



HOWARD  
LEIGHT®

**Bilson®**

Hearing Catalogue

Bacou-Dalloz



## Protecting People at Work

Bacou-Dalloz is the world leader in personal protective equipment (PPE). The group takes advantage of this position to constantly innovate and develop total solutions for the protection of people in the workplace or in risky situations.

Bacou-Dalloz is unique because it designs, manufactures and markets the industry's broadest range of premium personal protective equipment, meeting all user needs "from head to toe".

This equipment is specifically designed for use in all sectors where workers are at risk, such as industry, construction, telecommunications, and domestic preparedness.

Its activities are organised in two areas: head protection - eye, face, hearing and respiratory and body protection - fall protection, gloves, clothing and footwear.

These lines are sold through a portfolio of leading international brands, recognised for their exemplary quality in terms of protection but also in terms of individual comfort and style. In short, the group strives to design protective equipment that people will want to wear.



eye protection



respiratory protection



hearing protection



hand protection



fall protection

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# The effects of noise and hearing impairment

Hearing is one of the most vital of the five senses. Hearing, combined with sight and speech, allows us to communicate with the world around us. However, today's environment contains many sounds our ears weren't designed to withstand.

Loud and continuous noise can permanently damage our ears, and lead to partial or a reduced ability to communicate. Noise in the work place can cause stress, discomfort and impair hearing. Noise also interferes with conversation and concentration, and can reduce productivity.

Whether a noise is damaging depends on three factors: the sound pressure level, the duration of exposure and the sensitivity of the individual. The problem with noise induced hearing loss is that by the time someone realises their hearing is impaired, the damage has been done and it is irreversible. Side effects of hearing loss include psychological difficulties such as annoyance and stress, and physiological problems including headaches, nausea, muscle tension, fatigue and tinnitus. Tinnitus is a continuous high pitched noise in the ears, a medical condition for which there is no treatment.

## How the ear works

Sound is created when the balance of the air is mechanically disturbed. The resulting air pressure variations radiate in all directions in the form of waves. When these waves strike the ear, they are collected and sent to the brain via the three main parts of the hearing apparatus, known as the the outer, middle and inner ear (cochlea).

The cochlea converts the sound waves into signals which can be interpreted by the brain. Pitch is determined by the frequency of the sound waves, and is measured in hertz (Hz). 'Loudness' is determined by the strength of the waves, and is measured in decibels (dB). Humans can not perceive sound waves with frequencies above or below certain limits. The average range of audible frequencies is from 20 to 20,000 Hz.

### OUTER EAR

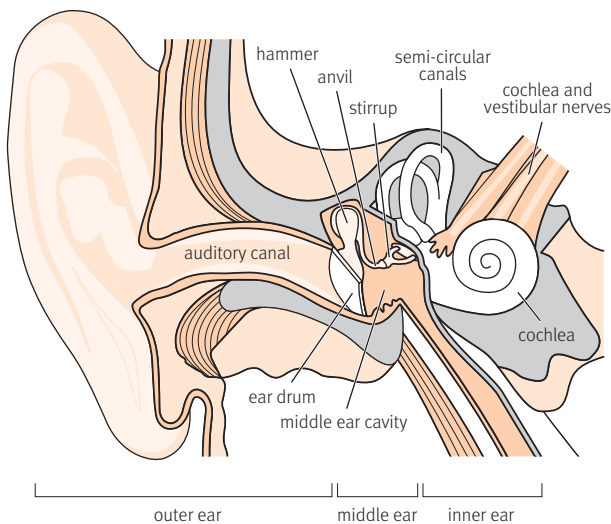
The outer ear 'collects' the sound waves, and directs them into the auditory canal, making the eardrum vibrate.

### MIDDLE EAR

The vibration is passed through the middle ear via three small bones called the hammer, anvil and stirrup.

### INNER EAR

The inner ear is a fluid filled complex set of small tubes and chambers filled with tiny hairs that convert the vibration into nerve signals that the brain can interpret as sound.



# Damage prevention

Since noise induced hearing loss can not be cured, it must be prevented. There are several noise control techniques including engineering controls and administrative controls. Personal hearing protection should be regarded as first aid until noise levels can be reduced to 'safe' levels, or as a last resort when noise can not be engineered out.

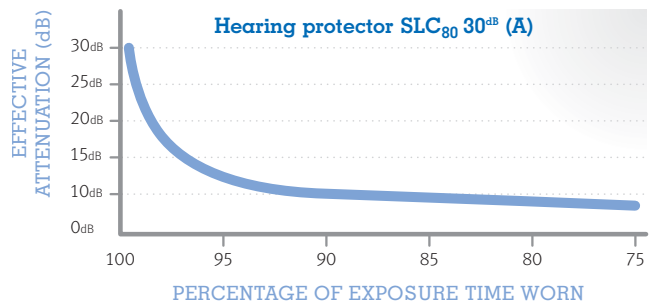
## COMMON NOISE LEVELS

Quiet Office	50-60 dB
Restaurant	60-70 dB
50kW Electric Motor	90 dB
Heavy Vehicle	90 dB
Grinder	83-115
Compressor	101-123 dB
Diesel Generator	107-111 dB
Mining Drill	108-113 dB
Power Saw	110 dB
Rock Drill	110 dB

Personal hearing protection is usually available in two forms: earplugs and earmuffs. Earplugs are usually made of silicone, or foam, and are inserted into the ear canal. Earmuffs completely enclose the ear, and are held in place against the side of the head by a headband. Earplugs and Earmuffs work by blocking the sound waves from reaching the inner ear. The process of blocking the sound waves is called attenuation. The higher the attenuation, the more noise is blocked from reaching the inner ear.

## Hearing protection in the workplace

For the wearer, any discomfort or irritation with hearing protection is particularly apparent and can lead to removal of the hearing protector. This is commonly what happens with high attenuating hearing protectors that are often heavier and more uncomfortable. You only have to take off your hearing protection for a few minutes every day for the damaging effects of noise to accumulate. This is why 100% wearing time is so important.



Over a working day, periods of a few minutes of unprotected exposure can easily accumulate. An example of reduced effective protection is removing your hearing protector for 10 minutes during a total exposure time of 1 hour. The effective protection provided by a high attenuating hearing protector (30dB) is reduced to 8dB. This makes the effective protective value 22dB less than expected, by wearing the hearing protector 83% of the time over 1 hour.

It is vital that every effort is made to encourage 100% wear time. This can be achieved through training and providing suitable hearing protection that is comfortable enough to wear all day.

# The Class System

Under the Australian Standard AS/NZS 1270:2002, the class system is a simple way to select a hearing protector appropriate to a noise exposure. Once the extent of the noise hazard has been determined by a noise level survey, the user simply applies this to a table like the one below to select an appropriate hearing protector.

CLASS	SLC <sub>80</sub> dB	FOR USE IN NOISE
1	10-13	less than 90 dB(A)
2	14-17	90 to less than 95 dB(A)
3	18-21	95 to less than 100 dB(A)
4	22-25	100 to less than 105 dB(A)
5	26 or greater	105 to less than 110 dB(A)

All calculations are based on the maximum exposure limit of 85dB Leq, 8hr.

Example: if a noise level survey shows a person will be exposed to a noise level of 102dB(A)Leq8hr using the above table, we can see that a Class 4 hearing protector is required for protection against this level of noise.

In Australia the SLC<sub>80</sub> rating is still an acceptable method for the selection of hearing protectors according to clause A2.3 in Appendix A of AS/NZS1269.3-2005.

## Hearing product test procedure

The method of testing a hearing protector to AS/NZS 1270:2002 is an involved process, and ensures that the protector will meet the requirements of workers in the real world.

In an approved laboratory, 20 naive subjects are individually tested for earplugs, and 16 subjects for earmuffs. They are provided with the hearing protector and printed instructions for fitting and are not given any assistance from the tester.

The test subject is asked to respond to different noise frequencies of where mathematically the SLC<sub>80</sub> is calculated. The Class of the protector is determined by the SLC<sub>80</sub>.

