

Model 369D

➤ *Owner's/Installation Guide*

limited lifetime consumer warranty

For a period of one calendar year from the date of purchase of this auto-security device, Directed Electronics, Inc. promises to the ORIGINAL PURCHASER to repair or replace (with a comparable reconditioned model), free of cost, any electronic control module which proves to be defective in workmanship or material under normal use, SO LONG AS THE SYSTEM WAS SOLD, INSTALLED, AND SERVICED BY A PROFESSIONAL AUTO INSTALLER, AND REMAINS IN THE CAR IN WHICH THE SYSTEM WAS ORIGINALLY INSTALLED. If warranty service is necessary you must have a clear copy of your sales receipt containing all of the information shown on the following page.

After the first calendar year, from the date of purchase of this auto-security device, Directed Electronics, Inc., promises to the ORIGINAL PURCHASER to repair or replace (with a comparable reconditioned model) any electronic control module which proves to be defective in workmanship or material under normal use FOR A CHARGE OF \$45.00, SO LONG AS THE SYSTEM WAS SOLD, INSTALLED, AND SERVICED BY A PROFESSIONAL AUTO INSTALLER, AND REMAINS IN THE CAR IN WHICH THE SYSTEM WAS ORIGINALLY INSTALLED. If warranty service is necessary you must have a clear copy of your sales receipt containing all of the information shown on the following page.

This warranty contains the entire agreement relating to warranty and supersedes all previous and contemporaneous representations or understandings, whether written or oral. IN ANY EVENT, Directed Electronics, Inc. IS NOT LIABLE FOR THE THEFT OF THE VEHICLE AND/OR ITS CONTENTS.

This warranty is void if the product has been damaged by accident, unreasonable use, neglect, improper service or other causes not arising out of defects in materials or construction. This warranty is nontransferable and does not apply to any unit that has been modified or used in a manner contrary to its intended purpose and does not cover batteries. The unit in question must be returned to the manufacturer, postage prepaid. This warranty does not cover labor costs for the removal, diagnosis, troubleshooting or reinstallation of the unit. For service on an out-of-warranty product a flat rate fee by model is charged. Contact your authorized dealer to obtain the service charge for your unit.

These systems are a deterrent against possible theft. Directed Electronics, Inc. is not offering a guarantee or insuring against the theft of the automobile or its contents and disclaims any liability for the theft of the vehicle and/or its contents. Directed Electronics does not authorize any person to create for it any other obligation or liability in connection with this security system.

TO THE MAXIMUM EXTENT ALLOWED BY LAW, ANY AND ALL WARRANTIES ARE EXCLUDED BY THE MANUFACTURER AND EACH ENTITY PARTICIPATING IN THE STREAM OF COMMERCE THEREWITH. THIS EXCLUSION INCLUDES BUT IS NOT LIMITED TO THE EXCLUSION OF ANY AND ALL WARRANTY OF MERCHANTABILITY AND/OR ANY AND ALL WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND/OR ANY AND ALL WARRANTY OF NON-INFRINGEMENT OF PATENTS, IN THE UNITED STATES OF AMERICA AND/OR ABROAD. NEITHER THE MANUFACTURER OR ANY ENTITIES CONNECTED THEREWITH SHALL BE RESPONSIBLE OR LIABLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO ANY CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, TOWING, REPAIR, REPLACEMENT, DAMAGES FOR LOSS OF TIME, LOSS OF EARNINGS, COMMERCIAL LOSS, LOSS OF ECONOMIC OPPORTUNITY AND THE LIKE. NOTWITHSTANDING THE ABOVE, MANUFACTURER DOES OFFER A LIMITED WARRANTY TO REPLACE OR REPAIR THE CONTROL MODULE AS DESCRIBED ABOVE. Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

IMPORTANT NOTE:

This product warranty is automatically void if its date code or serial number is defaced, missing, or altered. This warranty will not be valid unless you have completed the warranty card and mailed it to Directed Electronics, Inc. within 10 days after purchase to the address listed on the warranty registration card.

Make sure you have all of the following information from your dealer:

A clear copy of the sales receipt, showing the following:

- > Date of purchase
- > Your full name and address
- > Authorized dealer's company name and address
- > Type of remote start/keyless entry installed
- > Year, make, model and color of the automobile
- > Automobile license number
- > Vehicle identification number
- > All security options installed on automobile
- > Installation receipts

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what is included

- Control Module
- One 3-Button Transmitter
- 9-Pin Main H/1 Harness
- 5-Pin H/2 Secondary Harness
- 4-Pin External Relay
- HF+ External Receiver and Cable
- Shutdown Toggle Switch
- Dual-Relay Door Lock Module
- Plug-in Valet/Program Button

installation tools

- Digital Multi-Meter
- Drill
- $\frac{1}{32}$ and $\frac{5}{16}$ Drill Bits
- Screwdrivers
(Phillips and Flathead)
- Wire Stripper
- Solder Iron
- Electrical Tape
- Pliers
- Crimping Tool



note: The installation tools required will vary depending on your vehicle.

important information

Congratulations on the purchase of your remote start keyless entry system. This system will allow convenient access to your vehicle with the push of a button, as well as remote start and other optional features. Properly installed, this system will provide years of trouble-free operation.

Please take the time to carefully read this User's Guide in its entirety and watch the Rattler Do-It-Yourself Installation Video prior to installing your system.

You can print additional or replacement copies of this manual by accessing the Directed web site at www.diyrattler.com.

important! If you are not comfortable working with electronics or unfamiliar with the tools required, please contact your local dealer for advice or ask to have the remote start professionally installed to avoid costly damages. Failure to properly install the remote starter may result in property damage, personal injury, or both.

