

**Product Overview** The System is a two-way intercom specifically designed to aid communications where normal speech is impaired by the use of glass security screens or other similar barriers.

Every system is controlled and powered individually and operates on a stand-alone basis.

Each system comprises a twin-channel audio amplifier, power supply unit, a microphone and speaker for the staff and a microphone and speaker for the customer. The microphone and speaker modules are supplied in various formats to enable the system to be installed in differing locations.

The system operates on an "Open Duplex" basis, i.e. microphones and speakers are live simultaneously, similar to a telephone, with no manual or automatic switching of the voice. This means that clipping of speech is not encountered whilst still allowing users to operate the system "Hands Free". Sophisticated electronic circuitry in the amplifier and purpose designed speaker and microphone modules ensure that the risk of acoustic coupling or "Feedback" is kept to a minimum.

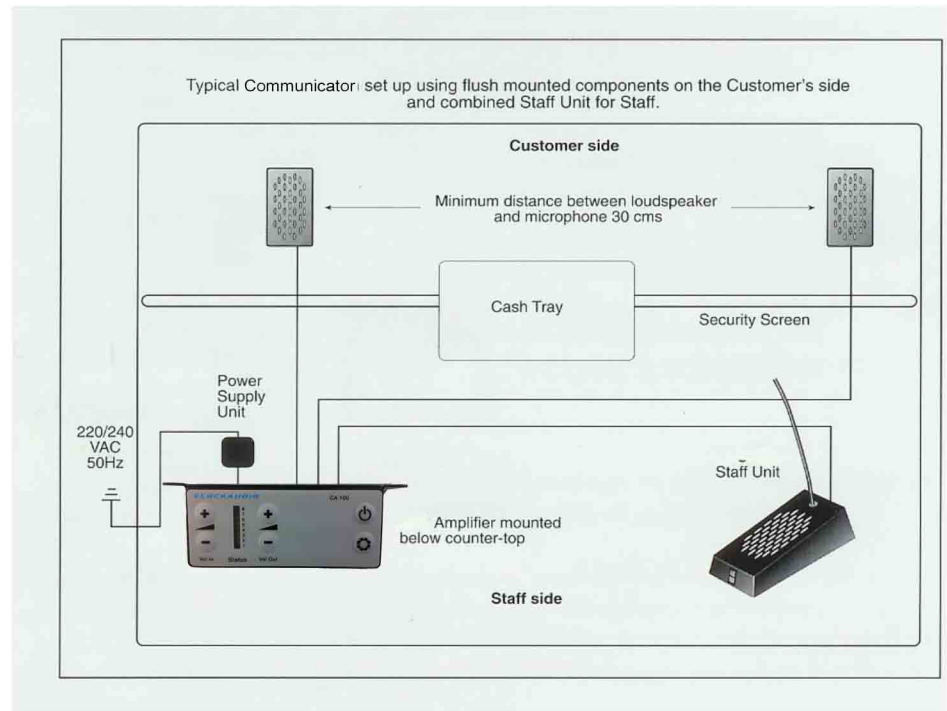
## System Components

1. CA 100 Audio amplifier.
2. 12V DC power supply.
3. CSU 100 Staff Unit comprising close speaking microphone and loudspeaker.
4. A microphone for the Customer.
5. A loudspeaker for the Customer
6. Induction Loop Aerial.

N.B. Microphones and Loudspeakers are available in flush or surface mounting formats.

The CSU 100 staff unit for the staff side is supplied as standard. An alternative option comprising separate microphones and loudspeakers is also available.

A Customer Audio Bridge with twin surface mounted loudspeakers and a centrally fitted close speaking microphone is available for the Customers side.



## Sighting and Installing the Amplifier

Each Communicator System requires an Audio Amplifier (CA 100) with its associated power supply (CPS 100). The Amplifier connects on a plug and socket basis to other system components via individual cables.

The Amplifier should be mounted on a flat surface within close proximity to the other system components and conveniently to hand for the operator. For example, on the staff side under the desk-top or counter-top would be suitable. Ensure there is also access to the Microphone and Induction Loop gain controls located on the side of the amplifier and also to the rear connection sockets before fixing. Twin flanges each with two screw holes are formed at the top of the amplifier housing. These are used to fix the amplifier under the counter top with small self tapping screws. The amplifier housing need not be opened, as all connections are external.