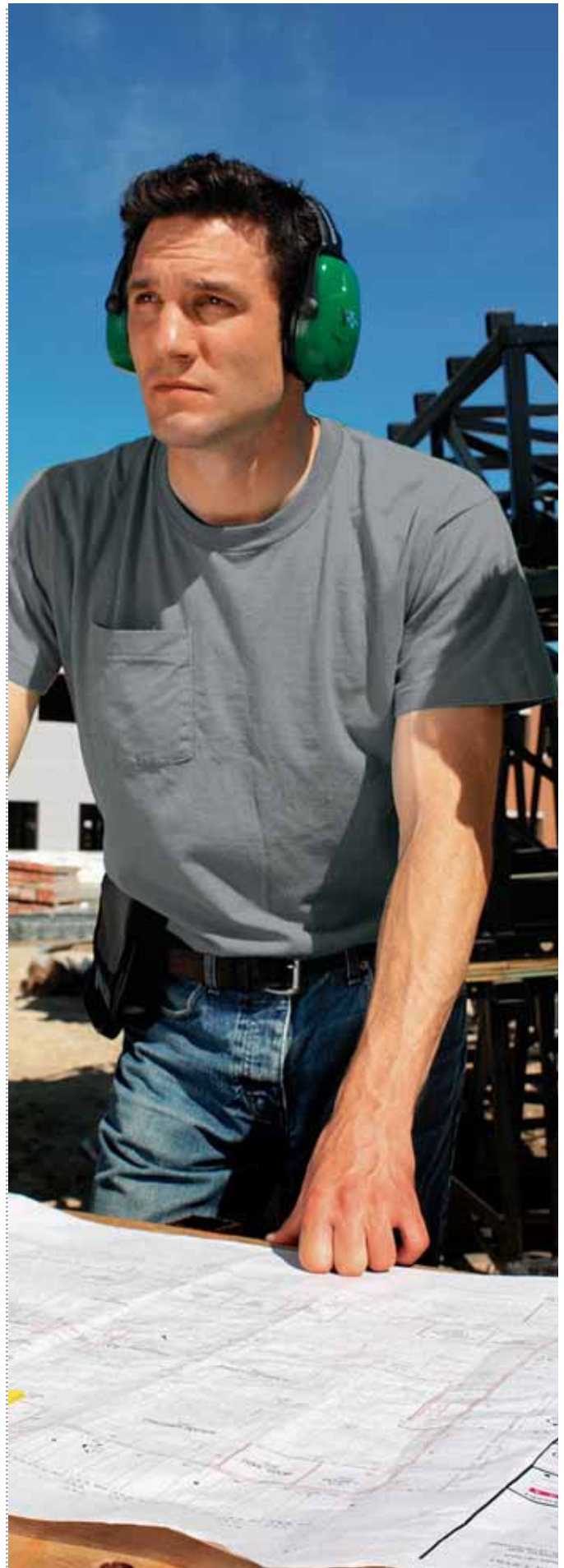
Both Bilsom earmuff and Howard Leight earplug packaging display the protector's SLC<sub>80</sub> rating and class. This information is also supplied in this catalogue like so.



## Plugs or Muffs?

Not all ears are the same. Ear shapes vary from person to person. It is important to choose a hearing protection solution that suits your working environment, the needs of the worker and also promotes 100% wear time.

Plugs are best for people who work all day in noise and who have to wear other safety equipment such as hard hats, masks or goggles. Earmuffs are easier to put on and take off, so they are more convenient for people who are intermittently exposed to noise. It is a matter of personal preference and both will provide protection provided that they are worn correctly.





It's all about making the right choice



Selecting the right protection for your workers means more than choosing the earplug with the highest SLC<sub>80</sub> rating. A better way to ensure consistent and proper use is to select earplugs by comfort profile. That means considering all the features that make one earplug work and fit differently than another: material, shape, size and SLC<sub>80</sub> rating. Howard Leight makes it easy to compare products and ensure that all your workers receive the right fit and protection.

## Find It Fast

Need to compare products or find a specific feature? Our FastSpecs make it quick and easy to find what you're looking for.



### ① SHAPE

Because every ear is different Howard Leight earplugs are available in a range of shapes.



#### FLANGE

Distributes pressure evenly on the ear canal to deliver unmatched comfort and superior attenuation.



#### TAPER

Tapered shape for easy insertion into the ear canal.



#### BELL

Flared shape provides superior attenuation.



#### T

Contoured for easy insertion and comfortable long-term wear.



#### PILL

Two sizes in one provides more fit options with a single product.



#### CYLINDER

Contoured to fit the shape of the ear canal.



#### FLAT ARROW

Fits easily inside the ear canal opening and provides excellent protection.



#### OVAL PAD

Fits just outside the opening of the ear canal for wearer comfort.

### ② MATERIAL

#### FOAM

Low and medium pressure foam. Self-adjusts for a comfortable fit.

#### MOULDED

Soft and pliable. Ideal for long-wearing or multiple-use applications.

#### CONFORMING MATERIAL TECHNOLOGY™ (CMT)

The ultimate fit. Changes shape with body heat to conform to every individual wearer. The longer you wear it the better it fits.

### ③ SLC<sub>80</sub> RATING

This rating system lets you compare the level of protection offered by various products. Use SLC<sub>80</sub> information, along with comfort features, to determine what product works best in your situation.

## ADVANCED MATERIALS

Howard Leight uses advanced materials in earplug designs, each providing unique properties for comfort and protection. Our latest advance? Conforming Material Technology™, a true innovation in comfort. This unique material responds to body heat and adapts to the individual shape of each wearer's ear canal. The longer you wear it, the better it fits.

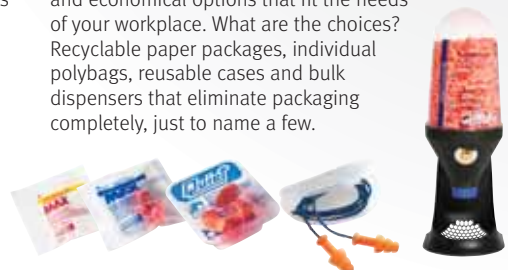
## CORDS FOR ADDED CONVENIENCE

In many environments, workers need to remove their earplugs during the course of a days work. We offer a wide selection of products with cords that make refitting earplugs more convenient, reducing lost plugs.



## PACKAGING, DISPENSER AND STORAGE OPTIONS

Whether you're outfitting employees by the handful or hundreds, we offer convenient and economical options that fit the needs of your workplace. What are the choices? Recyclable paper packages, individual polybags, reusable cases and bulk dispensers that eliminate packaging completely, just to name a few.



# Howard Leight® earplugs

The Howard Leight product overview shows the selection of Single-Use, Multiple-Use, Detectable and Banded earplugs available in the range. Whether you are outfitting employees by the handful or by the hundreds, there is a Howard Leight earplug solution to suit.



## SINGLE-USE EARPLUGS

Single-Use shouldn't mean single choice. Howard Leight offers a comprehensive choice of Single-Use earplugs that include the comfort features your employees deserve, plus the highest SLC<sub>80</sub> rating available. An economical and convenient choice for work situations that demand a high degree of comfort, frequent changes or where hygiene presents a problem for re-use.



MAX™



MAX LITE™



LASER LITE™



MATRIX™



MULTIMAX™



X-TREME™



300 SERIES™



## MULTIPLE-USE EARPLUGS

Multiple-Use Earplugs last for weeks, reduce waste and save money. Simply clean with soap and water. Ideal for environments where workers can retain and store earplugs for reuse.



QUIET™



AIRSOFT™



FUSION™



SMARTFIT™



## DETECTABLE EARPLUGS

Our comprehensive selection of Detectable earplugs are designed for high visibility and detectability. Available in Single-Use and Multiple-Use options. Specially created for environments where contamination from foreign objects is unacceptable.



LASER-TRAK™



XD3™



SMARTFIT™



FUSION™



## BANDED EARPLUGS

We offer a variety of performance features, including a patented band design that prevents earpads from touching dirty or contaminated surfaces when set down. Great for use in environments with intermittent sound hazards.



QB1™



QB2™



QB3™



PERCAP™



## single-use earplugs

Matrix's unique no-roll design allows wearers to push the plug in and go – insertion is easy, fast and reliable

Want Innovation? We'll give you an earful. We made the diameter smaller, but packed in more innovation. The result is the patented Matrix™, a triumph of hearing protection technology. It promises enhanced communication, safety and compliance.

Forget rolling the earplug, insertion is fast, and protection is instant upon proper insertion. A revolutionary, super-soft outer skin ensures comfort, and low-pressure foam does away with that plugged up feeling.

While Matrix's uniform attenuation blocks out harmful noise, voice frequencies can be heard more naturally, combating worker isolation and overprotection on the job.

**Applications:** Fork lift drivers, process workers, factory workers, maintenance workers, anywhere you need to hear safety signals whilst protecting your hearing.

### MATRIX™ EARPLUGS



Foam



The Matrix no-roll foam plug provides instant protection when properly inserted.

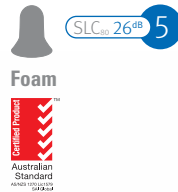
#### Special Features

- Patented no-roll design makes insertion easy.
- Smooth outer skin and reduced diameter provide long term comfort.
- Delivers instant protection upon proper insertion, no need to wait for foam to expand.
- Uniform attenuation profile blocks loud noise while voice frequencies can be heard more naturally.
- 2 attenuation levels, Orange 18dB Class 3, Green 17dB Class 2.

#### Part No.

MTX-1-GRA	GREEN UNCORDED, INDIVIDUAL POLY BAG
MTX-1-ORA	ORANGE UNCORDED, INDIVIDUAL POLY BAG
MTX-30-GRA	GREEN POLYCORD, INDIVIDUAL POLY BAG
MTX-30-ORA	ORANGE POLYCORD, INDIVIDUAL POLY BAG
MTX-1-GR-DA	GREEN UNCORDED LS-500A DISPENSER REFILL
MTX-1-OR-DA	ORANGE UNCORDED LS-500A DISPENSER REFILL
MTX-GR-LS4A	GREEN UNCORDED LS-400A DISPENSER REFILL
MTX-OR-LS4A	ORANGE UNCORDED LS-400A DISPENSER REFILL

### MAX™ EARPLUG



Foam



Max bell shape single-use earplug offers maximum in-ear comfort.

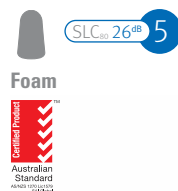
#### Special Features

- The world's most used polyurethane earplug.
- Bell shape delivers maximum comfort.
- Improved design easier to insert, reduces tendency to back out of the ear.
- Smooth, soil-resistant skin prevents dirt build-up.
- Corded and uncorded versions available with various dispensing options.

