Document Title

GUIDE, QUICK START,
POWERBOX, VAC4, HARDWARE INSTALL

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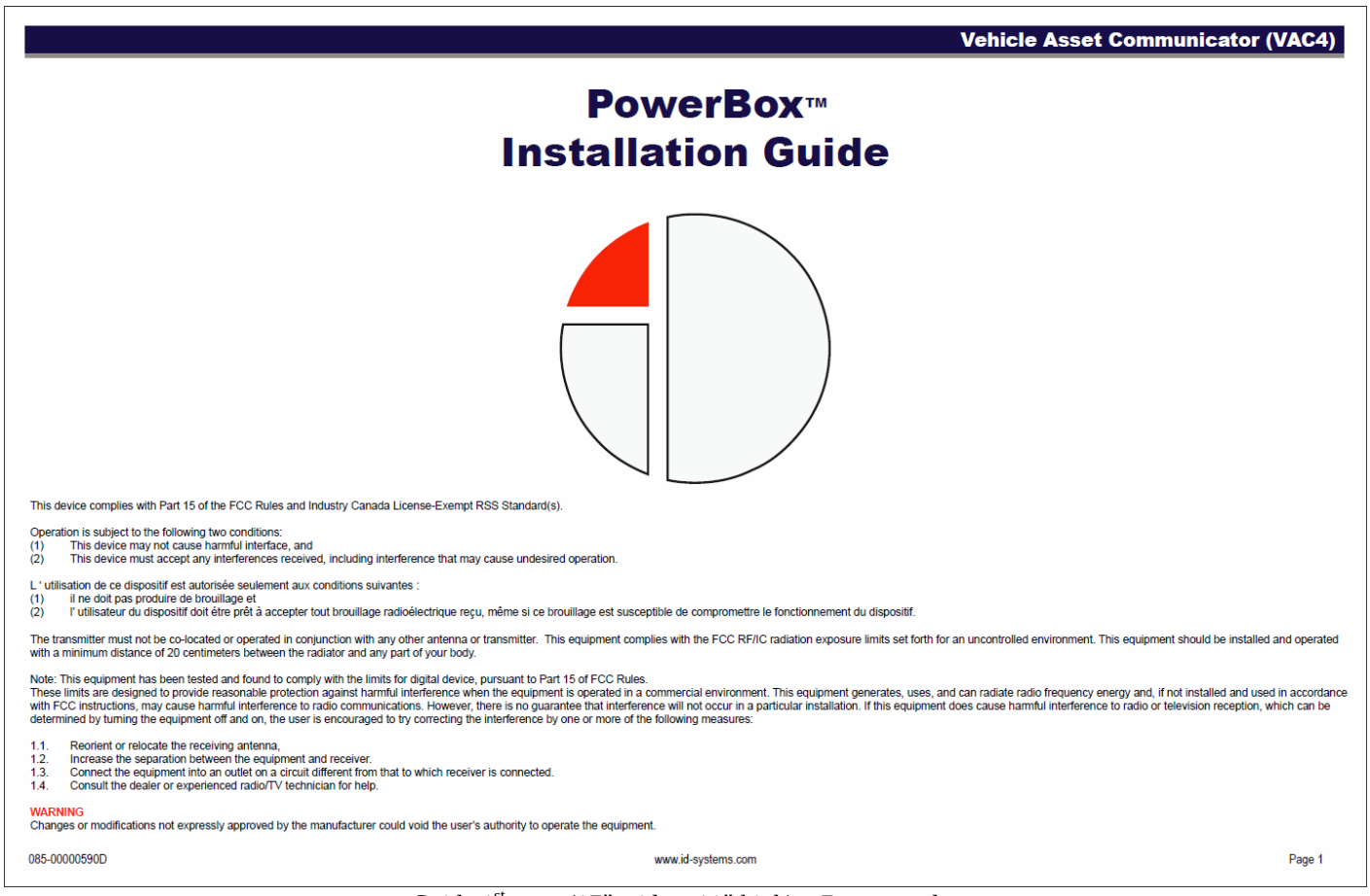
1. Material:

Size: 11" x 17", Folded in half
Full color, single-sided
Paper Stock: 100# Gloss Text

