# **EV Equipment Brochure**





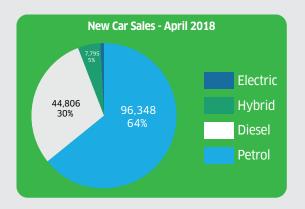
workshop warehouse

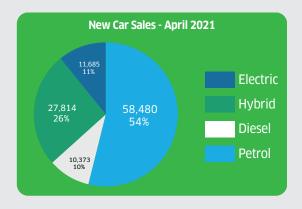
Helping to maintain industry

## **EV Market**

Electric vehicles enjoyed a record year in 2021 for car sales in the UK against a market place which was 28.7% below pre-Covid levels. Overall, 1.65 million new cars were registered in 2021 (1% up on 2020) due to the ongoing impact of the pandemic and the global semiconductor chip shortage.

Despite this, more battery electric vehicles (BEV) were sold than over the previous five years combined (2016 – 2020), with 190,727 registrations (11.6% of all new car sales), while plug-in hybrid vehicles (PHEVs) made up 7% / 114,554 cars. This means that 18.5% of all new cars registered in 2021 can be plugged in.





BEV sales grew again in January with 14,433 being sold making up 12.5% of all new registrations. This trend continued in February with a market share of 17.7% of all new registrations.

March 2022 saw the highest volume of BEV registrations ever being recorded in a single month with 39,315 new zero emission cars leaving the dealerships – an increase of 78.7% on March 2021.

In fact March 2022 witnessed more BEV being registered in March 2022 than during the whole of 2019 which now gives them an overall market share of 16.1%.

According the latest vehicle stats, the EV market is booming. Electric passenger car sales increased by

186% in 2020 and today there is 432,000 electric vehicles on the road in the UK and more than 750.000 plug-in hybrids.

There's been a massive increase in the number of electric vehicles on sale in the UK with more than 40% of models now available as plug-ins. Car manufacturers like Nissan, Tesla, Ford & Vauxhall have all expanded their offerings. Volkswagen have created their electric only ID. range and Mercedes Benz have launched their EQ models.





The institute of the Motor Industry (IMI) has warned that workshops and garages do not currently have the skills and the pipeline talent needed to service and repair electrified vehicles. The original report in May 2021 stated that the UK had just of 6% of garages equipped for E V vehicles.

With the UK garages having this major shortfall serious investment will be required. Each technician will need to be equipped with the correct clothing, protection & tooling to be kept safe at all times. Having your own 'EV kit' is no different to apprentice mechanics investing in their tool kits when starting out.

Data gathered from DfT (Department for Transport) & SMMT (Society of Motor Manufacturers & Traders)

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## **Electrical Operations**

#### Maintenance

**Vehicle Shut Down - Lock-Out Procedure** 

- Identify the vehicle The most obvious and instant indication is the badge on the vehicle. As well as the badges on the exterior of the vehicle, there are a number of internal differences. An electric or hybrid vehicle will have a digital display to show battery / energy levels. Plus the vehicle will not have a gear stick as there is no gearbox. The vehicle will have a 'paddle' or 'selector'.
- Before starting the vehicle 'shut down' please check the vehicles operating manual. ALL makes and models have a 'safe time' that needs to be followed to allow the vehicle shutdown correctly keeping all the manufacturers data along with making the vehicle safe.
- Before starting any work on the vehicle please ensure the vehicle has all the correct safety coloured chains & posts around the vehicle to identify it to others.
- Ensure you have the correct PPE protection on before identifying the power points / voltage or carrying out any work on the vehicle.

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4	Safety Boots	EVH48, EVH49, EVH50, EVH51, EVH52	6
5	Safety Chain, Post & Base	EVH1, EVH2 & EVH3	7, 8
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9	Voltage Detector	EVH32	10
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#### **Working On The Vehicle**

**Vehicle Shutdown - Working Safely** 

- Before commencing any work on the vehicle please ensure the vehicle is safe to do so.
- There are special procedures for working on electric vehicles and the technician needs to be suitably qualified.
- High voltage is dangerous and can cause burns, shocks, sparks, explosions and even fires.