#### Part No.

MAX-1	UNCORDED, INDIVIDUAL POLY BAG
MAX-30	POLYCORD, INDIVIDUAL POLYBAG
MAX-1-D	UNCORDED, LS-500A DISPENSER REFILL
MAX-PD-4	UNCORDED PLUG DEPOT REFILL 4 X 450 PAIR
MAX-LS4	UNCORDED LS-400A DISPENSER REFILL

### X-TREME™ HIGH ATTENUATION EARPLUG



Foam



Brightly coloured tapered earplug ensures compliance and encourages 100% wear time.

#### Special Features

- Brightly coloured offering high visibility and worker compliance.
- Smooth tapered shape for easy insertion and removal.
- Corded version helps to guard against earplugs falling onto the floor
- Conveniently sized hand dispensing option for easy accessibility.
- Wall dispenser unit allows a refillable option for the whole work area.

#### Part No.

1006716	UNCORDED INDIVIDUAL POLY BAG
1006717	POLYCORD, INDIVIDUAL POLY BAG
1006821	UNCORDED, 100 PAIR HAND DISPENSER
1006204	UNCORDED LS-400A DISPENSER WITH 400 PAIR REFILL
1006188	UNCORDED, 200 PAIR WALL DISPENSER REFILL.



## MAX LITE™ UNCORDED & CORDED FOAM EARPLUG



SLC<sub>max</sub> 25<sup>dB</sup> 4

Foam



Max Lite provides comfort for smaller profile workers in a low pressure foam earplug.

### Special Features

- Ideal size for female workers.
- Low pressure foam expands gently for comfortable long-term wear.
- Contoured T-shape for easy handling and wear.

### Part No.

LPF-1 UNCORDED, INDIVIDUAL POLY BAG  
 LPF-30 POLYCORD, INDIVIDUAL POLY BAG  
 LPF-1-D UNCORDED LS-500A DISPENSER REFILL  
 LPF-PD-4 UNCORDED PLUG DEPOT 4 REFILLS  
 LPF-LS4 UNCORDED LS-400A DISPENSER REFILL

## LASER LITE™ UNCORDED & CORDED FOAM EARPLUG



SLC<sub>max</sub> 25<sup>dB</sup> 4

Foam



Vibrant colours make the Laser Lite a highly visible earplug and allows at-a-glance determination of worker compliance.

### Special Features

- Vibrant colours make protection visible and fun.
- Self adjusting foam expands to fit virtually every wearer.
- Contoured T-shape for easy handling and wear.

### Part No.

LL-1 UNCORDED, INDIVIDUAL POLY BAG  
 LL-30 POLYCORD, INDIVIDUAL POLY BAG  
 LL-1-D UNCORDED LS-500A DISPENSER REFILL  
 LL-PD-4 UNCORDED PLUG DEPOT 4 REFILLS  
 LL-LS4 UNCORDED LS-400A DISPENSER REFILL

## MULTIMAX™ UNCORDED FOAM PLUG



SLC<sub>max</sub> 24<sup>dB</sup> 4

Foam



MultiMax features 2 sizes in 1 earplug to reduce inventory and offer a size choice without having to change plugs.

### Special Features

- Two sizes in one product improves individual fit and simplifies inventory.
- Smooth, soil resistant skin prevents dirt build up.
- Self-adjusting foam expands to fit virtually every wearer.

### Part No.

MM-1 UNCORDED INDIVIDUAL POLY BAG  
 MM-LS4 UNCORDED LS-400A DISPENSER REFILL

## 300 SERIES TAPERED EARPLUG



SLC<sub>max</sub> 22<sup>dB</sup> 4 uncorded    SLC<sub>max</sub> 24<sup>dB</sup> 4 corded

Foam



The 300 series earplug features a tapered shape for easy insertion and a smooth hygienic outer to eliminate irritation.

### Special Features

- Two sizes available to suit the majority of workers – small and large.
- Tapered shape for easy insertion.
- Smooth PVC-free hygienic outer surface.
- Suited to applications where noise levels are 100 to less than 105dB(A).

### Part No.

1005073 LARGE UNCORDED	■ 1005074 SMALL UNCORDED
1007192 10 PR LARGE UNCORDED	■ 1007193 10PR SMALL UNCORDED
1000106 LARGE POLYCORD	■ 1000107 SMALL POLYCORD
1005852 100PR LARGE UNCORDED	■ 1005850 100PR SMALL UNCORDED
1006202 400PR LARGE UNCORDED LS-400A DISPENSER WITH REFILL	
1006203 400PR SMALL UNCORDED LS-400A DISPENSER WITH REFILL	
1006186 LARGE UNCORDED BULK POLYBAG BILSOMAT REFILL	
1006187 SMALL UNCORDED BULK POLYBAG BILSOMAT REFILL	



## LEIGHT™ SOURCE 500 PAIR EARPLUG DISPENSER



Earplug dispensers save time, waste and space. LS-500A Leight Source Dispenser, permanent hearing protection source.

**Special Features**

- Heavy duty anodised aluminum construction withstands constant use.
- Mount on wall for easy access.
- Crank handle to dispense earplugs.
- Ideal for large factories and process industries that have a zero tolerance for packaging waste.
- Will suit: Matrix, Max, Max Lite and Laser Lite in bulk refills.

**Part No.**

LS-500A 500 PAIR EARPLUG DISPENSER

## LEIGHT™ SOURCE 400 PAIR EARPLUG DISPENSER



LS-400A Leight Source Dispenser, a new versatile earplug dispenser.

**Special Features**

- Mounts to wall or stands as table top dispenser with balanced footing.
- Twist knob to dispense earplugs.
- Handy catch tray for stray plugs.
- Ideal for smaller workshops, or where one or more dispensers are required.
- Will suit: Max, Xtreme, Max Lite, Laser Lite, MultiMax, 300 series and Matrix.

**Part No.**

LS-400A 400 PAIR EARPLUG DISPENSER

## QUIET™ MULTIPLE USE EARPLUGS



SLC<sub>100</sub> 20dB 3

**Moulded**

Easy handling and a better fit with a patented “no-roll” design.

**Special Features**

- Bell shape comfortably matches contours of the ear canal.
- Built-in insertion stem for easy fitting.
- Patented “no-roll” design makes it easy to handle and fit.
- Available in corded and uncorded configurations.

**Part No.**

QD-1 UNCORDED, FLIP TOP BOX

QD-30 POLYCORD, FLIP TOP BOX

## AIRSOFT™ MULTIPLE-USE EARPLUGS



SLC<sub>100</sub> 14dB 2  
uncorded

SLC<sub>100</sub> 16dB 2  
corded

**Moulded**

One of the original Howard Leight products, the AirSoft is an industry standard in re-useable hearing protection.

**Special Features**

- Patented internal air cushion.
- Maintains superior comfort during extended wear.
- Moulded design for multiple usage.
- Available uncorded, corded, red vinyl cord and white nylon cord.

**Part No.**

AS-1 UNCORDED, SAFETY IMPACT CASE

AS-30R POLYCORD, SAFETY IMPACT CASE

DPAS-30R RED VINYL CORD, FLIP TOP BOX

DPAS-30W WHITE NYLON CORD, FLIP TOP BOX

# Howard Leight® SmartFit™ with Conforming Material Technology™ for superior comfort and attenuation

Ears are like people, each one is unique and different. That is what makes SmartFit such a marvel of user-friendly design.

SmartFit is the only multiple-use earplug with Conforming Material Technology™ providing the ultimate custom fit. As SmartFit warms up, it takes on the shape of the surrounding ear canal. Unlike traditional earplugs, which at first feel fine, but can irritate over time, SmartFit actually feels better the longer that you wear it.

When removed, the SmartFit returns to its original shape, ready to be used again and again. There's no easier way to offer greater comfort, protection and convenience for everyone.

The triple fin design maximises user comfort by delivering more contact inside the ear canal and creates a better seal. A comfortable earplug is more likely to be worn consistently, minimising over-exposure to noise.

With a detachable cord system (SMF-30A only), HearPack carry case, and special application styles available, it's the ultra-smart choice for today's diverse workplace.

## SMARTFIT PROCESS INDUSTRY EARPLUG



Exceptional comfort and longer wear time, plus a cotton cord for use in the pulp and paper industry.

### Special Features

- Cotton cord for use in the pulp/paper industries.
- Conforming Material Technology adapts to the contours of the ear canal for exceptional comfort and wear time.
- Flat Fin Seal maximises comfort through more contact inside the ear canal.
- Paper packaging which is 100% recyclable.

Part No.

SMF-30W-PA SMARTFIT PROCESS INDUSTRY

## SMARTFIT EARPLUG



Conforming Material Technology adapts the plug to the contours of the ear canal for exceptional comfort and longer wear time.

### Special Features

- Material adapts to the ear canal for comfort and longer usage.
- Easy insertion and removal.
- High visibility for compliance checks.
- One size will fit most users.
- Protective case for long term use.
- Easy to clean using soap and water.

Part No.

SMF-30A SMARTFIT

## FUSION™ EARPLUG



Patented quadruple SoftFlange™ design adjusts perfectly to the ear canal for great comfort and superior attenuation.

### Special Features

- FlexiFirm core for easy insertion.
- Design provides unmatched comfort and high attenuation.
- Two sizes, regular and small.
- Modern styling and design.
- Hygienic materials, easy to clean and re-use.