## Sighting and Installing Microphones and Speakers

Customer Microphones and Loudspeakers may be flush or surface mounted depending on individual requirements. See following pages for fitting instructions. Surface mounted components are best sited at the junction between the counter-top and the glass partition. For best performance, the microphone should be mounted at least 30 cms away from the Loudspeaker. Each component comes with a 3 metre lead and two-way plug. It is advisable to remove the plug before fixing as this enables a neater installation to be achieved using smaller diameter holes through which to feed the cables. However, the cables and plugs must be re-connected correctly or the system will not operate. If in doubt, identify and mark the wires before disconnecting the plug(s).

# CA100v02 Installation

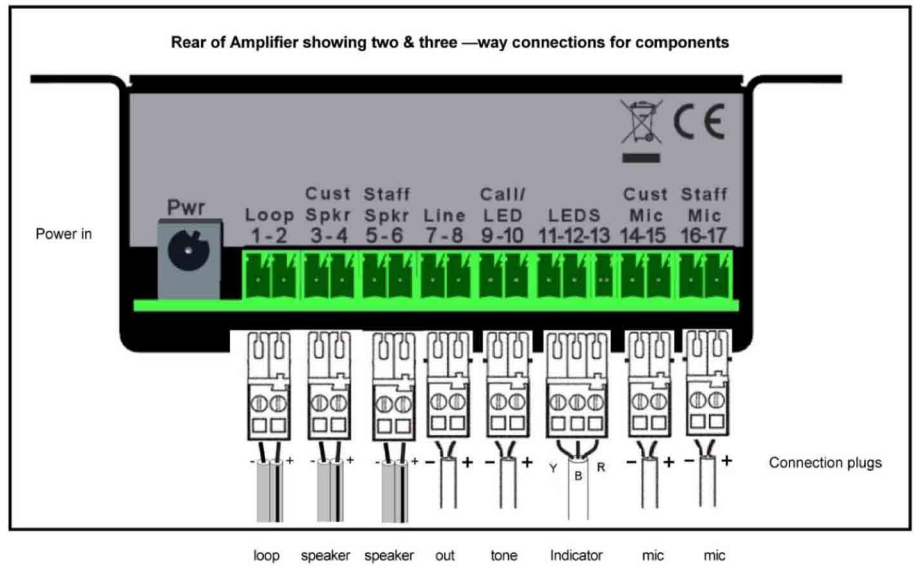
## Positioning & installing the staff unit

The staff unit is a self standing module for the staff side. It should be placed conveniently on the counter top so the cashier can hear the loudspeaker and talk into the gooseneck microphone to the customer.

The microphone is of the close talking type so background noise is not picked up. A 'Mute' switch is located on the front of the Staff Unit. In the absence of a cable port, a suitably sized hole should be drilled in the counter top at the rear of the staff unit to take the cable.

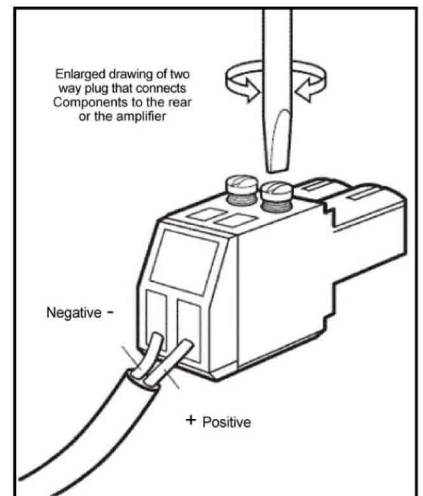
## Amplifier Connections

- |                             |                             |                      |
|-----------------------------|-----------------------------|----------------------|
| 1. Induction Loop Aerial(-) | 8. Audio Line in (+)        | 15. Customer Mic (+) |
| 2. Induction Loop Aerial(+) | 9. LED/Tone (-)             | 16. Staff Mic (-)    |
| 3. Customer Speaker (-)     | 10. LED /Tone (+)           | 17. Staff Mic (+)    |
| 4. Customer Speaker (+)     | 11. Confidence LED (yellow) |                      |
| 5. Staff Unit Speaker (-)   | 12. Confidence LED (black)  |                      |
| 6. Staff Unit Speaker (+)   | 13. Confidence LED (Red)    |                      |
| 7. Audio Line in (-)        | 14. Customer Mic (-)        |                      |



## Connecting Components to the Amplifier

Each component (Microphone, Loudspeaker, Staff Unit or Induction Loop comes fitted with two-way connection plug(s), with the exception of the confidence LED connection which is fitted with a three-way connection plug. These connections locate in the appropriate socket(s) at the rear of the Amplifier. The plugs connect to the cables by screw terminal connections so cables can be removed and fed through small, neat apertures for an unobtrusive, discrete installation. However, the cables and plugs must be re-connected correctly or the system will not operate. If in doubt, mark the wires before disconnecting the plug(s). If there is a suitable cable port on the cashier's side, the cables can be diverted through this without the need to remove and reconnect the two-way plugs.