→ system maintenance

The system requires no specific maintenance. Your remote is powered by a miniature 3-volt lithium battery that will last approximately one year under normal use. When the battery begins to weaken, operating range will be reduced and the LED on the remote will dim.

→ your warranty

Your warranty registration must be completely filled out and returned within 10 days of purchase. Your product warranty will not be validated if your warranty registration is not returned. Please note that it is necessary to keep your proof of purchase.

→ fcc/id notice

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

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

warning! safety first

The following safety warnings must be observed at all times:

- When properly installed, this system can start the vehicle via a command signal from the remote control transmitter. Therefore, never operate the system in an area that does not have adequate ventilation. The following precautions are the sole responsibility of the user; however, the following recommendations should be made to all users of this system:

1. Never operate the system in an enclosed or partially enclosed area without ventilation (such as a garage).
 2. When parking in an enclosed or partially enclosed area or when having the vehicle serviced, the remote start system must be disabled using the toggle switch.
 3. It is the user's sole responsibility to properly handle and keep out of reach from children all remote control transmitters to assure that the system does not unintentionally remote start the vehicle.
 4. THE USER MUST INSTALL A CARBON MONOXIDE DETECTOR IN OR ABOUT THE LIVING AREA ADJACENT TO THE VEHICLE. ALL DOORS LEADING FROM ADJACENT LIVING AREAS TO THE ENCLOSED OR PARTIALLY ENCLOSED VEHICLE STORAGE AREA MUST AT ALL TIMES REMAIN CLOSED.
- Use of this product in a manner contrary to its intended mode of operation may result in property damage, personal injury, or death. Except when performing the Safety Check outlined in this user's guide, (1) Never remotely start the vehicle with the vehicle in gear, and (2) Never remotely start the vehicle with the keys in the ignition. The user will be responsible for having the neutral safety feature of the vehicle periodically checked, wherein the vehicle must not remotely start while the car is in gear. This testing should be performed by an authorized Directed dealer in accordance with the Safety Check outlined in this product installation guide. If

the vehicle starts in gear, cease remote start operation immediately and consult with the Dealer to fix the problem immediately.

- After the remote start module has been installed, test the remote start module in accordance with the Safety Check outlined in this installation guide. If the vehicle starts when performing the Neutral Safety Shutdown Circuit test, the remote start unit has not been properly installed. The remote start module must be removed or properly reinstalled so that the vehicle does not start in gear. OPERATION OF THE REMOTE START MODULE IF THE VEHICLE STARTS IN GEAR IS CONTRARY TO ITS INTENDED MODE OF OPERATION. OPERATING THE REMOTE START SYSTEM UNDER THESE CONDITIONS MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY. IMMEDIATELY CEASE THE USE OF THE UNIT AND REPAIR OR DISCONNECT THE INSTALLED REMOTE START MODULE. DIRECTED WILL NOT BE HELD RESPONSIBLE OR PAY FOR INSTALLATION OR REINSTALLATION COSTS.

primary harness (H/1), 9-pin connector

H1/1	LT. GREEN/BLACK	Factory Alarm Disarm
H1/2	GREEN/WHITE	Factory Alarm Rearm
H1/3	YELLOW	Ignition Output (to alarm)
H1/4	WHITE/BLUE	(-) Activation Input
H1/5	GRAY/BLACK	(-) Wait to Start Input
H1/6	WHITE/RED	(+) Activation Input
H1/7	RED/WHITE	Channel 2 (output)
H1/8	BLACK	Ground
H1/9	WHITE	(+/-) Light Flash

secondary harness (H/2), 6-pin connector

H2/1	BLACK/WHITE	(-) Neutral Safety Switch Input
H2/2	VIOLET/WHITE	Tachometer Input
H2/3	BROWN	(+) Brake Switch Shutdown Wire
H2/4	GRAY	(-) Hood Pinswitch Shutdown Wire
H2/5	BLUE/WHITE	(-) 200 mA 2nd Status/Rear Defogger Output

relay satellite ribbon harness (H/3), 4-pin connector

H3/1	BLUE	Status Output
H3/2	ORANGE	Accessory Relay Trigger
H3/3	PURPLE	Starter Relay Trigger
H3/4	PINK	Ignition Relay Trigger

relay satellite thick gauge wires

H4/1	PINK	(+) (30A) Output to Ignition Circuit
H4/2	PURPLE	(+) (30A) Output to Starter Circuit
H4/3	ORANGE	(+) (30A) Output to Accessory Circuit
H4/4	RED	(+) (30A) High Current 12V Input
H4/5	PINK/WHITE	(+) Programmable Output for Accessory or Ignition
H4/6	RED	(+) (30A) High Current 12V Input

installation

Be sure to read this section thoroughly and view the Rattler Do-It-Yourself Installation Video in its entirety before starting the installation. Pay special attention to all warnings to prevent personal injury or damage to your vehicle.

Visit our 24-hour technical Web site (www.diyrattler.com) to get a vehicle-specific wiring guide prior to starting this installation. If at any time during the installation you are unable to answer your questions on the Web site, call **1-800-873-1314** for live technical assistance.



warning! This system is intended for automatic, fuel-injected vehicles only. Installation in any other vehicle is contrary to its intended use.



warning! On vehicles with air bags or supplemental restraint systems (SRS) you may notice a bright yellow tube with small wires in it marked SRS underneath the steering column near the key cylinder. **DO NOT** tamper or unplug these for any reason to prevent costly damages to your vehicle or personal injury. Tampering may cause unintended deployment of airbags.



warning! **DO NOT** use any testing tool other than a digital multi-meter to prevent costly damages to your vehicle. Use of a test light may cause grounding of sensitive electrical components that can damage the on-board vehicle computer and processors resulting in substantial cost for replacement.



