

# Security & Convenience Expansions

6/96 CHANGE:  
For DEI® O5F Chip

Here we have listed only some of the many expansion options available. Please consult your dealer for a complete explanation of all the options available to you.

**Field Disturbance Sensor:** An invisible dome of coverage is established by the 508T "radar" sensor. Your system can react to any intrusions into this field with the triggered sequence.

**Backup Battery:** The 520T keeps the system armed, triggers the alarm and keeps the starter kill active if main battery power is disconnected.

**Electronic Hood Lock:** This prevents the vehicle's hood from being opened whenever the system is in alarm mode, keeping thieves away from the system's siren, the battery connections, or other components under the hood.

**Audio Sensor:** Metal on glass, glass cracking, or breaking glass produce distinctive acoustic signatures. The 506T and audio sensor uses a microphone to pick up sounds, and then analyze them with proprietary acoustic software to determine if the glass has been struck.

**Power Trunk Release:** The channel 2 output of the system can operate a factory power release for the vehicle's trunk or hatch. (An optional relay may be required.) If the factory release is not power activated, the DEI's 522T trunk release solenoid can often be added.

**Power Locks:** This system offers lock outputs that can control some manufacturers' power door lock systems. For other systems, additional parts may be required.

**Valet® Start System:** For the ultimate in convenience, the Valet® start system can start your vehicle, monitor engine functions, and power your climate control system with a push of a button! Over-rev protection, open-hood lockout, brake pedal shutoff, and automatic timer shutoff are all included. (Only for automatic transmission, fuel-injected gasoline vehicles).

**Power Window Control:** Automatic power window control is provided with the 529T or 530T systems. These can operate power windows, and can roll them up automatically when the system is armed, down when you transmit channel 2 or 3, or both up and down. The 530T also provides one touch switch operation.

## Model 500 Owner's Guide

- *Code Hopping™*
- *High Frequency*

This device complies with part 15 of FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

# Glossary of Terms

**CONGRATULATIONS** on your purchase of a state-of-the-art vehicle security system. This system has been designed to provide years of trouble-free operation. Due to the complexity of this system, it must be installed by an authorized dealer only. Installation of this product by any other person other than an authorized dealer voids the warranty. All dealers are provided with a preprinted dealer certificate to verify that they are authorized.

**THE SYSTEM REQUIRES NO SPECIFIC MAINTENANCE.** Your remote control is powered by a miniature 12V battery, type GP23A, that will last about a year under normal use. When the battery weakens, operating range will be reduced and the LED on the remote will light dim.

**YOUR WARRANTY** card must be returned and the bar code serial number must not be removed. If the warranty card is not returned you don't have a warranty. It is also necessary to keep your proof of purchase which reflects that the product was installed by an authorized dealer. **Make sure you receive the warranty card from your dealer.**

**THIS OWNER'S GUIDE** should help you to get the most out of your system. Please take the time to read it thoroughly, prior to using the system.

**Control Unit** The "brain" of your system. Usually hidden underneath the dash area of the vehicle. It houses the microprocessor which monitors your vehicle and controls all of the alarm's functions.

**FailSafe® Starter Kill** An automatic switch controlled by the security system which prevents the vehicle's starter from cranking whenever the system is armed. The vehicle is never prevented from cranking when the system is disarmed, in valet mode, or should the starter kill switch itself fail. Your system is ready for this feature, however installation of this feature may require additional labor.

**Input** A physical connection to the system. An input can be provided by a sensor, pinswitch or to existing systems in the vehicle, such as ignition or courtesy lights.

**LED** Red light mounted somewhere in the vehicle. It is used to indicate the status of your system. It is also used to report triggers and faults in the system or sensors.

**Shock Sensor** This system is packaged with a Stinger™ DoubleGuard® shock sensor. This sensor is mounted in the vehicle and designed to pick up impacts to the vehicle or glass.

**Siren** Noise generating device usually installed in the engine compartment of the vehicle. It is responsible for generating the "chirps" you hear, as well as the six tones you hear while the alarm is triggered.

**Transmitter** Hand-held, remote control which operates the various functions of your system.

**Trigger or triggered sequence** This is what happens when the alarm "goes off" or "trips." The triggered sequence of your system consists of 30 seconds of siren sounding and parking light flashing.

