Bail Out™

Remote Door Opening System for Canine Vehicles

Installation & Operation Manual

Congratulations! You have purchased the most advanced door opening system available today. With over 25 years of field use, the **Bail Out™** system has earned the respect and loyalty of K-9 Officers nationwide. ***Criminalistics, Inc.*** is proud to be your choice in canine systems and we are committed to providing the best in reliability, quality, and support.

K-9 Officers & Installers please take time and read the instructions carefully. Know your system and what it is capable of doing! Keep the instruction with the car!

I. Overview/Operational Summary

Your **Bail Out™** will immediately unlock, unlatch and push open your vehicle door with the press of a single button from up to 1,000 feet away. The reliable door unlatch solenoid is rated for 15 pounds. Most door locks require only a 5-pound pull. Your **Bail Out™** door opening system is supplied with 40-pounds of pneumatic pushing power. Agreeably, this unit has more than enough strength to operate the door of most vehicles. Your **Bail Out™** is individually coded for a specific vehicle to ensure that only the door with the matching code will open. A necessary advantage when multiple systems are used within an agency. The old "Park/Neutral" has been replaced with new sensor that disengages the door opening solenoid when the vehicle is moving.

II. List of Contents

- **Bail Out™** Control Unit
- Hand-held Remote
- Power Wire 12 Ga. Red(w/in-line fuse)
- Ground Wire (Black) 14 Ga.
- VSS Wire (Green) 16 Ga.
- Door wires (Red/Black 2-joined wires)
- Unlatch Solenoid w/wire, clip, barrel nut, pull cable
- Mounting Screws for Control Unit
- Pneumatic Spring Do not open now!
- Antenna Kit
- 2 fuses 40 Amp (Required size 40 amp blade)

III. Installation

Please follow all instructions carefully. Use a qualified technician for installation. The quality of the installation may determine how your system works. Your **Bail Out™** is warranted against defective components and faulty workmanship for 1 year. Do not hesitate to call if you have any questions. We have engineers on staff to assist you.

1) Door Unlatch Solenoid

Select the door you desire to open. Think about traffic, will your K-9 be exiting into traffic? Consider mounting your **Bail Out™** control unit and unlatch solenoid preferably on the same side of vehicle so that wiring from the control unit will easily be routed to the solenoids inside the door. The door panel and any other obstacles that block your access to the door unlatch mechanism must be removed.

NOTE: The solenoid power is supplied by the vehicle battery and must be maintained by leaving the vehicle engine running during testing of door opening operations or the system may malfunction. The solenoid can pull up to **28 Amps** during operation.

2) Lubricate and familiarize

While using the outside door handle to open the vehicle door look inside at the rod being pushed down by the outside door handle action. Observe the action of the lever/rod that is connected to the outside door handle unlatch. Working from the inside of the door, use your fingers to manually unlatch the door several times using this same lever/rod.

Attached to the outside door handle is a 3/16" rod. Near the end of this rod is a factory clamp. Place the clip lock hook located at the end of the solenoid pull cable over the end of the 3/16" rod directly at the connection point at the latch mechanism. **DO NOT** mistakenly attach this solenoid to the inner door handle rod for it will not operate properly.

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Some doors may require you to use an inspection mirror to see this rod and a pair of long needle nose pliers to apply the clip. Use plenty of spray type lubricant (WD-40 etc.) to insure trouble free operation.

NOTE: A door latch lever typically travels a total of 5/8" beginning with 1/4" free movement and then as it moves to 3/8" it unlatches completely. The lever requires a minimum of 4 pounds pull and a travel of 3/8" to unlatch, which fits well within the solenoid travel of 1" and its pulling power of 15 pounds.

CAUTION: IF YOU HAVE A CHEVROLET CAPRICE CLASSIC OR OTHER GM VEHICLE:
DO NOT make the solenoid cable taut. If too much tension is in the line ***the lock will jam and not release even after removing the solenoid cable.*** You must test the latch setup several times by locking and unlocking the door. Then pull the outer door handle to check for proper functioning.

