

MCM 72-6069A

# Handsfree telephone 800

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Operating Instructions

**GB**



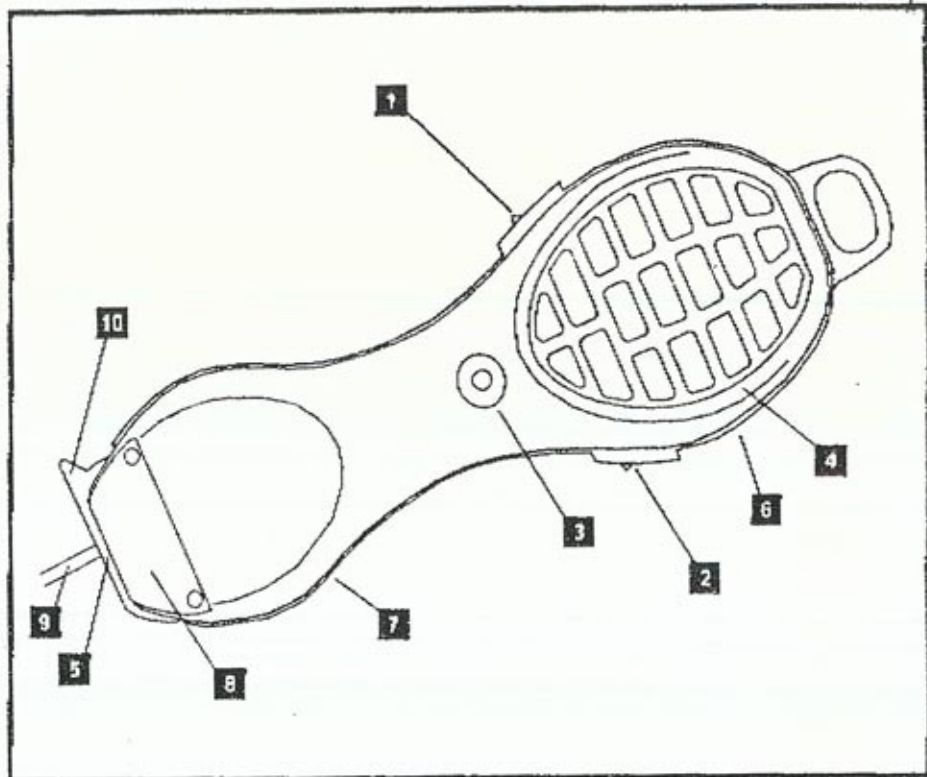
**DATASAFE** Technology  
Micropower **DIGITAL** control

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**CE**

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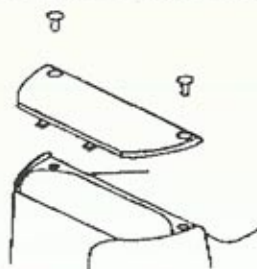


- 1** **DIAL TYPE** switch - select **DTMF** for DTMF tone dialling or **PULSE** for loop disconnect or pulse dialling.
- 2** **HOOK** switch - select **SPK** to go OFF HOOK and make a call or **MON** to go ON HOOK and monitor the line.
- 3** **DISCONNECT BUTTON** - press to disconnect the line as if the line was disconnected from the line socket.
- 4** Handsfree loudspeaker located under keypad.
- 5** Handsfree microphone.
- 6** Handset earpiece.
- 7** Handset microphone.
- 8** Battery compartment (see Page 3 for battery replacement).
- 9** Line cord exit (see Page 14 for line cord replacement)
- 10** Flip-out belt clip.

## Battery replacement

When the 800 indicates a low battery condition, see below, the battery requires replacement. The unit is powered by a 9V PP3 (MNI604 / 6LF22) type alkaline battery, but for longer operating life an alkaline manganese battery is recommended.

- 1 Dis-connect the 800 from the line.
- 2 Using a screwdriver remove the two screws from the battery compartment cover and lift away.



- 3 Remove the exhausted battery from the compartment and carefully un-snap the battery connector.
- 4 Snap the connector on to the new battery, insert into the compartment and replace the battery cover.