## Controls

Push button controls are provided on the front of the Amplifier which gives access to the host of the amplifier features. The amplifier allows the user to adjust the output from the loudspeakers this is accompanied by a status LED indicator.

# CA100v02 Installation

## Adjusting the System

Controls for adjusting the microphone gains are located at the front of the amplifier by the use of push buttons. The volume of the loudspeaker on the staff side or customer side and be adjusted individually using the (+) and (-) buttons for the relevant position. Vol in represents the staff side and Vol out represents the customer side speakers.



A column of LEDs on the front fascia of the amplifier is present to aid setup; it signifies the volume status of the position being adjusted.



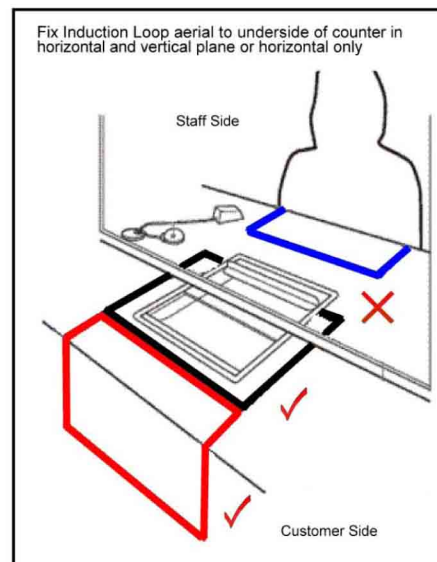
## Induction Loop Facility

The amplifier is supplied with an Induction Loop Facility. If sold in a package it will contain an CILA Induction Loop Aerial, and a self adhesive induction loop sign. The principle of the system is to transmit sound via an electro-magnetic field which is picked up and amplified by a tele-coil fitted inside customers' hearing aid.

Correct positioning of the Induction Loop Aerial is critical to ensure the loop performs to its full potential. It should be fixed under the desk-top or counter centrally so that half is mounted horizontally under the counter and the other half mounted vertically, facing the customer (Red installation). If Red installation is not possible aerial can be installed flat on the counter surface (black installation). Do not install in location marked in blue.

Make sure that the Induction Loop self adhesive sticker is displayed in a prominent position. The Induction Loop Aerial connects to terminals (1) and (2) on the amplifier using the appropriate plug and socket.

The induction loop gain is set at a default level.

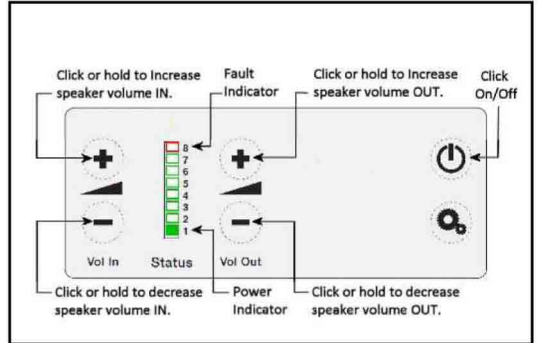


# CA100v02 Installation

## Front Panel Overview

There are three setup "pages" available on the amplifier, all of which can only be accessed through the engineer's setup mode. The settings that can be adjusted are:

- Staff/Customer Volume

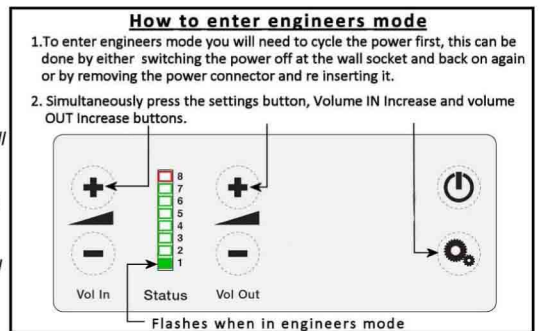


## Entering Engineer's Setup Mode

**Note:** If the CA100v02 detects an error in its settings memory, it will restore itself to factory default settings.

**Note:** The CA100v02 will exit engineer's setup mode if the "On/Off" button is pressed at any time.

**Note:** The CA100v02 will also exit engineer's setup mode if no button has been pressed for a period of two minutes.

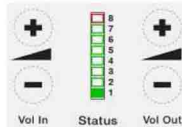


## Whilst in Engineers Mode

### Whilst in engineers mode

#### Maximum volume adjustment

increase or decrease the maximum volume using the below buttons



The On / Off button and Settings button in all Eng area's operate as below.



Save and exit engineers mode.



Moves onto the next Setup Area.