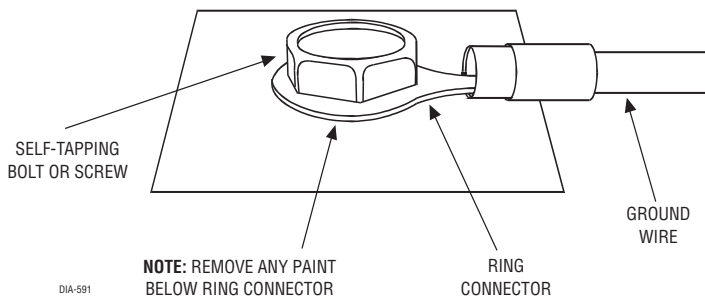
warning! Verify that the vehicle is set to park and that the parking brake is set before beginning installation.

→ **step 1**

Ground Wire

The BLACK wire on the main 8-pin harness is ground. This wire should be connected to a clean, paint-free area of metal in the drivers kick panel area. First strip back a $\frac{3}{4}$ -inch section of the insulation off the BLACK wire and crimp a ring terminal (not provided) to that wire. Locate a clean, paint-free metal surface in the drivers kick panel. Using a self-tapping screw, drill the screw with the ring terminal to the metal area. Once screwed down, pull on the wire to ensure a good connection.

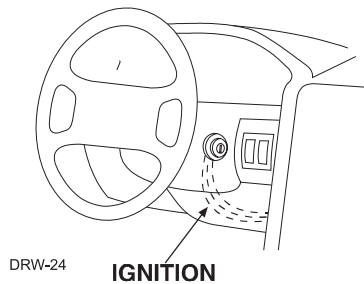
note: More problems are attributed to poor ground connections than any other cause. Take extra care to ensure the ground is clean and secure.



→ **step 2**

Constant Power and Ignition wires

Almost all power and ignition wires can be found behind the key cylinder under the lower drivers side dash panel. Using the appropriate hand tools, remove the lower dash panel using care not to break any parts. If the panel does not come off easily check for any additional screws you may have missed.

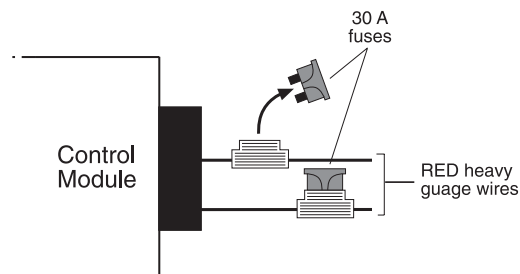


Once the lower dash panel has been removed, locate the ignition harness at the back of the key cylinder. This is usually a group of thicker wires. With the ignition harness exposed, use your digital multi-meter to find your power and ignition wires.

Place the black lead of the meter to a clean metal surface in the kick panel area and secure it. Put the meter in the DC voltage position, then take the red lead of the meter and probe one of the thicker gauge wires. The color and identity of your specific vehicle wiring can be obtained at www.diyrattler.com. With the key in the OFF position, test the suspect wire. The constant power wire will read between 11.00 volts and 13.00 volts regardless if the key is on or off.



warning! Before making any connection to constant battery power make sure that the two green 30 amp fuses are removed from the fuse holders on the two thick red wires. Failure to do so may cause fire or shorting of sensitive electrical components.



Once the constant power wire has been identified, solder the two thick RED wires from the control module to it and cover the connection with electrical tape to ensure a safe connection.

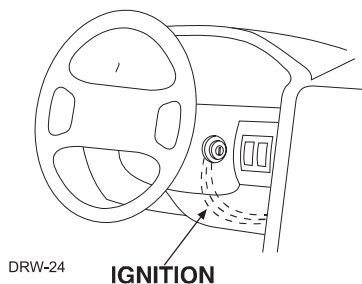
With the meter black lead still in the kick panel, locate the ignition wire harness in the same location. It will test differently than constant (+)12 volts. Locate the suspected wire using the www.diyrattler.com Web site and place the red lead of the meter on the suspected wire. With the key in the off position the meter will read 0.00 volts. Turn the key to the on position and the meter should read between 11.00 volts and 13.00 volts. Now watching the meter, turn the key to the crank position and the voltage should drop a small amount but not disappear. If the voltage disappears this is not an ignition wire but an accessory wire. If the wire meters correctly, solder the thick PINK wire of the relay satellite pack to it and cover the connection with electrical tape.

If the vehicle requires more than one ignition as per the Web site information follow the same test procedure and solder the thick PINK/WHITE wire to it and be sure to cover your connection with electrical tape. If your vehicle requires more than two ignitions, contact Rattler Technical Support.

→ **step 3**

Accessory and Starter wires

The starter and accessory wires will be located in the same harness as the ignition and constant power. Leaving the meter black lead connected to the metal ground, take the red lead and probe the wire suspected to be the accessory. With the key off, your meter should read 0.00 volts. Turn the key to the on position and the meter should read between 11.00 volts and 13.00 volts. Now turn the key to the crank position. If you have the correct wire the voltage will disappear while the starter is cranking and return once the key returns to the on position. If the wire tests correctly, solder the thick ORANGE wire off the relay satellite pack and secure it with electrical tape. If your vehicle requires more than one accessory contact Rattler Technical Support.



Now that the accessories have been located, find the wire suspected to be the starter wire according to the web information on your vehicle. Place the red lead of your meter on the wire. With the key in the off position the meter should read 0.00 volts and will stay at 0.00 volts in all key positions except the crank position. In the crank position your meter should read between 10.00 volts and 13.00 volts, and will drop back to 0.00 volts when the starter disengages.

note: Always check the Web site information on your vehicle for warnings regarding the starter wire and check engine lights. Some vehicles will trip a check engine light if the starter wire is cut.

