

**ENC**

ELECTRONIC  
NOISE CANCELLING  
HEADSETS

**OWNER MANUAL**



[WWW.DAVIDCLARK.COM](http://WWW.DAVIDCLARK.COM)

# SATISFACTION

The idea of a guarantee that a product will function in accordance with certain claims, and will be replaced or repaired if it fails to perform to those standards, has been popular for decades. In these times, most guarantees promise safeguards against failure over varying periods, and are worded such that proving fault with the manufacturer has become primarily the customer's responsibility.

A guarantee made by the David Clark Company assumes full responsibility for the quality and the performance of the product, to your satisfaction; it is supported by a policy of service to customers which is based on the premise that our relationship is one of mutual honesty, requiring that we respond in a prompt, positive manner to anyone who contacts us.

David Clark Company communication equipment has evolved to a performance level of excellence that is appreciated by quality conscious people throughout the world.

We strive constantly for excellence in design, and performance, and have a positive attitude toward constructive criticism, especially from our customers.

We have earned a reputation for excellence; we intend to keep it, and to continue deserving your confidence!

**Rich Urella**, President

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# ELECTRONIC NOISE CANCELLATION

## DESCRIPTION & TECHNICAL INFORMATION:

### How it works.

David Clark's Electronic Noise Cancellation (ENC) headsets feature the latest advances in electronic noise cancellation technology. They're specially designed for pilots of aircraft which generate noise at lower frequencies. Headsets relying on passive noise control methods alone cannot suppress low frequencies as effectively as mid and high range frequencies.

### Opposites protect.

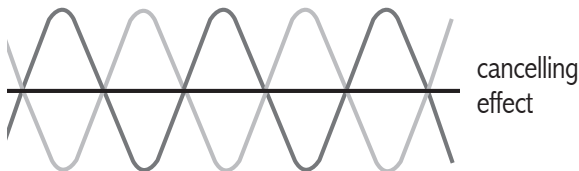
Unlike passive headsets, David Clark's electronic noise cancellation headsets use an electronically produced signal to cancel the offending noise. Low frequency noise is sensed and an opposing signal of the same sound level is generated. The result is cancellation of the noise before it reaches your ears.

### Hear what's important.

With low frequency noise canceled, you'll hear essential communications clearly, and with less strain. Sounds within the range of the human voice, such as air traffic messages and conversations with other pilots, will be easier to verify. Such improved audio comfort leads to alert, and safer flying.

■ outside noise

■ electronically generated signal



Passive versions of these headsets already exhibit excellent noise reduction ratings (NRR). Test measurements indicate an increase in attenuation at lower frequencies when ENC is switched on. At the present time there is no ANSI test standard for independent measuring of the effectiveness of Electronic Noise Cancellation.

## Fail-safe:

An important product feature is true “fail-safe” operation. By having dual earphone drivers, which are electronically independent, no interruption of communication can result from failure of the ENC system or its power source.

## Headset:

Sensitivity: 90dB +/- 5dB SPL on flat plate coupler, re 1mW input @ 1 KHz.

Frequency Response: 350-3,000 Hz +/- 6dB re 1 KHz.

Impedance: Monaural, 150  $\Omega$  nominal; Stereo, 300  $\Omega$  nominal per side.

## Microphones:

### M-7A:

- Incremental DC and Dynamic AC, 50  $\Omega$   $\pm$  20%.
- Sensitivity: 400 mV  $\pm$  6dB into 150  $\Omega$  AC load @ 1 KHz for 114dB SPL input.

### DC-87:

- Microphone designed to be used in aircraft requiring a LOW IMPEDANCE microphone. Microphone impedance is nominally 5  $\Omega$ .
- Sensitivity: .05 to .11 mV across 5  $\Omega$  load at 1000 Hz with an input of 103 dB SPL.
- Frequency response: 200-6000 Hz

Electronic noise cancellation is an “electrical” process. Power to drive the circuitry is obtained from either the Portable Battery Power Module (models ending in “XL” or “X”) or the aircraft’s electrical system (models ending with “XP”).

