KARMA AUTOMOTIVE

HYBRID ELECTRIC
REVERO GT, REVERO GTS, GS-6 MODELS.

MODEL YEAR(S) 2020, 2021, 2022 -

INFORMATION FOR FIRST AND SECOND RESPONDERS
EMERGENCY RESPONSE GUIDE
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### Low voltage disable cut points

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**WARNING!**

High Voltage system with DC voltage up to 400V. Do not touch high voltage components. These items can be identified by the orange cables connected to them.
1. Identification / recognition

**WARNING**

Approach a damaged vehicle or vehicle in the need of recovery with caution. Lack of any sounds (engine or other) does not mean the vehicle is powered off. Silent movement or a restart can occur until the vehicle is completely shut down and powered off. Wear appropriate PPE.

A Karma vehicle can be identified by the badges and name plates.
The referenced Karma vehicles are electric vehicles equipped with an internal combustion (gasoline) engine used as a range extender.
This is a rear drive vehicle with 2 traction motors at the rear.
Distinguishing badges:
The emblem and Karma word-mark on the deck lid, a GS-6 badge on the fender or the Revero (with GT or GTS badge) Name plate on the fenders.

1. Glass roof
2. Charging port cover
4. Exterior door release
5. Wheels and tires
6. Fuel filler cover
7. Trunk deck lid
8. Vehicle recovery eye.
10. Exterior mirrors

Karma Revero GT and Revero GTS Fender Badge
Karma GS-6 Fender Badge
Karma Decklid Badge

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2. Immobilization / stabilization / lifting

Immobilization

Chock rear tires/wheels to keep the Karma Vehicle from rolling backward or forward. Always chock the wheels.

Power off Vehicle

Pressing the power mode button will power off the vehicle if all systems are normal. This is located the right of the steering wheel on the dash board, it is illuminated when the vehicle is powered on.

Put Vehicle in Park

Karma Vehicle is powered on silently, there is an audible passenger sound when the vehicle is in motion however, never assume it is powered off when stationary. Pressing the accelerator pedal while a Karma Vehicle is in Drive or Reverse may result in very rapid acceleration. Press the button located on Drive mode selector located on the center console. Once in Park, a “P” will be indicated along the lower edge of the center gauge cluster, and the electronic parking brake should engage to immobilize the rear wheels. if powered on the driver information panel will indicate park is applied with a “P” in the center display as shown below.
**WARNING**

The vehicle should only be lifted or manipulated if the first responders are trained and equipped at the technician level per the applicable country’s national fire training requirements and are familiar with the vehicle’s lifting points. Use caution to ensure you avoid contact with the high-voltage battery or other high-voltage components while lifting or manipulating the vehicle. Avoid contact with the high voltage battery.

Four lift points are approved for stabilization and lifting locations when using, indicated by the arrows and red circled “x”.

![Stabilization and lifting locations (bottom view)](image)

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**Stabilization and lifting locations (side view)**

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3. Disable direct hazards / safety regulations

The hood can be opened by the manual hood release cable located on the left side knee bolster area on the driver side in the vehicle.

**WARNING**

Not every High-Voltage component is labeled. Always wear appropriate PPE. Do not attempt to open the High-Voltage Battery.
Disable direct hazards / safety regulations

Ensure Passengers are out of the vehicle prior to cutting low voltage power!

Emergency Low Voltage Disable Locations

If access to the MSD cannot be gained, open the hood. On each side under the hood will be a black harness with a clearly visible yellow label, with a scissor illustration. Cut one or both of the cables at the appointed line, this is a low voltage safe system.

Unplugging/Cutting the first responder loop removes low-voltage power going to the high-voltage contactors inside of the high-voltage battery pack. Disconnecting the first responder loop does not disable the low-voltage battery system. The vehicle’s low voltage (12-volt battery) is located on the right side, behind the fender panel and aft of the front wheel. This is accessed by moving back the fender liner. The battery must be disconnected or low voltage cables cut in order to disable the low-voltage battery system, which powers the Supplemental Restraint System (SRS) control unit.

NOTE: Once the low-voltage battery negative cables have been cut, power accessories will no longer operate. This includes items, such as exterior door handles, windows, seats, and the steering column. It will also not be possible to disable the Electronic Parking Brake System.