## Visual & Audible indicators

The 800 employs both visual and audible indication of telephone status.

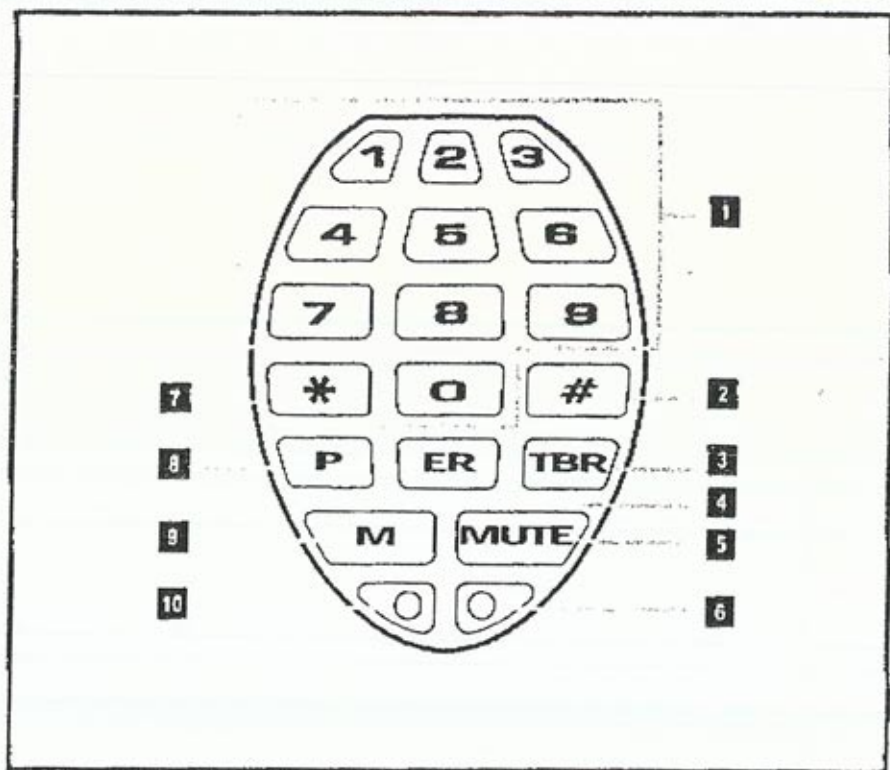
The polarity indicators located at the bottom of the keypad provide visual indication of the following conditions.



Telephone condition	Visual Indication
Line LC5 +, LC2 -	GREEN illuminated (Vline min 2.75V)
Line LC5 -, LC2 +	RED illuminated (Vline min 2.75V)
Line LC5 +, LC2 - & low battery	GREEN fast flashes (Vline min 2.75V)
Line LC5 -, LC2 + & low battery	RED fast flashes (Vline min 2.75V)
Line polarity undetermined e.g. line not connected	GREEN and RED flashing
Program mode selected	GREEN flashes slowly
Memory mode selected	RED flashes slowly

Audible confirmation or warning is generated as follows:

Indication	Audio output
Function confirmation	Two beeps
Function warning	One long beep



- 1** Numeric keypad 0,1,2...8,9 - generates DTMF or PULSE dialling and is used for programmable functions.
- 2** # key - generates # tone during DTMF dialling and is used for programmable functions.
- 3** Timed Break Recall (TBR) - generates 100mS break in OFF HOOK mode.
- 4** Earth Recall - generates an earth recall function on LC4.
- 5** Mute function for handset and handsfree microphones.
- 6** RED polarity indicator (see Visual & Audible indicators on Page 3)
- 7** \* key - generates \* tone during DTMF dialling and is used for programmable functions.
- 8** Program key - provides access to multiple programming functions.
- 9** Memory key - provides access to multiple memory functions.
- 10** GREEN polarity indicator (see Visual & Audible indicators on Page 3)

### 800 telephone power-up

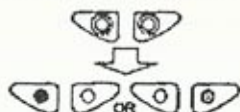
The 800 tele will automatically power-up when connected to a telephone line (when Vline >2.75V) or if a key is depressed on the keypad (Not ER or MUTE).