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Do not work without face shield and insulating gloves in the vicinity of live energy sources Do not use a measuring device when carrying out a voltage absence check

### **Electrical Operations**

#### **Working On The Vehicle**

**General Day To Day Activities** 

- Ensure the vehicle's key is kept away from the vehicle to prevent accidental operation, ideally being locked away utilising the 'lock-out' cabinet
- Before carrying out any maintenance visually check the vehicle for signs of damage to high voltage cabling (usually coloured orange) or any electrical components.
- Unless a specific task requires the vehicle to be energised always isolate or disconnect the high voltage battery in accordance with the manufactures instructions.
- Even when isolated, vehicle batteries and their components may still
  contain large amounts of energy and retain a high voltage. Only suitable
  tools & test equipment should be used. You must always test and prove
  that any high voltage cable or electrical component is dead prior to
  carrying out work.
- Pressure washing has the potential to damage high voltage electrical components and cables. Refer to guidance from manufacturers before valeting in any under body areas.
- Avoid towing any E&HV vehicles unless it can be determined that it is safe to do so. Dangerous voltages can be generated by movement of the drive wheels.
- Determine the location of high voltage cables before carrying out tasks such as panel replacements, cutting or welding plus taking appropriate precautions to prevent them being damaged



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## Vehicle Warnings & Inspection Vehicle Dangers

- Voltages present in electric and hybrids are significantly higher (up to 650 Volts direct current -DC, than those used in other vehicles 12/24 Volts DC. In dry conditions, accidental contact with parts that are live at voltages above 110 Volts DC can be fatal.
- Not only is it important to check the vehicle is safe to use but its also important to regularly check your PPE equipment for damages as even a 'pin prick' sized hole in your gloves will cause serious injury as electricity will find its way through as it earths.



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11	Fire Blanket	EVH19	7

#### Vehicle Check & Overview

**Vehicle Assessment** 

 Always approach the vehicle with care, just because the technician has carried out the 'shutdown' process always assess the vehicle properly and give the possible risks the respect they deserve

















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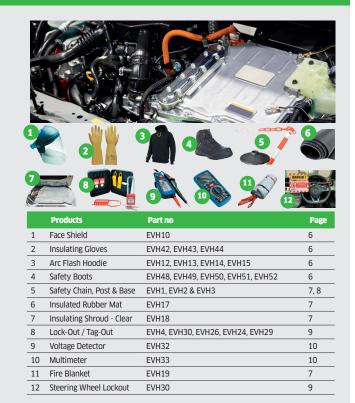
- Do not work without face shield and insulating gloves in the vicinity of live energy sources
- Do not use a measuring device when carrying out a voltage absence check

### **Electrical Operations**

#### **Roadside Recovery**

**Incident Response** 

- Identify the vehicle and asses the risks for the technician, general public & other rescue services.
- Only approach the vehicle whilst wearing the correct PPE.
- · Look for visual damages to bodywork and high voltage cabling.
- Check to see if the battery has been compromised. If the vehicle is smoking deploy the fire blanket.
- Once safe to do so remove the key from the vehicle to prevent it being activated / started.
- Sign off the area to prevent any unauthorised access.
- If the vehicle is damaged, faulty, and it's safe to do so, isolate the high voltage battery system using the isolation device on the vehicle. Always refer to the manufacturer's instructions for guidance.
- Have access reliable source of information for specific vehicle types.
- Avoid towing electric or hybrid vehicles unless it is determined to do so.



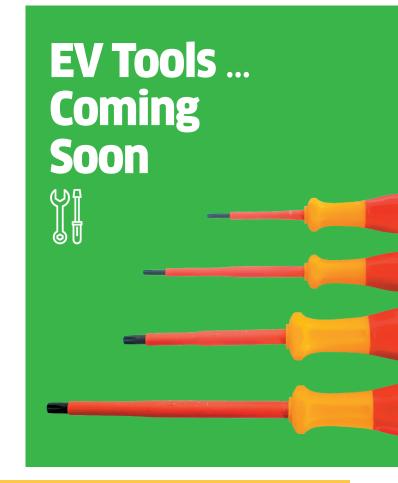
## Work And Repair

**Workshop Steps** 

- Locate the vehicle away from other vehicles & sign off the area.
- Approach the vehicle with the correct PPE.
- Check for damages to cabling and bodywork.
- If the vehicle has already been made safe by the shutdown process and isolating the service plug check for voltage.
- When checking voltage only use a CAT 3 tester.
- Remember to store the vehicles key and isolation service plug in the lock-out cabinet.