The cut locations will have the cut tag on the appropriate harness under the hood.
Disable direct hazards / safety regulations

Passenger-side low voltage disable location

Driver-side low voltage disable location
Disable direct hazards / safety regulations

Even if the first responder loop has been cut, always treat the high-voltage pack and the high-voltage components as if these are live. Treat every battery pack and orange cable as if there is high voltage in them. Never cut an orange high-voltage cable or cut into the battery pack. There is no way to perform an instant discharge of the energy inside of the battery pack when a vehicle is in an accident. There is stored energy in the high-voltage battery. Caution must be used to not damage the battery pack, in the case of vehicle extrication operations.

Vehicle Charging

In the case of an emergency incident that involves collision, electrical failure, or fire, while charging additional steps should be taken to isolate the charging station. If the charging station is equipped with an e-stop, it should be applied. If an e-stop is not present or accessible, property management should be accessed to locate the main service disconnect and lockout/tagout breaker. After it has been located, immediately disconnect the charger handle at the vehicle by pressing the release button on the charging cable handle. In the event the charge coupler latch fails to release, use the emergency manual release cable. Follow the steps below to reach the emergency manual release.
1. Gain entry to the trunk cargo area
2. Pull the black connector on the left side of the cargo panel
3. The charge connector will be manually unlocked
After the latch has been released, you will have to push the cable back into the socket and push the black ending cap until it locks in the original resting place.
Disable High Voltage Electrical System

The Manual Service Disconnect ("MSD") located under the Rear seat cushion on the driver side. Open the left rear door and pull up on the seat cushion to disengage. Under the cushion you will find a boxed cover with a locking pin. Remove the locking pin and open the cover to expose the MSD (see Figure B), (continue to the next page for removal.)
Disable direct hazards / safety regulations

**WARNING**

You must wait 5 minutes after the MSD cap has been removed. Although the battery is now isolated from the system, the harness may need 5 minutes to discharge the harness and High Voltage Capacitors internal to the High Voltage components.

Pull up orange tab.

Lift outer handle rotate 90 degrees (as shown), where it will stop. Pull up on the handle to disengage the Manual Service Disconnect for the HV battery.
Disable direct hazards / safety regulations

Low Voltage Battery
The hybrid has a 12-Volt maintenance Free Battery which is located in the inner passenger front fender behind the wheel. The Absorbent Glass-Mat (AGM) battery stores 12-Volt power for the vehicle’s low voltage system. If the Low voltage cable is not cut, disconnecting the cables at the 12-volt main connector is a service method to disconnect the low voltage system. This is located on the fender under the hood. The 12-volt battery is located under this behind the fender.

With the wheel removed the fender liner is unfastened and removed, the 12-volt battery slides forward to be removed (image shown without fender for clarity.)
Note: AIRBAGS

**WARNING**
The supplementary restraint system ("SRS") unit has an internal energy reserve, which enables it to remain powered for up to five minutes after Low-Voltage battery power has been disconnected. The SRS unit will remain powered from the vehicle after it deploys any airbag or per-tensioner. Do not touch the SRS unit while it is powered.

Airbags are located in the approximate areas shown. Airbag warning information is printed on the sun visors. The First Responder Loop and Low-Voltage Battery negative cables (2) should be cut (or if possible the 12-volt service disconnect should be open) in order to open the low voltage circuit that provides power to the airbags.

The exact location of the airbag modules are indicated by the word Airbag on the trim or a label sewn into the seat cover.

1. Passenger’s knee airbag
2. Passenger’s front airbag
3. Side airbag
4. Curtain airbag
5. Driver’s airbag
6. Driver’s knee airbag
**WARNING**
NO CUT ZONES. Never cut or crush inflation cylinders. Cutting or compressing cylinders can cause catastrophic failure and lead to serious injury or death.

**WARNING**
The SRS control unit has a backup power reserve with a discharge time of approximately ten seconds. Do not touch the SRS control unit within ten seconds of an airbag or per-tensioner deployment.

1. SRS control module under center console
2. Seatbelt Tensioner
3. Gas Generator
4. Gas Filled Strut
4. Access to occupants

Access to the vehicle is done using the door handles. To unlock use the Key Fob, or entry through the passenger front door with a mechanical key.