Part No.

FUS30-HPA REGULAR SIZE ■ FUS30S-HPA SMALL



### LASER-TRAK™ SINGLE-USE DETECTABLE EARPLUG

SLC<sub>50</sub> 25dB 4

Foam



The Laser-Trak provides detectability in a single-use earplug.

#### Special Features

- Self adjusting foam expands to fit virtually any wearer.
- Non-ferrous metal and bright colours are easily detected by visual and automated inspections.
- Blue polycord prevents earplugs from falling into sensitive production lines.

Part No.

LT-30 POLYCORD, INDIVIDUAL POLYBAG

### XD3™ SINGLE-USE DETECTABLE EARPLUG

SLC<sub>50</sub> 25dB 4

Foam



The XD3 provides full detectability in a single-use earplug.

#### Special Features

- Self adjusting foam expands to fit virtually any wearer.
- Non-ferrous metal and blue colours are easily detected by visual and automated inspections.
- Metalized cord offers additional protection in highly sensitive production areas.

Part No.

1007349 METALIZED CORD, INDIVIDUAL POLYBAG

### SMARTFIT™ MULTIPLE-USE DETECTABLE EARPLUG

SLC<sub>50</sub> 16dB 2

Moulded



The Smart Fit fully detectable and visual detectable plugs are a revolution in personal fit.

#### Special Features

- Simplifies inventory control – a single product fits almost every wearer.
- Blue colour for high detection visibility.
- Detectable stem ring and metalized cord is detectable by automated equipment. (SDT-30A only).
- Delivers superior comfort and fit.
- Multiple use, can be used for weeks.

Part No.

SDT-30A DETECTABLE POLYBAG  
SMF-30BUA BLUE POLYBAG

### FUSION™ MULTIPLE USE DETECTABLE EARPLUG

SLC<sub>50</sub> 22dB 4

Moulded



Total protection, comfort and fit in a Multiple-Use, detectable earplug, the Fusion offers two sizes to ensure the perfect fit.

#### Special Features

- Metalised cord and shaft ring easily detected by automated equipment.
- Patented dual material design.
- FlexiFirm® core for easy handling.
- Soft Flanges for comfort and fit.
- Cleans easily with mild soapy water.
- Multiple use, can be used for weeks.

Part No.

FDT-30-SMA SMALL ATTACHED METALIZED CORD HEARPACK  
FDT-30A REGULAR ATTACHED METALIZED CORD, HEARPACK





### QB1™ BANDED EARPLUGS



Moulded



For Inner-aural protection the QB1 has smooth, ergonomic pads which fit in the ear for maximum protection

#### Special Features

- Patented band design prevents ear pads from touching contaminated surfaces.
- Smooth, ergonomic pads fit into the ear for maximum comfort.
- Lightweight and portable.
- Available with replacement ear pieces.

Part No.

QB1 BANDED INNER AURAL RESEALABLE BAG  
QB100 REPLACEMENT FOAM QB1 INDIVIDUAL POLYBAG

### QB2™ BANDED EARPLUGS



Foam



Supra-aural protection, the soft pads rest partially in the ear for a balance of protection and comfort.

#### Special Features

- Patented band design prevents ear pads from touching contaminated surfaces.
- Soft pads rest partially in the ear for a balance of protection and comfort.
- Lightweight and portable.

Part No.

QB2 BANDED SUPRA-AURAL RESEALABLE BAG  
QB200 REPLACEMENT FOAM QB2 INDIVIDUAL POLYBAG

### QB3™ BANDED EARPLUGS



Foam



The QB3 offers Semi-aural protection, with super soft pads which rest outside the ear for outstanding comfort.

#### Special Features

- Patented band design prevents ear pads from touching contaminated surfaces.
- Super soft pads rest outside the ear for outstanding comfort.
- Lightweight and portable.
- Available with replacement ear pieces.

Part No.

QB3 BANDED SEMI-AURAL RESEALABLE BAG  
QB300 REPLACEMENT FOAM QB3 INDIVIDUAL POLYBAG

### PERCAP™ BANDED EARPLUGS



Foam



A comfortable folding hearing protector that seals the opening of the ear canal without having to be inserted.

#### Special Features

- 3 wearing positions over the head, under the chin and behind the neck.
- Exchangeable foam caps.
- Lightweight at only 10 grams.
- Fits into a pocket when not needed.
- Non intrusive for sensitive ears.

Part No.

1000276 BANDED SEMI-AURAL RESEALABLE BAG  
1000277 REPLACEMENT FOAM INDIVIDUAL POLYBAG

## Hearing safety tools for the most demanding work environments

Every day, workers count on Bilsom products to block noise and manage sound in some of the world's most acoustically challenging environments. Bilsom products meet these demands through a combination of advanced technology, performance and comfort features that put people first.



### ① COMFORT HEADBAND

Distributes pressure evenly, resulting in the same comfortable fit regardless of head size.



### ② SNAP-IN EAR CUSHIONS

Our exclusive snap-in ear cushions make replacement easy for extended performance and life of your earmuffs.



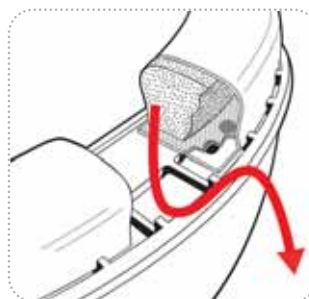
### MULTIPLE-POSITION

Viking and the Clarity C2 earmuffs provide options for use with hard hats, respirators, face visors and other personal protective equipment. They can be worn over the head, behind the head and also under the chin.



### QUICK-CLICK HEIGHT ADJUSTMENT

Allows for an easy fit adjustment that stays in place.



### ③ AIR FLOW CONTROL™ TECHNOLOGY

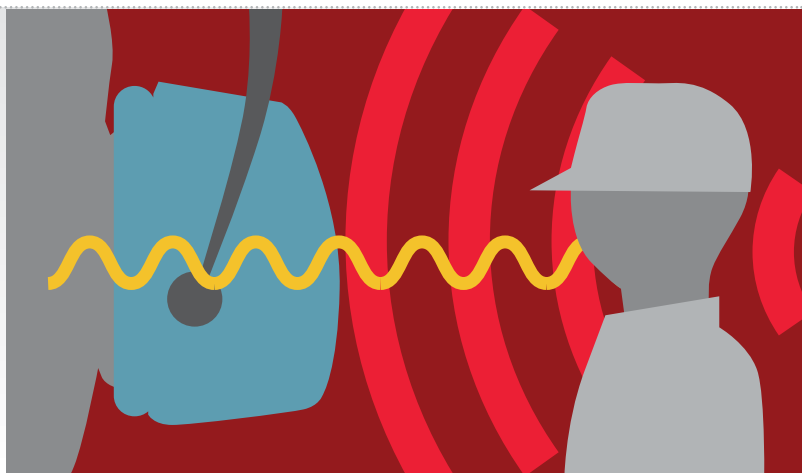
Bilsom's patented Air Flow Control™ technology delivers optimal attenuation across all frequencies, without increasing cup size or weight. As sound travels through the air in the earcup, a patented baseplate chamber and high-tech non-woven layer manage the flow of air inside the earmuff to control how sound reaches the ear. The result is better, more

consistent attenuation for almost all industrial noise environments. Air Flow Control™ is a standard feature on all Lightning and Thunder series earmuffs.

## New and improved earmuff designs for safety and protection

### ADVANCED SOUND MANAGEMENT TECHNOLOGIES

At Bilsom we do more than just block noise. We help you manage sound in loud environments. Our Clarity® sound management technology improves worker safety through uniform attenuation – while blocking harmful noise, voice frequencies can be heard more naturally, with less distortion. Clarity's uniform attenuation profile combats worker isolation and overprotection on the job. Clarity is a patented technology only available from Bilsom.



# Bilsom® earmuffs

The Bilsom product overview shows the selection of Noise Blocking, Sound Management and Radio earmuffs available in the range. Whatever the environment, working situation or application, there is a Bilsom earmuff solution to suit.



## NOISE BLOCKING EARMUFFS

When you need to block noise, Bilsom gives you the tools to do the job right. From maximum attenuation to maximum value, we set the standard for noise blocking and hearing protection. Our Thunder®, Leightning®, Viking® and Mach™ 1 series earmuffs provide a choice of features and protection ideal for many workers and environments.

### LEIGHTNING®



OVER-HEAD L1, L2, L3



CAP-MOUNTED LIH, L2H



NECKBAND LIN, L2N



FOLDING L2F



HIGH VISIBILITY L2F, L3

### THUNDER®



OVER-HEAD T1, T2, T3



CAP-MOUNTED TIH, T2H, T3H



FOLDING T1F

### VIKING®



3 POSITION V1, V2, V3

### MACH™ 1



## SOUND MANAGEMENT EARMUFFS

Sometimes blocking sound isn't enough. You need to block noise out and let information in. Our Sound Management earmuffs use patented passive and electronic technologies that block out noise while allowing alarms, warnings and even co-workers' voice frequencies to be heard more naturally.

### CLARITY®



OVER-HEAD C1, C2, C3



CAP-MOUNTED CIH, C3H



FOLDING C1F

### IMPACT™



OVER-HEAD



CAP-MOUNTED



## RADIO EARMUFFS

Add music and routine jobs become more satisfying. Our Radio earmuffs provide protection from noise – and let you listen to music from a built-in AM/FM radio.