2. Artwork:

IDS P/N 010-00000590 (Adobe Illustrator files 010-00000590<*REV*>-1.ai, 010-00000590<*REV*>-2.ai, 010-00000590<*REV*>-3.ai, 010-00000590<*REV*>-4.ai, 010-00000590<*REV*>-5.ai, 010-00000590<*REV*>-6.ai, 010-00000590<*REV*>-7.ai, 010-00000590<*REV*>-8.ai, 010-00000590<*REV*>-9.ai, 010-00000590<*REV*>-10.ai, 010-00000590<*REV*>-11.ai)



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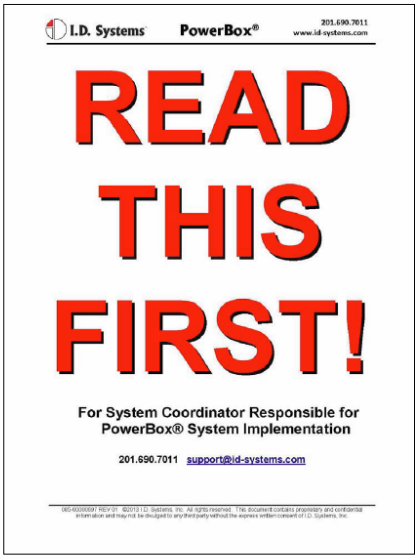
Note: This publication is intended to provide the general knowledge needed to install the Vehicle Asset Communicator (VAC). Since vehicle designs vary widely throughout the industry, this guide focuses on providing comprehensive instruction for a "typical" installation method instead of tailored instructions by vehicle model.

1 **System coordinator and installers should first refer to the *PowerBox VAC4 Getting Started Guide* for complete product overview.**



2 **Select an appropriate location to perform the vehicle installation. Ideally, a well-lit, open area where the vehicle can be test driven for about 5 seconds forward and then 5 seconds in reverse once the installation is complete.**

3 **Confirm that the vehicle kit is complete.**

Component	Description	Qty
Vehicle Asset Communicator (VAC)	Black box with LCD screen and keypad	1
VAC mounting bracket	VAC Bracket	1
Vehicle hardware kit	VAC Bracket rear mounting plate, grommet, screws and nuts	1
VAC cable	6' to 18' fused cable (wired or OEM harness)	1
Relay kit	Small bag with two (2) relays and various fast-ons, etc.	1
Impact sensor	Square plastic device with integrated 12' cable	1
Electrical installation kit	Cable ties, ring terminals, etc.	1

4 **Gather recommended installation tools.**

Vehicle electrical diagram	17/64" (7 mm) drill bit
Multimeter and clip leads	11/32" (9 mm) drill bit
Allen wrench set	1-1/4" (32 mm) Holesaw
Metric socket set	Wire stripper/cutter
Metric combination wrench set	Utility knife
Phillips and flathead screwdriver set	Pliers
18 AWG wire	Electrical tape
Butt splices	Flashlight
Spare fuses (supplied in the *Open Me First* box)	
IDSY's Diode Splitters (supplied in the *Open Me First* box)	

NOTE: In addition to the recommended installation tools listed above, tools to be used for dismantling the vehicle body and potentially removing the vehicle battery will be needed.

By following these installation guidelines, the aftermarket installation of the I.D. Systems VMS hardware does not void the vehicle manufacturer's warranty.

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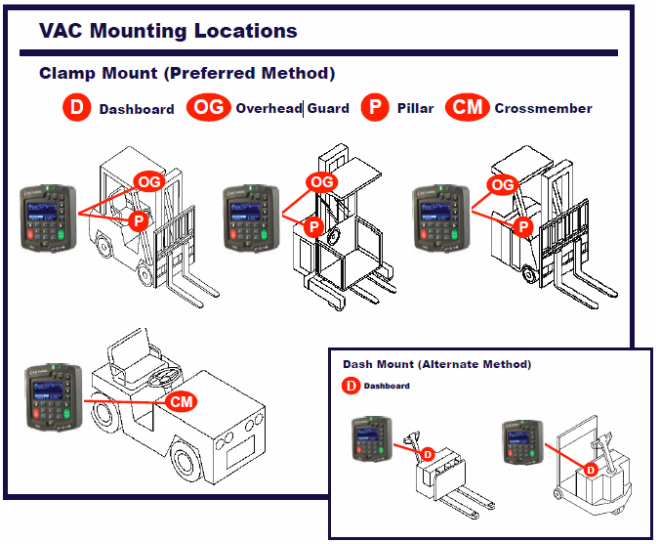
5 **Choose the VAC mounting location.**

