

*Solwise*

**S-308**

**Private  
Branch  
Exchange**

*Users Manual &  
Programming Reference.*

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# System Features

To those new to telephone systems there are many new and sometimes confusing terms. This section of the manual lists the features of the system along with a brief explanation of each. If this is new to you then it is advisable to spend half an hour or so familiarising yourself with the terminology before installing the system.

## Automatic Line Access

To make an external call a user just picks up the phone and enters a single digit (0 or 9 - as programmed) to get the next free line. Access is granted subject to any toll restrictions applying to the extension being used.

## Tone/Pulse switchable

Phones come in two types. The old type, pulse, sent its dialling information as a series of clicks or pulses on the line. The new type of phone, called 'Tone' or 'DTMF' (Dual Tone Multi Frequency) send the dialling information as a series of musical beeps. The PBX system can accept either type of phone.

## Extension Privacy

With the PBX system it is not possible for the user of another station to listen-in or eavesdrop on conversations from other extensions. This is unlike the situation of the common domestic 'Paralleled extensions'.

## Internal Call or Intercom

Extension to extension calls may be made even when an outside line is in use. PBX systems have three such intercom paths which can be used simultaneously.

## Operator Access

One extension is assigned as the operator and other extensions can call this extension by dialling a single digit (0 or 9 - as programmed)

## Call Pickup

An extension can pick up a call that is ringing at any other extension by entering the 'Call Pickup Code'.

## Recall External (CO Flash)

For some applications it is necessary to deliver a recall signal to the trunk line (also called the CO or Central Office Line). Normal recalls entered at extensions will be accepted by the PBX and used for functions like call transfer. The PBX therefore provides a way of delivering a recall signal to the trunk line. This is done using the # key.

## Recall (Flash) internal timing

Phone services around the world have adopted different time intervals for a 'Timed Line Break' recall signal. This line break is equivalent to tapping the hook switch of the telephone and is the

universal way of signalling the exchange for call transfers and such like. A long break allowance means that it will take a long time for the exchange to be sure a call is finished so that another can be started. A short break, though convenient if generated automatically, can be mistaken for the first 'click' from a pulse dial telephone. Most of the world have selected around a 300ms (300 milliseconds  $\sim 1/3$  sec). BT in their wisdom selected 80ms which is definitely sometimes confused by their own system with a pulse phone.

The S-308 system from Solwise is set to minimum flash time suitable for UK phones of around 74ms. The upper limit is adjusted by the user for use with phones lacking a TLB, recall or flash key. **If you find your phones do not generate a suitable 'recall' signal then you can use \*\*\* instead. (See Programme 33). Since, in the UK the normal telephone handset recall time is about 65ms we strongly advise against trying to use the normal Recall or Flash method. Instead customers should use the \*\* key combination to issue a recall.**

## Hold Calls

External calls can be placed on hold where they will hear hold music. Held calls can be retrieved as required but the system will ring the extension if a held call is not retrieved within 60 seconds.

## Transfer Calls

External calls can be transferred to any other extension by first placing the call on hold and then entering the number for the destination extension. When the extension answers the user can optionally announce the call to the recipient and then replace the handset to complete the transfer.

## Call forwarding - Internal

Sometimes called 'follow-me'. Each extension may be set so that when it is called from another extension, the calls is routed to another number, either internal or external. This transfer will occur whether or not the original target extension is busy.

## Camp On - Internal

Internal calls to a busy extension can be remembered by the system so that when the target becomes free it rings immediately. Once the call is answered the system rings the original calling phone to complete the call.

## Camp On - Transfer

When transferring an incoming call to a busy extension, the system can be told to hold the incoming call until the target extension is free and then complete the call.

## Call Park

This is a way of placing a call on hold in such a way that it can be retrieved from any extension as well as the initiating one. Only one call may be parked on the PBX system and it will call back the

initiating extension if not retrieved within 60 seconds.

### Do Not Disturb

Each extension can be programmed to inhibit ringing. The function will always be over-riden by the Operator, or if the station is the only one that will ring on an incoming call.

### Conference Call

A conference call is a call with more than two parties. The PBX system can support conference calls with 3 parties of which up to two may be external.