NOTE: The final adjustment should only be made after several test openings then be sure to tighten the brass cable lock nut.

3) Mounting Solenoid

Let the solenoid hang free from the door latch and use it as a positioning guide for mounting. Some installers have found good positions on the inside door frame with the bottom of the solenoid facing out and the pulling end pointing to the door latch. Also, some door curvatures will not permit mounting the solenoid directly under the latch. However, it will work positioned off to one side as long as the pulling end points to the door latch.

The solenoid cable may be manually pulled while hanging. This will easily release the door latch, which may be manually reset to study the release action caused by pulling the solenoid cable. Keep in mind that a binding plunger from a sideways pull will not perform properly.

DO NOT put excessive tension on the solenoid cable. Just make sure it is not too slack. The cable length may be adjusted by releasing the brass cable lock device. The final pull adjustment should be made with the brass cable lock nut. Before drilling **raise and lower window to check for clearance**. Mount the solenoid beneath the latch using the two holes in the bracket.

4) Exterior Door Latch

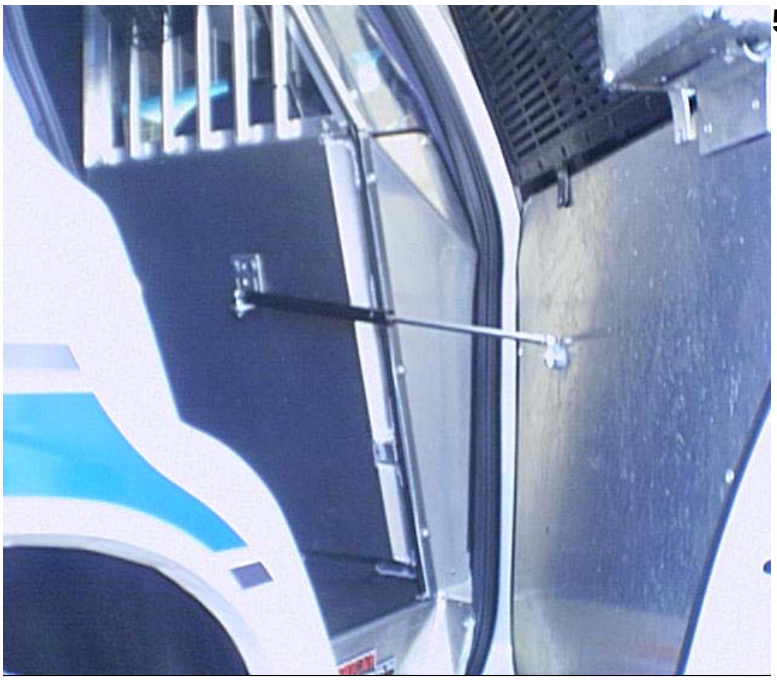
<u>If necesary</u> adjust the exterior door latch/striker plate/post on the door making sure it will open easily. Over-tightening of the latches will bind and hinder solenoid functions. In addition, make sure the door is not binding where your cage meets the door.

<u>Standard Ford Crown Victoria measurement from base of unlatch opening cut in door is 12 1/2" down. Measure from the base of the square cut in the door where the latch, latches to post.</u>

Caution	**Caution**	**Caution**

All doors should be thoroughly tested before putting the interior cover panel back on. **Do Not** put excessive tension on the solenoid cable when installing as it **will jam the unlock function which in turn will jam the door**. Some doors that are jammed may be released by removing parts of the K-9 cage from within the vehicle, if the interior cover panel was prematurely re-installed. Removing pieces of the cage will allow access to the cover panel screws for removal.