**Valet® Switch** A small push button switch mounted somewhere inside the vehicle. It is used to override the alarm when a transmitter is lost or damaged, or to put it into Valet® mode.

**Warn Away® response** Lighter impacts to the vehicle will generate the Warn Away® response. It consists of several seconds of siren chirps and parking light flashes.

**Zone** A zone is a separate input that the alarm can recognize as unique. Each input to the system is connected to a particular zone. Often two or more inputs may share the same zone.

change to a continuous blast.



From this point on, when the ignition key is turned off, the VRS® will immediately turn on the FailSafe® starter kill. This will prevent the vehicle from being restarted, thus immobilizing it at that spot.



Three minutes after the constant siren output begins, the flashing parking lights and the siren will stop. The starter kill will remain active until the VRS® system is disarmed. If the door is opened or the ignition is turned off and on in an attempt to restart the car, the siren and flashing lights will begin again.

## Disarming the VRS®

Take the time to familiarize yourself with the VRS® trigger sequence and the disarm procedure. It is important to recognize the VRS® and know how to disarm it in case of accidental activation.

Disarming the VRS® is always the same whether it is triggering or not.

Once again, if VRS® is armed, it does not disarm automatically. You must disarm it the next time you operate the vehicle. You must manually disarm it following this procedure:



With the ignition key in the "RUN" position, press the VRS® button **NOT** the arm/disarm button on the remote control). **Remember, neither the transmitter nor the Valet® button will disarm the VRS® feature. Only the hidden arm/disarm button can disarm VRS®.**

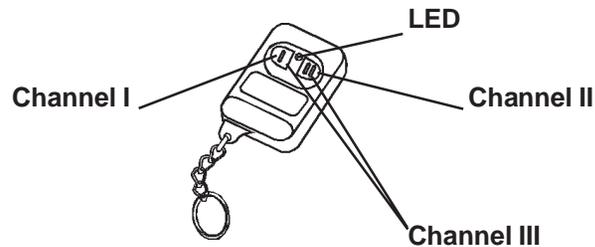
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## What is included

- The control module
- A pair of two-button transmitters
- A Stinger™ DoubleGuard® dual-output shock sensor
- The *Revenger™* Soft Chirp™ six-tone programmable siren
- The red Status LED indicator light
- A push-button Valet® switch
- Your warranty card
- FailSafe® starter kill (Ready feature, may require additional labor).

# Transmitter Channels



## Channel I

The arm/disarm and panic functions, are usually controlled by button I.

## Channel II

The Silent Mode™/trunk release function, is usually controlled by button II. Silent Mode™ and Remote Valet® work by pressing button II for less than one second. Trunk release requires you to press button II for 1.5 seconds.

## Channel III (for options)

Usually controlled by pressing buttons I and II at the same time.

These assignments can be changed if needed, such as for two-car operation from one remote.

# Using Your System

## Arming

You can turn on, or **arm**, the system by pressing button I of your transmitter for one second. When the system arms, you will hear a short siren sound, or **chirp**, and see the parking lights flash once. If the vehicle's power door locks are controlled by the system, the doors will lock.

While the system is armed, the Status LED will flash about twice a second, showing that the system is actively protecting your vehicle.

If you hear a second chirp after arming and see the Status LED flashes in groups, see *Diagnostics* section. This extra chirp is called **Bypass Notification**.

The system also can be programmed to arm itself automatically (called **passive arming**). If the system is programmed for passive arming, it will automatically arm 30 seconds after the ignition is turned off and the system

The optional Vehicle Recovery System is armed and disarmed using a hidden push button switch. If the system has been installed, **make sure you are aware of the location of the VRS® button**.



## Arming the VRS®

To arm the VRS®, push the button once. This can be done before driving or while driving the vehicle. Once the system is armed, it will go into its triggered sequence (see below) if any door is opened and closed. If you are forced from the vehicle the system will trigger as the door will be opened and closed as you leave the vehicle. This is how the system works to combat **intersection carjacking**. If ordered from the vehicle, you may press the VRS® button before exiting. Arming prior to that point, however, is highly recommended.

To protect against **parking lot carjacking**, simply press the VRS® button once before leaving the vehicle. The system will now trigger automatically the next time you or anyone drives the vehicle. This helps to protect the vehicle if someone takes your keys and alarm remote by force in a parking lot.