VAC Mounting Location Considerations:

- Whenever possible, mount the VAC bracket to an available beam, pillar, overhead guard, or cross-member using the "Clamp Mount" method.
- Vehicle operator must be able to view the VAC display and access the keypad while positioned for normal vehicle operation.
- Do not obscure the operator's line of sight or prohibit accessibility to the vehicle controls.
- Mount the VAC within physical range of vehicle connections and within 12 feet of the impact sensor.
- Limit the risk of cable damage by routing cables through the vehicle body. Whenever possible, use existing cable paths.
- Keep the VAC and VAC bracket inside the overall dimensions of the vehicle to avoid damage.
- Install the VAC and cable in a manner that will not interfere with routine vehicle operation.



6 **Loosen the bracket arm bolt so that the VAC adapter plate and bracket base plate can be adjusted.**

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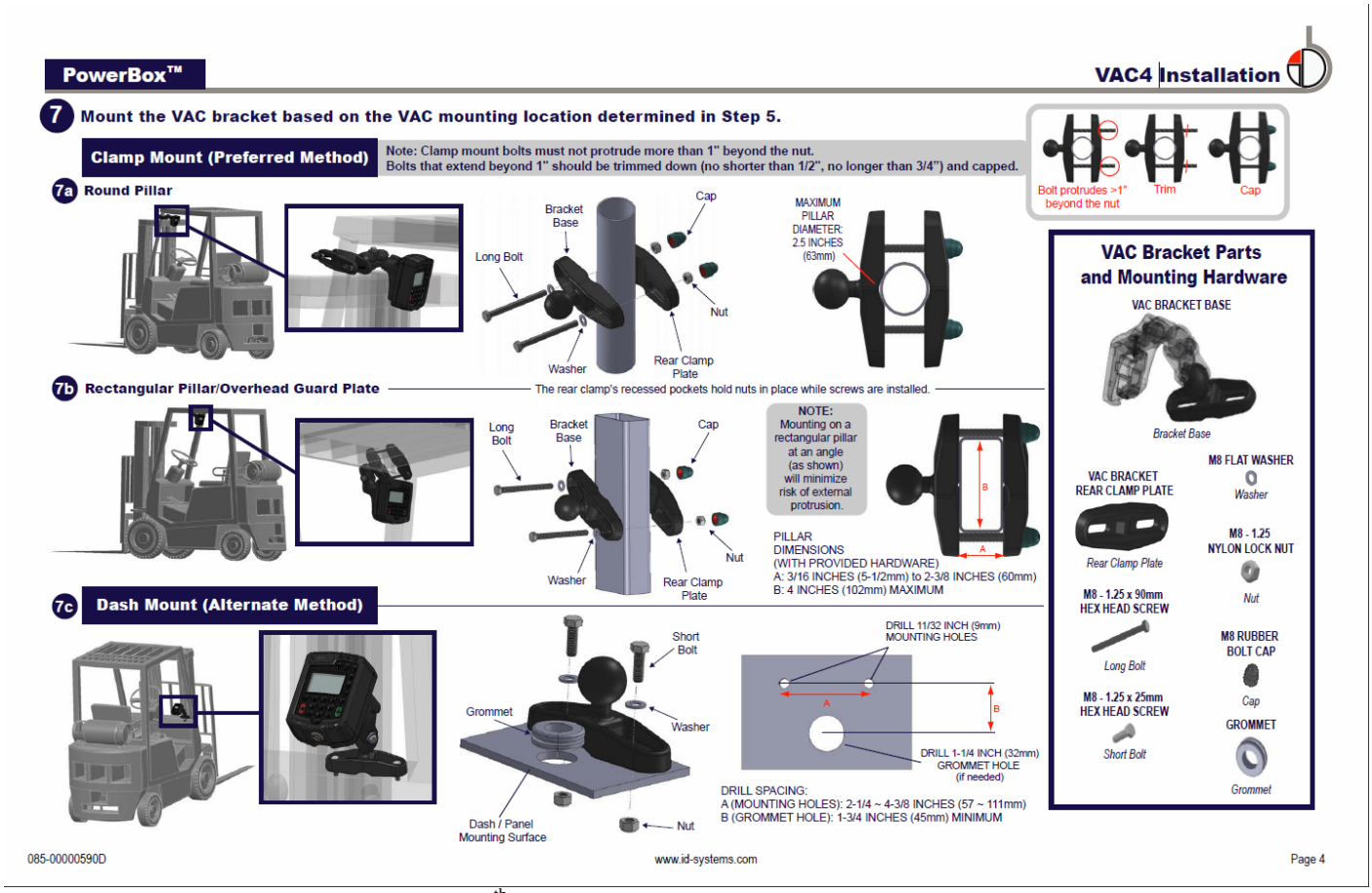

