

Operating Instructions

MODEL HD-7 LINEMAN'S TEST SET

HD Telecom, Inc.
2629 Redwing Road
Suit 370
Fort Collins, CO 80526

800.356.4940



CAUTION

THIS SYMBOL INDICATES THAT THE USER SHOULD READ THESE OPERATING AND CONNECTION INSTRUCTIONS BEFORE USE.



CAUTION

FOR YOUR SAFETY AND TO PREVENT DAMAGE TO THE UNIT, DO NOT CONNECT THIS TESTSET TO 110 VOLT OR 220 VOLT AC POWER LINES. INTENTIONAL OR ACCIDENTAL CONNECTION TO AC POWER LINES IS ENTIRELY THE USER'S RESPONSIBILITY AND VOIDS THE WARRANTY.

FOLLOW GOOD SAFETY PRACTICES DURING INSTALLATION AND TESTING OF TELEPHONE SERVICES.



CAUTION

THE TEST SET SHOULD BE DISCONNECTED FROM THE LINE BEFORE OPENING FOR BATTERY OR LINE CORD REPLACEMENT.

CONTENTS

Description	3
Features	3
Controls and Indicators	4
Operation	6
Basic Operation	6
Monitor mode	6
Talk mode	7
Amplified speaker	7
Hands-free	7
Memory dialing	8
One-touch memories	8
Two-touch Memories	9
Redial of last number	10
Polarity check	10
Ringer	10
Replacing the Batteries	10
Line cord change	10
Maintenance	11
Warranty	11
Service	12
Specifications	13

DESCRIPTION

The HD-7 telephone butt-in testset is specifically designed for use by installers, repair technicians, and other telecommunications personnel for the installation and testing of telephone services.

FEATURES

The HD-7 Test set provides:

- Hands-free operation with included Retractable Headset-Beltclip
- DSL circuit protection built-in
- Amplified Speaker in Talk and Monitor Mode - Battery Operated
- High Impedance Line Monitor - Safe For Data
- 3 "One-Touch" Direct Dialing Numbers - 21 Digits
- Memory Dialing - 10 "Two-Touch" Numbers - 21 Digits
- Electronic ringer to indicate incoming calls - DTMF (lone) and Rotary (pulse) Dialing
- Last Number Redial - 32 digits - T/P - Mute Feature for noisy locations
- Line Polarity Indication - Hook Flash Key

The HD-7 complies with EN60950 A1-11

Notes to Features

Hands-free operation

The HD-7 can be used "hands-free" with our Retractable Headset-Beltclip.

DSL circuit protection built-in

This feature is intended to prevent interruption of data or voice signals on an active telephone line.

Amplified Speaker in Talk and Monitor Mode

The HD-7 has a battery operated amplified speaker for amplified listening in talk and monitor modes,

High Impedance Line Monitor

The HD-7 high impedance monitor mode is "Safe For Data".

Memory Dialing - 3 "One-Touch" Direct Dialing Numbers

The HD-7 has 3 "One-Touch" keys for quick access to frequently dialed numbers

Memory Dialing - 10 "Two-Touch" Numbers

There are 10 "Two-Touch" memory locations for storing frequently dialed numbers.

CONTROLS AND INDICATORS

ON/TALK - MON/E. DIS Switch

Located on the left below the receiver, this two position switch is used to select the mode of operation:



ON/TALK - Talk

This position connects the testset to the line for network signaling, testing, and conversation. The TALK position creates an 'off-hook' condition, the same as that created when the handset is picked up on a regular telephone set.

MON/E. DIS - Monitor

This position connects the testset to the line through a high impedance circuit, allowing monitoring of the line without disturbing on-going conversations, data transmission, or network signaling.

The MON position creates an "on-hook" condition, with the speech and test circuits isolated from the line.

The electronic ringer is connected to the line in Monitor mode.

Amplifier Controls - Both Talk and Mon



TONE-PULSE

Located below the receiver, this 2-position switch is used to select the dialing mode. The TONE position selects DTMF signaling. The PULSE position selects rotary style, dial pulse signaling.



LED

The dual-color red/green LED located next to the MON/TALK switch indicates the polarity of the line. During testing, if the LED is green, the line polarity is correct. If the LED shows red, the line polarity is reversed.

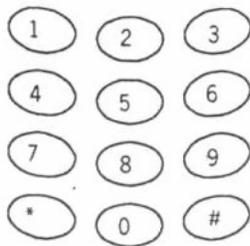
NOTE: All functions of the HD-7 testset will operate with any line polarity.

Battery Voltage Indication

The red battery indicator LED is located next to the Amplified Speaker switch. The red LED is active when the amplifier is turned on. It lights steadily when the amplifier is on and the batteries are OK. If the LED does not light up, the batteries need to be changed.