Once you locate the starter wire, cut the wire in half and try to start the vehicle. If the vehicle does not start, the correct wire has been identified. Reconnect the starter wire while soldering the thick VIOLET wire off the relay satellite pack to it and cover the connection with electrical tape.

→ **step 4**

Safety Shutdown Wires

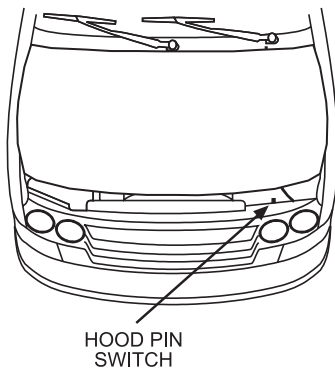
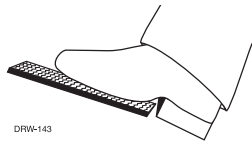
important! These wires are meant to protect the vehicle and anyone near the vehicle. They must be connected appropriately to prevent damage to the vehicle and possible bodily injury. Failure to properly install these wires may cause the vehicle to lunge if remote started while in gear.

With all ignition wires properly connected, find the appropriate safety shutdown wires. These include the brake wire, hood pin,

and neutral safety wires.

First locate the factory brake wire using your multi-meter. Find the switch at the top of the metal arm coming off the brake pedal. There are usually two wires connected to that switch. Locate the wire color according to the web information. With your black meter lead still in the kick panel, probe the suspected wire with the red lead of your meter. With the brake pedal at rest it should read 0.00 volts. While watching the meter, depress the brake pedal. The meter should read between 10.00 volts and 13.00 volts. Once you have located the correct brake wire, solder the small BROWN wire on the secondary harness to it and tape the connection with electrical tape.

important! Do not use the vehicle until you confirm the operation of the brake shutdown.



Installing the hood pin switch requires drilling a 1/4-inch hole in the metal lip under the hood. Choose a location that will allow the pin switch to be depressed when the hood is closed.

The pin switch has a connector on the bottom for the wire connection. Using a spade connector (included) strip back a 3/4-inch section of the insulation and crimp the connector on to the wire. Pull on the connector to ensure a good connection.

Place the connector onto the pin switch and run the wire into the vehicle through a factory rubber grommet. Using a sharp, pointed object poke a hole into the grommet and attach the wire to the object with electrical tape. Pull the wire through the grommet taking extra care to keep the wire away from any moving parts or anything that will generate extreme heat. Once the wire is run into the vehicle and secured from any moving parts, solder the wire to the GRAY wire on the secondary wire connector and cover the connection with electrical tape.

important! Do not use the vehicle until you confirm the operation of the hood pin shutdown.

The last safety shutdown wire is the neutral safety wire. This wire is extremely important as it prevents the vehicle from starting in gear which could cause serious bodily harm.

When determining the neutral safety wire it is important to test the vehicles starting circuit for factory neutral safety features. To do this, simply put the vehicle in gear and try to start the vehicle with the key. If the vehicle starts in gear there is no factory safeguards and the safety switch must be installed.



warning! The vehicle may lunge forward when started if there is no factory safeguards. Have the emergency brake engaged, and be prepared to quickly press on the brake and turn the engine off.

The after-market safety switch will have two wires coming off it. Take one of the wires (it does not matter which one) and strip back a $\frac{3}{4}$ -inch section of the insulation off the wire. Crimp a ring terminal to the wire, and using a self tapping screw, drill the screw with the ring terminal to the same area as the ground wire. Solder the other wire on the switch to the BLACK/WHITE wire on the secondary connector and cover the connection with electrical tape.



If the vehicle will NOT start in gear, the vehicle is equipped with a factory neutral safety circuit and will need to be located with the multi-meter.

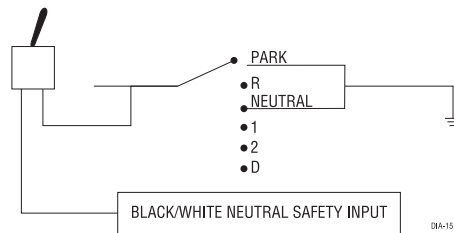
The majority of neutral safety switches can be located at the steering column in the harness coming from the gear shift. With the meter black lead still in the kick panel, use the red lead of the meter to probe the suspected wires. The correct wire will show a small amount of voltage in any gear but once the gear shift is put in neutral or park it will read 0.00 Volts. After the correct neutral safety wire is properly identified, solder it directly to the

BLACK/WHITE wire on the secondary connector and cover the connection with electrical tape.

The shut down toggle switch is designed to shut the remote start off in an emergency or to disable the remote start functions temporarily (i.e., for service on the vehicle).

If your vehicle came with a factory neutral safety switch this switch needs to be installed in line with the black/ white wire, instead of soldering the black/ white wire to the factory neutral safety wire solder the black/ white wire to one side of the switch (it does not matter which side) and solder the other side to the vehicle factory neutral safety switch.

important! Do not use the vehicle until you confirm the operation of the neutral safety feature.



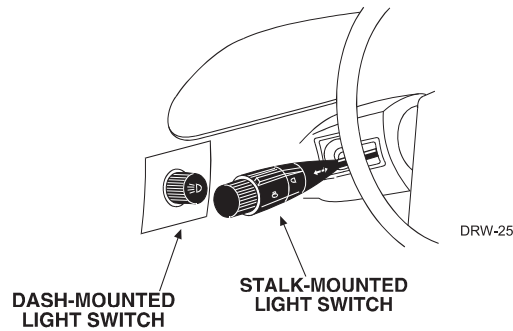
→ step 5

Parking light flash

There are several different types of parking light circuits. The following description is for a standard negative-triggered parking light circuit, usually located at the light switch. If the web vehicle information suggests a different type of parking light circuit, please contact Rattler Technical Support.