#### Line connection power-up

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**1** Insert the 800 line plug into a line socket.

**2** The 800 will indicate it's reset sequence by flashing the polarity indicators and then indicate a steady line polarity.

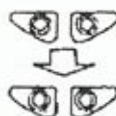


#### Keyboard power-up

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
**1** Press a key on the 800 keyboard (not ER or MUTE)

**2** The 800 will indicate it's reset sequence by flashing the polarity indicators and then indicate an un-determined line state.





### Line monitoring mode



As long as the **HOOK** switch remains in the **MON** position high impedance monitoring mode is active. Audible output is at the **EARPIECE** by default, however, the **SPEAKER** can be enabled and the volume changed.


**1** Press  then  to enable the **SPEAKER** at volume level 1.

**2** Press  then  to step to volume level 2.

**3** Press  then  to step to volume level 3.

**4** Press  then  to step to volume level 4.

**5** Press  then  to disable the **SPEAKER** and enable **EARPIECE**.

 Warning maximum input voltage 350V AC/DC  
Custom volume and memory programming functions are available in this mode.

## Normal OFF HOOK dialling

The 800 functions as a normal telephone in this mode of operation. The HOOK switch is used to take the telephone OFF HOOK, where upon normal dialling, LNR dialling or memory dialling can be performed.

**1** Ensure that the 800 is connected to line and the **HOOK** switch set to **MON**.

**2** Select the required dial type using the **DIAL TYPE** switch, select **DTMF** for DTMF tone dialling or **PULSE** for loop disconnect or pulse dialling.

**3** Switch to **SPK** on the **HOOK** switch and listen for dial tone on the **EARPIECE**. (Note: **DATABAJE** feature may prevent this, see page 11)

**4a** Dial the telephone number on the numeric keypad.

Or

**4b** Dial a number from the **Last Number Redial** register by pressing **M** then **M**.

Or

**4c** Dial a number from memory (see 20 memory recall)

**5a** On connection carry out a conversation.

Or

**5b** Perform a **Timed Break Recall** by pressing the **TRR** key.

Or

**5c** Send out a tracer tone (see Tracer tone feature)

**6** Place the telephone **ON HOOK** once more by switching the **HOOK** switch to **MON**.



The **MUTE** key may be pressed at any time to MUTE the handset microphone.

## ON HOOK dialling

The 800 features an ON HOOK dialling mode that allows the engineer to effectively go OFF HOOK with an amplified output and dial a telephone number. As soon as the call is answered the engineer can switch to handset mode and carry out a conversation. The handset microphone is automatically muted during this mode to prevent acoustic feedback.

- 1 Ensure that the 800 is connected to line and the **HOOK** switch set to **MON**.
- 2 Select the required dial type using the **DIAL TYPE** switch, select **DTMF** for DTMF tone dialling or **PULSE** for loop disconnect or pulse dialling.
- 3 Switch to **ON HOOK dialling** mode by pressing **P** then **M**. This will take the 800 OFF HOOK, enable the **SPEAKER** and step to volume level 1. Listen for a dial tone on the **SPEAKER**.  
(Note: **DATABASE** feature may prevent this, see page 11)

4a Dial the telephone number on the numeric keypad.

Or

4b Dial a number from the **Last Number Redial** register by pressing **M** then **M**.

Or

4c Dial a number from memory (see 20 memory recall)

Or

4d Return to ON HOOK monitoring mode again press, **P** then **M**.

5 On connection switch to **SPK** on the **HOOK** switch and carry out a conversation on the handset. (see Normal OFF HOOK dialling)

6 Place the telephone **ON HOOK** once more by switching the **HOOK** switch to **MON**.



Custom volume setting is available in this mode.

## Last Number Redial

The 800 incorporates a standard 24 digit Last Number Redial register (LNR). Digits entered on the numeric keypad, PBX pause and extended DTMF codes are stored during dialling ready for redial at the next OFF HOOK condition. This register is only cleared on replacement of the battery or on entry of a new number.