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Do not work without face shield and insulating gloves in the vicinity of live energy sources Do not use a measuring device when carrying out a voltage absence check

## **EV PPE**

### **Face & Head Protection**

#### **EV Arc Flash Face Shield**

- Heavy duty helmet & visor offers class 1 electric arc protection (GS-ET-29) to 1,500VDC.
- The ABS dual shell helmet offers excellent impact resistance & incorporates a retractable PC visor.
- A foam sweat band with rotor adjustment system to suit head sizes between 53 / 63cm.
- Retractable visor with anti-scratch prote
- Includes a microf storage bag.

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#### **EV Arc Flash Face Shield** Lightweight

- Lightweight design with a flip front protector.
- 1.5mm visor thickness offers protection against short circuit electric arcs.
- Visor comes with anti-fog acetate coating.
- Adjustable headband gives a comfortable & secure fit.
- Conforms to: EN 166 B 3.9.

Qty



#### **EV Face Shield Protective Bag**

- Protective bag to safely store the lightweight face shield.
- Storage bag will help prevent damage to the face shield



Part No	Qty
EVH11	1

## **Hand Protection**

1

**WS420** 

#### **Pneumatic Safety Glove Tester**

- The tester allows you to check electrical insulation gloves in accordance with EN60903.
- The EN60903 standard recommends regular inspection & testing for all electrical insulating products.
- Ideally they should be checked prior to each use to ensure they are free from damage.
- The pneumatic tester allows you to inflate the gloves to inspect them to check for air leaks caused by pinholes as electricity will find the smallest of holes in the gloves.
- Any holes or mechanical damage to the insulated gloves renders them ineffective & should be



#### **EV Insulated Gloves**

Part No

EVH10

- Fully insulated electrical safety glove. Latex material offers excellent electrical resistance.
- Class 0 rated for 1000v.
- Standards -EN60903, PPE CAT III 0333
- Overall length 36cm



Part No	Qty	Size
EVH42	1 Pair	Medium
EVH43	1 Pair	Large
EVH44	1 Pair	Extra Large

#### **EV Leather Gauntlet Overgloves**

- Designed to be worn over electricians gloves.
- Extends the lifespan of the electricians gloves.
- Provides additional mechanical protection & offers a higher level of grip.
- Standards 3111X, PPE CAT II
- Protects the electricians gloves in dirty or oily environments.



Part No	Qty	Size
EVH45	1 Pair	Medium
EVH46	1 Pair	Large
EVH47	1 Pair	Extra Large

#### **EV Arc Flash Hoodie**

- Arc flash protective fleece with hood. This premium hooded sweatshirt features a warm neck design, ideal for working outside.
- Constructed from 320gsm VXS+ inherent sweat fabric with a brushed inner fleece lining for warmth.
- Breathable, soft to wear & fantastic to touch. Round neck higher collar.
- Colour: Navy

Part No	Qty	Size
EVH12	1	Small
EVH13	1	Medium
EVH14	1	Large
EVH15	1	Extra Large



#### **EV Safety Boots**

- Protective boot with fibreglass toecap & composite anti-penetration flexi-midsole.
- Complete with scuff cap & shock absorbing dual density EVA nitrile rubber outsole.
- Upper material water repellent full grain black nubuck with breathable mesh panels.
- Certified to withstand electrical risks of 18KV in accordance with the ASTM F2412-18 test method.

Part No	Qty	Size	
EVH48	1 Pair	Size 8	
EVH49	1 Pair	Size 9	
EVH50	1 Pair	Size 10	
EVH51	1 Pair	Size 11	
EVH52	1 Pair	Size 12	



## **EV Safety**

### Safety Chain, Post & Base

#### **Safety Chain**

- Safety chain designed it cordon off the working area around the car.
- Also designed as a multifunctional barrier.
- High visibility for easy identification.
- To be fitted to matching colour posts.
- Chain 6mm x 25m length with a breaking strain of 60kg (Approx)



Part No	Qty	
EVH1	1	

#### **Chain Support Post**

- Support posts to house the safety chains around the vehicles.
- Also designed as a multifunctional barrier.
- High visibility for easy identification.

Height of post 90cm, diameter 4.5cm, weight 0.38kg

• Posts have two spring clips to clip the chain over.



#### **Chain Support Heavy Base**

- Heavy duty base which securely holds the post & chains in position.
- · Designed only to house our posts.
- Due to size offer less floor space when set up improving access.
- Made from recycled PVC.
- Base dimensions Diameter 34.5cm, height 8.4cm, Weight 3Kg (Approx).