Using the web information on the vehicle, locate the suspected wire and place the red lead of the meter to a constant (+)12 volt source and secure it. Place the multi-meter in the DC position. Using the black lead of the meter, probe the wire. With the switch in the off position the meter will read 0.00 volts. While watching the meter, turn the switch to the parking light position. The meter will read between 10.00 volts and 13.00 volts.

Once you have identified the correct wire, solder the WHITE wire on the main connector to it and cover the connection with electrical tape.



→ step 6

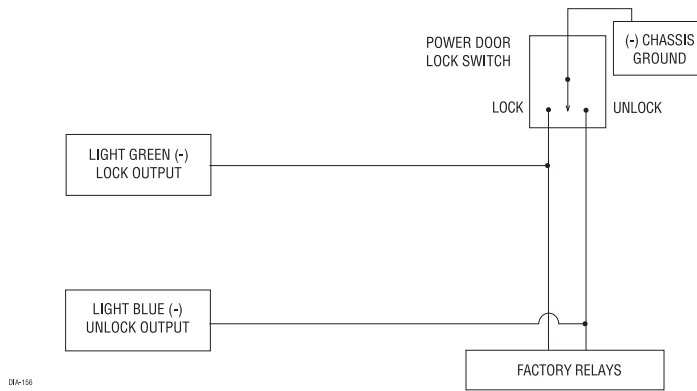
Door locks

When attempting to interface the power door locks with your system it is important to understand that there are multiple types of door locking systems in today's vehicles. To determine your vehicle's power door lock system, check the web information on your vehicle.

If your door lock system is a different type than described in this guide, go to www.diyrattler.com to download the door lock guide. The door lock guide identifies the type of system for your vehicle. With the dual-relay door lock module you can properly interface the power locks with your remote start system. If you are unable to identify your door lock system with the web information please contact Rattler Technical Support.

Although there are numerous types of door lock circuits, the most common is the negative triggered door lock system. Check the web information on your vehicle to determine your door lock system type. If your vehicle has a negative triggered door lock system, follow the steps below. If your vehicle has any other type of door lock system, please contact Rattler Technical Support to obtain the correct door lock wiring diagram.

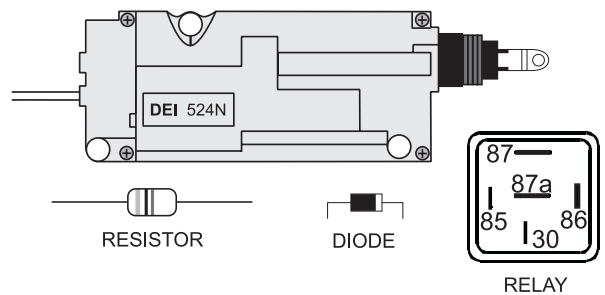
Locate the suspected lock wire, and with the red meter lead still secured to a (+)12 volt source, probe the suspect wire with the black lead of the meter. Press the door lock switch to the lock position and watch the meter display. The correct wire will show a 10.00 to 12.00 volt pulse when the switch is pressed.



Once the correct wire has been found, solder the small LIGHT GREEN wire off the main connector to it and cover the connection with electrical tape.

Repeat this process for the unlock wire but press the switch to the unlock position when testing. Once you have identified the correct wire, solder the LIGHT BLUE wire off the main connector to it and cover the connection with electrical tape.

note: Additional parts may be required to interface with certain door lock types.



The Rattler Do-It-Yourself system comes with a dual-relay pack included for door lock operation. To interface this piece with the system it is necessary to cut the three-pin plug off the relay module leaving the three wires long enough to connect to the system module.

Once you have cut the plug, strip a $\frac{3}{4}$ -inch section of insulation off the ends of the RED, GREEN, and BLUE wires. Solder the LIGHT BLUE wire of the relay module to the LIGHT BLUE wire of the eight-pin main harness, and solder the LIGHT GREEN wire of the relay module to the LIGHT GREEN wire of the eight-pin main harness.

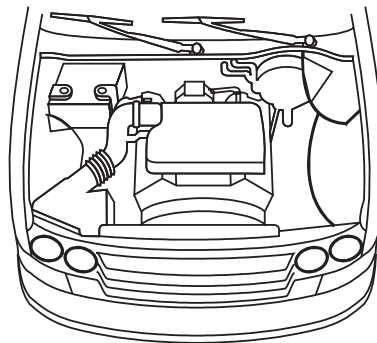
Cover the two connections with electrical tape. The remaining RED wire of the relay pack will be soldered to the RED wire of the main eight-pin harness for a 12V supply. For additional information regarding the wiring of the dual-relay module contact Rattler Technical Support.

step 7

Engine monitoring

During remote start the system will need to know what the engine is doing and how fast it is idling in order to determine if the car is running. The module does this by monitoring the voltage of the vehicle's electrical system. When the vehicle is not running the electrical system should read approximately 12 volts and will increase up to 14.40 volts when running. The remote start system monitors the increase to prevent the starter from cranking when the vehicle is already running.

If the idle is too slow or too high, the system will shut down the engine to prevent damage. If the starter does not crank long enough to actually start the engine, it is possible to change the programming to extend the crank time. Refer to the *Programming Options* section of this guide.



On some vehicles the electrical system has too low of a voltage variance for the remote start module to see. In this case the engine will not be protected from over cranking, over revolution, or under revolution of the engine.

If this is the case, it will be necessary to locate a tachometer wire in the vehicle using the multi-meter. Identify the suspect wire according to the web information. Then start the vehicle with the key and place the black lead of the multi-meter on the negative battery post and secure it. Put the multi-meter in the AC position and probe the suspect wire with the red lead of the multi-meter. With the engine at idle the multi-meter should read between .05 volts to 1.5 volts.