### Brokers Call

This is just a special application of a held call where the user places a second call to another party, internal or external. The user can switch between the two calls so each conversation is held privately.

### Speed Dialling

Program 66, 55, 53, 54

The PBX system can hold 10 numbers in memory for the whole system as well as 10 numbers for each extension. Each of these memories can hold numbers of at least 20 digits.

### Trunk Queuing

If all trunk lines are busy when a user tries to place an external call, the system can alert the user by ring-back when a trunk becomes free.

### Grouping - Incoming Calls

Program 70, 80, 82

Each trunk line can be assigned to any number of extensions for ringing on incoming calls. For instance you may need a 'Sales' group and an 'Accounts' group. Each extension may be a member of none, one or more groups. This function does not affect the ability to transfer or make internal calls between groups.

### Grouping - Outgoing Calls

Program 70

Each extension may have access to each trunk line enabled or disabled, for instance for billing purposes. This function does not affect the ability to transfer or make internal calls between groups.

### Toll Restriction

Program 71, 72, 73, 74

Toll restriction limits the type of external call an extension can make by monitoring the first 3 digits dialled. There are 4 levels of toll restriction each of which can have 4 selections for the first 3 digits of the dialled number. Toll restriction can be set up system-wide or on a by-extension basis and can be over-riden with passwords.

The facility is powerful but does require some care in setting up.

### Call Duration Limit

Program 76

A limit between 1 and 9 minutes may be set for outgoing calls. The function is set up on a by-extension basis.

### Call Interrupt (Intrusion)

Program 75

Extensions can be programmed to enable them to alert a busy station when it is called using an intrusion tone. The function is set up on a by-extension basis. Sometimes called 'Call Waiting'

### Call Distribution

Program 80

Incoming calls can be made to ring all the assigned extensions together, or have assigned extensions each take a call in turn.

### Distinctive Ringing

Different ringing patterns are provided to distinguish between internal, external and hold-return calls.

### Programming Passwords

Program 88

To prevent unauthorised or accidental system re-programming a password system is used. The password may be set by the user or disabled as required.

### Hold Music

The PBX system can generate its own hold music or accept a signal from an external source such as a domestic radio or CD player.

## Installation

### Before Installation

Before proceeding with the installation, check that the PABX is of the type listed on the delivery note or invoice and that it is of the same configuration that you require. Ensure that no transit damage is apparent. Especially check that the number of trunk lines and extensions is as expected. You should also find length of cable terminating in a BT plug supplied for each trunk line on your system. You should mount the PABX securely on a wall where it will not be disturbed or knocked. It should be powered from an electrical source that is not shared with high-power equipment or appliances that generate a lot of electrical noise, such as refrigerators or compressors.

Try to position the unit to minimise the total wire laying that will be required, remembering that there are more extensions to wire than trunk lines.

### Dip Switch Settings

Please ensure that **ALL** dip switches are set to off **EXCEPT** switches 6 and 12 which must be in the on position. Ignore all other settings.

## Initial Power-Up

Mount the unit to the wall securely using screws and wall plugs if necessary. Connect the multi-plug from the power unit to the circuit board of the PABX and then plug the power unit into the mains. There are no dangerously high voltages within the case, though you should avoid touching metal parts unless necessary. The 80V ac available from a ringing telephone line is sufficient to make you say "ooh".

If all is well an LED (Light Emitting Diode) will begin to flash on the circuit board. At this point you should disconnect the mains supply and wire up the extensions. Notes about system wiring are provided below.

Before using the system you should clear its memory using the 'Reset Switch', SW1 which is located near the blue backup battery. Just press this switch once after initial power-up or when re-programming the system.