### ELECTO™



OVER-HEAD



CAP-MOUNTED

### RADIO™



OVER-HEAD



# Leightning® - Maximum comfort and contemporary design

Maximum protection with a contemporary design, the Leightning® range of earmuffs offers products to block out noise in rough industrial environments.

Bilsom's Leightning® series steel wire construction provides high performance and robust durability, standing up to abuse without compromising comfort.

Leightning® features Bilsom's patented Air Flow Control™ technology, delivering optimal attenuation across all frequencies without increasing earcup size or weight. As sound travels through the air in the earcup, a patented baseplate chamber and high-tech non-woven layer manage the flow of air inside the earmuff to control consistent overall attenuation for virtually all industrial noise environments. Air Flow Control™ is a standard feature on all Leightning® series earmuffs.

Protection against environment noise from: Fabrication machinery, aircraft and truck engines, production lines, power tools etc.

## LEIGHTNING® CAP-MOUNTED EARMUFFS

SLC<sub>cap</sub> 28<sup>dB</sup> 5

SLC<sub>cap</sub> 29<sup>dB</sup> 5



Leightning® cap-mounted earmuffs offer a solution to workers who need to wear hearing protection with hard hats.

### Special Features

- Can be used with a wide range of popular hard hats.
- The earcups lock in place during use and can rotate back to park.
- Air Flow control provides better consistent attenuation.
- Snap-in ear cushions makes replacement quick and easy.
- Steel wire provides a robust construction to withstand demanding use.
- Telescoping height adjustment remains fixed during use.

Part No.  
1012536 L1H CAP-MOUNTED 28dB ■ 1012537 L2H CAP-MOUNTED 29dB

## LEIGHTNING® OVER-HEAD EARMUFFS

SLC<sub>cap</sub> 29<sup>dB</sup> 5

SLC<sub>cap</sub> 31<sup>dB</sup> 5



SLC<sub>cap</sub> 33<sup>dB</sup> 5



SLC<sub>cap</sub> 33<sup>dB</sup> 5



The Leightning® over-head range offers a choice of profiles and attenuation to suit any work environment.

### Special Features

- Padded foam headband minimises pressure on the head.
- Steel wire provides a robust construction to withstand demanding use.
- Air Flow control provides better consistent attenuation.
- Snap-in ear cushions makes replacement quick and easy.
- Telescoping height adjustment remains fixed during use.
- Hi-visibility earmuffs provide contrast on the job and the reflective headband illuminates under light for increased visibility.

Part No.  
1010922 L1 OVER-HEAD 29dB ■ 1010923 L2 OVER-HEAD 31dB  
1010924 L3 OVER-HEAD 33dB ■ 1013941 L3 HI-VISIBILITY 33dB

## LEIGHTNING® SPECIAL APPLICATION EARMUFFS

SLC<sub>cap</sub> 31<sup>dB</sup> 5

SLC<sub>cap</sub> 30<sup>dB</sup> 5



SLC<sub>cap</sub> 30<sup>dB</sup> 5



SLC<sub>cap</sub> 30<sup>dB</sup> 5



Leightning special applications styles offer flexibility to use one earmuff for different applications.

### Special Features

- Can be used with a variety of face shields, hard hats and other PPE.
- Folding design for convenient easy storage and transport.
- Telescoping height adjustment remains fixed during use.
- Steel wire provides a robust construction to withstand demanding use.
- Hi-visibility earmuff for increased visibility and safety.

Part No.  
1011995 L2N NECKBAND 31dB ■ 1011997 L2F FOLDING 30dB  
1011994 L1N NECKBAND 30dB ■ 1013942 L2F HI-VISIBILITY 30dB



## Thunder® - Top of the line protection and comfort

When it comes to selecting an earmuff, comfort reigns supreme with your workers. That is why the Thunder® series of earmuffs, is designed with all day comfort in mind. The Thunder® series features a non-deforming dual headband design, with inner-ventilation for better positioning and breathability on the head.

Working in conditions with dielectric requirements? No problem – Thunder® has a robust non deforming dielectric construction which is suitable for all workplaces including electrical environments.

Thunder® also features Bilson's patented Air Flow Control™ technology, delivering optimal attenuation across all frequencies without increasing earcup size or weight. As sound travels through the air in the earcup, a patented baseplate chamber and high-tech non woven layer manage the flow of air inside the earmuff. This controls consistent overall attenuation for virtually all industrial noise environments. Air Flow Control™ is a standard feature on all Thunder® series earmuffs.

Protection against environment noise from:  
Fabrication machinery, aircraft and truck engines,  
production lines, power tools etc.

### THUNDER® CAP-MOUNTED EARMUFFS

SLC<sub>26</sub> 26dB 5



SLC<sub>30</sub> 30dB 5



SLC<sub>31</sub> 31dB 5



Thunder cap-mounted earmuffs provide optimum worker protection.

#### Special Features

- Can be used with a wide range of popular hard hats.
- The earcups lock in place during use and can rotate back to park.
- Snap-in ear cushions make replacement quick and easy.
- Dielectric construction does not conduct electricity.
- Quick-Click height adjustment remains fixed during wear.
- All day comfort with broad ear cushions improving wearer comfort.

Part No.

1012530 T1H CAP-MOUNTED 26dB ■ 1012531 T2H CAP-MOUNTED 30dB  
1012532 T3H CAP-MOUNTED 31dB

### THUNDER® OVER-HEAD EARMUFFS

SLC<sub>29</sub> 29dB 5



SLC<sub>31</sub> 31dB 5



SLC<sub>33</sub> 33dB 5



SLC<sub>30</sub> 30dB 5



Thunder® combines a dielectric earmuff with all day comfort.

#### Special Features

- Inner-ventilated headband (T2 & T3) minimises pressure on the head.
- Air Flow control provides better consistent attenuation.
- Dielectric construction does not conduct electricity.
- All day comfort with broad ear cushions improving wearer comfort.
- Snap-in ear cushions make replacement quick and easy.
- Folding design for convenient and easy storage and transport.

Part No.

1010928 T1 OVER-HEAD 29dB ■ 1010929 T2 OVER-HEAD 31dB  
1010970 T3 OVER-HEAD 33dB ■ 1011600 T1F FOLDING 30dB

### MACH™ 1 EARMUFF

SLC<sub>22</sub> 22dB 4



Mach 1 is a lightweight general purpose, over-head earmuff.

#### Special Features

- Economical design provides adequate protection at low cost.
- Extremely lightweight construction provides comfort for intermittent and long term wearers.
- Dielectric design safe for all workplaces, especially electrical environments.

Part No.

1010421 MACH 1 EARMUFF



# Viking® multiple-position earmuff – A flexible solution for worker comfort



The Viking® multiple-position earmuff series gives workers flexibility to wear their earmuffs over-the-head (OTH), behind-the-neck (BTN), or under-the-chin (UTC).

This enables workers to wear their Viking® earmuff easily with other PPE equipment including visors, face shields and respirators. A headband strap provides additional security, keeping earcups in place when worn other than over-the-head.

The Viking® series features a dual-headband design, with inner-ventilation for better positioning and breathability which is non-deforming. This minimises pressure on the head and gives a soft and comfortable contact surface.

Working in conditions with dielectric requirements? No problem – the Viking® earmuff has a robust non-deforming dielectric construction which will protect your workers in electrical environments.

A flexible solution for worker comfort, when it comes to selecting an earmuff, comfort is the number one focus. That is why the Viking® series of earmuffs, is designed with all day comfort in mind.

## VIKING® V1 EARMUFF

SLC<sub>90</sub> 26dB 5



The lightweight Viking® V1 is a low profile three-position earmuff, allowing maximum wearer flexibility.

### Special Features

- Non deforming 3-position headband allows the worker to select a position to best suit their working application, and allows use of other PPE equipment including hard hats, respirators and visors.
- Dielectric construction - does not conduct electricity.
- Headband strap improves comfort and fit when worn BTN or UTC.
- Snap-in ear cushions make replacement quick and easy.

Part No.

1010925 V1 EARMUFF

## BILSOM® VIKING V2 EARMUFF

SLC<sub>90</sub> 28dB 5



The Viking® V2 is a medium profile three-position earmuff, allowing maximum wearer flexibility.

### Special Features

- Inner-ventilated headband minimises pressure on the head and breathes easier in warm or humid climates.
- Dielectric construction. The plastic headband does not conduct electricity making it suitable for virtually all workplaces.
- 3-position headband allows easy use with other PPE.
- Snap-in ear cushions make replacement quick and easy.

Part No.

1010926 V2 EARMUFF

## VIKING® V3 EARMUFF

SLC<sub>90</sub> 30dB 5



The Viking® V3 is a broad profile three-position earmuff, providing maximum wearing flexibility.

### Special Features

- Non-deforming headband withstands rough treatment.
- Quick replacement snap-in ear cushions.
- Inner-ventilated headband for a soft and comfortable contact surface.
- Headband strap improves comfort and fit when worn BTN or UTC.
- 3-position headband allows easy use with other PPE.

Part No.

1011170 V3 EARMUFF



## Advanced Sound Management Technology enhances communication on-the-job

Bilsom's Clarity® Sound Management Technology improves worker safety by blocking out noise while voice and signal frequencies can be heard more naturally.