WARNING: The solenoid is designed for momentary use. Do not hold power to the solenoid for extended periods of time, or use in rapid succession. Use the solenoid one or two times allowing for cooling then reuse or test. Do not use more than 3 times without allowing for cooling. The solenoid becomes weaker as it heats up and will eventually burn up. Solenoids damaged in this manner are not covered under the warranty.



5) Pneumatic Spring

NOTE: DO NOT open the spring before planning your installation position.

Your **Bail Out™** is supplied with a 40-pound push pneumatic spring, two (2) mounting brackets and bolts. The positioning of the spring is important and warrants good planning and workmanship for the door to open correctly. The black cylinder attaches to the cage at a position slightly higher than the silver colored piston to accommodate the internal oil flow of the spring. This position can be reversed if need be.

With the door skin removed, get in and close the door you plan on opening. Position the closed spring on the your cage and study where to attach to door. Mount shown in photo on left is a Ford CV. Mount high if possible, keep out of K-9's exit way. If mounting on floor of cage put as close to vertical wall behind front panel as possible. This will provide a wider opening and keep the spring out of the K-9's way while exiting.

With the door still closed, look on the **DOOR FRAME** for an attachment point, usually mid way on the door. Only put two holes in the door frame to temporarily hold the spring while the inside back position is being determined. Bolt the spring bracket to the door frame, never to the aluminum cover. Do not drill the door's interior cover panel prematurely. The ball on the bracket is removable and allows for a small cut in the door panel.

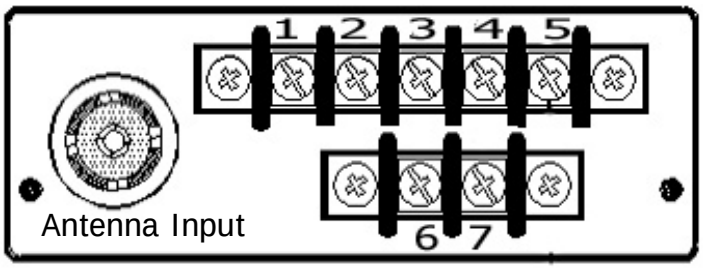
Once you are satisfied with the spring position and installation, remove ball, mark your position on the cover, and cut aluminum door panel. Mount the gas spring, remount the aluminum door panel, and reinstall the ball. Silicone the cut opening in the door panel. **PHOTOS OF GAS SPRING MOUNTING IN FORD CROWN VICTORIA ON PAGE 9.**

6) Bail Out™ Control Unit

Your **Bail Out™** control unit is housed in a black and silver case with on/off switch and LED power on indicator light located on the front of the case. Find a convenient place to mount your **Bail Out™** control unit. Most control units are mounted under the dash, on the cage screen between the driver and the canine area, or on top of the cage. When determining the mounting position of the control unit consider the following:

- Accessibility of your **Bail Out™** On/Off switch to the driver.
- An area of the vehicle that is dry at all times.
- Keep your **Bail Out™** control unit away from any heat source, i.e. heater vents.
- Keep your **Bail Out**™ control unit away from direct sunlight.
- **DO NOT** install your **Bail Out™** control unit under vehicle hood.
- **DO NOT** install your **Bail Out™** control unit next to radio equipment. Do not mount **Bail Out**™ antenna next to another antenna, leave at least 14 inches between antennas! Do not run antenna coax with other antenna coax, do not join them.
- Choose placement of your **Bail Out™** control unit near the selected door for ease of installation wiring.

Bail Out™ Control Unit RearView



The following is a description of terminals on rear of unit:

Terminal #1 Ground for **Bail Out™** system, wire directly to vehicle battery ground post.

Terminal #2 Electric door lock input. (Flow through)

Terminal #3 Electric door lock output. Momentary output will supply 12 Vdc to activate electric door lock actuator. 1/2 second pulse of 12 volts.

Terminal #4 Solenoid output. (To unlatch door) 12 gauge wire required!

Terminal #5 12 Vdc input. Connect to battery via in-line fuse wire supplied. 12 Gauge wire required!