**Central door unlock, left button (yellow arrow)**

**Outside door handle, press underside button and pull door open**

**Interior door unlock and release, press button, door will open**

1. **Key Fob Lock** (press once to lock)
2. **Key Fob Unlock** (press once to unlock, twice to unlock all doors)
3. **Panic Alarm** (Press and hold activate)
4. **Trunk Release** (Press and hold to open trunk)

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Perform the following steps if the central locking system will not work.
Use the blade key if available. This is found in the Key fob casing.

Insert the blade into the lock located on the passenger door handle. Turn the key counterclockwise and release (as shown in below).
Access to occupants

In the event of a power failure, each of the doors can be manually opened from inside the vehicle by pulling the release cable located below the door handle. To access the release cable, press the lower edge of the cover below the door handle and remove the cover.

Emergency trunk access

If there is a power failure to the vehicle, manually enter the vehicle with the bladed key then perform the following steps.

Open the left-rear door, which can be achieved from inside the vehicle by pulling the release cable located below the door handle. Press groove on lower edge of cover below door handle and pull downward on door pull ring.

Lift up the left-rear seat-back cushion and the carefully tilt it forward.

Pull on trunk release pull ring to gain access to the trunk where the recovery eye attachment is located.
**WARNING**

DO NOT cut into the vehicle until the 12v electrical system has been disabled. Cutting into the vehicle prior to disconnecting and isolating the 12v electrical energy sources may cause air bag deployment resulting in serious injury.

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**NO CUT ZONES**

**DO NOT CUT HERE.**

- Side Curtain air bags
- DC Charging module

**DO NOT CUT HERE.**

High voltage (400 volts) electrical cables are wrapped with orange-colored insulation and are located in the rear compartment, engine compartment, and under the vehicle.

**DO NOT CUT HERE.**

High voltage battery has 400 volt electrical potential at all times.
Windows
Karma automotive vehicles use laminated safety glass for all exterior windows. In an emergency, safety laminate glass may require the use of high-pressure punch and glass cutters.
5. Stored energy / liquids / gases / solids

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Battery Icon" /></td>
<td>12 Volts Sealed AGM</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Battery Icon" /></td>
<td>Lithium Ion 400 Volts</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Chemical Icon" /></td>
<td>R1234YF, A/C refrigerant (0.60 kg)</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Chemical Icon" /></td>
<td>G48 (HOAT) Coolant Blue (2.5 liter)</td>
<td></td>
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</tbody>
</table>
### Stored energy / liquids / gases / solids

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<th>Electric drive Components</th>
<th>G48 Engine (HOAT) Coolant Blue (9.7 to 10.3 liters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coolant</td>
<td></td>
</tr>
<tr>
<td>Engine Coolant</td>
<td>G48 Engine (HOAT) Coolant Blue (9.0 liters)</td>
</tr>
<tr>
<td>Engine Oil</td>
<td>SAE 0W/20 (4.7 liters)</td>
</tr>
<tr>
<td>Fuel Tank</td>
<td>Gasoline (up to 35 liters)</td>
</tr>
</tbody>
</table>
The Accessory Power Module (APM) is a DC/DC Converter. The APM is a High Voltage component located under the hood on the driver’s side steps 400 volts down to 13-14 volts of power to operate and run the vehicle’s 12-volt accessories. The APM has an independent high voltage harness from the energy storage system (HV battery).

NOTE: The emergency cut location is identified by a label located off the APM.
High Voltage Power Cable

High Voltage cables are identified by the bright orange cable coloring. Do not compromise these high-voltage cables with rescue tools. The assumption should always be made that there may be high voltage present in the orange, high-voltage cables.
High Voltage Electrical System Information

**WARNING**

ELECTRIC AND HYBRID VEHICLES DAMAGED BY A CRASH MAY HAVE COMPROMISED HIGH VOLTAGE SAFETY SYSTEMS AND PRESENT A POTENTIAL HIGH VOLTAGE ELECTRICAL SHOCK HAZARD. EXERCISE CAUTION ALWAYS WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING HIGH VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELRY, INCLUDING WATCHES AND RINGS. ISOLATE THE HIGH VOLTAGE SYSTEM AS DIRECTED BY THIS EMERGENCY RESPONSE GUIDE FOR THE VEHICLE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

The following features have been incorporated into Karma Vehicles to allow for shut-off of the High Voltage electrical systems, or automatic shut-off.

Manual disconnect with high voltage fuse — In the event of a High Voltage short circuit, the High Voltage fuse opens, isolating the High Voltage battery from the circuit.