Clarity works by reducing the levels of harmful noise to protect your hearing, but allows more recognition of speech. This provides uniform attenuation that blocks low frequency noise by enhancing perception of higher voice and warning signal frequencies without distortion.

Working in conditions with dielectric requirements? No problem – the Clarity earmuff has a robust non-deforming dielectric construction which will protect your workers in electrical environments.

Advanced Sound Management, enhanced communications combined with comfort is essential, when it comes to selecting an earmuff. That is why the Clarity series of earmuffs, is designed with all day comfort in mind. The Clarity series features a dual-headband design, with inner-ventilation, better positioning, breathability and is non deforming. This minimises pressure on the head and gives a soft and comfortable contact surface.

### CLARITY® OVER-HEAD EARMUFFS

SLC<sub>eq</sub> 23<sup>dB</sup> 4



SLC<sub>eq</sub> 26<sup>dB</sup> 5



SLC<sub>eq</sub> 28<sup>dB</sup> 5



SLC<sub>eq</sub> 24<sup>dB</sup> 4



Clarity® over-head earmuffs provide enhanced communication and a choice of cup profiles.

#### Special Features

- Sound management technology provides uniform attenuation.
- Natural listening without distortion preventing worker isolation.
- Dielectric construction does not conduct electricity.
- Snap in ear cushions make replacement quick and easy.
- Folding design for convenient and easy storage and transport.
- Quick-Click height adjustment for individual comfort settings.

Part No.

1011142 C1 OVER-HEAD 23dB ■ 1011145 C2 3-POSITION 26dB  
1011146 C3 OVER-HEAD 28dB ■ 1011143 C1F FOLDING 24dB

### CLARITY® CAP-MOUNTED EARMUFFS

SLC<sub>eq</sub> 24<sup>dB</sup> 4



SLC<sub>eq</sub> 27<sup>dB</sup> 5



Clarity® features two cap mounted earmuffs for use with a wide range of hard hats.

#### Special Features

- Can be used with a wide range of popular hard hats.
- Dielectric construction does not conduct electricity.
- Sound management technology provides uniform attenuation.
- The earcups lock in place during use and can rotate back to park.
- Snap-in ear cushions make replacement quick and easy.
- Broad ear cushions and spacious earcups provide maximum comfort.

Part No.

1011242 C1H CAP-MOUNTED 24dB ■ 1011243 C3H CAP-MOUNTED 27dB

### IMPACT™ EARMUFFS

SLC<sub>eq</sub> 24<sup>dB</sup> 4



SLC<sub>eq</sub> 26<sup>dB</sup> 5



Amplifying hearing protector enhances verbal communication in varying-noise and powerful impulse-sound environments.

#### Special Features

- Sound level limitation where amplification doesn't exceed 82dB.
- Water resistant stereo speakers assist wearer in determining noise direction.
- Ideal for people with hearing impairment.
- Long battery life (approx. 700 hrs) with auto shut-off.
- Sound amplification enhances user awareness of environment.

Part No.

1010376 OVER-HEAD ■ 1010632 CAP-MOUNTED





The Bilsom Radio™ offers superior AM and FM reception. The combination of sound amplification and radio in the Electro™ provides optimum worker protection.

The Radio earmuff has a lightweight design and its unique headband provides superb comfort for all-day wear. Radio's flexible antenna provides high-quality reception and is extremely durable for industrial environments.

The Electro series combines the entertainment benefit of the AM/FM radio earmuff with advanced sound amplification technology. Electro allows wearers to hear important communications at a safely amplified level, while listening to the radio. Positioned microphones provide more natural directional hearing. Through advanced response technology Electro amplifies incoming sound to 82dB, then acts as a passive earmuff for sounds above 82dB. Separate volume controls for radio and sound amplification allow personalisation.

The Bilsom Radio and Electro earmuffs provide workers with quality AM/FM radio reception with separate toggle switch to tune, encouraging wear time and worker acceptance.



### ELECTO RADIO EARMUFF

SLC<sub>85</sub> 24dB 4



SLC<sub>85</sub> 26dB 5



A hearing protector combining sound amplification, AM/FM radio and hearing protection – all in one earmuff.

#### Special Features

- High quality AM/FM reception lets workers listen to music.
- Superb amplification enhances verbal communication with directional microphones.
- Amplification is regulated with separate volume controls for greater flexibility.
- Cap-mount can be used with a wide range of popular hard hats.

Part No.

1010374 OVER-HEAD ■ 1010631 CAP-MOUNTED

### AM/FM RADIO EARMUFF

SLC<sub>85</sub> 24dB 4



Hearing protector with built-in AM/FM radio (tuning range 88-108 MHz (FM) and 600-1600kHz (AM)).

#### Special Features

- High quality AM/FM reception. Helps improve workers productivity in routine or stationary jobs.
- Sound level limitation of 82 dB(A).
- Durable, safe antenna construction.
- Robust construction for outdoor use.
- Includes 2 AA batteries.

Part No.

1010375 OVER-HEAD





### HYGIENE KITS

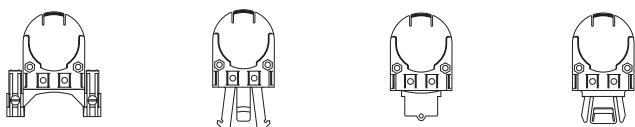


Hygiene Kits assist in extending the performance and lifetime of the earmuff.

**Part No.**

- 1011998 HYGIENE KIT L1/L1H/L1N
- 1011999 HYGIENE KIT L2/L2H/L2N/L2F
- 1012000 HYGIENE KIT L3
- 1010974 HYGIENE KIT T1/T1H/T1F
- 1010975 HYGIENE KIT T2/T2H
- 1010976 HYGIENE KIT T3/T3H
- 1006018 HYGIENE KIT V1, BLUE COMFORT
- 1010977 HYGIENE KIT V2
- 1010978 HYGIENE KIT V3
- 1006080 HYGIENE KIT C1/C1H/C1F/815/817/818 METALLIC
- 1006017 HYGIENE KIT C2/ 822 METALLIC
- 1006081 HYGIENE KTI C3/C3H/847/848 METALLIC

### HARD HAT ADAPTORS



**Part No.**

- 1000240 ADAPTOR 3702 UNIVERSAL
- 1000244 ADAPTOR 3713 ALSAFE/NORTON/NZ SAFETY
- 1000245 ADAPTOR 3714 PROTECTOR/CIG/UNISAFE
- 1000249 ADAPTOR 3718 MSA

### ORIGINAL SERIES HYGIENE KITS



The original series hygiene kits are recommended to be replaced every six months.

**Part No.**

- 2307 HYGIENE KIT LOTON 2401
- 2310 HYGIENE KIT COMPACT 2470
- 2312 HYGIENE KIT VIKING 2421
- 2741 HYGIENE KIT 727/ 728
- 2742 HYGIENE KIT 707/ 708/ 777/ 778/ 788/ 797/ 798/ 799
- 2743 HYGIENE KIT 717/ 718
- 2744 HYGIENE KIT 737



### COOL PADS



Sweat absorbing earmuff pad for increased comfort in hot & humid conditions.

### BELT POUCH



Convenient hygienic storage for folding earmuffs with velcro closure.

**Part No.**

- 1000251 BELT POUCH 3740
- 13910033 BELT CLIP 3741
- 13910032 COOL II ABSORBENT PADS - 5 PR POUCH 3456
- 13910031 COOL II ABSORBENT PADS - 100 PR DISP 3455