## XL-9V

### GENERAL AVIATION PORTABLE BATTERY MODULE

#### Instructions

##### Introduction

The model XL-9V battery pack uses a 9 volt alkaline battery to provide power to the headset ENC system. The XL-9V features an Auto Shut Off function to save the battery if the power switch is left on when the headset is not in use. The Auto Shut Off feature operates by sensing loss of microphone DC bias voltage when the headset is unplugged or aircraft audio system is shut off.

A switch is provided inside the battery compartment (see Fig.1) to control the Auto Shut Off feature. ***The XL-9V is shipped from the factory with the switch in the DISABLE position, which will provide continuous power to the ENC system whenever the power switch is on.***



## To Enable Auto Shut Off

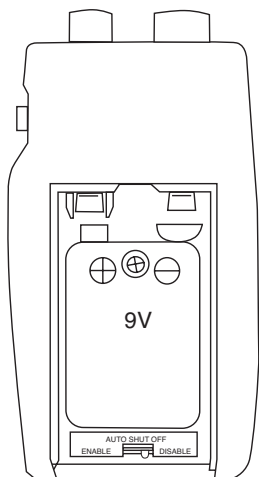
The ENABLE position provides automatic shut off of power to the ENC system if the headset is unplugged or the aircraft audio system power is turned off. To operate the Auto Shut Off switch remove the battery, and using a small pointed tool gently move the switch to the desired position. Replace battery (see Fig. 1).

## Power Indicator

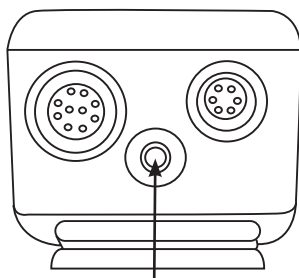
A bi-color LED, mounted on the top of the battery pack indicates the status of the battery (see Fig. 2).

When the battery is good and the headset is powered, the LED will blink **green** approximately once per second. When the battery is low, the LED will be **red** until the battery is fully discharged (see Fig. 2).

*Fig. 1*



*Fig. 2*



*View of the top of the battery module, showing LED*

*View into the battery compartment, showing Auto Shut Off switch*

## Battery Insertion and Removal

**CAUTION!** Improper battery insertion may damage unit.

To remove the battery compartment cover, press down lightly on the recess and slide the cover back. To install the battery compartment cover, align with the recess in the battery compartment and slide the cover forward until it snaps into position (see Fig. 3).

To install battery, insert back of battery into battery compartment, making sure to position the smaller positive terminal over the keying ribs in the front of the battery compartment (see Fig. 4). Press contact end of battery firmly until battery is seated in the battery compartment fully. To remove battery, lift up on the back of the battery and slide out of battery compartment.

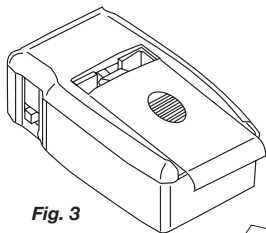
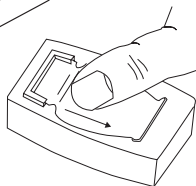
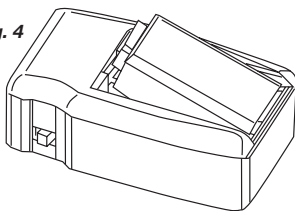


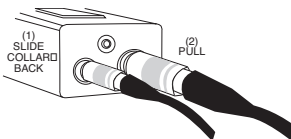
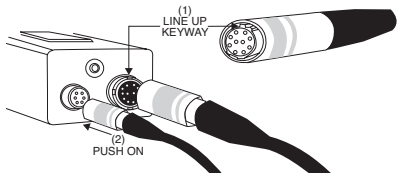
Fig. 3

Fig. 4



**Belt Clip Removal**  
Push down and slide at same time to remove belt clip

## Connector Insertion and Removal (not applicable to 13X version)



# GENERAL AVIATION

## H10 SERIES HEADSET

### Features:

**Headpad Assembly**  
P/N 40688G-36

**Headband Locknut**

When the headset is adjusted comfortably, the locknut can be tightened for consistent fit to your head.