- 1 Ensure that the 800 is connected to line, is **OFF HOOK** with the **HOOK** switch set to **[SPK]** or configured for **ON HOOK dialling**.
- 2 Press **[M]** then **[M]** to recall the last number dialled.
- 3 The number recalled is dialled to line in the current dial type, DTMF if the dial switch is set to **[DTMF]** or pulse if the dial switch is set to **[PULSE]**.

**!** Only the first 24 digits entered will be stored, on overrun the LNR is cleared.

## 20 memory programming

This feature allows one of the 20 internal, 24 digit, memories to be programmed during ON HOOK monitoring mode, or during an OFF HOOK condition.

- 1 Ensure that the 800 is powered up by connecting to line, or by pressing a key on the keypad.
- 2 Press **[M]** then enter a memory number from 1 to 20.
- 3 Press **[P]** to indicate programming is required.
- 4 Enter the telephone number digits you wish to store (24 max.), including PBX pause and extended DTMF digits if required.
- 5 Press **[M]** to confirm the programming, an audible confirmation tone is generated if the memory was successfully programmed.

**!** This function will overwrite any existing number.

## 20 memory recall

This feature allows one of the 20 internal, 24 digit, memories to be recalled and dialled during an OFF HOOK or ON HOOK dialling condition.

- 1 Ensure that the 800 is connected to line, is **OFF HOOK** with the **HOOK** switch set to **SPK** or configured for **ON HOOK dialling**.
- 2 Press **M** then enter a memory number from 1 to 20.
- 3 Press **M** again. The number recalled will be entered into the LNR register and dialled to line in the current dial type, DTMF if the dial switch is set to **DTMF** or pulse if the dial switch is set to **PULSE**.

**!** If the memory recalled does not contain a valid number, memory recall is aborted and an audible warning generated.

## HANDSFREE mode

The 800 features a handsfree, or speakerphone, mode. This mode allows the engineer to carry out an amplified call without holding the telephone by using a half duplex controller to stop acoustic feed-back. Background noise and dialling tone are also monitored in this mode. Normal dialling is performed in HANDSFREE mode.

- 1 Ensure that the 800 is **OFF HOOK**, with the **HOOK** switch set to **SPK**.
- 2 Press **P** then **P** to disable the **EARPIECE**, enable the **SPEAKER** for **HANDSFREE** mode and step to volume level 1.
- 3 Press **P** then **P** to step to **HANDSFREE** volume level 2.
- 4 Press **P** then **P** to step to **HANDSFREE** volume level 3.
- 5 Press **P** then **P** to step to **HANDSFREE** volume level 4.
- 6 Press **P** then **P** to disable the **SPEAKER** and enable **EARPIECE**.

**!** Custom volume setting and MUTE activation is available in this mode.

## Custom speaker volume control

This feature allows the **SPEAKER** volume to be adjusted in 99 steps during amplified monitoring mode, ON HOOK dialling or during HANDSFREE mode.

- 1 Press **P** to enter programming mode.
- 2 Enter a number from 1 to 99 on the numeric keypad, 1 being the lowest volume, 99 being the highest volume.
- 3 Press **P** to confirm the new volume setting.

The **SPEAKER** will be activated if not already.

## PBX pause & A,B,C,D digit entry

This feature allows the entry of a PBX pause, or an extended DTMF digit, into the dialling stream. These extended digits can be stored & recalled from LNR or memory just like normal 0-9 digits.

- 1 During an OFF HOOK or memory programming condition press **P** then **#**



- 2a Press the **1** key to insert a **PBX pause** of 3.6 seconds.

Or

- 2b Press the **2** key to output the DTMF digit **A**.

Or

- 2c Press the **3** key to output the DTMF digit **B**.

Or

- 2d Press the **4** key to output the DTMF digit **C**.

Or

- 2e Press the **5** key to output the DTMF digit **D**.

- 3 The required function is either output or stored in memory.