Have a second person press the gas pedal to increase the RPMs and watch the meter display. When the RPMs increase the voltage should read between 1.5 volts and 2.9 volts. Once the correct tachometer wire has been identified, turn the vehicle off.

Run the VIOLET/WHITE wire through the firewall along side the hood pin wire. Then run it into the engine compartment through the factory rubber grommet used for the hood pin. Using a sharp pointed object poke thru the hole in the grommet and attach the VIOLET/WHITE wire to the object with electrical tape. Pull the wire through the grommet taking extra care to keep it away from any moving parts or anything that will generate extreme heat. Once the wire is run into the engine compartment, solder it to the tachometer wire and cover the connection with electrical tape. Pull on the wire to ensure a good connection.

Once the connection has been made it will be necessary to teach the tachometer signal to the remote start module. The remote start system must be completely installed, and the Valet/program button must be in a convenient location. When ready, start the vehicle with the key and within five seconds press and hold the Valet/program button. Once the LED turns on solid confirming that the tachometer signal has been learned, let go of the Valet/program button and turn the vehicle off. If the LED flickers or does not come on at all, an alternate tachometer wire will need to be found. Contact Rattler Technical Support for assistance.



warning! Do not use a test light. Use of a test light can cause grounding of sensitive electrical components causing damage, including damage to the power train control module.

→ step 8

Factory Alarm Arm or Disarm

Since most newer vehicles come equipped with a factory alarm system, it is necessary for the factory alarm to be armed/disarmed when unlocking the doors and disarmed while remote starting the vehicle.

note: Some vehicles use a + trigger system. Use the www.diyrattler.com website to determine if your vehicle has a + trigger system. If this vehicle has this system call **1-800-873-1314** for live technical assistance as special wiring and an additional relay is required.

Locate the factory alarm arm/disarm wires using the web site vehicle information. Once the suspect wires are located, place the multi-meter's red lead to a (+)12 volt constant source and secure it. Put the multi-meter in the DC position then probe the suspect wire with the black lead of your meter. While probing the wire, place the key in the drivers door cylinder. Turn it to the unlock position and hold it when testing for the disarm wire. Turn it to the lock position and hold it when testing for the arm wire. The multi-meter should read between 10.00 volts and 13.00 volts and will disappear when the key is released.

When the correct wire has been found, solder the small GREEN/BLACK wire to the wire which activates in the unlock position when the key is turned. Connect the GREEN/WHITE wire to the wire which activates in the lock position when the key is turned. After these wires have been connected cover the connection with electrical tape.

→ **step 9**

Immobilizer Bypass Modules



warning! Any vehicle equipped with a factory immobilizer must use an immobilizer bypass module to remote start. If not used, the vehicle ignition or fuel supply circuits could lock up and require a costly trip to the dealer to reset the computer system.

Most newer vehicles have a factory engine immobilizer system designed to prevent any unauthorized use of the vehicle. These immobilizers will cut off power to the starter and the fuel supply preventing a thief from starting the vehicle.

There are several types of immobilizers, with the most common being the resistance based passlock/passlock 2 systems found on most newer GM vehicles. This system can be bypassed using the 557L immobilizer bypass module available at your local retail dealer. The majority of transponder-based immobilizer systems can be bypassed using the 557U immobilizer bypass module available at your local retail dealer.

To determine what bypass module your vehicle requires, check your web vehicle information sheet.

→ step 10

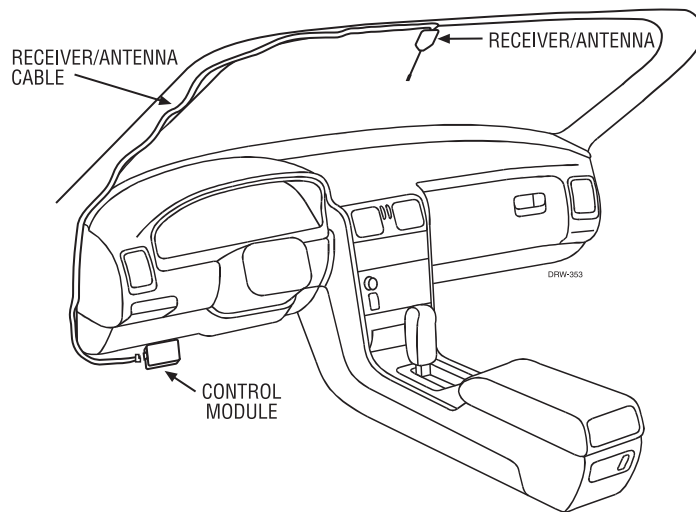
Mounting the receiver/antenna

The best location for the receiver/antenna is centered high on either the front or rear windshield. For optimal range, the antenna should be mounted vertically. It can be mounted horizontally in relation to the windshield or under the dashboard away from metal, but range will be diminished. Metallic window tint can also affect range, so this should be a consideration when determining the mounting location.

After determining the best mounting location, follow these steps:

1. Clean the mounting area with a quality glass cleaner or alcohol to remove any dirt or residue.
2. Plug the receiver/antenna cable into the receiver/antenna.
3. Mount the receiver/antenna using the supplied double-sided tape.
4. Route the receiver/antenna cable to the control module and plug it into the four-pin antenna connector.



important! To achieve the best possible range, DO NOT leave the antenna cable bundled under the dash. Always extend the cable its full length during installation, regardless of the antenna mounting location.



→ step 11

Testing the system

Once steps 1-9 have been completed, the operation of the system can be tested.