**NOTE:** If the VRS® is armed while operating the vehicle and not disarmed prior to leaving the vehicle, it remains armed and will trigger the next time the vehicle is driven.

## VRS® Trigger Sequence

 Fifteen seconds after the last door has closed, the system's Status LED will begin flashing. This delay is to allow you to put distance between yourself and your vehicle in the event of a carjacking.

**NOTE:** If the system is in Valet® Mode, the VRS® feature will still protect your vehicle. However, the Status LED will not provide this first-level indication if the VRS® triggers with the system in Valet® Mode.



Forty-five seconds later, the Soft Chirp™ Revenger™ siren will begin chirping and the parking lights will begin flashing. This time could be used to notify authorities that your vehicle has been hijacked, and tell them what the VRS® will do next.



Fifteen seconds after the siren chirps begin, the siren's output will

# Vehicle Recovery System (VRS®)\*

DEI® has engineered this vehicle security system, the FailSafe® starter kill, and the VRS® feature to provide the best combination of personal safety and property protection available. When properly installed, the system can never inadvertently stop your vehicle in traffic, on railroad tracks, etc., unlike any system that shuts down your engine while it is running. This system is designed to perform starter interrupt, or starter kill. The FailSafe® starter kill cannot shut down an already-running engine, it can only prevent an engine from starting in the first place.

**Any installation which allows this product to shut down a vehicle's engine as it is running is contrary to the product's design and intended usage, and DEI® hereby expressly disclaims any liability resulting therefrom.**

The optional Vehicle Recovery System feature is designed to ensure that any unauthorized user of your vehicle (even if using your keys and remote control) will not be able to permanently separate you from your vehicle.

The VRS® feature cannot *prevent* a carjacking attempt, however, it does ensure that if your vehicle is taken by an unauthorized user, it will be disabled (after several progressive warnings) as safely as possible. Should a carjacking occur, the VRS® allows you to concern yourself with your personal safety without worrying about your property.

\*The VRS® is an optional feature.

"sees" you leave the vehicle by opening and closing a door. Whenever the system is in its 30-second passive arming countdown, the Status LED will flash twice as fast as it does when the system is armed.

**NOTE:** If any protected entry point (such as a door or a switch-protected trunk or hood) is open, the system will not passively arm (unless forced passive arming is programmed on. See *Programming Options* section). Additionally, each time a sensor is triggered during the arming countdown, the 30-second countdown starts over.

## When armed, your vehicle is protected in the following ways:

- Light impacts will trigger the **Warn Away®** signal. When triggered, the siren will chirp and the parking lights will flash for a few seconds.
- Heavy impacts will trigger the system. The **trigger sequence** is 30 seconds of constant siren and flashing parking lights.
- If a door is opened, the system will immediately start chirping the siren and flashing the parking lights. Three seconds later, the siren output changes to a continuous blast. This **progressive** response gives you time to disarm the system with your transmitter if you inadvertently open the door while the system is armed, while still providing instant response (even if the door is immediately closed).
- Turning on the ignition key will trip the same two-stage response as opening a door.
- The optional **starter kill** prevents the vehicle's starter from cranking.

## Arming While Driving

Your system can be armed while driving the vehicle! Simply press button I on your transmitter for 1.5 seconds while the vehicle is running, or the ignition is on. The system will chirp once and then once more to indicate that the ignition is on. The system will not respond to any input except the door triggers and the starter kill relay (if installed) will not be activated. The system will disarm automatically when the ignition is turned off. The siren will chirp twice and the LED will stop flashing.

## Disarming

To turn off, or **disarm** the system, press button I again. You will hear two chirps, and the parking lights will flash twice. If power locks are controlled by the system, the doors will unlock. If the siren chirps either *four* or *five* times when disarming, see *Diagnostics* section. This is called **Tamper Alert**.

## High Security Disarm

Your system includes a High Security Disarm feature. During the trigger sequence, using the transmitter to disarm the system will only stop the trigger sequence (the siren will stop and the parking lights will stop flashing). However, the system will remain armed and the doors will stay locked. This is extremely useful if you must stop the system from sounding, but are unable to check the vehicle visually. The trigger will stop, but the vehicle will remain protected.