Main Keypad

The main keypad is located on the front of the testset, just below the receiver. The main keypad includes 12 standard network addressing keys:



Small Keypad



The 8 control keys cause the following functions to be performed:

M - MUTE key

When pressed, the transmitter is muted and the sidetone is eliminated. Using the mute feature improves communications in noisy locations.

M1, M2, and M3 Memory Keys

The memory keys M1, M2 and M3 are used to dial a number from memory using the "One Touch" memory feature.

R/P - Redial/Pause key

If pressed while "off-hook", the last number dialed will be redialed from the internal memory. Redialing of the last number dialed may be done in TONE or PULSE modes. Up to 32 digits may be recalled. The R/P key is used to enter a pause into the memory locations in the memory programming mode. Press the R/P key while programming memory locations and a Pause will be entered.

ST - Store Key (Save)

Using during programming to store/save a number into a memory location

MR - Memory Recall key

Used to Recall numbers from the 10 "Two-Touch" memory locations

F - Flash key

When pressed, the testset produces a hook flash, obtaining a new dial tone.

OPERATION**BASIC OPERATION**

Basic operation of the Model HD-7 testset is as follows:

1. Select MON (monitor mode)
2. Connect the cordset to the line - Red Lead to Ring (-) and Black Lead to Tip (+)
3. If no conversation or digital signals are heard, select TONE or PULSE dialing.
4. Select "Talk" mode to confirm a dial tone is received,
5. Proceed with dialing, testing, or conversation, etc

MON - Monitor Mode and Use

This switch position connects the testset to the line through a high impedance monitor circuit, enabling the technician to monitor a line without interrupting on-going voice conversations, data transmissions or network signalling.

MONitor mode is an "on-hook" condition with the speech and test circuits isolated from the line. Use the following procedure to operate the monitor feature:

1. Select MON (monitor) mode
2. Conned the cordset to the line - Red Lead to Ring (-) and Black Lead to Tip (*)
3. Monitor (listen) to the line,

NOTE:

Read later section for Amplified Speaker operation in MONitor mode,

NOTE:

The electronic ringer is connected to the line in Monitor mode,

NOTE:

The HD-7 monitor mode will not operate if the test set is connected to a non-powered line.

SPECIAL NOTE IN MONITOR MODE: THE HD-7 TESTSET WILL NOT OPERATE WITHOUT THE BATTERIES INSTALLED.

TALK (Talk) Mode

The Talk positron connects the testset to the line for network signaling, conversation, and testing. The TALK position creates an "off-hook" condition similar to picking up the receiver of a regular telephone set. See "Basic Operation" above for details.

NOTE: Read later section for Amplified Speaker operation in TALK mode.

Amplified Speaker

The HD-7 testset is equipped with an Amplified Speaker circuit to listen to line activity. The amplified speaker will operate in both talk and monitor modes. The amplified speaker has 2 levels of amplification.

To activate the Amplified Speaker function, in either TALK or MONitor mode, push up on the Amplified Speaker switch, located on the side of the testset, The amplified speaker will become operational and you will hear any activity on the line.

To increase the volume, push up on the speaker switch again. Turn off the amplified speaker function off by pushing the switch down to its original position.

NOTE:

When the Amplified Speaker is operating in monitor mode, the microphone will not work.

NOTE:

The Amplified Speaker function is not a speakerphone.

NOTE:

The Amplified Speaker will remain active as long as the testset is connected to the line and in MONITOR mode.

NOTE:

The HD-7 amplifier speaker will not operate if the test set is connected to a non-powered line.

SPECIAL NOTE:

THE HD-7 AMPLIFIER SPEAKER WILL NOT OPERATE WITHOUT THE BATTERIES INSTALLED.

Hands-Free Operation

The HD-7 will operate "hands-free" by connecting an appropriate headset to the 2.5 mm jack located under the ON/TALK - MON/E.DIS switch. HD Telecom provides a retractable headset-beltclip as standard equipment.

To activate the hands-free operation, just plug a headset into the HD-7 and all audio will then come through the headset. The normal microphone and receiver are inactivated. This feature is not a speakerphone function.

Memory Dialing

The HD-7 has two types of memory dialing. There are three (3) "One Touch" memory locations and ten (10) "Two Touch" memory locations.

The 3 "One Touch" memory locations will dial the stored number with one press of one of the three memory buttons on the small keypad (see page 5).

The 10 "Two Touch" memory locations require that you press the MR button on the main keypad and then press one of the numeric keys on the main keypad (See page 5)

Memory retention is dependent on the batteries. Without a battery the numbers stored in memory are retained for about 30 minutes.