## PBX Wiring Hints

In essence phone systems are quite simple to install, any competent DIYer should be able to do the wiring in an afternoon. If you are in doubt you could get any electrician to do the job for you. Some simple guidelines

1. PABX Systems require 1-pair cabling to each extension socket. Since most existing extension cabling will have two pairs, it is possible that existing cable runs can be doubled-up and used for two extensions.
2. Extension pairs should be connected to pins 2 and 5 of the BT type phone socket. These correspond to the 'T' & 'R' wires sometimes called Tip and Ring (from their locations on the old style Jack Plugs).
3. All extension sockets should be of the 'Master' or 'PBX Master' type. A slave socket may be converted to a 'PBX master' for this purpose by adding a ring circuit. This can simply be a 2.2 uF Bipolar Electrolytic (Ring) capacitor between pins 2 & 3 of the BT socket. A 'PBX Master' socket is similar to a full 'Master' socket except that the lightning protection circuitry is omitted.
4. All extension telephones should have a 'recall' key of the 'TLB' or 'Timed Line Break' variety, sometimes called 'Flash'. Phones without this key must access the recall function by tapping the 'on-hook' or cradle switch, which is a bit hit & miss or by pressing \*\* (See Programme 33).

5. Telephone systems are wired in a 'Star' arrangement. A single-pair wire runs from each extension phone to the system unit and from each incoming line box to the system unit.
6. If you must wire a system when it is live then be sure not to short together any two wires connected to the PBX.
7. Telephones are not sensitive to polarity of the line so pins 2 & 5 on the BT plug are interchangeable. Bear in mind however that this does not apply to wiring done *after* the ring circuit, i.e. using 'Slave' type sockets. Such wiring must all be completed on a one-to-one basis for pins 2, 3 & 5.

## Wiring the system

### **Power Fail Extension Assignments**

Should the mains power to the system fail then each installed trunk line will remain connected to a single extension as follows.

Trunk Line 1	Extension 22
Trunk Line 2	Extension 26
Trunk Line 3	Extension 28

You should take this into consideration when allocating extensions around your installation. It would not be appropriate for incoming calls to ring only in the garden shed. Also, other extensions will be dead and not available for emergency calls. Programming information is retained during power outages by a rechargeable battery on the circuit board.

## Hold Music

The PBX system can use an external source of hold music (also called 'Background Music' - 'BGM'), perhaps from a CD player or radio. Alternatively the PBX can generate its own music, though this does have a rather 'ice-cream van' quality.

The signal required to drive the 'BGM' input of the PBX is around 1V into 600 ohms.

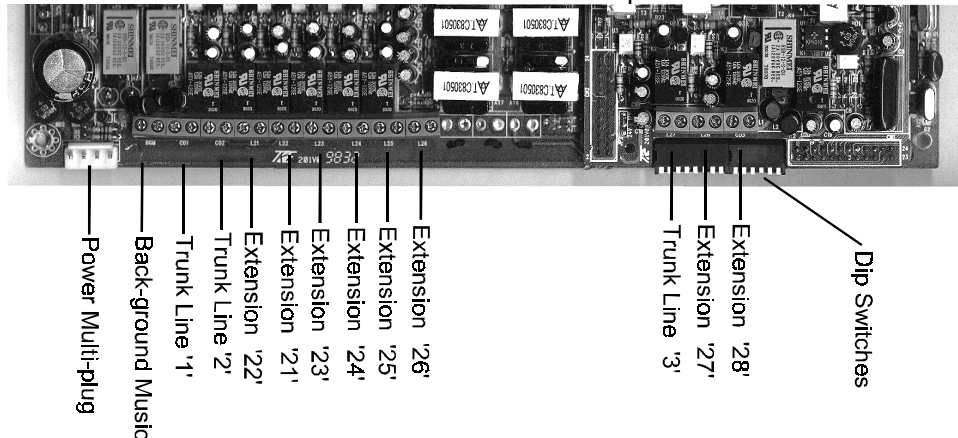
To use external hold music, first connect your source to the appropriate terminals on the circuit board, then move the 'jumper' on the three-pin header from the '1-2' position to the '2-3' position like this:



This jumper is located near the blue backup battery.

## Connections to the S-308 system unit

To access the connectors on the PBX remove the top cover of the case.



### Before Use

Ensure that Dip Switches 6 and 12 ONLY are in the 'ON' position.