Place the two 30-amp fuses back into the relay satellite red wire fuse holders. Make sure that the vehicle is in park with the emergency brake on and the hood closed. Press  twice on the remote control to initiate the remote start function. The parking lights should flash to confirm the remote start command has been received, The accessories and ignition should turn on followed by the starter cranking and the vehicle engine running. Pressing  twice again will shut the engine off.

transmitter/receiver learn routine

The system comes with one transmitter that has been taught to the receiver. The receiver can store up to 4 different transmitter codes in memory. Use the following learn routine and the information in the Features Menu to add transmitters to the system or to change button assignments if desired.

The Valet/Program switch, plugged into the blue port, is used for programming. There is a basic sequence of steps to remember whenever programming this unit: Key, Choose, Transmit and Release.



1. **Key.** Turn the ignition to the ON position.



2. **Choose.** Within 10 seconds, press and release the Valet/Program switch the number of times corresponding to the desired channel listed below. Once you





have selected the channel, press the switch once more and hold it. The LED will flash to confirm the selected channel. Do not release the Valet/Program switch.

auto learn transmitter configuration

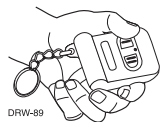


button one

Lock/Unlock

- AUX** button two Channel 2
-  button three Remote Start
-  + **AUX** buttons one and two Timer mode
-  +  button one and three Short-Run/Turbo

CHANNEL NUMBER	FUNCTION
1	Auto-Learn
2	Lock/Unlock
3	Channel 2 output
4	Remote Start
5	Turbo/Short Run
6	Timer Mode
7	Delete all Transmitters



3. **Transmit.** While holding the Program switch, press the button on the transmitter that you would like to control the selected receiver channel.



4. **Release.** Once the code is learned, the Program switch can be released.

You can advance from programming one channel to another by releasing the Program switch and tapping it to advance steps and then holding it. For instance: You have programmed Channel One and you want to program Channel Two. Release the Program switch. Press it one time and release it to advance from Channel One to Channel Two. Now, press and hold the Program switch. The LED will flash two times. As before, do not release it.

If you want to program Channel Three after programming Channel One, release the Program switch, press it twice and release it to advance to Channel Three. Then press it once more and hold it. The LED will flash three times to confirm it is ready to receive the code from the transmitter.

Learn Routine will be exited if:

- Ignition is turned off.
- Program switch is pressed too many times.
- More than 25 seconds elapses between programming steps.

operating settings learn routine

The System Features Learn Routine dictates how the unit operates. The programmable operating settings of this unit can be changed whenever necessary through the computer-based Learn Routine. The Valet/Program push-button switch, plugged into the blue port, is used together with a programmed transmitter to

change the settings. It is possible to access and change any of the feature settings using the Valet/Program switch. To program settings, remember: Key, Choose, Transmit and Release.

To program the learn routine:



DRW-121



DRW-05

1. **Key.** Turn the ignition on and then back off.

2. **Choose.** Within 10 seconds, press and release the Valet/Program switch the number of times corresponding to the feature number you want to program. (See



Features Menu section.)

Once the Valet/Program switch has been pressed and released the desired number of times, press it once more and hold it. After a second, the LED will flash to indicate which feature you have accessed. For example, groups of eight flashes would indicate access to the status output feature (Feature 8).



DRW-89

3. **Transmit.** The transmitter is used to select the desired setting. As shipped, the unit is configured to the LED ON settings. These are called the default settings.

Pressing  will set it to the LED ON setting. The LED will light solid (stop flashing) to indicate the setting. Pressing  will change the setting to the LED OFF setting. The LED will

go out indicating the change.



4. **Release.** The Program switch can now be released.

You can advance from feature to feature by pressing and releasing the Valet/Program switch the number of times necessary to get from the feature you just programmed to the feature you wish to access. For example, if you just programmed the run time (Feature 3) and you next want to program parking lights (Feature 4) to constant, release the Valet/Program switch. Press and release it once to advance from Feature 3 to Feature 4. Then press it once more and hold it. The LED will flash in groups of 4 to confirm that you have accessed Feature 4.

The learn routine will be exited if any of the following occurs:

- The ignition is turned on.
- The Valet/Program switch is pressed too many times.
- More than 25 seconds elapses between programming steps.

features menu

Feature Number	LED On Setting (press channel 1)	LED Off Setting (press channel 2)
1	Engine checking On	Engine checking Off
2	Tachometer checking type	Voltage checking type
3	12 minutes run time (1)	24 min. (2) or 60 min. (3)
4	Flashing parking light output	Constant parking light output
5	Cranking time 0.6 sec. (1)	Cranking time 0.8 (2), 1.0 (3), 1.2 (4), 1.4 (5), 1.6 (6), 1.8 (7), 2.0 (8), 4.0 (9) sec.
6	Voltage check high level	Voltage check low level
7	Short-run/turbo timer 1 minute	Short-run/turbo timer 3, 5, or 10 minutes
8	Activation pulse 1 (1)	2 (2), 3 (3)
9	Ignition/acc output: Ignition	Ignition/acc output: Accessory
10	Acc state during wait to start: Off	Acc state during wait to start: On
11	2nd status output: normal	Rear defogger latched (1)/ pulsed (2)
12	Unlock output 1 pulse	Unlock output 2 pulses
13	Ignition lock On	Ignition lock Off
14	Ignition unlock On	Ignition unlock Off

note: The number in parentheses indicate the number of times the LED will flash.

feature descriptions

1 ENGINE CHECK ON/OFF: In the default setting the remote start will monitor either the vehicle's tach wire or voltage depending on the programming of Feature 2. If programmed off, the vehicle will crank for the programmed crank time (Feature 5) and will not verify with tach or voltage that the vehicle is running. In the off setting, if the vehicle fails to start, the ignition can stay on for the entire run duration. Using tach or voltage check is always recommended if possible.