Power in the OFF Position — Any time the power is in the off position the High Voltage system is isolated to the battery pack, this includes if the charge cable is not connected to the vehicle charge port.

PLEASE NOTE not every crash will cause the vehicle to shutoff or High Voltage system deactivation.

**WARNING**

FIRES IN CRASH-DAMAGED ELECTRIC VEHICLES MAY EMIT TOXIC OR COMBUSTIBLE GASSES. SOME AMOUNTS OF EYE, SKIN OR LUNG IRRITANTS MAY BE PRESENT. WEAR PERSONAL PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WHEN WORKING IN CLOSE PROXIMITY OR IN A CONFINED AREA (e.g. A TUNNEL OR GARAGE). VENTILATE THE VEHICLE INTERIOR BY OPENING VEHICLE DOORS OR WINDOWS. VENTILATE THE WORKING AREA. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

High Voltage warning labels will be present on or around high voltage components.
Observe the following precautions when working on or around High Voltage batteries:

- Do not cut the High Voltage battery case. Do not penetrate the batteries or case in any way.
- The High Voltage battery pack is located in the central tunnel under the vehicle.
- The total voltage of the vehicle HV battery pack may be up to approximately 400 volts DC.
- The battery case is water resistant.
- The battery pack is composed of large modules constructed of pouch cells containing gel-type liquid electrolyte. The electrolyte will not leak from the battery under most conditions. However, if the battery is crushed, it is possible for a small amount of electrolyte to leak.

If possible, isolate and avoid contact with any electric vehicle components. If contact with the High Voltage system cannot be avoided, Personal Protective Equipment (PPE) such as a splash shield or safety goggles, gloves (butyl), an apron or overcoat, and rubber boots are required when handling damaged batteries. Exposure to electrolyte could cause skin and/or eye irritation/burns. If exposed, rinse with large amounts of water for 10-15 minutes.

The High-Voltage battery will be fitted with the following label: 

![Battery Label]

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A Damaged vehicle or high voltage battery packs should be stored outside at a safe distance from other vehicles or structures.

WARNING

STORAGE OF DAMAGED A HIGH VOLTAGE BATTERY PACK OR A DAMAGED VEHICLE SHOULD BE KEPT AT A DISTANCE OF MINIMUM OF 15 METERS OR 50 FEET FROM OTHER STRUCTURES OR VEHICLES.

WARNING

ALWAYS ASSUME HIGH-VOLTAGE (HV) SYSTEMS TO BE ENERGIZED. DURING FIREFIGHTING ACTIVITIES, INCLUDING OVERHAUL, AVOID CONTACT WITH HV COMPONENTS. CUTTING OF HV COMPONENTS MAY CAUSE AN ARC FLASH, POTENTIALLY SEVERELY INJURING A FIREFIGHTER.
6. In case of fire

USE WATER TO FIGHT A HIGH VOLTAGE BATTERY FIRE.

If the battery catches fire, or is generating heat or gases, or if it is exposed to high heat, use large amounts of water to cool the battery. It can take between approximately 3,000-8,000 gallons (11,356-30,283 liters) of water, applied directly to the battery, to fully extinguish and cool down a battery fire; always establish or request additional water supply early. If water is not immediately available, use CO2, dry chemicals, or another typical fire-extinguishing agent to fight the fire until water is available.

Gasoline is stored in a traditional fuel tank.
Electricity is stored in a high-voltage battery pack.
Use of Class ABC powder-type extinguisher to contain and smother the flames.

<table>
<thead>
<tr>
<th>Class</th>
<th>TYPICAL FIRE – Wood, Paper, Cloth, Rubber, and most Plastics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class B</td>
<td>CHEMICAL FIRE – Flammable Liquids, Gasoline, Kerosene, Oil, Grease, Gases, and Solvents</td>
</tr>
<tr>
<td>Class C</td>
<td>ELECTRICAL FIRE – Live Electrical Equipment and Wiring</td>
</tr>
</tbody>
</table>

Apply water directly to the battery.
If safety permits, tilt or lift the vehicle for more direct access to the battery, which is central and underside the vehicle.