## Revert To Factory Default Settings

Unplug the power supply and reconnect it.  
Press "On/Off" button and "Vol In -" button together then release.

The status LED bar graph will show a fixed pattern of LEDs indicating the firmware revision number, followed by all LEDs illuminated. This indicates that the default settings have been restored.

## Flush Mounting

Microphone  
Speaker  
Combined Staff Unit

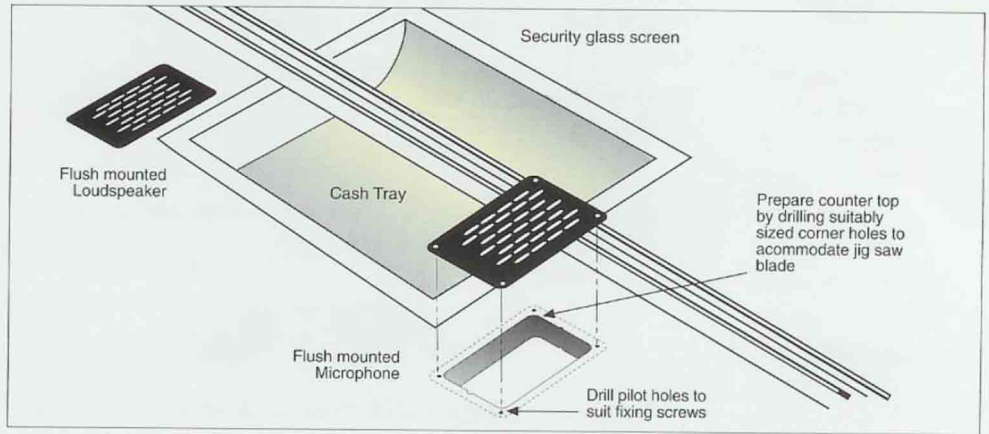