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8 Mount the VAC to the VAC bracket.

8a Slide the VAC onto the bracket and secure using the M5 nuts supplied with the VAC.

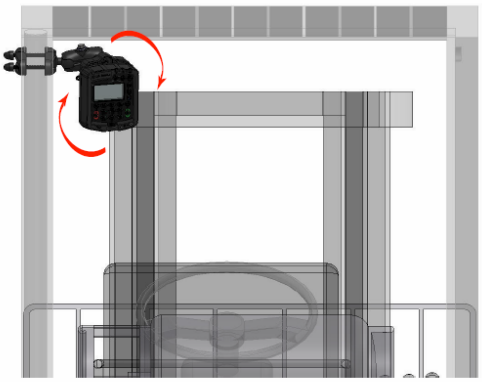
8b If needed, adjust the orientation of the bracket.

The vehicle operator should be able to easily access the VAC.

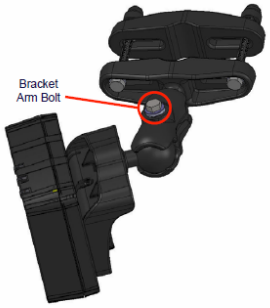
The position of the VAC and bracket must not obscure the operator's line of sight.

The VAC and bracket must remain within the overall dimensions of the vehicle.

Install the VAC and cable in a manner that will not interfere with routine vehicle operation.



8c Tighten the bracket arm bolt.