Never open the battery for the purpose of cooling it.
Water may be applied onto the pack from a safe distance ONLY if a natural opening or puncture (such as a vent or opening from a collision) already exists.
The use of a Thermal Imagery Camera or Infrared (TIC or IR) is recommended to monitor battery temperatures during the cooling process. Continue to use water until the battery has reached ambient temperatures or below, indicated by the thermal imagery camera. When utilizing a thermal imaging camera, allow time, once water application has stopped, for heat within the battery to transfer to the battery enclosure.

Extinguish small fires that do not involve the high voltage battery using standard vehicle firefighting procedures.

During fire extinguishing, do not make contact with any high voltage components. Always use insulated tools for fire extinguishing.

Heat and flames can compromise airbag inflators, stored gas inflation cylinders, gas struts, and other components which can result in unexpected excessive heat, which can cause inflation cylinder explosion.

Battery fires can take up to 24 hours to fully cool. After suppression and smoke has visibly subsided, a thermal imaging camera can be used to actively measure the temperature of the high voltage battery and monitor the trend of heating or cooling. Extra care should be taken during an event as the fuel tank may contain gasoline.

There must be no fire, smoke, audible popping or hissing, or heating present in the high voltage battery for at least 45 minutes before the vehicle can be released to second responders. The battery must be completely cooled before releasing the vehicle to second responders or otherwise leaving the incident. Second responders must be aware that there is a risk of battery re-ignition. Second responders should be advised to position the vehicle to drain excess water out of the vehicle by tilting or repositioning it. This operation can assist in mitigating possible re-ignition. During all firefighting activities, consider the vehicle energized. Always wear full PPE including a Self-Contained Breathing Apparatus (SCBA).
7. In case of submersion

Vehicles that have been exposed to large amounts of water or submerged should receive a risk analysis assessment. Contact ESA 1-855-ESA-SAFE (1-855-372-7233) for details.

Submerged vehicles are highly susceptible to internal short circuiting, resulting in thermal runaway. This may occur immediately upon removal or may be significantly delayed. Submerged vehicles should be staged in a safe area, a minimum of 50 ft radius, upon removal and monitored for thermal and physical indications of thermal event for 45 minutes prior to transport.

Treat a submerged Karma like any other submerged vehicle. However, wear appropriate PPE when handling any submerged vehicle. Remove the vehicle from the water and continue with normal high-voltage disabling. Vehiches that have been submerged in water should be handled with greater caution due to the potential risk of a high-voltage electrical battery fire. First responders should be prepared to respond to a potential fire risk. Raise one end of the vehicle to allow water to drain out of the vehicle and the high-voltage battery pack. If the vehicle’s structural integrity has been compromised, elevate the undamaged end of the vehicle to allow for proper drainage. After the vehicle is removed from the water, continue normal disabling procedures as above for 12-volt and high voltage.
8. Towing / transportation / storage

CAUTION

Pulling the vehicle with the wheels on the ground, or on a suspended lift, may cause serious damage to the vehicle as well as generating high voltages in the vehicle's electrical components.

The only approved method of recovering or transporting your vehicle is using a flatbed trailer, or transporter.

Recovery Eye

The recovery eye can be attached to the front the Karma to initiate pulling vehicle onto a recovery transporter in situations when the vehicle is able to roll freely.

NOTE: The recovery eye is located in the under-floor storage area in the trunk. If electric trunk release doesn’t work, see above for manual access procedure.
Proper Use of Recovery Eye – Front Location

**WARNING**

As an additional safety measure to protect against severe injury or death, be sure to use safety chains/straps on every vehicle recovery while loading, transporting, and unloading.

This procedure will prevent losing the vehicle in the event of equipment failure or vehicle breakage at the recovery eye attachment.

Safety chains/straps are intended as a back-up device and should be secured to the sub-frame.

Remove Recovery Eye Attachment Plug From Front Fascia

The recovery eye front fascia plug has a positioned retaining tab, this can be carefully manipulated from the 6 o’clock position to remove (push in to “pop” it out). (Figure A and B). The cap will fall out of the fascia, be careful it does not get pushed into the fascia.

Be sure to retain the plug properly before re-installation.
Towing / transportation / storage

Insert the recovery eye into its receiver and thread it in 10 complete turns to fully seat it.