EVH3	1
Part No	Qty

### **EV Safety**

#### **Rescue Safety Pole**

- Electrically insulated rescue hook & pole.
- Designed to safely remove victims of electric shock from danger.
- Conforms to NF EN50508 & CEI61235-S.
- Rated to 45,000V.
- · Length 145cm.

Part No	Qty	•
EVH16	1	

#### **EV Insulated Rubber Mat**

- · Electrical insulated rubber matting.
- Essential for ensuring the safety of technicians whilst working on electric & hybrid vehicles.
- Manufactured to IEC61111 Class 0 international standards.

 Offers protection up to 1,000 volts.

• Size : 1m x 1m.



Part No	Qty	
EVH17	1	

#### Warning Wing Cover

- Designed to protect both the vehicle that's being worked on & fellow technicians.
- Printed with hi-vis signage to identify the vehicle is a EV / Hybrid car that's being worked on.
- Printed in durable, fade resistant inks in high impact colours for
- great visibility.Manufactured with anti-slip soft rubber backing & polyester
- facing.

   Size: 90cm x 60cm.



Part No	Qty
EVH20	1

#### **Transparent Insulating Shroud**

- Transparent shroud 1000v to isolate / protect high voltage parts
- Prevents accidental contact with live terminals.
- Easily installed & fitted.
- Insulated safety clamps are recommended to secure the shroud in position.
- Dimensions: 1m x 1.3m



Part No	Qty	
EVH18	1	

#### **EV Insulated Safety Clamp**

- Insulated spring loaded plastic clamp to hold the transparent shroud in place.
- Secures the shroud in place to prevent the shroud from slipping to protect contact with live terminals.
- Insulation rating to 1,000 volts. Jaw opening: 25mm.
- Dimensions: 165 x 82 x 18mm



Part No	Qty	
EVH22	1	

#### **EV Car Fire Blanket**

- Manufactured from specialised quartz material with a silicon polymer coating.
- This combination of high tech fabric engineering provides continuous temperature resistance up to 1,000°C and spikes of 1,600°C.
- By deploying an EV car fire blanket the combustion potential can be minimised by depriving the fire of oxygen.
- Once the fire is controlled the temperatures drop rapidly which prevents damage to surrounding vehicles & property.
- Dimensions: 8 x 6 metres.

Part No	Qty	
EVH19	1	

## **EV Signage**

### **EV Warning Sign Pack**

- Complete assorted pack of electric vehicle warning signs.
- Comes with drivers door window sign Size 300mm x 200mm.
- Roof top warning sign Size 310mm x 235mm x 3 sides. Constructed from durable rigid plastic.
- Chain barrier warning signs x 3. Size 300mm x 200mm.
- Perfect warning starter pack.

Pack of Part No **EVH37** 



#### **High Voltage Sign**

High voltage ISO pictogram denotes a hazard or prohibition message without text.

- Fitted with a durable sucker to
- allow placement on any smooth
- Printed on a durable polymer panel measuring 25cm x 20cm.
- Sign to warn the workforce or customers of the potential
- Suitable for use throughout



Part No	Qty	
EVH35	1	

#### High Voltage Floor Sign

- Hazard warning floor sign.
- High voltage sign to be used with additional signage / warnings to highlight electric / hybrid vehicles & the potential danger.

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- Warning of the potential hazards insid the workshop or garage with this double sided, highly visible warning sign.
- Manufactured from hardwearing plastic with integral handle making it easier for
- Height measures 630mm

Part No	Qty	
EVH41	1	

#### **Electric Vehicle Safety Poster**

- Electric vehicle full safety procedure wall poster.
- An essential checklist for technicians preparing to work on electric & hybrid vehicles.
- Ensures the correct sequence is followed to make vehicles safe prior to work.
- Printed on durable
- Dimensions 750mm x 500mm



Part No	Qty	
EVH38	1	

#### **Electric Shock & CPR Poster**

The first aid & CPR advice poster offers a full procedure & precautions against electric shocks from EV / hybrids.