Terminal #6 VSS - Vehicle Speed Sensor See chart enclosed with this booklet.

Terminal #7 Blank - Not used at this time.

CAUTION: DO NOT tamper with the screws holding the terminal strip on the back of the unit. Do NOT insert foreign screws into the control box, you may pierce the circuit board! This will void the warranty.

IV. Wiring

DO NOT MAKE CONNECTION TO THE VEHICLE BATTERY UNTIL INSTALLATION IS COMPLETE.

Before completing the connection to the battery and inserting the fuse make sure your control unit is **OFF** by moving the toggle switch to the "down" position. Failure to do so may jolt the control unit and cause the system to operate upon power up.

1) Unlatch Solenoid

Attach the positive wire from the unlatch solenoid to Terminal #4 of your **Bail Out™** control unit. This will supply a positive 12 Volts DC output to activate the solenoid that will unlatch the door. Connect the negative lead of the unlatch solenoid to a true metal source to a chassis ground **inside the vehicle**. Remove paint from the surface around these connections. Newer vehicles do not supply a good ground source in the door, route solenoid ground wire into vehicle for a true chassis ground. Solenoids with a poor ground will not open every time, you will have intermittent operation! Do not ground in door!

NOTE: The vehicle engine must be running during testing of door opening operations or your **Bail Out™** system may malfunction. Remember the solenoid can pull up to 28 amps, operate a few times, 3 and allow for cooling of the solenoid! Solenoid damaged due to repeated excessive activation are not covered under warranty.

2) Electric Door Locks

Use a Voltmeter at the electric door lock actuator inside the door to locate the wire that has a positive 12 volts when unlocking the door. The wire on the electric lock actuator reverses polarity depending on the function. Check carefully that you select the wire that has a positive voltage during the unlock function. Cut this wire between the unlock switch and the electric door lock actuator.Using the Red/Black two-conductor wire provided, connect the Red wire to the wire that is attached to the door unlock actuator. Route the opposite end towards Terminal #3 of your **Bail Out™** control unit. Connect the Black wire to the switch side of the wire. This Black wire is flow through allowing the existing door lock system in the vehicle to continue operating normally. Route the opposite end towards Terminal #2 of your **Bail Out™** control unit. Do NOT make this connection before the switch, it will not work! Find Unlock/Lock actuator and make connect close to it.

TIP: Do not split the Red/Black two-conductor wire but rather route them together.

3) Bail Out™ Control Unit

#1 Terminal #1 - Ground for Control Unit
The 16-gauge Black ground-wire provided attaches to **Bail Out™** Terminal #1. Attach the other end directly to the vehicle battery ground post.

#2 Terminal #2 - Input from Door Lock Switch as instructed above.
(See Step 2 - Electric Door Locks)

#3 Terminal #3 - Positive output to electric door lock solenoid as instructed above.
(See Step 2 - Electric Door Locks)

#4 Terminal #4 - Positive output to solenoid in door to unlatch door as instructed above.
(See Step 1 - Unlatch Solenoid)

#5 Terminal #5 - 12 Volt power supply for **Bail Out™** system.
The ring-connector end of the provided Red 12-gauge Power Wire (with an in-line fuse) goes directly to the vehicle's positive battery terminal. Route the end with u-spade connector to your **BailOut™** Terminal #5. **DO NOT connect at this time.**

#6 Terminal #6 - VSS Vehicle Speed Sensor. The provided Green 16-gauge VSS wire must be connected to Vehicle Speed Sensor output. See following chart for wire color and location. The spade terminal end goes directly to Terminal #6.