You will need a 'Tone' type telephone, with a # and \* key to program the system. Before programming the system you should perform a 'System Reset'. To do this connect the programming phone to any extension and enter the following sequence

**Off-Hook - 88 - 1996# - \*456789# - On-Hook**

You should check the settings of functions 84, 85, 81, 33 and 67 before proceeding further. These functions set the installed/un-installed status for each trunk line, the extension ring assignments, and adjust the recall-break time to suit your phones: **Since, in the UK the normal telephone handset recall time is about 65ms we strongly advise against trying to use the normal Recall or Flash method. Instead customers should use programme 33 to enable the \*\* key combination to issue a recall..** See the programming guide later in this manual for details.

### Line Sensitivity

Telephone lines in the US have slightly different signal levels. To accommodate this you must set jumpers on the PBX as follows:

	US	UK & Europe	Location
<b>AJP1</b>	On	Off	Main Board
<b>AJP2</b>	On	Off	Main Board
<b>JP1</b>	On	Off	Daughter Card

If the jumpers are in the wrong positions the system will still work though the lines may be a little quiet.

## System Programming

Once the PABX is installed the user must program the system to configure it as required. This is a non-trivial operation for the uninitiated, do not expect to get it right first time.

The best way to approach programming is to thoroughly familiarise yourself with the systems features and then make notes about the programming steps you will need. When you have

### System Programming Codes Summary

successfully completed programming copy out your notes as the definitive programming reference. One day you will need it again and be glad that you don't have to re-learn all those procedures.

You can program the system from any extension phone, but this must be of the 'tone', DTMF type. One that produces musical beeps, not clicks, when you press the keys.

Each of the programming codes is detailed in the following pages. The table below summarises the function codes available.

Code	Function	Default Value	Default Status
33	'**' recall option enable	0	Not Set

65	Operator station		Not Assigned
66	Speed Dialling		
67	Flash Time		80-400 ms
70	Grouping - Outward Calls		No Restriction
71	Toll Password		"59-----"
72	Toll Grouping	0	Not Assigned
73	Toll Code	0xx	First "0"
74	Unrestricted Tolls	xxx	Any Number
75	Intrusion	0	Not Assigned
76	Call Duration Limit	0	No Restriction
77	Internal Dial Tone Select	2	Continuous
80	Call Distribution	0	All Extensions
81	Grouping - Inward Calls		
84	Extension Installed / Status	1	All Installed - Tone Type
85	Trunk Installed / Status	1	All Installed - Tone Type
86	Trunk DISA Assign	0	Not Assigned
87	Trunk / Operator Access Code	0 9	Operator Trunk
88	Password / System Reset	1996	"1996"

## General Notes

You should enter all programming instructions quite slowly to give the system time to respond to

your instructions. After each instruction you should hear confirming 'Hold Music'. If you hear anything else then you should replace the handset and enter the function again.

## Function Codes

The function codes described here fall into two groups, programming codes and user codes. They are presented together for completeness. The programming codes may be distinguished by their use of the password.

### 33 - Allow \*\* to send recall

Off Hook - 33 - Password # - 1 - # On Hook (Enable \*\* Recall)  
- 0 - # On Hook (Disable \*\* Recall)

This function is useful where your simple telephones fail to issue a correct recall signal (TLB) and allows the use of \*\* as a substitute. **Since, in the UK the normal telephone handset recall time is about 65ms we strongly advise against trying to use the normal Recall or Flash method. Instead customers should use the \*\* key combination to issue a recall.**

### 38 - Remote Control Code Assignment

Off Hook - 38 - Password # - 39nnnnn # - On Hook (Set code)  
- 0 - On Hook (Disable Remote Function)

Where nnnnn represents a 1 to 5 digit numeric code.

### 39 - Remote Control Service

(Talking with service centre) - Recall - 39nnnnn - (Talk/Program)...

This function enables programming of the system whilst in communication with a service centre or technician. In the 'Talk/Program' phase, programming instructions can be entered by either the user or service technician whilst they discuss the users requirements.

### 53 - Speed Dial Set-up (Extension)

Off Hook - 53 - n - Phone Number - # On Hook

Where n is the ESD (Extension Speed Dial) digit (0 to 9)

A '\*' key is stored as a pause.

Each memory can store a phone number up to 20 digits long.

To clear a stored number, replace it with any single digit.