Figure 1

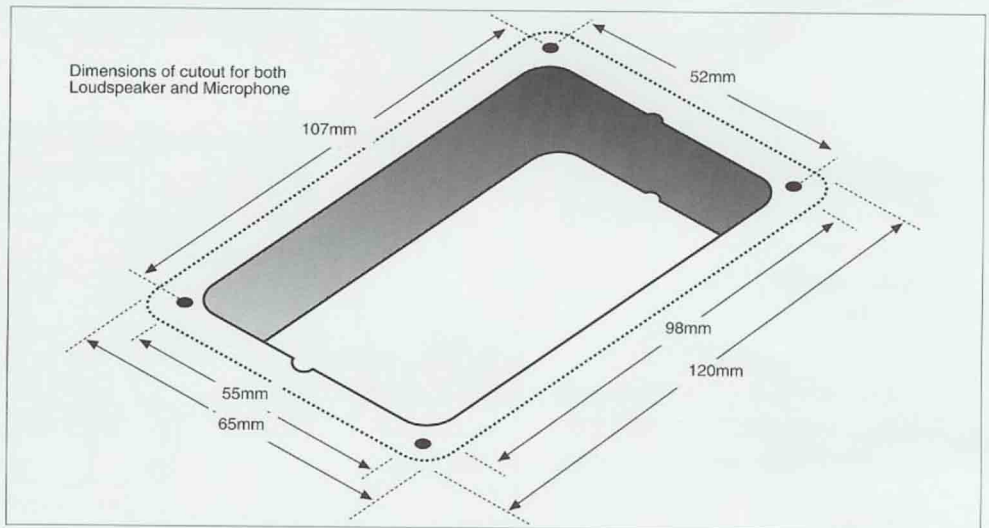


Figure 2

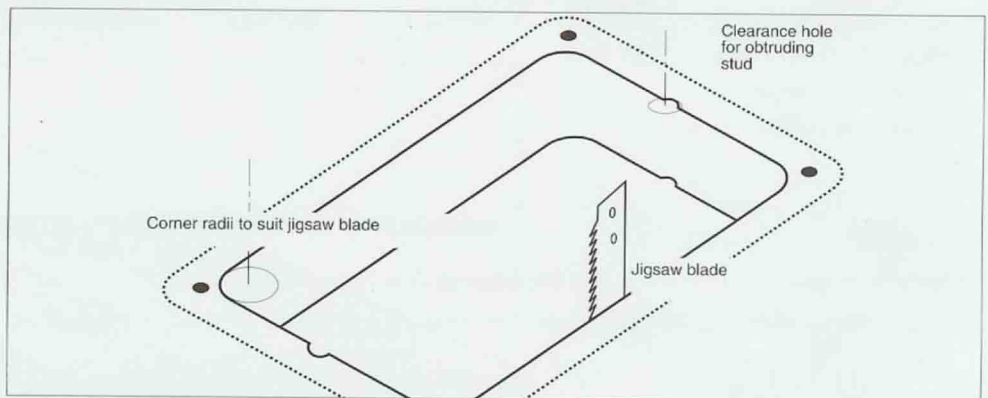


Figure 3

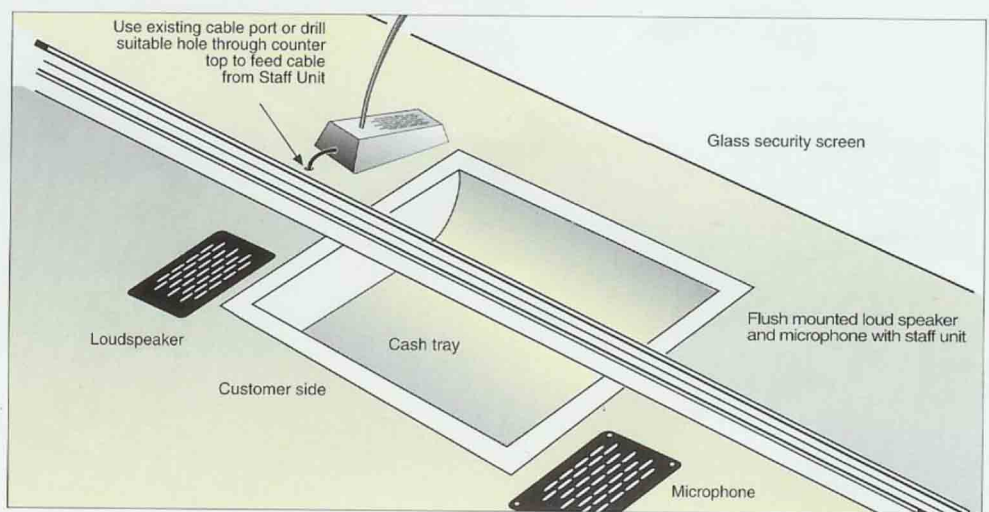


Figure 4

**Staff Unit**  
Combined  
Microphone  
and Speaker

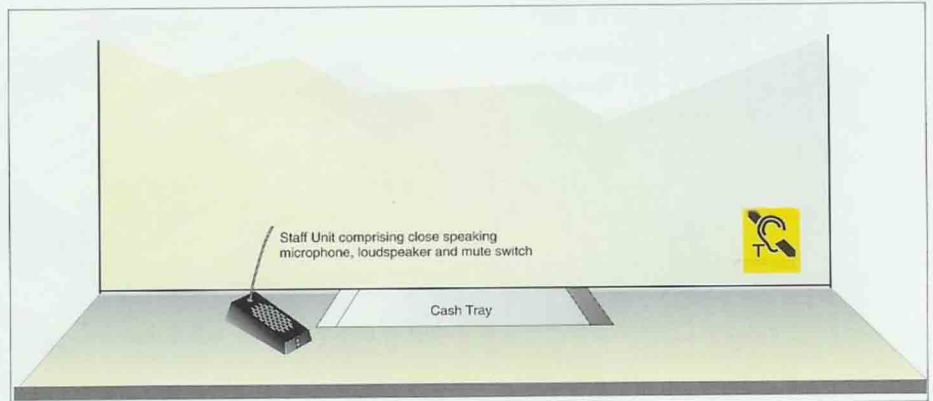


Figure 1

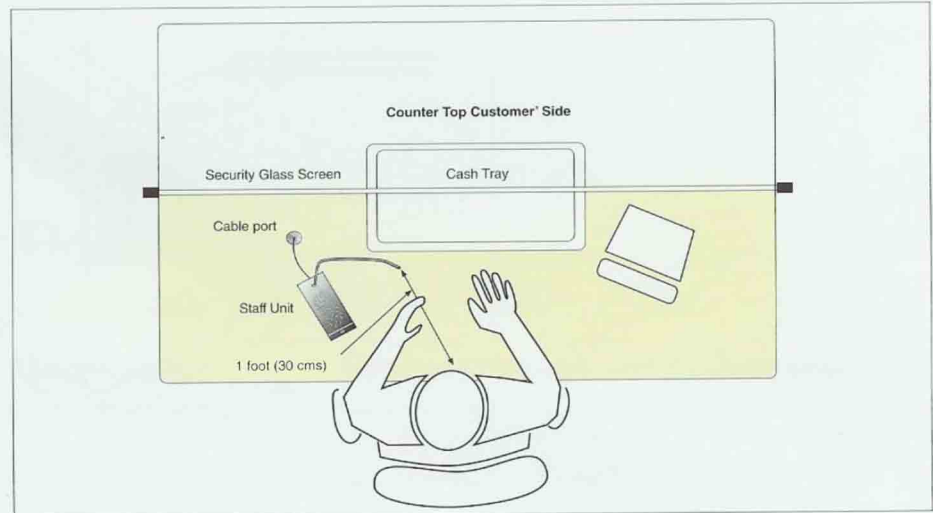


Figure 2

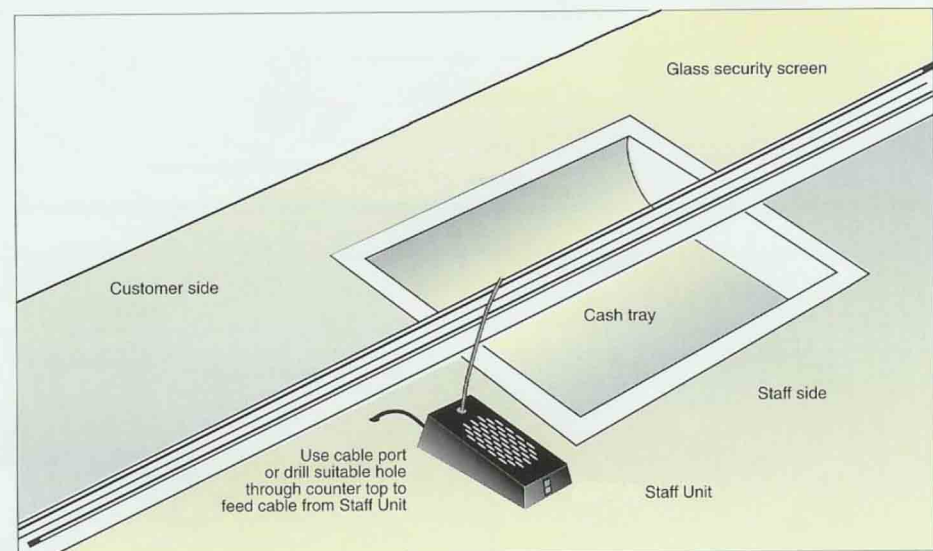
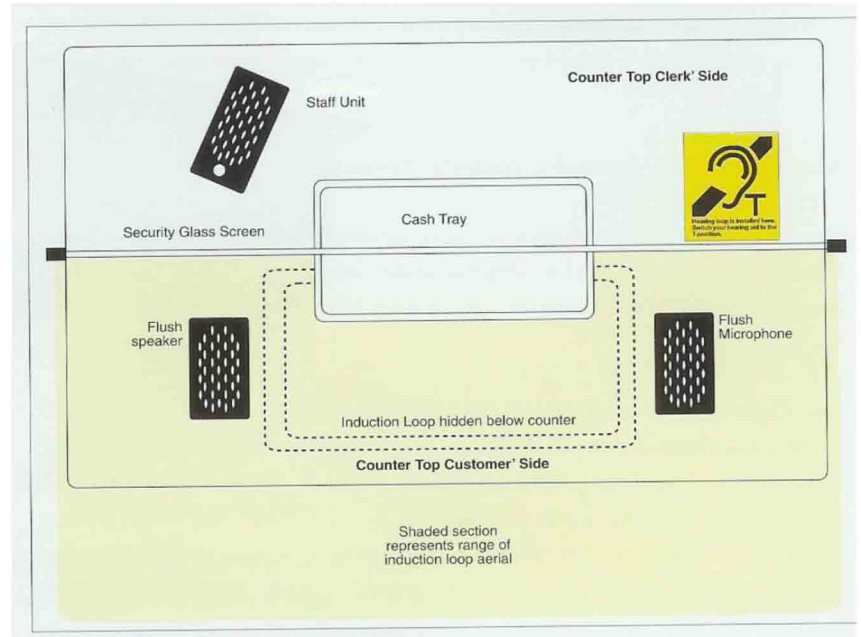


Figure 3

## Optional Hearing Aid Induction Loop



### Suggested text for notice displayed to customers

To meet obligations under the 1995 Disability Discrimination Act, an induction loop system has been installed in this area for the benefit of Hearing aid users. To use this facility, customers should switch their hearing aids to the "T" position. Background noise will be less obtrusive and customers will hear the member of staff more clearly.