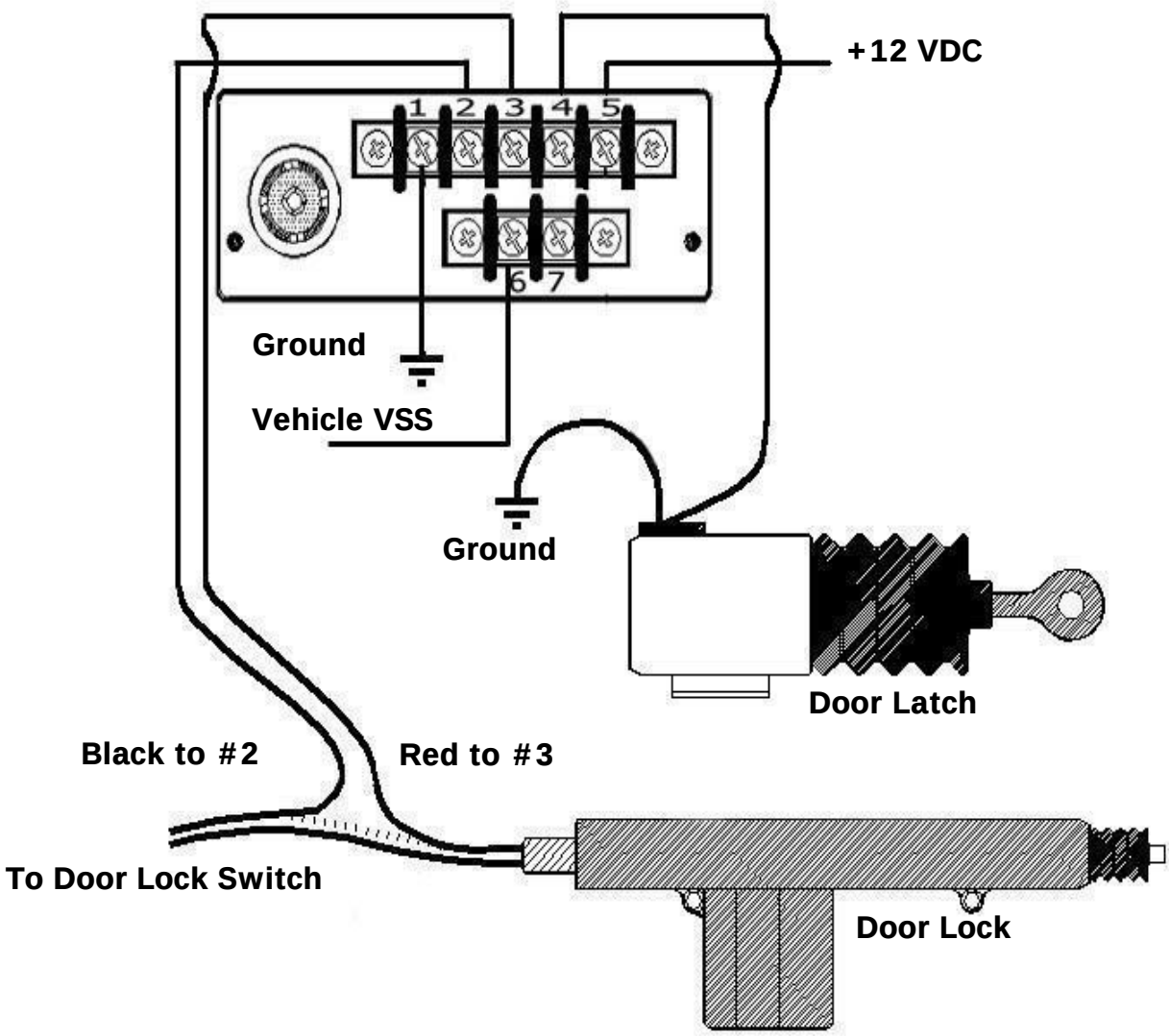
Special Note: For those vehicles that required VSS Adapters, this adapter is no longer required with newly manufactured unit or units serviced by us on or after 6/6/03.

#7 Terminal #7 - Blank - Not used.