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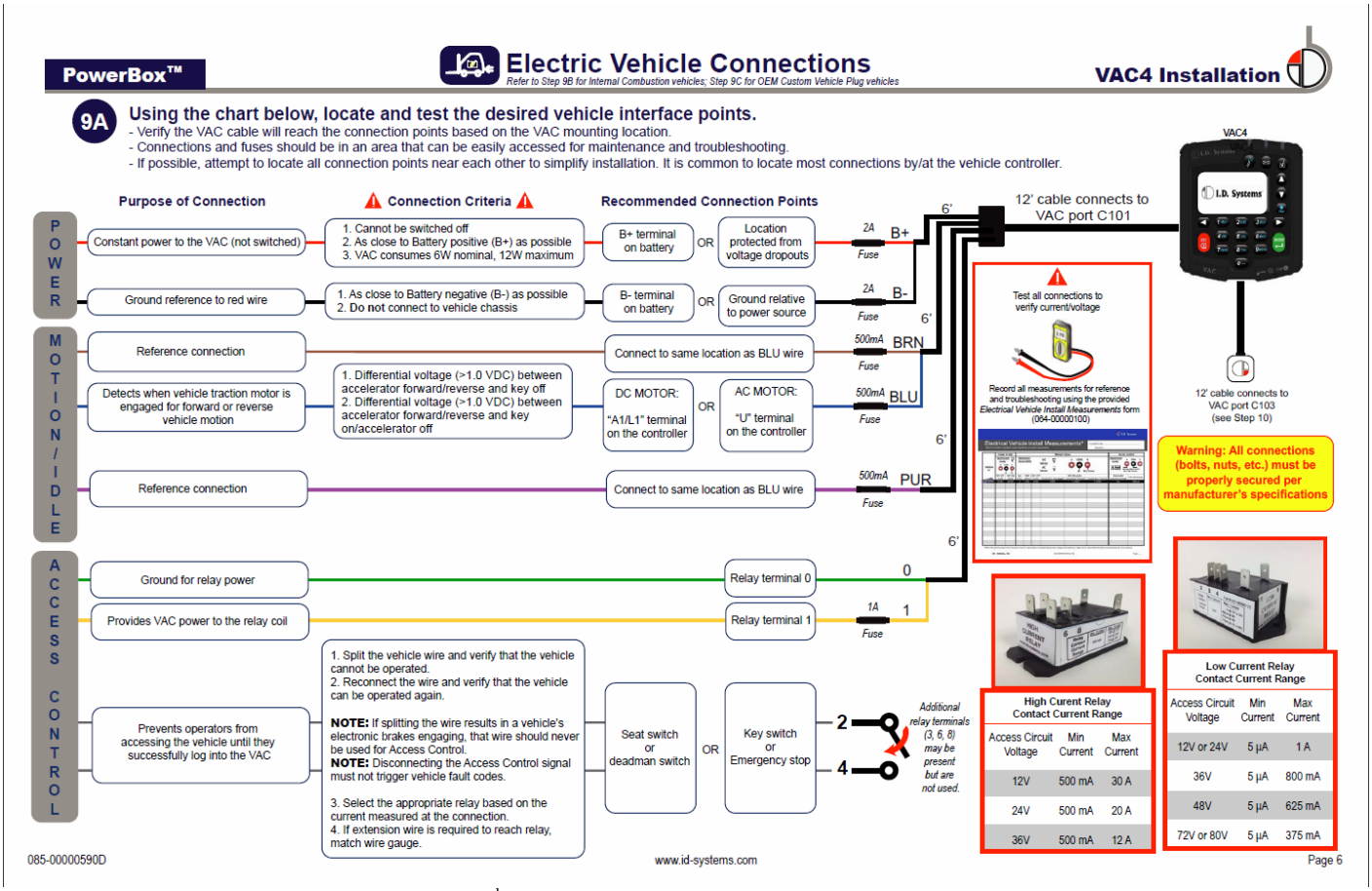

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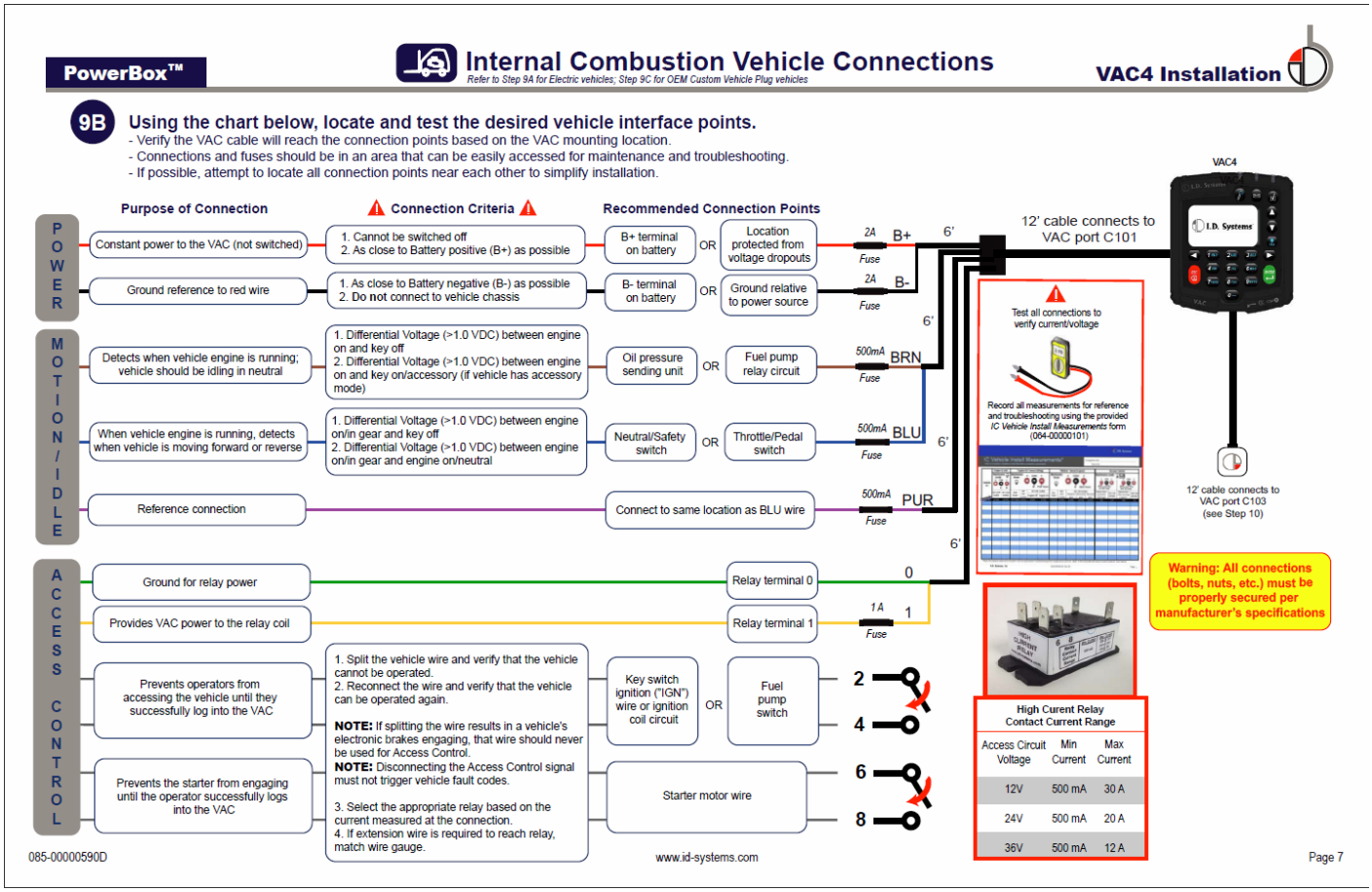