**Undercut Comfort Gel Ear Seals**  
P/N 40863G-02

**Microphone Protector**  
P/N 40062G-02

**Exclusive, Patented Flex/Wire Boom**  
Rotates for left or right side positioning. Detented for precise control. Wire slide allows easy, repeatable microphone placement.

**Volume Controls**

Dual volume controls. Select a comfortable listening level for each ear. Both sides are wired for unidirectional operation. (Roll forward, roll reverse, produces the identical result in each ear cup, regardless of microphone placement.)

### IMPORTANT NOTE:

**All General Aviation Headsets come with a 5 year warranty**





# MILITARY

## H10-66XL

### SERIES HEADSET

#### Features:

**Headpad Assembly**  
P/N 18900G-48

**Undercut Comfort  
Gel Ear Seals**  
P/N 40863G-02

**Dynamic Microphone**  
P/N 09168P-88

**Exclusive, Patented Flex/Wire Boom**  
Rotates for left or right side positioning.  
Detented for precise control. Wire slide allows  
easy, repeatable microphone placement.

#### Headband Locknut

When the headset is adjusted comfortably, the locknut can be tightened for consistent fit to your head.

#### High/Low Impedance Select Switch



#### Volume Control

Low profile knob to prevent  
accidental changes. Lets  
you select a comfortable  
listening level.

#### IMPORTANT NOTE:

**H10-66XL and H10-76XL headsets utilize XL-9V-M battery pack with rotating belt clip**



# MILITARY

## H10-76XL & H10-76XP

### (LOW IMPEDANCE ENC HEADSETS)

#### Features:

**Headpad Assembly**  
P/N 40688G-36

**Undercut Comfort  
Gel Ear Seals**  
P/N 40863G-02

**Dynamic Microphone**  
P/N 09168P-88

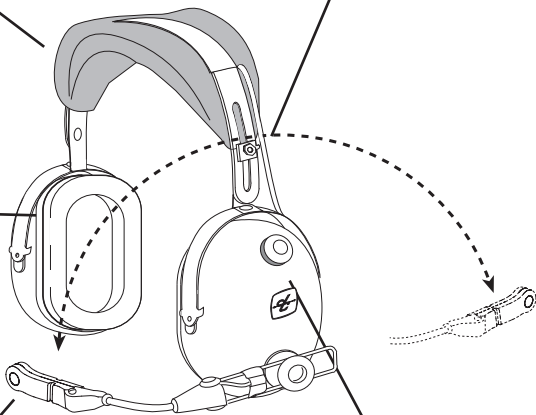
**Exclusive, Patented Flex/Wire Boom**  
Rotates for left or right side positioning.  
Detented for precise control. Wire slide allows  
easy, repeatable microphone placement.

#### **Headband Locknut**

When the headset is adjusted comfortably,  
the locknut can be tightened for consistent  
fit to your head.

#### **Volume Control**

Low profile knob to prevent  
accidental changes. Lets  
you select a comfortable  
listening level.



#### **IMPORTANT NOTE:**

**All Military Headsets come with a 1 year warranty**



## ACCESSORIES –

### POWER OPTIONS

**'X' Series modular design allows pilots the option of using one headset with either Portable Battery Powered Modules XL (with a communication cord required) or the Panel Mount Module XP (which is hard wired to the audio and power circuits of the aircraft).**

**To further enhance your headset's versatility, the following items may be purchased separately:**



#### **General Aviation Portable Battery Pack Module XL-9V P/N 40862G-01**

W1.9" x H3.2" x D1.21"

This Portable Battery Powered Module is included with all General Aviation XL Model purchases. This unit has a built in auto shut off switch. One 9V battery provides up to 25 hours of operation. Removable placement belt clip included.