4) Vehicle Speed Sensor Hook-up

The **Bail Out**™ System is designed to sense the AC signal transmitted from the Vehicle Speed Sensor on the transmission. When the vehicle is in motion (output from VSS) the solenoid will be disabled and the door cannot be opened. We have enclosed a chart listing the location of the VSS wire for most vehicles.
For other vehicles consult service manuals for color codes or inquire of our engineers. Not all new model wire colors are available, we will do our best to assist. The VSS is also located on the transmission, feeding information to the PCM.

5) Bail Out™ Control Unit Hook-up Diagram



During testing and extensive demonstrations please make sure that your vehicle is running and the battery is in good shape with proper charge. During installation check the battery voltage! Your system will not work with a low battery level. Poor grounding may cause failure! Follow directions!

Notice: Vehicle Manufactures will not supply us with complete data on the various switching systems for unlock. Certain vehicles will require special ground (control) applying relay to supply ground as our system supplies 12 volts. Unlock: Chevrolet and Dodge owners/installers pay special attention to circuits.

V. Antenna Installation

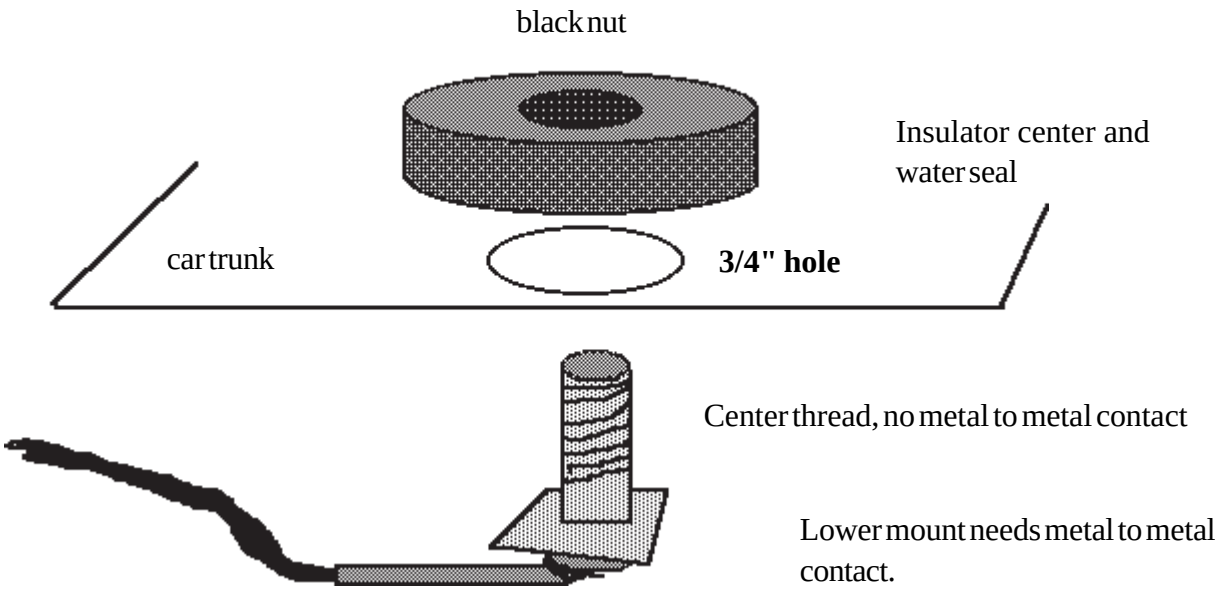
A popular place to mount the antenna is on the trunk. Decide on a mounting location that is not between or next to other antennas, **a minimum of 14 inches away from any other antenna,** as this will limit your range. Use the following instructions:

1) Drill a **3/4"** hole in body of vehicle at desired location.
Remove padding or other thick material from inside at least 1/4" from hole edge.