# Attenuation data - Howard Leight Earplugs

PRODUCT	PART No.	ATTENUATION [dB] ACCORDING TO TEST METHOD AS 1270:2002									SLC <sub>80</sub>	CLASS
		FREQ.(HZ):	125	250	500	1000	2000	4000	8000			
Matrix OR Matrix OR - Corded	MTX-1-ORA MTX-30-ORA	Mean Value dB Std. Deviation dB	16.1 6.7	15.9 7.7	18.6 7.9	21.0 6.5	28.8 5.2	33.2 5.1	36.5 5.8	18dB	3	
Matrix GR Matrix GR - Corded	MTX-1-GRA MTX-30-GRA	Mean Value dB Std. Deviation dB	15.6 7.3	16.5 7.1	17.5 7.6	20.4 6.8	27.1 5.0	32.6 5.1	35.6 7.4	17dB	2	
Max Max Corded	MAX-1 MAX-30	Mean Value dB Std. Deviation dB	29.4 9.4	29.0 9.7	30.1 9.5	30.2 7.7	33.2 4.7	42.8 5.1	42.7 6.9	26dB	5	
Xtreme Xtreme - Corded small	1006716 1006717	Mean Value dB Std. Deviation dB	22.5 6.6	24.0 6.1	27.1 4.8	28.5 6.3	32.6 5.2	39.8 4.1	42.9 5.2	26dB	5	
Max Lite Max Lite Corded	LPF-1 LPF-30	Mean Value dB Std. Deviation dB	24.2 5.2	23.6 5.1	25.3 6.7	26.2 5.4	32.0 4.0	41.8 4.8	43.6 5.6	25dB	4	
MultiMax	MM-1	Mean Value dB Std. Deviation dB	26.7 5.6	25.3 5.7	26.0 7.6	27.1 6.8	32.4 5.0	39.6 6.3	42.7 7.9	24dB	4	
Laser Lite Laser Lite Corded	LL-1 LL-30	Mean Value dB Std. Deviation dB	24.4 6.9	23.6 5.9	25.6 5.5	26.5 5.4	32.3 4.3	42.0 4.7	42.5 6.7	25dB	4	
303 - Small 303 - Large	1005074 1005073	Mean Value dB Std. Deviation dB	22.3 7.3	21.6 7.2	23.4 7.8	24.8 7.0	32.8 6.4	39.6 8.8	41.7 9.5	22dB	4	
304 - Corded small 304 - Corded large	1000107 1000106	Mean Value dB Std. Deviation dB	23 6.8	22.9 7.3	24.9 6.4	25.1 5.6	32.8 5.0	39.8 7.6	43.6 6.8	24dB	4	
Quiet Quiet Corded	QD-1 QD-30	Mean Value dB Std. Deviation dB	24.4 7.1	25.0 7.3	24.5 7.7	25.4 5.8	29.0 4.4	42.9 5.3	39.1 4.5	20dB	3	
AirSoft	AS-1	Mean Value dB Std. Deviation dB	19.4 9.2	18.6 10.5	19.0 10.9	20.7 10.4	29.6 8.9	33.7 10.4	34.2 14.0	14dB	2	
AirSoft Corded	AS-30R, DPAS-30R DPAS-30W	Mean Value dB Std. Deviation dB	19.0 9.7	19.1 10.1	19.1 9.3	20.9 8.7	30.3 7.1	33.9 9.9	33.1 12.4	16dB	2	
SmartFit - Uncorded	SMF-30A	Mean Value dB Std. Deviation dB	20.4 8.0	20.8 9.3	22.4 9.0	25.2 8.6	30.4 5.9	33.4 7.6	37.8 8.0	20dB	3	
SmartFit - Cotton corded	SMF-30W-PA	Mean Value dB Std. Deviation dB	19.8 12.2	21.1 10.3	22.0 9.9	21.4 9.6	27.4 8.4	31.2 8.5	36.7 11.3	16dB	2	
Fusion Regular Fusion Small	FUS30-HPA FUS30S-HPA	Mean Value dB Std. Deviation dB	24.3 9.1	23.3 9.5	26.2 9.2	28.5 10.2	31.6 6.1	33.4 10.8	40.0 10.3	22dB	4	
Laser-Trak	LT-30	Mean Value dB Std. Deviation dB	24.9 7.3	25.6 5.5	25.9 7.5	27.1 5.9	30.9 4.6	41.2 6.0	44.0 5.4	25dB	4	
SmartFit - Detectable SmartFit - Blue	SDT-30A SMF-30BUA	Mean Value dB Std. Deviation dB	19.8 12.2	21.1 10.3	22 9.9	21.4 9.6	27.4 8.4	31.2 8.5	36.7 11.3	16dB	2	
XD3 - Detectable	1007349	Mean Value dB Std. Deviation dB	24.9 7.3	25.6 5.5	25.9 7.5	27.1 5.9	30.9 4.6	41.2 6.0	44.0 5.4	25dB	4	
Fusion - Detect Regular Fusion - Detect Small	FDT-30A FDT-30-SMA	Mean Value dB Std. Deviation dB	24.3 9.1	23.3 9.5	26.2 9.2	28.5 10.2	31.6 6.1	33.4 10.8	40.0 10.3	22dB	4	
QB1 Banded	QB1	Mean Value dB Std. Deviation dB	21.4 10.0	19.9 8.0	17.5 8.3	19.4 6.9	24.6 6.3	34.8 9.5	35.9 8.6	16dB	2	
QB2 Banded	QB2	Mean Value dB Std. Deviation dB	25.8 7.8	23.1 7.3	20.2 5.8	22.4 4.7	30.6 5.3	37.5 5.8	40.4 6.3	21dB	3	
QB3 Banded	QB3	Mean Value dB Std. Deviation dB	23.2 6.9	20.0 6.2	18.4 4.9	20.6 3.9	28.6 5.1	32.9 4.0	35.9 5.7	20dB	3	

PRODUCT	PART No.	ATTENUATION [dB] ACCORDING TO TEST METHOD AS 1270:2002								SLC <sub>80</sub>	CLASS
		FREQ.(HZ):	125	250	500	1000	2000	4000	8000		
Percap - Over-head	1000276	Mean Value dB	23.7	19.2	17.5	20.0	31.2	36.8	41.0	20dB	3
		Std. Deviation dB	5.9	4.5	3.6	4.0	4.0	5.2	5.9		
Percap - Behind-head		Mean Value dB	25.0	22.5	20.0	21.2	31.6	35.5	41.1	22dB	4
		Std. Deviation dB	5.4	5.6	4.9	3.5	3.9	4.7	4.4		
Percap - Under-chin		Mean Value dB	22.3	19.0	18.3	19.0	31.3	37.2	39.9	20dB	3
		Std. Deviation dB	4.5	4.2	4.4	4.0	3.1	4.2	6.0		

## Attenuation data - Bilsom Earmuffs

Leightning L1 Over-head	1010922	Mean Value dB	19.6	21.9	27.5	31.6	31.7	36.9	38.3	29dB	5
		Std. Deviation dB	3.9	3.5	3.7	2.3	3.6	2.5	2.4		
Leightning L1N Neckband	1011994	Mean Value dB	18.5	22.3	28.4	32.0	32.5	37.5	39.7	30dB	5
		Std. Deviation dB	2.8	3.8	2.9	2.4	3.4	2.7	3.2		
Leightning L1H Cap-mounted	1012536	Mean Value dB	17.6	20.1	25.9	29.8	31.5	37.4	40.9	28dB	5
		Std. Deviation dB	2.9	3.4	3.0	3.7	2.9	2.9	3.4		
Leightning L2 Over-head	1010923	Mean Value dB	18.8	24.5	30.3	34.8	33.1	36.4	38.5	31dB	5
		Std. Deviation dB	3.2	4.4	3.5	3.3	2.1	2.3	2.5		
Leightning L2N Neckband	1011995	Mean Value dB	21.4	25.4	30.7	33.4	33.6	37.3	39.5	31dB	5
		Std. Deviation dB	3.2	3.4	2.8	3.4	2.4	4.2	4.0		
Leightning L2F Folding	1011997	Mean Value dB	20.8	24.6	30.0	31.6	32.0	38.9	39.4	30dB	5
		Std. Deviation dB	2.9	2.3	2.9	2.9	2.4	2.6	2.9		
Leightning L2C Cap-mounted	1012537	Mean Value dB	17.9	22.3	28.9	31.4	31.4	37.5	39.1	29dB	5
		Std. Deviation dB	2.4	2.9	3.4	3.6	3.5	4.6	3.1		
Leightning L3 Over-head	1010924	Mean Value dB	22.2	26.3	33.3	37.6	35.1	38.1	39.2	33dB	5
		Std. Deviation dB	4.3	3.9	3.5	3.9	2.5	2.1	1.7		
Thunder T1 Over-head	1010928	Mean Value dB	17.7	21.7	27.2	31.6	33.6	32.6	36.1	29dB	5
		Std. Deviation dB	3.4	3.0	2.6	2.2	2.3	4.0	4.4		
Thunder T1H Cap-mounted	1012530	Mean Value dB	16.4	19.1	25.5	31.6	31.6	34.2	37.0	26dB	5
		Std. Deviation dB	5.2	5.2	4.2	3.5	3.8	4.7	6.1		
Thunder T1F Folding	1011600	Mean Value dB	19.2	21.9	27.6	32.3	33.1	36.4	38.5	30dB	5
		Std. Deviation dB	3.2	2.3	2.5	3.2	3.4	3.6	3.7		
Thunder T2 Over-head	1010929	Mean Value dB	21.2	26.0	31.5	34.6	34.2	33.6	37.0	31dB	5
		Std. Deviation dB	3.7	3.1	4.0	2.2	3.0	2.6	3.8		
Thunder T2H Cap-mounted	1012531	Mean Value dB	18.7	23.8	29.5	33.3	32.9	35.8	39.3	30dB	5
		Std. Deviation dB	3.8	4.3	2.8	2.9	2.6	3.1	2.9		
Thunder T3 Over-head	1010970	Mean Value dB	21.2	26.2	32.1	35.7	36.6	38.7	40.1	33dB	5
		Std. Deviation dB	2.5	2.7	3.1	3.9	2.6	3.4	2.9		
Thunder T3H Cap-mounted	1012532	Mean Value dB	22.2	26.4	32.3	36	32.4	38.6	40.6	31dB	5
		Std. Deviation dB	4.1	3.7	4.0	1.9	3.2	2.8	4.0		
Mach 1	1010421	Mean Value dB	7.8	9.7	21.4	29.0	31.8	29.8	29.0	22dB	4
		Std. Deviation dB	3.1	2.9	4.5	4.2	5.4	3.8	6.2		