### 54 - Speed Dial (Extension)

Off Hook - 54 - n - Talk ...

Where n is the ESD ( Extension Speed Dial) digit (0 to 9)

Trunk is selected automatically.

## 55 - Speed Dial (System)

```
Off Hook - 55 - n - Talk ...
```

Where n is the SSD (System Speed Dial) digit (0 to 9)  
Trunk is selected automatically.

## 59 - Toll Restriction Password Enter

```
Off Hook - Toll Password - Dial Number - - - -
```

Toll Passwords are used to make toll calls from restricted extensions.

## 65 - Operator Station Assign

```
Off-Hook - 65 - Password # - Ext Num # - n - On Hook
|
- 0 - On Hook (Clear All)
```

Where n = 1 : Assign  
n = 0 : Clear

A maximum of four extensions may be assigned as operator stations  
An operator extension cannot use the 'Do Not Disturb' feature.

## 66 - Speed Dial Set-up (System)

```
Off Hook - 66 - Password # - n - Phone Number - # On Hook
```

Where n is the SSD (System Speed Dial) digit (0 to 9)

A '\*' key is stored as a pause.

Each memory can store a phone number up to 32 digits long.

To clear a stored number, replace it with any single digit.

## 67 - Recall (Flash) Time

```
Off-Hook - 67 - Password # - 0
|
to - On Hook
9
```

Where 1 : 80ms	4 : 270ms	7 : 520ms	0 : 1000ms
2 : 100ms	5 : 350ms	8 : 600ms	
3 : 180ms	6 : 440ms	9 : 800ms	

**In the UK the normal telephone handset recall time is about 65ms we therefore strongly advise against trying to use the normal Recall or Flash method. In the UK customers should use the \*\* key combination to issue a recall; see function 33.**

## 70 - Outgoing Trunk Access

```
Off Hook - 70 - Password # - Trunk Num # - Ext Num # - On Hook (Disables)
|
- 0 - On Hook (Enables all Exts)
- 0 - On Hook (Enables all Exts on all Trunks)
```

This function disallows outgoing calls from selected extensions on selected trunks. The first line above should be used for each trunk/extension pair that are to be disallowed outgoing call access. Does not affect incoming calls.

## 71 - Toll Restriction - Password Setting

```
Off Hook - 71 - Password # - 59nnnnn # - 2 - # On Hook
|
3
- 0 - On Hook (Toll Passwords Cancelled)
```

Toll Passwords are used to make toll calls from restricted extensions. There are three passwords each can be 3 to 7 digits long and must begin with 59....

## 72 - Toll Restriction - Extension to Group Allocation

```
Off Hook - 72 - Password # - Ext Num # - 0 - On Hook (No Restriction)
|
- 1 - On Hook (Ext alloc. to group)
to
8
- 9 - Internal Calls Only
```

Selecting a restriction group for an extension will prevent calls with the prescribed first three-digits being made from that extension without a Toll Password. Up to 4 three-digit groups ( set using function 73 ) can be applied to individual extensions using this function.

**73 - Toll Restriction - Group Restriction Setting**

```

Code      Group
  0        1
Off Hook - 72 - Password # - nnn # - to - # - to - On Hook
  9        8
    
```

This function sets three digit starting numbers, 'nnn', that will be disallowed for extensions allocated to the appropriate group. Up to 10 sets of three digits can be allocated to each group.

**74 - Toll Restriction - Group No-Restriction Setting**

```

Code      Group
  0        1
Off Hook - 72 - Password # - nnn # - to - # - to - On Hook
  9        8
    
```

This function sets three digit starting numbers, 'nnn', that will be allowed for extensions allocated to the appropriate group. No-Restrict allocations override Restrict Allocations. Up to 10 sets of three digits can be allocated to each group.

**Toll Restriction Record Table**

The following table should be photocopied and filled in for reference. Toll Restriction by Group programming can be very complicated and you may want to refer back to a record of how the system is programmed.