2) Remove any burrs, particularly on the underside of the hole.
Remove paint in a narrow ring around the hole on the underside.
Metal to metal contact between the vehicle and the lower square-cornered mount is essential for best performance.

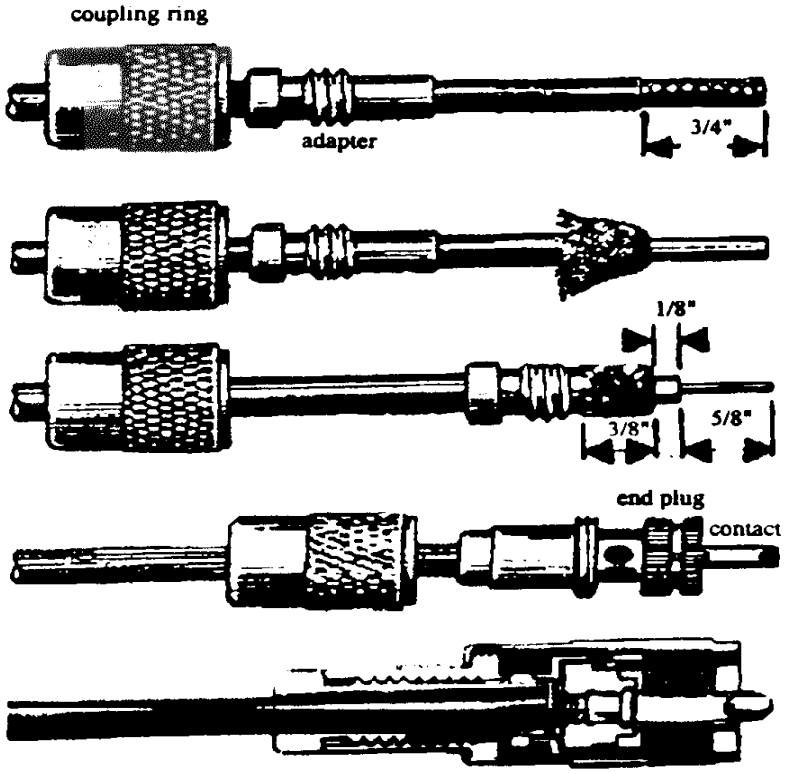
3) Remove round black insulator nut from the lead.
Route the bare end of cable to the control center and slip the mounting through the hole from the underside. Now screw on the black nut and tighten down while centering in place.
You can use the included Allen wrench to help tighten.

4) Make sure that there is **NO metal to metal** contact between the center-threaded bolt sticking up and the car. This will limit the radio range. All systems are range tested before shipment.



NOT FOLLOWING THESE STEPS WILL EFFECT YOUR RANGE!!!
PLEASE FOLLOW INSTRUCTIONS!!!

VI. Antenna Connector Instructions



1) Cut the end of the cable even. Slide coupling ring and the adapter over cable as shown. Expose the wire braid 3/4".

2) Fan braid slightly and back as shown, exposing white cable.

3) Position the adapter flush with cable bracket. Press braid down over the body of the adapter and trim to 3/8". Bare conductor to 5/8". Use solder to tin the exposed center conductor.

4) Screw end plug onto adapter. Solder the braid to shell through the solder holes. Use enough heat to create bond of braid to shell. Solder conduc tor to contact.

5) For final assembly, screw coupling ring onto end plug.

VII. Final Notes

After everything is done, make sure you do the final connection to the battery to power up your **Bail Out™** System. Follow the directions enclosed with your antenna carefully. This antenna is designed and cut specifically for your **Bail Out™** System. Good range can depend on the antenna installation. Be sure the grounding sheath is in no way connected to the signal wire, either at the plug or at the antenna. A continuity tester will verify this.

PLEASE NOTE: Failure to follow installation guide, drilling into or opening the control unit, removal of any screws, improper mounting of the solenoid, and abusive use of the **Bail Out™** system voids the warranty. It is not necessary to hold down the button on the remote; a single firm press and release will do the job. To do otherwise would be damaging to the unlatch solenoid.