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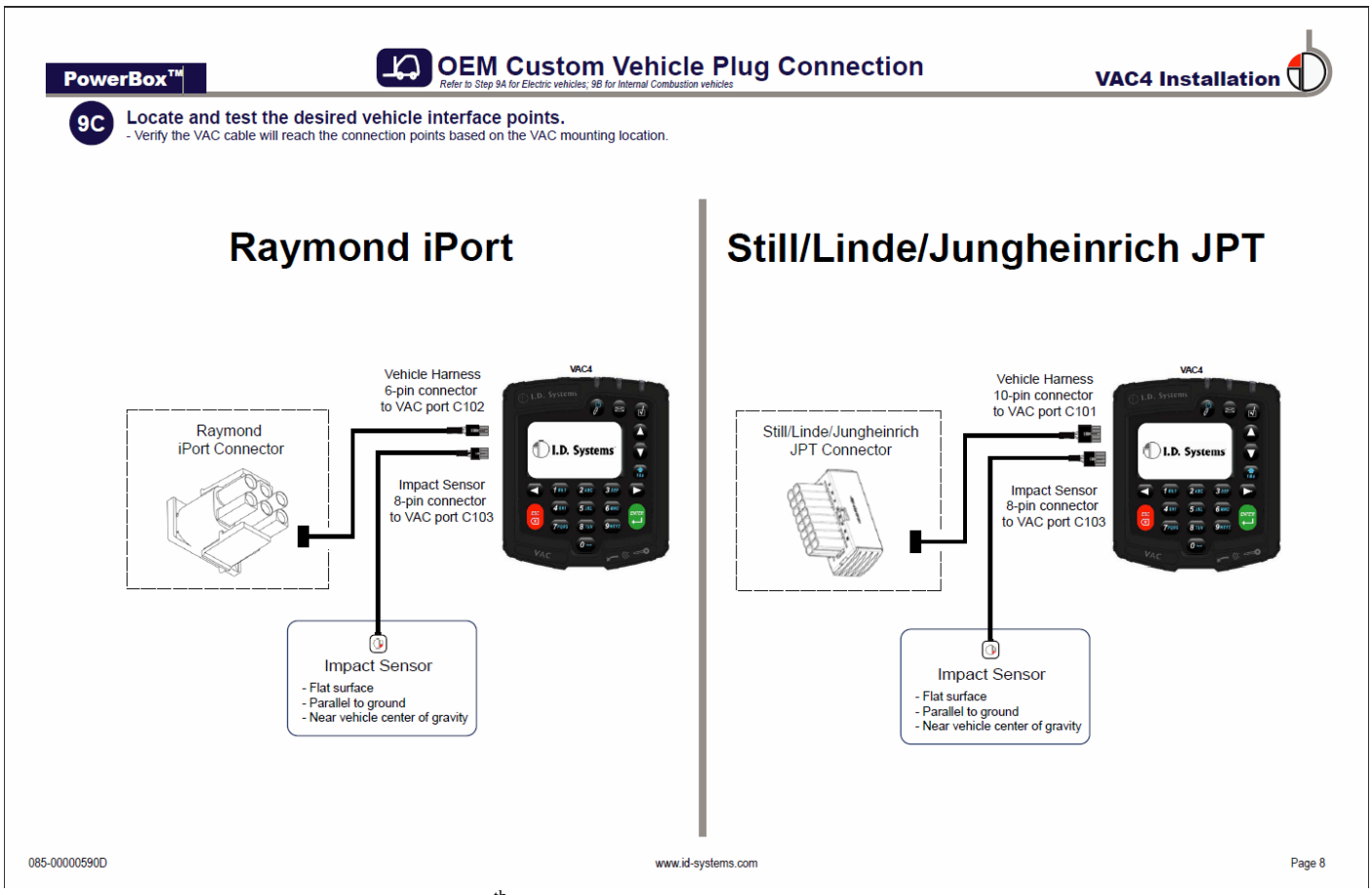