### Instructions for Use

- **The System is "ON" at all times.**
- **Staff's voice is picked up by the staff unit on the staff side.**
- **Customers will receive the maximum signal from the induction loop provided they are within the shaded area shown above.**
- **Confirmation that a System is installed is displayed by an Induction loop sign.**

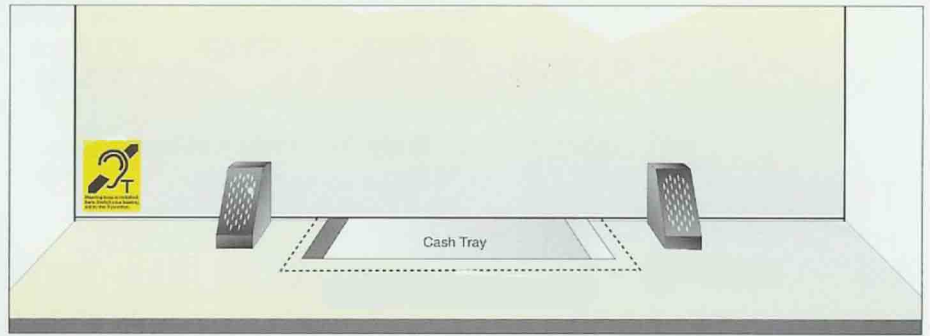
NOTE: THE SOUND LEVEL WILL HAVE BEEN SET FOR THE AVERAGE CUSTOMER. VOLUME CAN BE ADJUSTED BY THE HEARING AID USERS OWN VOLUME CONTROL.



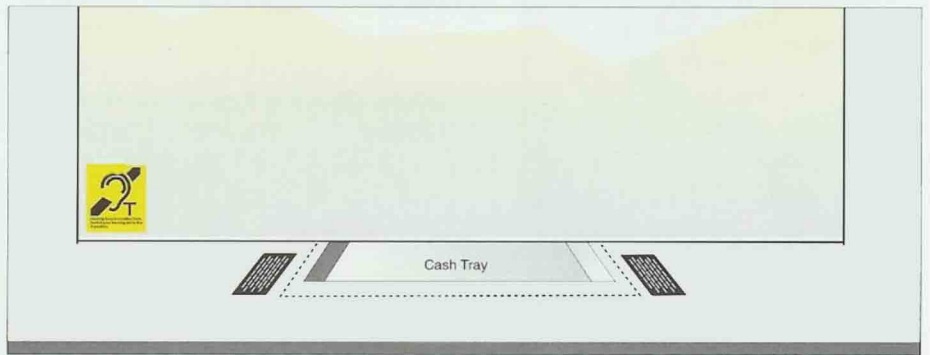
## Customer Options

### Customer side

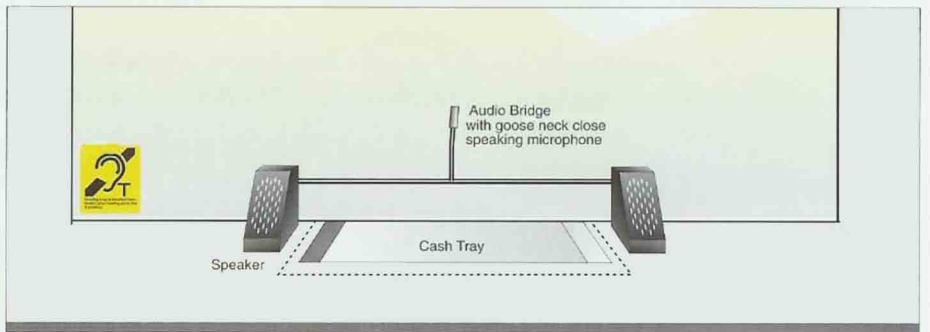
Customer's side 1  
Surface mounting components  
Microphone  
Loudspeaker



Customer's side 2  
Flush mounting components  
Microphone  
Loudspeaker



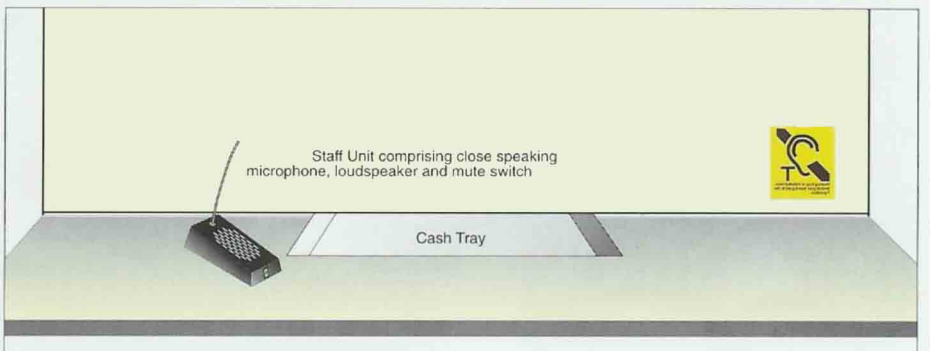
Customer's side 3  
Surface mounting components  
Audio Bridge  
Close talking Microphone  
and twin Loudspeakers