Memory programming can be done in Tone or Pulse. You can program memory in Pulse mode and dial that number from memory in Tone mode or vice versa. You cannot program a "Flash" into a memory location.

A maximum of 21 digits can be programmed into a memory location.

Chain dialing is possible, meaning that you can dial from one or more memory locations during one telephone call.

Programming the memories or using the memories is done with the testset connected to a telephone line and in the "TALK" mode.

NOTE:

During memory programming, the key presses will have no effect on the telephone line. You will hear tones in the receiver or on the Amplified Speaker as you press the keys indicating the key press was completed.

"One Touch" Memory Dialing

The HD-7 has three (3) "One Touch" memory locations. These are labeled as M1, M2, and M3. The one touch memories are programmed by using the regular keypad and the "ST" key for saving a number in memory and the "R/P" key for entering a pause into the number at that memory location.

Programming the One-touch memory

The set should be connected to a phone line and switched to TALK mode. Then you can begin programming your memory locations.

Press the ST key. Enter the number using the main keypad, press on M1 or M2 or M3 to store the number in that location.

For example, to store 1-800-356-4940 into memory location M2, you would use the following sequence,

ST 18003564940 M2

If you want to store a pause, for example, after dialing a 9, press the R/P key at the appropriate part of the number entry sequence and a pause will be stored. A Pause is 3 seconds long.

For example, to get through a PBX that requires a 9 and short pause to access the dial tone on an outside line, you will need to press the buttons as follows:

ST 9 R/P 18003564940 M2

Dialing Using the One Touch Memory

Put the testset into TALK mode by moving the TALK - MON switch to the TALK position, confirm that you have dial tone and then press the One Touch Memory button for the number you want to call The testset will dial the number in that location.

“Two Touch” Memory Dialing

There are ten (10) "Two Touch" memory locations, These memory locations are dialed by pressing the "MR" button on the main keypad and then pressing the 0 to 9 key on the same main keypad.

Programming the Two touch-memory

The set should be connected to a phone line and switched to TALK mode,

Then you can begin programming the Two Touch memory locations, Press the ST key on the small keypad Enter the number you want to store by using the main keypad, press the MR key followed by a press on one of the numeric keys on the main keypad to store the number in that location.

For example, to store 1.800.356.4740 into main keypad memory location 5, you would press the following keys in the following sequence.

ST 18003564740 MR 5

If you want to store a pause, for example, after dialing a 9, press the RIP key at the appropriate part of the number entry sequence and a pause will be stored. A Pause is 3 seconds long.

For example, to get through a PBX that requires a 9 and short pause to access the dial tone on an outside line, you will need to press the buttons as follows:

ST 9 R/P 18003564740 MR 5

Dialing Using the Two Touch Memory

Put the testset into TALK mode by moving the TALK - MON switch to the TALK position, confirm that you have dial tone. Press the MR (Memory Recall) key on the main keypad, then press the numeric key on the main_ keypad for the number you want to call, The testset will dial the number in that location.

MR - Memory Recall - Memory Dialing

Please see memory section for operation information

R – Redial of Last Number Called

Re-dialing of the last number dialed may be done in TONE or PULSE modes. Up to 32 digits may be recalled.

After you have dialed a number, disconnect from the line by going "on-hook" for a moment. Then press "TALK" to reconnect to the network.

Confirm that you have a dial tone, and then press the "R" key on the keypad- The last number previously dialed will be re-dialed from memory. Redial can be done in any mode (Tone or Pulse). You may go "on hook" by switching from Talk to Mon and then back to Talk,

Polarity Check

The Model HD-7 testset indicates polarity continuously, without requiring a keypad action, To check the polarity of a line:

Connect the BLACK test lead to TIP (positive). and conned the RED test lead to RING (negative) Switch to "TALK" to access the network.

If the dual-color LED above the keypad shows Green, the line polarity is correct, it the LED slows red, the line wiring polarity is reversed.

NOTE: All functions of the HD-7 will operate with any line polarity.

Ringer

The HD-7 testset is equipped with an internal electronic ringer to indicate incoming calls.

Connect the HD-7 testset to a line The TALK - MON switch should be in "MON" position in order to receive incoming calls (ring signals).

REPLACING THE BATTERIES (See page 14)

The batteries for the HD-7 are located under the back cover.

Use a screwdriver to loosen the two screws holding the back cover in place The batteries are the LR 03 AAA type We recommend that you use the alkaline battery type for replacement.

Insert the batteries in accordance with the symbols inside of the battery compartment

The testset will retain the numbers in the memory locations for about 30 minutes without batteries installed, The set is protected against reverse polarity if you accidentally insert the batteries in the wrong direction. Replace the cover, install the screws. Tighten carefully



CAUTION

THE TEST SET SHOULD BE DISCONNECTED FROM THE LINE BEFORE OPENING FOR CORD REPLACEMENT MAINTENANCE.