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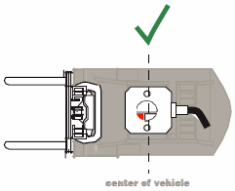
PowerBox™

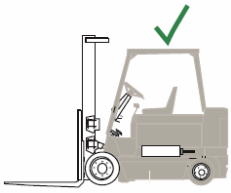
VAC4 Installation

10 Mount the impact sensor on a stable section of the vehicle's frame.

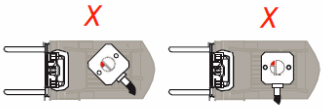
Verify the impact sensor cable will reach the mounted VAC location.

Select a location that is not prone to vibration or routine shock and is as close to the center of the vehicle as possible (see below).

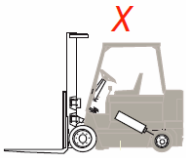




- Impact sensor should be mounted near the vehicle's center of gravity, as shown above.
- Impact sensor cable should protrude toward the back or front of the vehicle, not to the sides or at an angle.



- Impact sensor should be mounted parallel with the ground.
- Impact sensor should be secured to the vehicle frame.



Clean the vehicle surface prior to adhering the impact sensor's double-sided tape.

The supplied tape cannot be reused. If the sensor must be moved, new tape must be used.

Do not mount the impact sensor with screws.

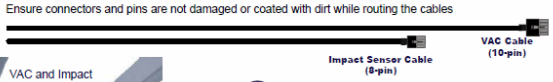
Do not leave excess cables resting on top of the impact sensor as this may produce false impacts.

11 Determine cable routing path.

- Avoid installing or coiling the cable adjacent to the high-current cables or high-noise sources (e.g. motors)
- Avoid routing through pinch points that may damage the cable jacket.
- Check that the vehicle connector, mid-cable junction and fuse holders all fit through any 'holes' the cable has to route through. Routing from the 'middle' outward is often the most efficient method.
- Avoid routing through areas containing, or often in contact with, chemicals and/or corrosive material.
- Avoid areas where the cable may become submerged in water.

12 Route VAC and Impact Sensor cables.

Ensure connectors and pins are not damaged or coated with dirt while routing the cables



12a Whenever possible, route cables via the vehicle's established cable paths and pass the cable's into the vehicle using existing access areas.

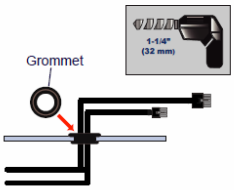
12b If existing cable channels are not available:

i.) Select a safe, unobstructed location where the cables can enter the vehicle and route to their respective connection points.

ii.) Use a 1-1/4" (32 mm) bit to drill a cable access hole at the location identified in the previous step.

iii.) Route the VAC and Impact Sensor cables through the cable access hole.

iv.) Fit the grommet snugly into the cable access hole.