## Programmable features

The standard 800 handsfree telephone allows for the programming of three internal features.

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**1** Press **[P]** then **[\*]** to enter feature programming mode.

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**2a** Press the **[7]** key to enable the *keytone* function.\*\*  
This mode produces a 500Hz beep as each key is depressed.

Or

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**2b** Press the **[8]** key to disable the *keytone* function.

Or

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**2c** Press the **[3]** key to disable constant DTMF mode.\*\*

Or

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**2d** Press the **[4]** key to enable constant DTMF mode.  
This mode sends a standard 100ms DTMF tone on a key press, the tone continuing until the key is released.

Or

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**2e** Press the **[5]** key to disable **DATASAFE** feature.

Or

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**2f** Press the **[6]** key to enable **DATASAFE** feature.\*\*

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**3** Press **[P]** to confirm programming mode.

\*\* Default setting

## DATASAFE feature

The 800 employs **Data Safe Technology** - to warn the user and prevent an OFF HOOK condition - when digital traffic is detected on the connected line.

If the user should try to go OFF HOOK when digital traffic is detected a long warning tone is generated and the 800 forces an ON HOOK condition.

- **HOOK** switch switched to **[SPK]** during digital traffic:  
Warning tone is issued, no OFF HOOK condition is activated, wait for **HOOK** switch to return to **[MON]**
- **ON HOOK** dialing activated during digital traffic:  
Warning tone is issued, no OFF HOOK condition is activated.

## Tracer tone feature

This feature allows one of three tracer tones to be output on the line during an OFF HOOK condition.

**1** During an OFF HOOK condition press **P** then **#**

**2** Press a number key 6,7 or 8 to select the desired frequency, as follows:

**6** = 697Hz  
**7** = 941Hz  
**8** = 1477Hz



**3** The tone selected is constantly output to line, the automatic power-down timer is reset to 20 minutes to allow tone tracing.  
The tone is aborted when a key is pressed on the keyboard.

## Automatic power-down

The 800 employs an automatic power-down system to prevent the depletion of the internal battery during periods of non-operation.

Four conditions are monitored by the 800 to determine if, and when, the telephone should power-down to conserve battery power, these are:

- Keypad activity.
- Audio level during ON and OFF HOOK conditions.
- Tracer tone activity.
- Line connection status.

The following table details the conditions that effect the status of the telephone:

Line condition	Key?	Audio level?	Tracer tone?	Power down?
Connected	NO	NA	ON	YES in 20 minutes
Connected	YES	NA	ON	NO
Connected	NO	Low	OFF	YES in 5 minutes
Connected	YES	Low	OFF	NO
Connected	NO	High	OFF	NO
Dis-connected	NO	NA	OFF	YES in 30 seconds
Dis-connected	YES	NA	OFF	NO
Connected then dis-connected	NO	Low	OFF	YES in 5 seconds

The 800 powers-up if a line is connected or a key is pressed on the keypad.

## Fault finding in monitoring mode

This function allows line faults to be determined by connecting the 800, with test cord, to a line and listening for speaker clicks.

### To locate a short circuit

- 1 Ensure that the 800 is switched to **MON** mode
- 2 Depress a key on the keypad (not ER or MUTE) to power-up the 800.
- 3 If required select amplified monitor mode by pressing **P** then **P**
- 4 Open one side of the line under test and place the 800 in the loop i.e. one test lead to each side of the open line. On the exchange side of the fault a CLICK will be heard on the 800, on the field side of the fault no CLICK will be heard.

### To locate an open circuit

- 1 Ensure that the 800 is switched to **MON** mode
- 2 Depress a key on the keypad (not ER or MUTE) to power-up the 800.
- 3 If required select amplified monitor mode by pressing **P** then **P**
- 4 Place the 800 leads across the circuit i.e. one test lead on RING and the other on TTP, moving away from the exchange the fault is located at the point at which the CLICK disappears.

**!** Maximum input voltage 350V AC/DC. It is advised that during fault location the speaker or earpiece is not placed close to the ear, this preventing acoustic shock.