To disarm with the transmitter during a trigger, press button I on your transmitter. The siren will stop sounding. Next press button I once more and the system will chirp four or five times (reporting the trigger) and disarm.

## Disarming Without a Transmitter

This feature allows you to disarm the system without the transmitter should it be lost, damaged or disabled. In order to disarm without a transmitter, you must have the vehicle's ignition key and know where the valet button is. Be sure to check with the installer for the location of the Valet button.

Turn on the ignition.



Push the Valet switch *within 15 seconds*.



The system should now disarm. If it does not, you may have waited too long, so turn the ignition off and on and try again.

**IMPORTANT:** The Valet® switch will not disarm the optional VRS® feature. The hidden VRS® arm/disarm switch must be used (see VRS® section.).

## Silent Mode™

To temporarily turn off the arm or disarm chirps, use **Silent Mode™**. Simply press button II briefly before arming or disarming, and the confirmation chirp(s) will be eliminated for that one operation only. If you want the arm/disarm chirps turned off permanently, your dealer can do this for you.

**NOTE:** The Warn Away® response to lighter impacts is bypassed if the system is armed using Silent Mode™. This ensures that no chirps will be emitted by the siren in an area you want chirp free. The system is still fully able to trigger. Only the Warn Away® response is defeated.

the key is turned off. **Note:** If the door is open when the ignition is turned on, the doors will not lock.

- Panic mode **enabled**/disabled with the ignition on. (Some states have laws against siren capability in a moving vehicle).
- Automatic Engine Disable (AED) on or **off**. The purpose of the feature is to protect the vehicle from being stolen at all times, regardless of whether or not the alarm is armed. If AED is programmed on, the starter of the vehicle will be disabled 30 seconds after the ignition is turned off. Once the key is turned off, the LED will flash slowly (one-half its normal armed rate) to indicate the AED arming cycle. Thirty seconds later, the starter of the vehicle will be disabled. To start the car, it will be necessary to arm the car with the remote and then disarm it with the remote. It is also possible to disarm the AED feature by turning the ignition key to the "run" position and pressing the valet button once. AED is also disabled when in Valet® mode. **NOTE:** This feature will only function if the FailSafe starter kill relay has been installed.
- Forced passive arming **on** or off. If your system is programmed for passive arming and the forced passive arming feature has been programmed on, the system will passively arm after one hour, even if a protected entry has been left open. This feature is useful if a door has accidentally been left ajar when leaving the vehicle. Forced passive arming ensures that the system will be armed in every situation. **NOTE:** When the system passively arms after one hour, the entry point that has been left open, and anything connected to the same zone, is bypassed and cannot trigger the system. However, the remaining inputs to the system are fully operational.
- Siren tones and chirp volume. The output of the Revenger™ Soft Chirp™ siren consists of six different tones in sequence. Any of these tones can be eliminated by your dealer, resulting in a unique, easily identifiable siren sound. The siren chirps can be either full volume or **6 decibels quieter** than the full alarm blast.

# Code Hopping™

## EXPLAINED

The receiver and transmitters each use a mathematical formula called an algorithm to change their code each time the transmitter is used. This technology has been developed to increase the security of the unit. The control unit knows what the next codes should be. This helps to keep the transmitter "in synch" with the control unit even if you use the remote control out of range of the vehicle. However, if the transmitter has been pressed many times out of range of the vehicle, or the battery has been removed, it may get out of synch with the control unit and fail to operate the system. To re-synch the remote control simply press the arm/disarm button of the remote control several times within range of the vehicle. The alarm will automatically re-synch and respond to the transmitters normally.

## High Frequency

Your system transmits and receives at 434 MHz. This provides a cleaner spectrum with less interference and a more stable signal. Enjoy a phenomenal increase in range - even in areas with high radio interference.

## Programming Options

*Programming options control what your system does during normal operation, and require little or no additional parts. However, some may require additional installation labor.*

The following is a list of the programmable options, with the factory settings in **Bold**.