	Restricted Codes (Prog 73)										Unrestricted Codes (Prog 74)									
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
0	No Restriction																			
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9	Internal Calls Only																			

**75 - Intrusion or Interrupt**

```

Off Hook - 75 - Password # - Ext Num # - 1 - On Hook (Allow Interruptions)
|
|           0 - On Hook (No Interruptions)
- 0 - On Hook (Disallow all Interruptions)
    
```

This function determines whether a busy extension will be warned of a call from another extension. If the function is enabled, when a busy extension is called the recipient will be notified by the 'Intrusion' or 'Call Waiting' tone.

**76 - Limit Call Duration**

```

Off Hook - 76 - Password # - Ext Num # - n - On Hook
- 0 - On Hook (All Extensions - No Limit)
    
```

Where n is a number from 0 to 9. A zero will set 'No Limit' and 1 to 9 will set the limit time in minutes.

**77 - Dial Tone Type**

```

Off Hook - 77 - Password # - 1 - On Hook (Broken Dialtone)
- 2 - On Hook (Continuous Dialtone)
    
```

**80 - Incoming call distribution**

```

Off Hook - 80 - Password # - 1 - On Hook (Circular or 'Round-Robin')
- 0 - On Hook (All Assigned Extensions Ring)
    
```

The circular or 'Round-Robin' strategy will cause each subsequent incoming call on each trunk to cycle to the next group-assigned extension in turn. Also, the round-robin strategy will pass un-answered calls or busy responses on to the next extension in the group. (For groups - see function 81.) Extensions that have the 'Do Not Disturb' feature enabled will not ring.

### 81- Ring Assignment - (Groups)

```
Off Hook - 81 - Password # - Trunk Num # - Ext Num # - 0 - Hook (Assigns)
                |                |                - 1 - Hook (Clear)
                |                |                - 0 - On Hook (Enables all Exts)
                - 0 - On Hook (Enables all Exts on all Trunks)
```

This function is used to allocate extensions to a trunks group on a one-by-one basis. Once you have assigned an extension to a trunks group, all other extensions will cease to ring for this trunk until you specifically assign them. Does not affect outgoing calls. Should all the assigned stations be busy during an incoming call, the lowest extension number will hear a warning tone during the conversation.

### 84 - Extension Installed Status / Phone Type

```
Off Hook - 84 Password # - Ext Num # - 0 - On Hook (Not Installed)
                - 1 - On Hook (Tone Phone)
                - 2 - On Hook (Pulse type Phone)
```

This function is used to tell the system what, if any, type of phone is connected to each extension. The normal condition for each extension is 'Tone Phone Installed'. Usually this will not need to be modified since it does not matter if a given extension has no phone connected. For obvious reasons the phone being used to set this function cannot be changed from the 'Tone Phone' type.

### 85 - Trunk Installed Status / Line Type

```
Off Hook - 85 Password # - Trunk Num # - 0 - On Hook (Not Installed)
                - 1 - On Hook (Tone)
                - 2 - On Hook (Pulse)
```

This function is used to tell the system what type of line is connected to each trunk. The normal condition assumes that all trunk connections provided will use a tone-type line. You will need to alter this function if your exchange can only accept the old 'Pulse' or 'Loop Disconnect' type of phone. The system will convert the tones generated by phones connected to extensions if necessary.

You must also tell the system if any of the trunk lines provided by the unit are not connected to real trunk lines. For instance if you have a PBX312V and only two trunk lines are to be connected, you must tell the system that line-3 is 'Not Installed'. This will prevent the system allocating a dead line for outgoing calls.

### 86 - Trunk Function Normal/DISA

```
Off Hook - 86 - Password # - Trunk Num # - 0 - On Hook (Normal Trunk)
                - 1 - On Hook (DISA Trunk)
```

The trunk line must be installed using function 85 before this function can be operated.

### 87 - Trunk Access/Operator Access Code

```
Off Hook - 87 - Password # - 0 - On Hook (Trunk code = 0, Operator Code = 9)
                - 9 - On Hook (Trunk code = 9, Operator Code = 0)
```

This function sets the codes that users should enter to get an outside line and to call the operator. There are only two options, the digits 0 and 9 may be assigned to either operation.

