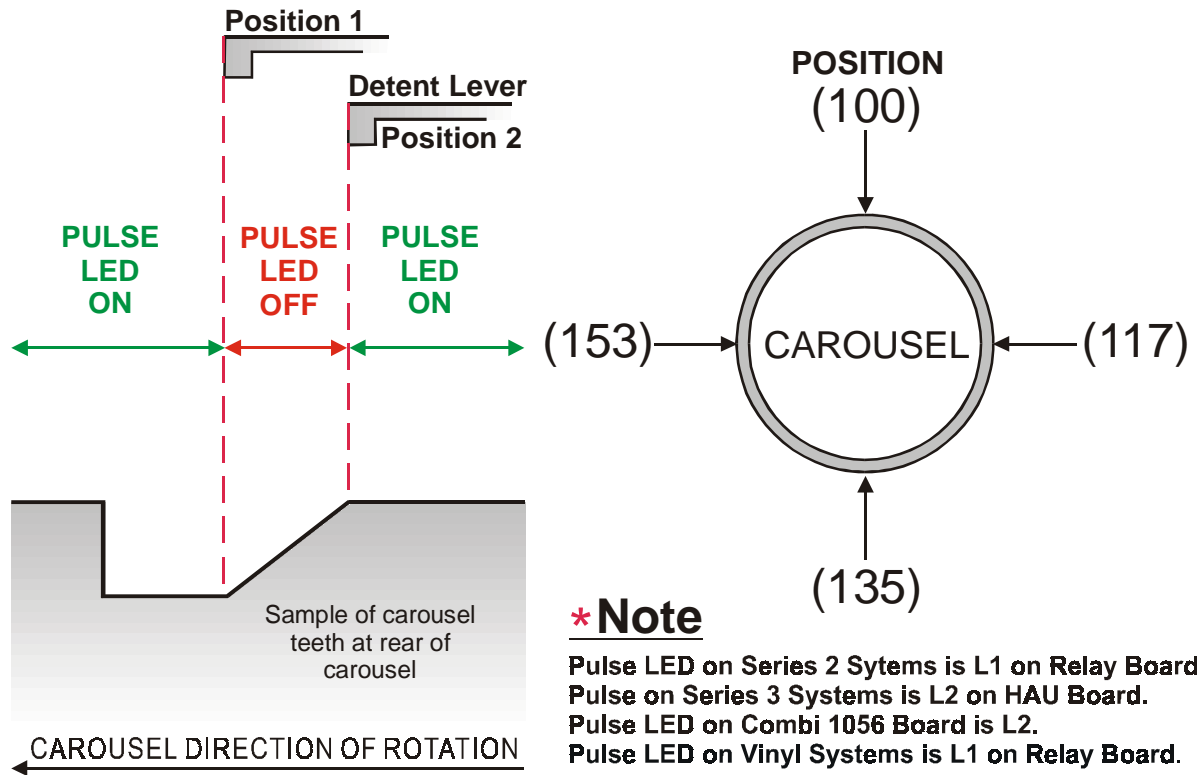
- a) With the alphanumeric display connected, press and hold simultaneously the *DISC UP* and *CLEAR MEM* buttons.
- b) Now switch the mechanism service switch from *OPERATE* to the *OFF* position with the buttons still held (i.e. *DISC UP* and *CLEAR MEM*).
- c) The display will now show *SOUND LEISURE* followed by *SITE NUMBER XXXX* then *REAL TIME CLOCK*. At this point the buttons can be released and the display will show the time and date in the following format.

e.g. SU 24/08/94 1350

15. PLAY MECHANISM OPTO SET UP

Ensure Pulse LED (*see note below) illuminates as shown in diagram below.

Ensure opto detectors are correctly set at positions on carousel, ie.



16. C.D. WALLBOX TEST

This test is ideal for engineers on site and gives an immediate answer to the question. Is it the wall box or is it the hideaway which is faulty?

The wiring from the wall box to the hideaway is also tested in the process, i.e. A & B wires.