- **Active** arming (only with the transmitter) or passive arming (automatic arming 30 seconds after the last door has been closed).
- Arming/disarming confirmation siren chirps **on** or off.
- Passive door locking (with passive arming) or **active** door locking (only when arming with the transmitter) . This feature only works if passive arming has been selected for step one.
- The ignition-controlled door locking feature **on** or off. With this feature on, the doors will lock 3 seconds after the key is turned on, and unlock when

## Panic Mode

If you are threatened in or near your vehicle, you can attract attention by triggering the system with your transmitter! Just press button I for 1.5 seconds, and you will enter **Panic Mode**. The siren will sound and the parking lights will flash for 30 seconds. To stop Panic Mode at any time, press button I on the transmitter again.

## Valet® Mode

You can prevent your system from automatically arming and triggering by using Valet® Mode. This is very useful when washing the vehicle or having it serviced. In Valet® Mode, the system will not arm, even with the transmitter, but all convenience functions (door locks, trunk release, etc.) will work normally.

### To enter or exit Valet® Mode with the Valet® switch:

Turn ignition to "run" position, then turn to "off" position.



Press and release the Valet® switch within 10 seconds.



The Status LED will light steady if you have entered Valet® Mode, and it will go out if you exited Valet® Mode.

### Using Remote Valet® as you enter or exit the vehicle:

Open any door.

Press button I (or the arm/disarm button).



Press button II (or the channel 2 button).



Press button I again.



The Status LED will light steady if you have entered Valet® Mode, and it will go out if you exited Valet® Mode.

## Nuisance Prevention Circuitry™

Your system has DEI's Nuisance Prevention Circuitry™ (NPC™). It prevents annoying repetitive trigger sequences due to faulty door pin switches or environmental conditions such as thunder, jackhammers, airport noise, etc. Here's how it works:

Let's say the alarm triggers *three times*. Each time, the same sensor or switch is triggering the alarm. The three triggers are within 60 minutes of each other. NPC™ will interpret this pattern of triggers as false alarms. After the third trigger, NPC™ ignores, or bypasses, that sensor or switch (along with any other sensors or switches sharing the same zone).

If the bypassed sensor tries to trigger the system while it is being bypassed, the 60-minute bypass period will start over. This ensures that a sensor that continuously triggers will remain bypassed.

Doors are covered by NPC™ differently: If the alarm is triggered by an open door for three full cycles (one and one half minutes), the doors will be bypassed until the trigger ceases.

**NOTE:** Arming and disarming the system does not reset this function! The only ways to reset a bypassed zone are for it to not trigger for 60 minutes, or to turn on the ignition. If testing your system, it is important to remember that the NPC™ programming can cause zones to be bypassed and seem to stop working. If five chirps are heard when disarming, NPC™ has been engaged. If you wish to clear the NPC™ memory, turn the ignition on.

## Diagnosics

*The microprocessor at the heart of your system is constantly monitoring all of the switches and sensors connected to it. It detects any faulty switches and sensors and prevents them from disabling the entire system. The microprocessor will also record and report any triggers that occurred during your absence.*

### Arming Diagnosics

If the system is armed with an input active (door open, sensor triggering, etc.) the unit will chirp once when arming and then one more time a few seconds later. This is called **Bypass Notification**.

**Note:** Bypass notification will not occur when using Silent Mode™ or if chirps have been programmed OFF.

The system will ignore the input that was active when it was armed until it goes away. Three seconds later it will monitor that input normally. For example, if your car has interior light exit delay, and you arm the system before the interior light goes out, you may get Bypass Notification. Three seconds after the light goes out, however, the doors are monitored normally.

### Disarming Diagnosics

Extra disarm chirps are the **Tamper Alert**. If *four* chirps are heard when disarming, the system was triggered in your absence. If *five* chirps are heard, a zone was triggered so many times that Nuisance Prevention Circuitry™ has bypassed that zone. In either case, the Status LED will indicate which zone was involved (see *Table of Zones* section). The system will retain this information in its memory, and chirp four or five times each time it is disarmed, until the next time the ignition key is turned on.

## Table of Zones

*The **zone number** is the number of LED flashes used by the system to identify that input. The standard input assignments are listed below, along with spaces to write in any optional sensors or switches you have had installed.*

ZONE (# of LED FLASHES)	DESCRIPTION	DEALER INSTALLED OPTIONS
1	Instant trigger	
2	A heavier impact trigger of the shock sensor	
3	Door switch circuit	
4	Instant trigger of optional sensors	
5	Ignition	

If the Warn Away® response is triggered, the LED will not report it.