- Displays an easy to follow casualty assessment guide & CPR instructions
- The poster is printed on a durable polymer panel.
- Please note The poster is just for Dimensions: 750mm x 500mm



Part No	Qty	
EVH39	1	

#### Vehicle Roof Top Warning Sign

- High visibility warning to alert all personnel that the vehicle that's being serviced or repaired is a hybrid or an electric vehicle.
- High voltage sign to be used with additional signage / warnings to highlight electric / hybrid vehicles & the potential danger.
- Constructed from durable rigid
- Foam protected feet to prevent damage to the vehicle bodywork
- Dimensions: 310mm x 235mm x 3 sides

Part No	Qty
EVH40	1

#### **Reusable Stickers** High Voltage

- Designed to indicate high voltage areas on an EV such as a charging port, battery, capacitor bank etc.
- Reusable labels.

Dart No

- Low-tack adhesive which does not leave residue on the vehicle & enables them to be used many times.
- Hi visibility warning sticker.
- Dimensions: 100 x 140mm

17	

Turcho	41)
EVH31	1

#### **High Voltage Signs** For Chains

- Electric / hybrid vehicle warning
- Signage to be used with barrier chains. Lightweight but durable polymer panel signs.
- Mounting hooks for easy



#### **Safety Chain**

- Safety chain designed it cordon off the working area around the car.
- Also designed as a multifunctional barrier.
- High visibility for easy identification.
- To be fitted to matching colour
- Chain 6mm x 25m length with a breaking strain of 60kg (Approx)



## **Chain Support Post**

- Support posts to house the safety chains around the vehicles.
- Also designed as a multifunctional
- High visibility for easy identification.
- Posts have two spring clips to clip the chain over.
- Height of post 90cm, diameter 4.5cm, weight 0.38kg

Part No	Qty	
EVH2	1	

#### **Chain Support Heavy Base**

- Heavy duty base which securely holds the post & chains in position.
- Designed only to house our posts.
- Due to size offer less floor space when set up improving access
  - Made from recycled PVC.

Base dimensions - Diameter 34.5cm, height 8.4cm, Weight 3Kg (Approx)

Part No EVH3 1

**EVH36** 

## **Lock-Out & Tag-Out**

### **EV Lockout Station**

- The lockout station is designed to securely store a vehicles keys, isolators & lockout padlocks away from the vehicle that's being worked on.
- Heavy duty steel construction & powder-coated finish.
- Includes wall mountings.
- Resettable 3-digit combination.
- Dimensions: 20cm x 16mm x 7.5cm.
- (PLEASE NOTE ISOLATORS & PADLOCKS ARE NOT INCLUDED)

Part No	Qty
EVH25	1



#### **Car Key Lockout Tags Reusable**

- Manufactured from gloss laminated polyester to ensure durability & moisture
- Hi-vis warning printed in vibrant colours on one side with a panel on the reverse so the technicians name can be written along with vehicle registration no.
- When used with the dry wipe marker the lockout tags can be used many times.
- Supplied with a fine point dry wipe marker pen so the 'technician in charge' can identify themselves.
- Dimensions: 50 x 70mm

Part No	Pack of
EVH28	10

#### Steering Wheel Lockout & Sign

- High visibility warning to alert unauthorised personnel that the vehicle is being serviced
- When the wheel lockout device sign is in place no attempt to start or move the vehicle should be made.
- The sign is an integral component of the key locked steering wheel immobiliser to prevent unauthorised removal.
- Supplied with a dry wipe marker pen so the 'technician in charge' can identify themselves.
- Comes with two keys

Part No Qty	
<b>EVH30</b> 1	



## **Padlocks & Tags**

#### **EV Lockout Safety Padlock**

- Insulated safety lockout padlocks are used to secure the insulation port lockout device.
- Nylon body & hasp ensures the padlock is fully insulated.
- Supplied with 2 keys.
- Ideally stored in the lockout station.
- Dimensions: 38mm body & 40mm hasp height.

Part No	Qty	V
EVH23	1	



Part No	Qty
EVH24	1

#### **EV Lockout Long Shackle Padlock Padlock Lockout Tags Reusable**

wheel warning cover.

- Insulated safety lockout padlocks are used to secure Lockout tags are designed to be used with lockout padlocks the insulation port lockout device. when securing the isolation port lockout device or steering
- Nylon body & hasp ensures the padlock is fully insulated.
- Supplied with 2 keys.
- Ideally stored in the lockout station.
- Dimensions: 38mm body & 76mm shackle.



•	10mm brass eyelet ensures the lockout tags cannot be torn off.
•	Supplied with a fine point dry wipe marker pen so the 'technician in charge' can identify themselves.
Pai	rt No Pack of

Manufactured from gloss PVC to ensure durability & moisture resistance.