Carry out the following instructions:-

- a) Turn the machine off.
- b) Disconnect the A & B wires at the hideaway (located on the distribution board). Do not disconnect the wires connected terminals 1, 2 and 3.
- c) Twist the A & B wires together to short them out.
- d) Turn the machine on.
- e) Note the selection being displayed on the wall box (last selection played).
- f) Instigate a credit.
- g) Make a selection. Any selection except that which was being displayed on the wall box before credit was established.
- h) If the wall box is working and the cable is undamaged, the data will be transmitted down the wall box send wire and (because they are shorted together) back up the wall box receive wire. This will result in the wall box display being updated to the new selection entered.
- i) If this is the result, then the wall box and cable are fine and the problem is at the hideaway.
- j) If the wall box display is not updated, then the test should be carried out on the wall box alone as follows:
 - i) Turn the machine off.
 - ii) Reconnect the A & B wires to the distribution board in the hideaway.

- iii) Disconnect the A & B wires from the wall box (tuck them out of harms way), do not join them.
- iv) Put a link between the A & B terminal connectors on the wall box interface board and screw them down firmly.
- v) Turn the machine on.
- vi) Note the selection being displayed on the wall box (last selection played).
- vii) Instigate a credit.
- viii) Make a selection (any selection except that which was being displayed on the wall box before credit was established).
- ix) If the wall box is working, the data will be transmitted from the wall box send terminal to the wall box receive terminal. This will result in the wall box display being updated to the new selection entered.
- x) If this is the result, then the wall box is fine and the cable (A or B wire) is open circuit.
- x) If the wall box display is not updated, then the wall box MPU is likely to be faulty and should be replaced.

N.B. Ensure the (ac) voltage at terminals 1, 2 and 3 read as listed below:-

1 to 2	=	12.5V(ac)
2 to 3	=	12.5V(ac)

17. SERIES 3 EPROMS

FUNCTION	EPROMS		
	HAU	WALLBOX	JUKEBOX
BGM only	1.3k	9.05F – 9.05	V2.2
Random Play	1.3k	9.05F – 9.05	V2.2
Track length	1.3k	9.05F – 9.05	V2.2
BGM volume	1.3k	9.05F – 9.05	V2.2
Site Number	1.3k	9.05F – 9.05	V2.2
BGM Timed	1.3k	9.05F – 9.05	V2.2
Popularity	1.3k	9.05F – 9.05	V2.2
Coin lockout	1.3k	9.04	V2.2
Happy Hour	1.3k	9.04	V2.2
Timed Free Credit	1.3k	9.04	V2.2
Price of Play	1.3k	9.05F – 9.05	V2.2
Bonus Plays	1.3k	9.05F – 9.05	V2.2
Max. No. Of Discs	1.3k	9.05F – 9.05	V2.2
Consecutive tracks	1.3k	9.05F – 9.05	V2.2
Low BGM Disc	1.3k	9.05F – 9.05	V2.2
High BGM Disc	1.3k	9.05F – 9.05	V2.2
Free Play	1.3k	9.05F – 9.05	V2.2

18. C.D. MECHANISM PARTS/SPARES

Item No.	Description
350-14	Main Spindle
350-20	Mag Drive Belt - 140
350-21	M12 x 1 Pitch x 25 Hex Screw
350-22	Tab Washer
350-23	Mag Spacing Washer
353-00	Pinch Arm Assembly
360-00	Main Frame Assembly
361-00	Ratchet Pawl Assembly
370-00	Philips Mech Decoder Unit Assembly
381-00	Magazine Assembly
391-18	Switch Cam
392-11	Cam Follower
397-00	Cam Shaft Assembly
398-00	Clamp Arm Assembly
398-01	Pinch Arm Assembly Lift Cam Nylon
398-22	Centre Plug Polycarbonate
398-23	Spring .25odx. 4371x .016 x 5 Coils
398-24	Steel Ball .25 dia
398-25	Magnet (Clamping)
399-03	Clamp Arm Spring
400-05	Jockey Pulley Spring
400-10	Diablo Guide Shaft
400-26	Micro Switch XFK5-S1
400-75	Knock Off Lever Spring
400-93	Lift Arm Spring

Item No.	Description
403-00	Philips CD Head Assembly
404-00	Jockey Pulley Assembly
405-00	Front Bracket Assembly
408-00	Tie Bar Opto Assembly
409-00	Transfer Arm Assembly
410-00	Gear and Motor Assembly
430-00	Reject/Scan Bracket Assembly
440-00	Opto Unit (with bracket) Assembly