---

**CAUTION**

The front recovery eye may bind when screwing into position causing it to not fully seat into the receiver located in the front fascia. Please use the procedure below to check integrity of front recovery eye installation. Under no circumstances should the recover eye to be used if the following specification for installation has not been met. Never use the Recovery eye for transporting the vehicle, this can cause serious damage to the vehicle and possible injury. The recovery eye is for recovery only.
Towing / transportation / storage

Using the Figure below for reference:

If the recovery eye is seated properly (see GREEN check mark) in the recovery eye receiver, the dimension between the front fascia and the tip of the recovery eye should measure 2.6 in (6.63 cm).

If the dimension between the front fascia and tip of the recovery eye measures more than specified (see RED X), the threads of the recovery eye may not be fully engaged or the threads in the receiver may be damaged and rework may be necessary.

Recovery eye shown installed vertically for demonstration purposes only

Recovery eye should be in horizontal position before attaching winch cable

NOTE: If recovery eye binds before 10 full turns are achieved;
Unthread recovery eye and clean out any debris from the recovery eye receiver.
Add lubricant to the recovery eye and attempt to thread it into the receiver again.
Some leverage on the recovery eye may be necessary.
Multiple attempts and additional lubricant may be necessary during this process.
WARNING

Do not use recovery eye as a tie-down, anchoring point or for tensioning vehicle to flatbed.

Misuse of vehicle recovery eye could result in severe injury to the operator and/or to others and damage to vehicle.

The Revero is equipped with a recovery eye (located in trunk). When using recovery eye it is only to be used to pull the Revero to the base of the recovery vehicle flatbed. While using the recovery eye, use nylon certified safety strap connected from the winch hook to the right-front (passenger side) lower control arm as a back-up safety measure (as shown).

- Slot located in right-front control arm for attaching back-up safety strap.
- Back-up nylon safety strap installed on right-front (passenger side) lower control arm.

CAUTION

The lower control arms should not be used as a tie-down or to secure the vehicle to the recovery vehicle flatbed, otherwise property damage and/or unsafe recovery of the vehicle may occur.
Towing / transportation / storage

Ensure securing straps are attached. Press the brake and select N (see close-up photo below) to allow the vehicle to roll.

Winch Revero onto the ramps and onto the base of the flatbed using the recovery eye, accompanied by a backup heavy-duty nylon certified safety strap looped through the winch hook and right-front (passenger side) lower control arm.

The illustration below shows overhead view of winching the Revero onto the base of recovery vehicle flatbed using the recovery eye.

- The recovery eye location in fascia is offset from centerline of vehicle and requires a minimum distance of 10 feet between the recovery eye and the winch.
- The winch cable must maintain a maximum 15 degree angle between the cable and the centerline of vehicle.

**WINCHING ONTO FLATBED**

DO NOT WINCH REVERO CLOSER THAN 10 FEET BETWEEN RECOVERY EYE AND WINCH
Towing / transportation / storage

**WARNING**

Attach certified nylon safety strap to the winch hook and through slot in right-front (passenger side) lower control arm.

Failure to follow safety procedures may result in injury to the operator and/or others and property damage.

WARNING

Using a back-up certified heavy-duty nylon safety strap in this procedure will prevent losing the vehicle in the event of equipment failure or vehicle breakage at the recovery eye attachment.
Towing / transportation / storage

Remove recovery eye and back-up safety strap.
Use Figures below for reference to swap from the recovery eye to using safety strap format.

DUAL-STRAP FORMAT
(ONCE FRONT WHEELS ARE ONTO END OF FLATBED, SWITCH FROM RECOVERY EYE TO DUAL-STRAP FORMAT)

SAFETY STRAP (108” MIN.)
[x2 - ONE FOR EACH SIDE]
WINCH CABLE

FLATBED

18”
36”
STACKED 4x4s [3.5”x3.5” LUMBER]

20° (OR LESS)

Use appropriate ramps or planks as needed

DUAL-STRAP FORMAT
(BOTTOM VIEW DIAGRAM)

SAFETY STRAPS (108” MIN)
PULL D-RINGS FORWARD PAST FRONT FASCIA AND CONNECT TO WINCH CABLE

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Chock rear tires/wheels to keep the Revero from rolling backward or forward.

**CAUTION**

Use 2.75m (minimum length) of heavy-duty nylon safety straps certified for vehicle recovery routed through front lower control arms (as instructed in this document) are required for recovery of Karma vehicle.