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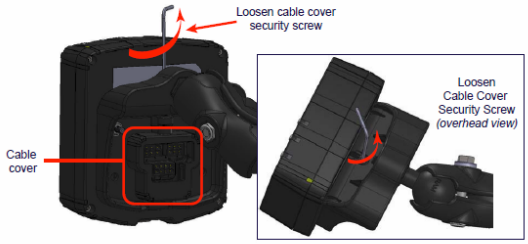
VAC4 Installation

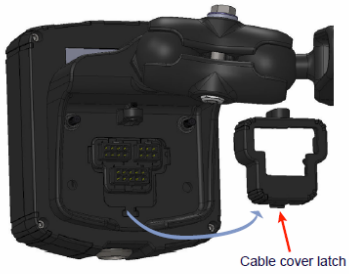
13 Remove the cable cover.

13a Using 2.5 mm Hex Key (Allen key), loosen the security screw at the top of the cable cover until the top of the cable cover can be removed.

Do not completely remove the security screw.



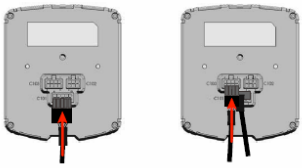
13b Press in the latch at the bottom of the cable cover and remove the cable cover.



14 Slide the VAC and Impact Sensor cables through the cable cover.

15 Connect the VAC and Impact Sensor cable connectors to their respective ports.

Verify that the connector latches are engaged to ensure that the cables are secured to the VAC.



16 Snap in the cable cover and tighten the security screw with a 2.5 mm Hex key (Allen key).

Do not overtighten the security screw.

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Guide 10th page (17" wide x 11" high) – Do not scale
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17 **Mount the external relay required for vehicle Access Control.**

External Relay Mounting Considerations

Mount the relay to a solid surface of the truck.

The mounting location should be dry, away from extreme heat, and as close as possible to the circuit that is being interrupted to avoid excess wire routing.

To avoid short-circuits, make sure no relay contacts remain exposed. Protection caps must remain installed on unused pins.

Never mount the relay near extreme magnetic or high current areas.

The relay is mounted to the vehicle using the supplied hardware, typically via screw mount. If tape-mounting is desired, use a wide-temperature-range VHB tape, and the vehicle surface must be cleaned.

⚠ It is critical that the appropriate relay is chosen for the connections based on current measurement. ⚠

High Curent Relay Contact Current Range

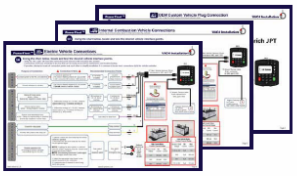
Access Circuit Voltage	Min Current	Max Current
12V	500 mA	30 A
24V	500 mA	20 A
36V	500 mA	12 A

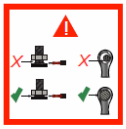
Low Current Relay Contact Current Range

Access Circuit Voltage	Min Current	Max Current
12V or 24V	5 µA	1 A
36V	5 µA	800 mA
48V	5 µA	625 mA
72V or 80V	5 µA	375 mA

NOTE: If neither of the two relays provided meets the current/voltage requirements of the installation, contact I.D. Systems Technical Support at 201-690-7011.

18 **Wire the cable to the connection points determined in Step 9.**





19 **Reassemble the vehicle so it can accommodate a test drive.**

20 **Log into the VAC as a Maintenance operator and select "Install" to run the configuration wizard.**

iButton VAC - Use the yellow Maintenance operator iButton

Contactless reader VAC - Enter the Maintenance operator ID and password using the VAC keypad

Maintenance ID: 7262468
Maintenance password: 2378

Master ID: 7278737
Master password: 5915

If needed, refer to the *PowerFleet Hardware User's Guide* for details on running the configuration wizard and routine troubleshooting.

21 **Verify the configuration wizard completes successfully. If configuration fails, address any issues identified by the VAC and re-run the configuration wizard.**

22 **Secure all cables, wires, etc. and then completely reassemble the vehicle.**

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