Part No	Pack of
EVH27	5

### **Lockout Accessories**

#### Isolation Port (MSD) Lockout Device

- The isolation port lockout device is designed to blank off electric & hybrid vehicle manual service disconnect (MSD) ports.
- It has an adjustable bar & cam action that allows it to be locked off with the insulated padlocks.
- Prevents unauthorised reinsertion of the isolator & restrict fingers touching live terminals.
- A small but essential piece of equipment to safeguard technicians working on electric & hybrid vehicles

Part No	Qty	
EVH4	1	

#### **EV Nylon Lockout Hasp**

- The nylon hasp allows you to prevent access when padlocks are not long enough.
- Can be used with lockout tags.

Part No

**EVH29** 

- Supplied with 6 holes so multiple padlocks can be used to prevent access.
- To be used with the safety lockout padlocks.

Qty

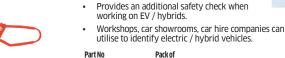
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Dimensions : Total length 193mm - width 415mm hole diameters: 10mm



#### **Identification Tags High Voltage** Identification tags designed to be hung on

- internal rear view mirror or steering wheels to warn the car is either an electric or hybrid vehicle.
- High voltage sign to be used with additional signage / warnings to highlight electric / hybrid vehicles & the potential danger.
- working on EV / hybrids.
- EVH26 10





## **Testing, Measuring & Accessories**

## Voltage Detector Up To 1,000V

- An electric voltage tester is an essential piece of equipment for EV / hybrid technicians to prove there is no voltage present prior to working.
- A simple LED scale indicates the voltage range present at the time of testing.
- The electrical voltage tester has a safe test range from 12v to 1000v AC/DC.
- Voltage measurement is in increments of -12, 24, 50, 120, 230, 400, 690 & 1000 volts.
- Conforms to the following safety standards BS EN61243-3, TUV-GS38, EN61010-1 CAT111 1000V, EN61010-1 CAT IV 600V.

Part No	Qty	Voltage
EVH32	1	Up to 1,000 V

#### EHV Multimeter CAT 111 Up To 1,000V

- The EHV multimeter & insulation tester is designed for testing & checking components on electric & hybrid vehicles through the continuity test & diode test.
- The multimeter function is combined with an inbuilt insulation test facility making it ideal for troubleshooting & preventative maintenance.
- The insulation test function operates at the following test voltages - 50v, 100v, 250, 500, & 1000v.
- Complies with EN61010 CATEGORY III (1000v) & CATEGORY IV (600v).

Part No	Qty	Ref	Voltage	
EVH33	1	CAT 111	Up to 1,000 V	

### **Accessories**

#### EV Disconnect Shutdown Timer

- Digital timers are perfect for accurately measuring the required shut down times following the manufacturers guide line for disconnecting & reconnecting.
- Important where airbag, BSI, hybrid & electric ECU's need time to shut down before proceeding with further work.
- Suitable for technicians working on electric & hybrid vehicles regularly.
- Large digital display & rear magnet fold out stand.
- Requires 1 x AAA battery (supplied).
- Dimensions: 70(H) X 70(W) X 25(D)mm.

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Part No	Qty	
EVH34	1	



## EV Cable End Shroud

- Protective cable end shroud with grip collars.
- Shrouds are designed to protect uninsulated cable ends, connectors & lugs.
- 1000 volts insulation.
- The flexible gripping collar ensures a positive fit onto cables to prevent damage.



Part NO	ŲĮ	Diameter	
EVH6	1	15 mm	
EVH7	1	25 mm	
EVH8	1	35 mm	

## EV Insulated Trim/Cable Tool Set

Insulated trim & cable management tool set.Used to safely remove vehicle



- Tested up to 1000 volts.
- Supplied with storage pouch.

### Pneumatic Safety Glove Tester

- The tester allows you to check electrical insulation gloves in accordance with EN60903.
- The EN60903 standard recommends regular inspection & testing for all electrical insulating products.
- Ideally they should be checked prior to each use to ensure they are free from damage.
- The pneumatic tester allows you to inflate the gloves to inspect them to check for air leaks caused by pinholes as electricity will find the smallest of holes in the gloves.
- Any holes or mechanical damage to the insulated gloves renders them ineffective & should be disposed of.

Part No	Qty	
EVH5	1	

## **Accessories**









## **workshop** warehouse

## Helping to maintain industry

