EV/Hybrid Safety Rules

1. Use and act on my dynamic risk assessment before approaching an EV/hybrid vehicle.

2. Do not touch high voltage (HV) cables, often (but not always) orange.

3. Do not touch high voltage (HV) components usually marked with a yellow warning label.

4. Keep smart keys at a safe distance away from the vehicle or preferably locked away in a signal blocking pouch.

5. In potential HV battery compromise situations, work on the safe-side of the vehicle and perform and record thermal checks using ambient, ground/surface and 5 points of HV battery temperatures.

6. Disconnect low voltage if it is required and you are suitably trained. You must wait at least 10 minutes following disconnection before touching - do not touch HV cabling or components even after disconnection.

7. Do not attempt to manually disconnect a HV battery. This must only be carried out by suitably qualified technicians, with the correct EV PPE and after it has been established that this is necessary.

8. Keep all drive wheels off the ground when recovering, unless current manufacturer information advises differently.

9. Always work within your level of training and accept that you are responsible and accountable for your actions.

10. Pass over information gathered during recovery to the next person to enable them to continue to risk assess, to record thermal temperature checks and to carefully consider where to park the vehicle.

Scope: Guidance for vehicle recovery operator when attending an EV/hybrid vehicle at the roadside. Only to be used by VR27 trained recovery technicians.

Reason: Industry guidance relating to EV/Hybrid vehicles in breakdown and RTC situations.

PERFORM DYNAMIC RISK ASSESSMENT (DRA) BASED ON IDENTIFICATION OF EV/HYBRID VEHICLE

ID using:

- **Customer/work provider information**
- **Vehicle badges**
- **High voltage cabling/ (often orange but not always)**
- **High voltage components (usually yellow warning stickers)**

→ **DO NOT TOUCH**
High voltage components or high voltage cabling, which may include manual disconnect (service plug)

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KEYS/SIGNAL BLOCKING POUCHES

- **Is vehicle switched off?**
- **Are keys isolated from vehicle – signal blocking pouch?**

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PERFORM AND RECORD THERMAL CHECKS

- **If required - battery compromised?**
- **Ambient**
- **Ground/surface**
- **5 points**

← **NOT OK**

CALL EMERGENCY SERVICES

- **Handover**
- **(See VRO/EMERGENCY SERVICES – Handover Protocol page 2)**

↓ **OK**

LOW VOLTAGE DISCONNECT

- **If suitably trained**
- **If required**
- **Wait at least 10 minutes before touching**

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RECOVERY

All drive wheels off ground unless manufacturer advises differently

Consider:

- **Extra weight**
- **Manufacturer information**
- **Ancillary equipment required**

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HANDOVER & STORAGE

Include:

- **Information gained**
- **Temperature check information**
- **(See VEHICLE STORAGE – handover protocol page 3)**

USEFUL INFORMATION

www.theivrgroup.com

https://apps.apple.com/us/app/euro-rescue/id1516807765?ls=1

https://play.google.com/store/apps/details?id=com.euroncap.rescue&hl=en_GB&gl=US

VRO/EMERGENCY SERVICES – Handover Protocol		
Light RTC	**Medium RTC**	**Severe RTC**
Supplemental restraint systems (SRS) – airbags **not** deployed	Supplemental restraint systems (SRS) – airbags deployed	Potential battery compromise and severe bodywork chassis damage
Fire Service not on scene	Fire Service may or may not be on scene	Fire Service on scene
1. Follow IVR EV/Hybrid Recovery Protocol. 2. If VRO feels that there is a potential for thermal event, contact Fire Service via 999. Must emphasise to the call handler: a) That it is an electric or hybrid vehicle with potential of thermal event. b) To request attendance with thermal imaging equipment.	1. Follow IVR EV/Hybrid Recovery Protocol. 2. If Fire Service not on scene – and if VRO feels that there is a potential for thermal event, contact Fire Service via 999. Must emphasise to the call handler: a) That it is an electric or hybrid vehicle with potential of thermal event. b) To request attendance with thermal imaging equipment. 3. If Fire Service are on scene - arrange for Fire Service to carry out and record first thermal check.	1. Arrange for Fire Service to carry out and record first thermal check. 2. Follow IVR EV/Hybrid Recovery Protocol. 3. Request Fire Service to escort the recovery vehicle back to the yard. 4. Request Fire Service to carry out and record second thermal check in the yard. 5. Potentially a high-risk vehicle must continue to thermally check and monitor. 6. Consideration must be given to storage location.

VEHICLE STORAGE – Handover Protocol		
No thermal event present	**Potential thermal event occurring**	**Thermal event is occurring**
Follow IVR thermal checks	Follow IVR thermal checks	Follow IVR protocol
If no spike in temperature	If there is a spike in temperature	If there is smoke, flame, noise, gases, smell
1. Vehicle can go into general storage (allied to company operating policy/procedures). 2. Continue to monitor.	1. Call 999 and ask for Fire Service. 2. Must emphasise to the call handler: a) That it is an electric or hybrid vehicle with potential of thermal event. b) To request attendance with thermal imaging equipment. c) A potential deployment of a vehicle fire blanket by VRO. 3. Before Fire Service is on scene and if VRO feels that it is safe to do so, a vehicle fire blanket* could be deployed over the vehicle (in line with manufacturer's instructions). 4. Ensure good access for Fire Service. 5. Dynamically risk assess if it is safe to move other vehicles from around the vehicle. 6. Stand well back and upwind of vehicle (smoke and gases are toxic and possibly life threatening).	1. Stand well back and upwind of vehicle (smoke and gases are toxic and possibly life threatening). 2. Call 999 and ask for Fire Service. 3. Must emphasise to the call handler: a) That it is an electric or hybrid vehicle with thermal event. b) To request attendance with thermal imaging equipment. 4. Ensure good access for Fire Service. 5. Dynamically risk assess if it is safe to move other vehicles from around the vehicle.

* Vehicle fire blankets should only be deployed:

- Following a dynamic risk assessment and should you deem it necessary and safe to do so
- By persons trained in vehicle fire blanket deployment and in line with manufacturer's instructions
- Where specific operational arrangements at your premises have been agreed, with your local Fire Service

NEVER deploy a vehicle fire blanket on a vehicle that is already on fire (e.g. where there is smoke, flame, noise, gases, smell).

NEVER attempt to remove a vehicle fire blanket after deployment, this can only be done by the fire service.