## Staff Option

### Staff side

Staff side 1  
Staff Unit



## WHAT DOES IT DO?

For people with hearing aids, the Induction Loop System acts as a highly effective block against background noise. Unlike the human brain, a hearing aid is unable to discriminate between what the user wants and does not want to hear, so the Loop assists the user by cutting out much of the extraneous noise. Operating the "T" switch in a hearing aid enables the user to connect directly into the microphone, reducing impairment of sound quality which may occur as a result of distance or obstruction.

## WHY DOES IT HELP?

Because unlike glasses, which can restore good eyesight to those with less than 20/20 vision, hearing aids cannot restore hearing to those whose hearing is impaired. Hearing aids can only amplify sound, not improve it. It is as if a person with poor vision is given a bigger image, rather than a sharper image, as compensation. Like turning-up the volume of a radio with fading batteries, which produces a bigger, but not a clearer sound. The side effect caused by a hearing aid is greater distortion which, in turn, creates a fresh barrier denying clear audible reception in what can be rather difficult and often important situations.

## WHAT DOES IT DO FOR YOU?

The advantages gained by organisations who install the Loop System are far greater than most people at first realise. With the Induction Loop, members of staff with good hearing wishing to communicate with clients or colleagues whose hearing is impaired discover that they can do so without the need to raise their voice. This modulated tone allows for the development of better relationships which, in turn, is better for business, an advantage which applies equally to situations where transactions take place with members of the public. Induction Loop also enables conversations of a sensitive or private nature concerning health, financial, work or domestic worries, for example, to be conducted quietly and confidentially, thereby avoiding unnecessary embarrassment all round. Furthermore, the aggressive sound of a raised voice is eliminated and along with it the tendency to speak in a clipped, deliberate manner when addressing those who suffer from poor hearing. Simply, a potential cause of irritation - a feeling of alienation, is effectively removed. So, the Induction Loop System not only helps the hard of hearing but also those who deal with them. It also communicates to all through the displayed "T" signs,\* a measure of care, consideration and progressiveness which clearly reflects the general attitude prevailing throughout the organisation.

- The symbol which tells everyone the Induction Loop is in place.

## HOW DOES IT WORK?

Simply expressed, the Induction Loop System makes use of an insulated wire, an amplifier and a microphone. When a hearing aid is switched to its "T" setting, a tiny coil within the aid responds to the magnetic waves sent out from the Loop. This enables someone with a hearing aid to "tune - in" to whatever a member of staff or colleague may be saying, be it from behind a glass screen, at a counter, a conference table, a reception area, or in an interview room.

**AMPLIFIER**

(CA 100)

OUTPUT POWER	1.8 WATTS RMS PER CHANNEL INTO 4 OHMS
DISTORTION	< 0.5 THD
OPERATING CURRENT	1 AMP
OUTPUT IMPEDANCE	4 OHMS
POWER SUPPLY	12V DC
CONTROLS	
STAFF/CUSTOMER SPEAKER	PUSH BUTTON
STAFF/CUSTOMER MICROPHONE	PUSH BUTTON
POWER	PUSH BUTTON
CONNECTIONS	
AUDIO/CONTROL	2-WAY SCREW PLUGS (PHEONIX)
POWER	2.1mm DC PLUG

**MICROPHONE**

(CMF 100 or CML 100)

TYPE	CONDENSOR (BLACK ELECTRET)
POLAR PATTERN	CARDIOID
REQUENCY RESPONSE	50Hz – 18KHz
SENSITIVITY	-46dB +/- 3dB @ 1KHz (0Db = 1VPA)
IMPEDANCE	1.8KOHMS
S/N RATIO	64Db (A)
MAXIMUM SPL	125dB 1% THD
POWER REQUIREMENTS	1.5-9V DC
OPTIMUM OPERATING VOLTAGE	5V DC
TEMPERATURE	-20°C TO +50°C
HUMIDITY	+50°C 90%
OPERATING TEMPERATURE	-20°C ~ +50°C

**LOUDSPEAKER**

(CLF 100 or CLS 100)

ELLIPTICAL	90 x 50mm
CONE	PRESSED PAPER FIBRE
SURROUND	FABRIC SILICONE TREATED
FREQUENCY RESPONSE	180Hz – 16KHz
IMPEDANCE	4 OHMS (1V @ 100Hz)
POWER RATING	5 WATTS RMS
OUTPUT SPL 1WATT @ 1m	85dB