### 88 - Change Password / System Reset

```
Off Hook - 88 - Password # - New Password # - On Hook
                - # - (Disable Password Requirement)
                - *456789 # - Wait 10 secs - Hook (System Reset)
```

Passwords are 4 numeric digits. It is unwise to disable the password, even in secure environments, because it is very easy to re-program the system by accident, for instance by entering a phone number without first requesting an outside line.

# Using the PBX System

## Main Functions

### To Make an Internal Call

Off Hook - Extension Number

Extensions are numbered from 21 up, so, for instance, a PBX312 will have extension numbers up to 32

### To Make an External Call

You can access an external line by the automatic method;

Off Hook - Access Code (9 or 0: ask your installer) - Dial Number

Or by the direct method

Off Hook - 41 - Dial Number (Trunk Line 1)  
 - 42 - Dial Number (Trunk Line 2)  
 - 43 - Dial Number (Trunk Line 3)

### Call Pickup

Off Hook - 44 - .....

This function enables you to pick up a call that is ringing on another extension, including a DoorPhone call. External calls can also be picked up using the 'Recall' key instead of '44'. If you are on another call you can still pick up the new call by placing the original call on hold, i.e.

(Talking) - Recall<sup>1</sup> - 44 - .....

### To Place a call on Hold

(Talking) - Recall - On Hook

If the held call is not retrieved within 30 seconds the system will return the call to the extension that initiated the hold. Should the extension be busy, the system will wait until it is free, then replace the call.

### To Retrieve a Held Call

Off Hook - Recall - Talk...

A held call can only be retrieved at the extension that originally placed the call on hold. A held call cannot be retrieved from an extension that is hearing a busy tone, (cancel the call first using 'On Hook').

### To Transfer a Call

Talking - Recall - Ext Num - Talk to Transferee - On Hook

1. If the called station is busy then use 'Camp-On' to transfer the call. Firstly, cancel the transfer by going 'On Hook', then recover the call by pressing 'Recall', then see 'Camp On Transfer'.
2. If the transferred call is not answered within 30 seconds, then it will ring back at the initiating extension.
3. If you enter a non-existent or busy extension and then hang up, the system will return the call to you within 5 seconds.
4. If the transferee does not want to take the call he just hangs up. The original extension will get a busy tone and can recover the call by pressing 'Recall'.

<sup>1</sup> The Recall key, sometimes called the Flash key issues a 'Timed Line Break'. This is the same as tapping the hook switch on your phone, though the electronics makes it more predictable. If your phone does not have a recall key then you could try tapping the hook switch or press \*\* (See Programme 33). Ask your installer or supplier for guidance.

## Speed Dialling

Off Hook - 55 - (0/9) - (Auto Trunk System Speed Dial)

The system holds 10 pre-programmed numbers of up to 32 digits which can be accessed as 'Speed Dial' numbers from any extension. The numbers are programmed by your installer or system administrator.

Off Hook - 55 - (0/9) - (Auto Trunk Extension Speed Dial)

The system can also store up to 10 speed dial numbers for each extension which can be programmed by the user. To program the numbers use the following sequence:

Off Hook - 53 - (0/9) - Tel Num - On Hook

## Less Common Functions

### Conference Call

```
Talking - Recall - Dial 2nd Num - Recall (Switch to other Call) -
|
|-----<-----|
|
| - Recall-Recall (Conference)
```

Conference calls enable users to speak simultaneously to two other parties, each of which may be internal or external. In effect each time the 'Recall' key is pressed the current call is placed on hold. If 'Recall' is pressed twice (within 2 seconds) then all three parties will be connected

### Brokers Call

```
Talking - Recall - Dial 2nd Num - Recall (Switch to other Call) -
|
|-----<-----|
|
| ( - Recall-Recall (Conference) )
```

A brokers call enables alternate communication with two other parties. If 'Recall' is pressed twice (within 2 seconds) then all three parties will be connected

### Call Parking

(Talking) - Recall - 45 - On Hook

A Parked call is just like a Held call except that it may be retrieved at any extension. The system can only support one Parked call and un-retrieved Parked calls will ring back the initiating extension after 40 seconds. To retrieve a parked call

Off Hook - 46

### Trunk Queuing

(No Trunk Available - Busy Signal) - 47 - On Hook

Once a trunk becomes free the system will ring back the initiating station with an external dial tone. The trunk queuing is cancelled as soon as the extension goes off hook.