12.8. Loop 108” (minimum length) heavy-duty nylon safety strap certified for vehicle recovery through left-front (passenger side) lower control arm as shown below. Pull both D-Rings forward past front fascia to center-line of vehicle and attach to winch hook.

**CORRECT ROUTING FOR STRAP THROUGH LOWER CONTROL ARM**

Loop 2.75m (108”) (minimum length) heavy-duty nylon safety strap certified for vehicle recovery through right-front (driver’s side) lower control arm. Pull both D-Rings forward past front fascia to center-line of vehicle and attach to winch hook.

Winch vehicle into place and secure vehicle properly.

Repeat procedure in reverse order when unloading vehicle.
**Towing / transportation / storage**

**Securing the Wheels**

Once the vehicle is in position on the transporter or trailer, use chocks when securing wheels with tie down straps.

Approved vehicle tie down strap types shown below.

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**CAUTION**

Unless otherwise instructed in this document: attaching straps to the chassis, suspension or other parts of the body can damage the vehicle.

Ensure that metal parts on tie down straps do not contact the vehicle's wheels and/or painted surfaces.
### Vehicle Exterior Dimensions

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Overall Length:</td>
<td>199.6 in. (5070 mm)</td>
</tr>
<tr>
<td>B</td>
<td>Overall Width:</td>
<td>85.1 in. (2161 mm) with mirror</td>
</tr>
<tr>
<td>C</td>
<td>Overall Height:</td>
<td>52.6 in. (1337 mm)</td>
</tr>
<tr>
<td>D</td>
<td>Wheelbase:</td>
<td>124.4 in. (3160 mm)</td>
</tr>
<tr>
<td>E</td>
<td>Front Overhang</td>
<td>37.4 in. (951 mm)</td>
</tr>
<tr>
<td>F</td>
<td>Rear Overhang</td>
<td>37.8 in. (961 mm)</td>
</tr>
<tr>
<td>G</td>
<td>Ground Clearance - Front:</td>
<td>5.4 in. (138 mm)</td>
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<tr>
<td></td>
<td>Approach Angle - Front:</td>
<td>13.0 Degrees</td>
</tr>
<tr>
<td></td>
<td>Approach Angle - Rear:</td>
<td>21.0 Degrees</td>
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<tr>
<td></td>
<td>Front Track:</td>
<td>66.6 in. (1692 mm)</td>
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<tr>
<td></td>
<td>Rear Track:</td>
<td>67.0 in. (1701 mm)</td>
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<tr>
<td></td>
<td>Height Clearance with Hood Raised:</td>
<td>85.0 in. (2159 mm)</td>
</tr>
<tr>
<td></td>
<td>Vehicle Weight:</td>
<td>5040 lbs. (2290 kg)</td>
</tr>
<tr>
<td></td>
<td>Weight Distribution:</td>
<td>Front 47% and rear 53%</td>
</tr>
</tbody>
</table>

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### 10. Explanation of pictograms used

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Description</th>
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<th>Description</th>
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<tbody>
<tr>
<td><img src="image" alt="General Warning" /></td>
<td>General Warning</td>
<td><img src="image" alt="Warning, High-Voltage Electricity" /></td>
<td>Warning, High-Voltage Electricity</td>
</tr>
<tr>
<td><img src="image" alt="High-Voltage Battery Pack" /></td>
<td>High-Voltage Battery Pack</td>
<td><img src="image" alt="Class B High-Voltage Propulsion System" /></td>
<td>Class B High-Voltage Propulsion System</td>
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<tr>
<td><img src="image" alt="Cable Cutting location" /></td>
<td>Cable Cutting location</td>
<td><img src="image" alt="Flammable" /></td>
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<td><img src="image" alt="Hazardous to Human Health" /></td>
<td>Hazardous to Human Health</td>
<td><img src="image" alt="Explosive" /></td>
<td>Explosive</td>
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<tr>
<td><img src="image" alt="Acute Toxicity" /></td>
<td>Acute Toxicity</td>
<td><img src="image" alt="Corrosives" /></td>
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<td>Air Conditioning Component</td>
<td><img src="image" alt="Warning, Low Temperature" /></td>
<td>Warning, Low Temperature</td>
</tr>
<tr>
<td><img src="image" alt="Lifting Point" /></td>
<td>Lifting Point</td>
<td><img src="image" alt="General Caution" /></td>
<td>General Caution</td>
</tr>
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