LINE CORD CONNECTION (See drawing page14)

The HD-7 testset is designed with a screw connector for easy connection of a variety of cordsets- This connector is located under the cover that secures the batteries

To change the cordsel, remove the two screws holding the back cover in place Slide the cover away from the speaker grille and lift up Then loosen the two screws securing the cordsel, Insert the new cordsel tighten the cordset screws, replace the cover, and tighten the cover screws.

Cordsets should be checked periodically for continuity. shorts, and signs of physical wear, such as fraying and loose test clips that may interfere with the unit's ability to function properly

The HD-7 testset may be cleaned with a damp cloth, Use a small amount of liquid soap if heavy dirt is encountered- Do not use scouring powders or cleansers as they may scratch the unit or cause malfunctions.

WARRANTY

Limited 18 Month Warranty

HD Telecom warrants to the original end-user purchaser that its lineman's testsets, and the components and parts thereof, will be free from defects in workmanship and materials for a period of 18 months from the date of purchase

The obligations of HD Telecom, Inc. under this warranty shall be limited to the repair or replacement (at our option), during the warranty period; of any part that proves defective in material or workmanship under normal installation, use, and service provided the product is returned to HD Telecom, Inc- freight prepaid.

Products returned to us must be accompanied by a copy of the purchase receipt, In the absence of such purchase receipt, the warranty period shall cease 18 months from the date of manufacture.

No warranties other than that set forth in this section are given or implied. HD Telecom shall not be liable for any consequential damages or loss, direct or incidental, including without limitation, damages or expenses resulting from the use, the misuse, or the inability to use its products.

Cordsets used with testsets are not under warranty.

This warranty, shall be invalid if the product is damaged as a result of misuse, abuse, neglect, accident, exposure to improper electrical voltages or currents, repair, alteration, or 21 maintenance by any persons other than the HD Telecom service facility,

Some states do not allow limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you, This warranty gives you specific rights and you may also have other rights which vary from state to state.

SERVICE

HD Telecom products are designed and manufactured to ensure a minimum of maintenance, However, should your testset ever require service, follow the instructions below:

In-Warranty Service

For in-warranty service, ship the unit to our service group Include a form of proof-of-purchase, such as a photocopy of the sales receipt HD Telecom will, at our option, repair or replace your testset free of charge, and will return it freight prepaid Note that cordsets used with the testset are not under warranty. See shipping instructions below.

Out-of-Warranty Service

For out-of-warranty service, ship the damaged unit to our service group HD Telecom will inspect the unit for damage and advise the estimated cost of repair by phone or mail Upon your approval of the estimated repair charge, we will make all necessary repairs and return the testset to you Charges for service and return freight are invoiced on a C O,D, basis with the return shipment, unless you have an approved credit account. See shipping instructions below:

Shipping Instructions:

- 1, Ship the testset and a copy of the sales receipt, if available
- 2 Enclose a description of the problem you are having
- 3 Include your name, address, and telephone number

- 4- Pack securely to prevent damage in transit
5. Ship prepaid to:

HD Telecom, Inc.. Service Group
Suite 370
2629 Redwing Road
Fort Collins, CO 80526

SPECIFICATIONS

ELECTRICAL

Talk -

Loop Limit: 600 ohms maximum at 48 VDC

Monitor -

Leakage: Higher than 1 M Ohms

Impedance: Greater than 120K Ohms

Return Loss: @ 600 Ohms Complex: Greater than 14dB from 300 to 3400 Hz.

ROTARY DIAL OUTPUT

Pulse Rate: 10 lops +/- 10 %

M/B Ratio: 60/40% +/- 2%

Inter-digit Interval: 800 ms typical

Leakage During Break: Greater than 100KOhms

DTMF OUTPUT

Tone Frequency Error: +/- 1.5% maximum

Tone Level: High group: - 9 dBm +/- 2.5dB

Low group. - 11 dBm +/- 2dB

High/Low Tone - twist: 2 dB +/- 1 dB

MEMORY DIALING

Type: Redial and Memory

Mode: Tone and pulse

Retention: Life of the batteries (30 minutes without battery)

Capacity: 32 digits (Redial) 21 digits (Memory)

RINGER

Output level: 70 dBA at 1 meter

Response: 25-50 Hz, 60 Volts

Operating Temperature: -10 to +60 Deg C

PHYSICAL

Length: 5.1 inches (130 mm)

Width: 2.4 inches (60 mm)

Height: 1.2 inches (30 mm)

Weight: 8.8 ounces (250 gm)

Specifications subject to change without notice