#### **Military Portable Battery Pack XL-9V-M P/N 40862G-06**

W1.9" x H3.2" x D1.21"

This Portable Battery Powered Module is included with all H10-66XL & H10-76XL Model purchases. One 9V battery provides up to 25 hours of operation. Module comes with a durable rotating belt clip included.



#### **Permanent Panel Mount Module XP P/N 40594G-01**

W2.8" x H1.7" x D.9"

The Permanent Panel Mount Module is standard and included with all XP Model purchases and can also be ordered separately. This unit has an on/off power switch. It is wired directly to the aircraft's electrical power system and intercom, operating on 12V - 30V power.

***Headset Cord Plugs Directly into Permanent Panel Module.***

## **Undercut, Comfort-Gel Ear Seals**

Softer, more supple and form fitting with an “undercut” shape that provides more room for your ears. The larger, yet lighter, ear seals cradle the ears with unsurpassed comfort. Compatible with all David Clark Company headsets.

P/N 40863G-02 (1pair)

NSN 5965-01-516-8082



## **Microphone Protectors**

### **DC-87**

Cloth mic-muff with drawstring. Protects microphone from moisture. Fits all microphones.

P/N 40062G-06



### **M-7A**

Foam microphone protector and O-ring assembly assure secure positioning over the microphone and provide clear, crisp voice transmission.

P/N 40062G-02

NSN 5965-01-424-3296



## **For your headset to perform properly, always comply with the following:**

1. Never alter or modify your headset. If you re-form the headband or muff, cut or punch holes in the ear seal, drill or punch holes in the ear cup insert, paint or coat the device, you will seriously jeopardize the hearing protection it affords and hearing damage could occur.
2. Use of ear seals, other than those supplied by David Clark Company, may adversely affect both your comfort and the headset's overall performance.
3. Seek repair or replacement of the headset immediately if you see a defect, such as any sign of cracks or splits in domes, ear seals, headbands, or other parts.
4. Storage in direct sunlight or at high temperatures, or cleaning in non-recommended cleaning solutions, may shorten the useful life of the headset.
5. Each individual's body chemistry is different. Perspiration, body oils, and hair grooming cosmetics may affect materials; loss in elasticity or softness of ear cup seals and of the foam pads inside ear cups may result. Replace parts immediately if these signs of wear occur.

## **Cleaning Instructions:**

1. Headpad cover can be removed for washing. Ear seals can be removed and cleaned using mild soap and water. Be sure to dry thoroughly.
2. **DO NOT SUBMERGE IN WATER!**

***Alert: Do Not Use Comfort Covers. Your headset came with form fitted ear seals. Do not use "comfort covers" of any kind. Any disruption to the seal around the ears will result in the reduction of effectiveness in the ENC performance.***

## Thank you for purchasing our product.

David Clark Company makes every effort to prevent problems and the need for repairs. Still, if you do experience a problem with your David Clark product, qualified representatives are on hand to answer your questions and provide the best Customer Service in the industry. Many repairs are covered by the David Clark 5-Year Warranty.

Simply return the product to the following address for evaluation and service:

**David Clark Company Inc.**  
**c/o Customer Service**  
**360 Franklin Street, Box 15054**  
**Worcester, MA 01615-0054 U.S.A.**

***Note: please include your name, return address, a daytime telephone number and a brief description of the problem.***

For more information please call Customer Service directly at:

**1-800-298-6235**  
***service@davidclark.com***



**Visit our website at**  
**[www.davidclark.com](http://www.davidclark.com)**  
**email: [sales@davidclark.com](mailto:sales@davidclark.com)**



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