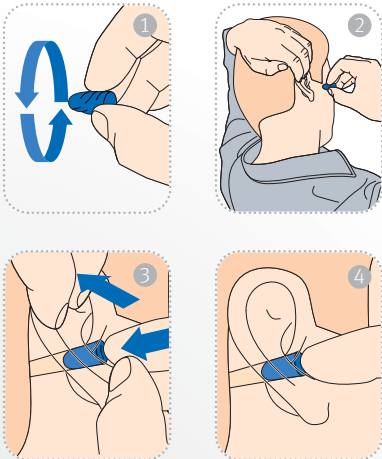
PRODUCT	CODE	ATTENUATION [dB] ACCORDING TO TEST METHOD AS 1270:2002								SLC <sub>80</sub>	CLASS
		FREQ.(HZ):	125	250	500	1000	2000	4000	8000		
Viking V1 Over-head	1010925	Mean Value dB	13.3	14.7	28.0	29.8	34.9	36.3	36.4	26dB	5
		Std. Deviation dB	5.3	3.8	4.8	5.6	4.5	4.1	6.2		
Viking V1 Behind-head		Mean Value dB	10.3	15.1	25.3	28.6	33.6	35.6	34.2	25dB	4
	Std. Deviation dB	3.7	4.1	5.7	3.8	4.5	5.2	4.1			
Viking V1 Under-chin		Mean Value dB	9.3	14.4	24.6	27.8	33.0	36.6	34.7	25dB	4
	Std. Deviation dB	3.0	2.6	4.6	4.2	4.9	4.3	4.4			
Viking V2 Over-head	1010926	Mean Value dB	14.1	17.9	25.4	30.4	34.8	35.8	35.6	28dB	5
		Std. Deviation dB	2.2	4.0	2.0	2.2	3.3	3.5	3.0		
Viking V2 Behind-head		Mean Value dB	13.0	16.4	23.3	30.9	36.5	34.2	34.3	27dB	5
	Std. Deviation dB	3.5	3.4	2.5	2.8	3.3	4.9	3.3			
Viking V2 Under-chin		Mean Value dB	12.3	17.7	23.1	30.1	35	34.7	34.4	27dB	5
	Std. Deviation dB	3.3	2.9	3.5	2.6	2.6	2.7	3.4			
Viking V3 Over-head	1011170	Mean Value dB	15.9	18.6	30.0	37.4	38.2	42.7	41.4	30dB	5
		Std. Deviation dB	3.4	3.2	3.8	6.0	4.3	4.7	5.2		
Viking V3 Behind-head		Mean Value dB	13.5	18	30.1	37.0	36.1	40.5	40.4	30dB	5
	Std. Deviation dB	2.6	3.3	4.2	3.2	3.6	4.6	3.9			
Viking V3 Under-chin		Mean Value dB	13.7	20.2	30.9	37.4	36.8	41.4	39.1	31dB	5
	Std. Deviation dB	3.2	3.2	4.0	4.1	3.1	3.7	4.7			
Clarity C1 Over-head	1011142	Mean Value dB	16.5	21.7	25.4	24.0	28.1	31.0	32.0	23dB	4
	Std. Deviation dB	4.3	4.9	4.6	2.7	5.6	3.7	3.1			
Clarity C1H Cap-mounted	1011242	Mean Value dB	16.0	22.0	26.8	25.1	25.9	31.4	31.1	24dB	4
	Std. Deviation dB	5.8	4.8	3.7	2.3	3.4	4.7	4.1			
Clarity C1F Folding	1011143	Mean Value dB	15.8	23.6	27.0	23.3	26.6	34.6	31.7	24dB	4
	Std. Deviation dB	1.6	3.4	1.7	2.8	2.8	2.8	4.9			
Clarity C2 Over-head	1011145	Mean Value dB	17.8	24.9	28.7	26.6	29.5	28.5	29	26dB	5
		Std. Deviation dB	3.0	3.0	2.5	2.7	2.9	3.2	2.9		
Clarity C2 Behind-head		Mean Value dB	18.8	23.5	29.1	26.2	30.5	28.1	27.8	26dB	5
	Std. Deviation dB	4.5	2.7	3.6	2.1	3.8	3.2	2.8			
Clarity C2 Under-chin		Mean Value dB	20.5	24.4	29.6	26.3	30.2	29.5	29.8	26dB	5
	Std. Deviation dB	3.7	2.6	2.9	2.8	3.8	3.9	3.0			
Clarity C3 Over-head	1011146	Mean Value dB	22.7	27.0	34.3	30.3	30.5	34.5	34.9	28dB	5
	Std. Deviation dB	5.2	7.0	4.6	4.4	4.5	3.8	3.6			
Clarity C3H Cap-mounted	1011243	Mean Value dB	19.2	26.5	32.9	29.6	28.5	33.9	33.5	27dB	5
	Std. Deviation dB	6.2	6.2	6.2	2.6	3.1	3.2	2.2			
Impact Over-head	1010376	Mean Value dB	12.8	17.4	25.6	24.9	27.8	38.7	43.1	24dB	4
	Std. Deviation dB	2.4	4.5	4.4	2.9	3.3	5.0	4.2			
Impact H Cap-mounted	1010632	Mean Value dB	13.8	16.8	29.3	28.7	29.4	37.9	43.0	26dB	5
	Std. Deviation dB	4.5	2.9	5.8	4.7	3.6	3.7	4.9			
Electo Over-head	1010374	Mean Value dB	12.8	17.4	25.6	24.9	27.8	38.7	43.1	24dB	4
	Std. Deviation dB	2.4	4.5	4.4	2.9	3.3	5.0	4.2			
Electo H Cap-mounted	1010632	Mean Value dB	13.8	16.8	29.3	28.7	29.4	37.9	43.0	26dB	5
	Std. Deviation dB	4.5	2.9	5.8	4.7	3.6	3.7	4.9			
Radio Over-head	1010375	Mean Value dB	12.8	17.4	25.6	24.9	27.8	38.7	43.1	24dB	4
	Std. Deviation dB	2.4	4.5	4.4	2.9	3.3	5.0	4.2			



## Fitting instructions.

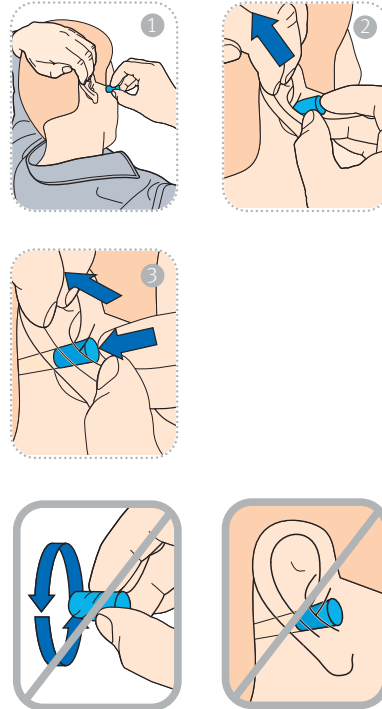
Correctly fitted earmuffs and earplugs are imperative to the protection of your hearing. The guidelines below show basic fitting instructions of the Howard Leight earplug range and the Bilsom earmuff range, and should be followed to ensure a correct fit every time.

### EARPLUGS



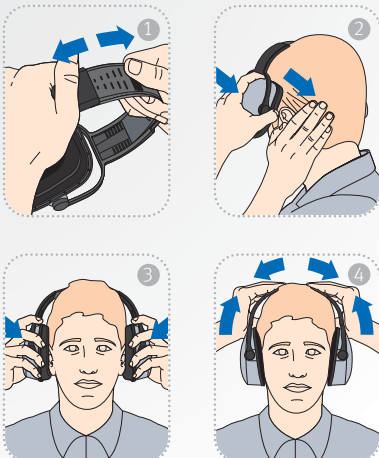
- 1 Make sure your hands and the earplugs are clean before insertion.  
Roll the earplug between your fingers to condense the foam for easy insertion.
- 2 Gently pull your ear up and backwards with one hand.
- 3 Insert the earplug well into the ear canal. Hold the earplug in place until the foam has expanded to fit the ear canal.
- 4 Make sure the earplug is a comfortable fit, and inserted well into the ear canal. If the earplug protrudes beyond the opening of the ear canal, it is not correctly inserted, and must be fitted again.

### NO-ROLL EARPLUGS



- 1 No-roll earplugs come in different lengths. Choose the earplug you feel will fit your ear best.  
Make sure the earplugs are clean.
- 2 DO NOT roll the earplug between your fingers. Howard Leight® earplugs have been pre-shaped for easy insertion.
- 3 Gently pull your ear up and backwards with one hand.
- 4 Insert the earplug well into the ear canal. Hold the earplug in place until the plug rests comfortably in the ear canal.  
Make sure the earplug is a comfortable fit. If the plugs are loose, or protrude beyond the opening of the ear canal, they are not correctly inserted, and must be fitted again.

### EARMUFFS



- 1 Extend the headband to the furthest point.
- 2 Place the earmuffs on your head and make sure your outer ears fit inside the earmuffs.
- 3 Place your hands on the earmuffs and push up against the headband until a comfortable fit is achieved.
- 4 The headband should rest on the top of your head, and the whole outer ear should fit comfortably inside the earmuffs. If any part of your ear extends beyond the space inside the earmuff, you will not get a proper seal and there will be noise leakage.
- 5 Push earmuffs gently towards your head to expel excess air.
- 6 Make sure no obstructions such as long hair and jewellery interfere with the cushion seal against the side of your head.

### CAP-MOUNTED EARMUFFS



- 1 Position hardhat on your head so that it fits comfortably with the rim about 1-2 cm above the tops of your ears.
- 2 Push the earmuff arms towards the head until a positive 'click' is heard as the earmuffs are positioned firmly against the head.
- 3 If necessary, move the earmuffs up and down on their arms until your whole outer ear fits comfortably inside the earmuffs. If any part of your ear extends beyond the space inside the earmuff, you will not get a proper seal and there will be noise leakage.

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