## Maintainance

The 800, during normal use, will give many man hours of un-interrupted service.

### Cleaning

The 800 handset can be cleaned with a soft cloth soaked in warm water and then rung out. If the handset is very dirty a mild detergent can be dissolved in the water, on NO account should an abrasive or chemical cleaner be used. **DAMAGE CAN RESULT WHICH IS NOT COVERED BY WARRANTY.**

### Line cord replacement

The 800 line cord can be replaced when damaged or when a different plug configuration is required. The centre screw, located under the belt clip, must be removed and the handset opened. The RJ12-4 line cord plug can then be removed and a new line cord inserted, replacing and tightening the centre screw to complete.

## Warranty

The supplier provides a 1 year product performance guarantee. If this product should fail in normal use during the warranty period please call Technical Support for further advice. In all cases the suppliers total liability shall be limited to the replacement value of this product.

### Français

Le fournisseur fournit une garantie de bonne fin de produit de 1 an. Si ce produit échoue dans l'utilisation normale pendant la période de garantie s'il vous plaît appelez technique supportent pour davantage de conseil. Dans tous les cas toute la responsabilité de fournisseurs sera limitée à la valeur de remplacement de ce produit.

### Deutscher

Der Lieferant stellt eine 1-Jahr-Produktleistung Garantie zur Verfügung. Wenn dieses Produkt im normalen Gebrauch während der Garantie Periode bitte ausfällt, benennen Sie technisch unterstützen für weiteren Rat. In allen Fällen wird die Lieferanten gesamte Verbindlichkeit auf den Wiederbeschaffungswert dieses Produktes begrenzt.

### Españoles

El surtidor proporciona a una garantía de funcionamiento de producto de 1 año. Si este producto falla en uso normal durante el periodo de la garantía por favor llame técnico utilizan para el consejo adicional. En todos los casos el defecto total de los surtidores será limitado al valor de remplazo de este producto.

### Italiano

Il fornitore fornisce una garanzia di adempimento di prodotto da 1 anno. Se questo prodotto viene a mancare prego nell' uso normale durante il periodo della garanzia chiamare tecnico contributo ad ulteriore consiglio. In tutti i casi la responsabilità totale dei fornitori sarà limitata al valore di rimontaggio di questo prodotto.

# Specification

The 800 design and specification are subject to change without notice.

## Electrical

Line voltage	:	4V min. in SPK mode.
Line current	:	4mA min. in parallel operation. 150mA maximum.
Loop limit	:	5k ohms max. @ 48V DC.
DC resistance	:	300 ohms typical in SPK mode.
Monitor impedance	:	> 100K ohms @ 1kHz.
Monitor voltage limit	:	350V AC/DC maximum.
Power supply	:	9V PP3 (MN1604 / 6LF22) alkaline battery.
Power consumption	:	8mA nominal, 20mA peak, 100uA standby.

## DTMF mode dialling

Tone rate	:	100mS min. (Non-constant mode or redial).
Inter Tone Pause	:	100mS min.
Tone frequency error	:	0.75%.
Digit availability	:	0 - 9, *, #, A, B, C, D.

## PULSE (loop disconnect) mode dialling & TBR function

Pulse rate	:	10 pulses a second.
MAKE/BREAK ratio	:	33.3:66.6%. (33mS:66ms).
Inter Digit Pause	:	800mS typical.
Timed Break Recall	:	100mS typical.

## Amplifiers

Speaker volume levels	:	Stepped 4 levels and off. Custom 99 programmable levels.
Speaker attenuation	:	0 to -32dB.
MUTE attenuation	:	-60dB on microphones.

## Functions

Memory capacity	:	20 x 24digit non-volatile. 1 x 24 digit volatile LNR.
Memory retention	:	> 40 years on non-volatile.
Automatic power down	:	5seconds to 20 minutes (see relevant section).

## Physical

Dimensions	:	Length 280mm, Width 90mm, Height 80mm.
Weight	:	400g.
Operating temperature	:	-20 to +85 °C.
Operating humidity	:	0 to 80% (non-condensing).