VIII. Limited Warranty

Criminalistics, Inc. warrants your **Bail Out™** system to be free from defects in materials and workmanship for a period of one year from date of sale to the original purchaser. ***Criminalistics, Inc.*** will repair this product free of charge, when product is returned at customer expense to ***Criminalistics, Inc.,*** and if in the judgment of our staff, said product has proven to be defective within the warranty period. This warranty does not cover any expenses incurred in the removal and reinstallation of this product.

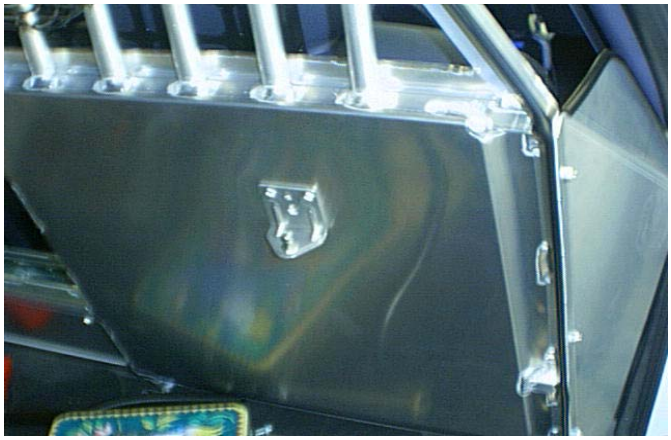
This warranty does not apply to any product damaged by improper installation, accident, misuse, abuse, improper line voltage, fire, flood, lightning or other acts of God, or if the product was altered or repaired by anyone other than ***Criminalistics, Inc.***

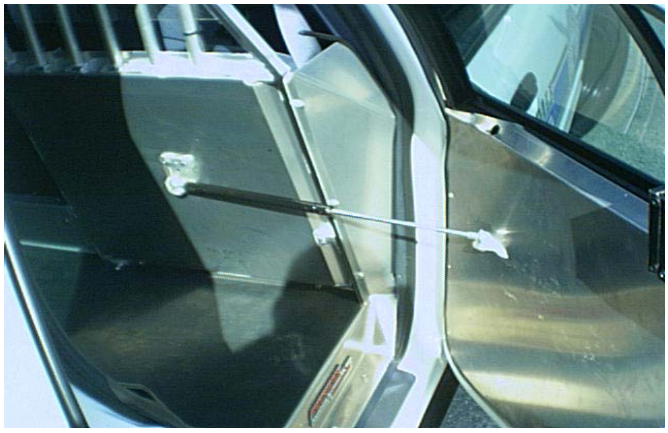
PLEASE NOTE: failure to follow installation guide, drilling into or opening control unit, removal of any screws, improper mounting of the solenoid and abusive use of the **Bail Out™** system voids the warranty. It is not necessary to hold down the button on the remote; a single firm press and release will do the job. To do otherwise would be damaging to the unlatch solenoid.

Criminalistics, Inc. shall have no liability for any death, personal and/or bodily injury and/or damage to property or other loss whether direct, indirect, incidental, consequential or otherwise, based on a claim that the product malfunctioned. However, if we are held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, our maximum liability shall not in any case exceed the purchase price of the product.

IMPORTANT

KEEP YOUR INVOICE WITH THIS WARRANTY STATEMENT!!!





Gas Spring installation photos from a Ford Crown Vic. Door is opened wide with plenty of room for K-9 to exit. Mount directly to door frame with supplied bolts, nuts & washers. Mounting ball is removable so the door cover can be cut professionally.

Gas Spring is mounted high to keep it out of the K-9 way during exiting. Gas Spring may also be mount low, but keep it close to the wall of the cage, out of K-9's foot area! High mount is better and safer.