### Camp On - Internal Call

(Extension Busy) - 48 - On Hook

When both extensions are free, they will both ring and the call is made. The called extension is made aware of the camp-on with a Call-Waiting tone.

### Camp On Transfer

(Talking) - Recall - Ext Num - (Extension Busy) - 48 - On Hook

When the busy extension hangs up, his phone will ring and he will be connected to the original call.

### Redial Last Number

Off Hook - 49 (or \*) - ....

The memorised last number will be lost as soon as the extension gets a trunk line for any other call. This is the only guaranteed way to speed-redial. The 'Redial' button on many feature phones may not work as expected.

### Call Forwarding

Off Hook - 57 - Tel Num # - On Hook

This function routes calls on an extension to another number, a function sometimes called 'Follow Me'. The telephone number for forwarding can be internal or external though external calls cannot be routed to an external number. External numbers must be more than 3 digits and cannot start with a '0' or be prohibited by 'Toll Restrictions'.

Calls forwarded to an external number are limited to two minutes. Extensions with call forwarding enabled have a modified dial tone called the 'System Re-Order Tone'. You cannot set call forwarding on a DoorPhone acceptor extension. Use 57# to cancel.

### Do Not Disturb

```
Off Hook - 58 - 1 - On Hook (Do Not Disturb)
           0 - On Hook (Normal)
```

The Do Not Disturb function prevents most types of calls from ring the extension. The Operator, DoorPhone and extensions with a one-to-one connection to a trunk cannot set Do Not Disturb. Extensions with Do Not Disturb enabled have a modified dial tone called the 'System Re-Order Tone'. Direct Inward System Access (DISA) will override Do Not Disturb.

### External Recall

```
(Talking) - Recall - # (Tone Phones)
            8 (Pulse Phones)
```

If you need to send a 'Recall' Signal to your service provider, e.g. BT, perhaps to access their X-Services or 'Feature-Phone', then use this function.

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## User Operation Summary

<b>Function</b>	<b>Operation</b>
Answer	Off Hook
Internal Call	Off Hook - Extension Number
Trunk Access (Direct)	Off Hook - 41 - Dial Number (Trunk Line 1) - 42 - Dial Number (Trunk Line 2) - 43 - Dial Number (Trunk Line 3)
Trunk Access (Auto)	Off Hook - Access Code (9 or 0: ask your installer) - Dial Number
External Call	See Trunk Access
Call Pickup	Off Hook - 44 - .....
Hold Call	Talking - Recall - On Hook
Hold Retrieve	Off Hook - Recall - Talk...
Call Transfer	Talking - Recall - Ext Num - Talk to Transferee - On Hook
Conference	Talking - Recall - Dial 2nd Num - Recall (Switch to other Call) -    -----<-----    - Recall-Recall (Conference)
Brokers Call	Talking - Recall - Dial 2nd Num - Recall (Switch to other Call) -    -----<-----    ( - Recall-Recall (Conference) )
Call Park	Talking - Recall - 45 - On Hook
Park Retrieve	Off Hook - 46
Trunk Queuing	(No Trunk Available - Busy Signal) - 47 - On Hook
Camp On - Internal Call	Talking - Recall - Ext Num - (Extension Busy) - 48 - On Hook
Redial	Off Hook - 49 (or *) - ....
Call Door-Phone	Off Hook - 501 - On Hook
Open Door Lock	Off Hook - 52 or # - On Hook
Call Forwarding	Off Hook - 57 - Tel Num # - On Hook
Do Not Disturb	Off Hook - 58 - 1 - On Hook (Do Not Disturb) 0 - On Hook (Normal)
Public Address	Off Hook - 40 - Speak
External Recall	Talking - Recall - # (Tone Phones) 8 (Pulse Phones)
Extension Speed Dial Program	Off Hook - 53 - (0/9) - Tel Num - On Hook
Extension Speed Dial	Off Hook - 54 - (0/9) - (Auto Trunk Speed Dial)
System Speed Dial	Off Hook - 55- (0/9) - (Auto Trunk Speed Dial)