2 TACH WIRE SENSE/VOLTAGE SENSE: If the tachometer signal wire is used, this feature must be left in the default (tach wire connected) setting. If programmed to the voltage sense setting, the unit will crank the starter for a preset time that can be programmed in Feature 5. Once the starter has been engaged, the system will check the voltage level to verify the engine is running. The threshold for the voltage level test can be programmed in Feature 6. When using voltage sense mode, connection of the H2/5 VIOLET/ WHITE tachometer input is not necessary.

3 RUN TIME 12/24/60 MINUTES: This feature controls how long the engine will run before it “times out” and shuts down. Programmed to the default setting the engine will run for 12 minutes. If the 24 or 60 minute run time is desired, change this feature to the two or three flash setting.

4 PARKING LIGHTS FLASHING/CONSTANT: In the default setting, the unit will flash the vehicle's parking lights while remote started. The constant setting will turn the parking lights on solidly for the entire run duration.

5 CRANK TIME 0.6/0.8/1.0/1.2/1.4/1.6/1.8/2.0/4.0: If Feature 2 is programmed to the voltage sense setting, the crank time must be set to the appropriate duration. The default setting is 0.6 second. If a different crank time is desired, select Feature 5 and (while pressing the Program switch) press the Channel Two button to advance through the LED Off settings. The unit will flash the LED to indicate which time is selected. Once the 4.0 second setting is reached the next press of the Channel Two button will reset the system to the shortest setting.

6 VOLTAGE CHECK LEVEL HIGH/LOW: This feature only functions when Feature 2 is programmed to voltage sense. Some vehicles have many accessories, which are turned on when remote started. In these vehicles, the variation of voltage between the engine off and the vehicle running is very slight and the remote start unit may "think" the vehicle has not started. This can cause the remote start to shut down after the vehicle has been started. If this is the case, program this feature to the LOW position.

7 SHORT RUN (TURBO TIMER): When the  and  buttons on the transmitter are pressed simultaneously while the engine is running, the vehicle will continue to run for the short run time. The factory default is 1 minute.

8 ACTIVATION PULSE COUNT: This feature allows the number of pulses to activate the remote start feature to be changed from 1, 2, or 3 pulses. The pulse count programmed to start the vehicle will also be the same required to shut down the remote start.

9 2nd IGNITION/ACCESSORY OUTPUT: This will allow the PINK/WHITE to be used as a 2nd ignition or a 2nd accessory.

10 ACCESSORY STATE DURING WAIT-TO-START: This will allow the programming of the accessory wire during the wait-to-start period of a diesel motor. When ON the accessory comes on when the wait-to-start output is activated and stays on, dropping out during crank and returning once the car has started. When OFF the accessory will activate as a normal accessory.

11 2nd STATUS OUTPUT: If programmed to status mode, this output will turn on when the remote start is activated. In defogger mode the output can be programmed to a latched or a pulsed output. When programmed to the latched output the status will only stay active for 10 minutes.

12 UNLOCK OUTPUT: This will program the unlock output to one or two pulses.

13 IGNITION CONTROLLED LOCK: When programmed ON the doors will lock when the key is on and all doors are closed.

14. **IGNITION CONTROLLED UNLOCK:** When programmed ON the doors will unlock automatically when the key is turned off.

shutdown diagnostics

The unit has the ability to report the cause of the last shutdown of the remote start system. To enter diagnostic mode:



1. Turn the ignition off.



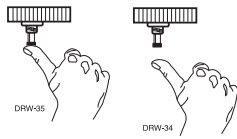
2. Press and hold the Program switch.



3. Turn the ignition on and then off.



4. Release the Program switch.



5. Press and release the Program switch.

The LED will now report the last system shutdown by flashing for one minute in the following grouped patterns:

The factory settings are indicated in bold text in the table below.

LED Flashes	Shutdown Mode
One	System timed out
Two	Over-rev shutdown
Three	Low or no RPM
Four	Transmitter shutdown (or optional push-button)
Six	(+/-) Shutdown
Seven	(-) Neutral safety shutdown (H2/1 BLACK/WHITE)
Eight	Wait-to-start timed out


transmitter functions

The receiver uses a computer-based learn routine to learn the transmitter buttons. This makes it possible to assign any specific transmitter button, or combination of buttons, to any receiver function. The transmitter initially comes programmed with the Standard Configuration, but may also be customized by an

authorized dealer. Unless otherwise specified, the buttons used in all of the instructions in this manual correspond to a Standard Configuration transmitter.

→ standard configuration


Button 

The door locking and unlocking functions are controlled by pressing .

Button **AUX**

The channel 2 output or trunk release is controlled by the **AUX** button.

Button 

The remote start function of your system is controlled by pressing .

Buttons  + **AUX**

When simultaneously pressed these buttons control the timer mode.

Buttons  + 

When simultaneously pressed these buttons control the short run/turbo mode.

using your system

→ **warning! safety first**

The following safety warnings must be observed at all times:

■ When properly installed, this system can start the vehicle via a command signal from the remote control transmitter. Therefore, never operate the system in an enclosed area or partially enclosed area without ventilation (such as a garage). When parking in an enclosed or partially enclosed area or when having the vehicle serviced, the remote start system must be disabled using the installed toggle switch. It is the user's sole responsibility to properly handle and keep out of reach from children all remote control transmitters to assure that the system does not unintentionally remote start the vehicle. **THE USER MUST INSTALL A CARBON MONOXIDE DETECTOR IN OR ABOUT THE LIVING AREA ADJACENT TO THE VEHICLE. ALL DOORS LEADING FROM ADJACENT LIVING AREAS TO THE ENCLOSED OR PARTIALLY ENCLOSED VEHICLE STORAGE AREA MUST AT ALL TIMES REMAIN CLOSED.** These precautions are the sole responsibility of the user.


■ Use of this product in a manner contrary to its intended mode of operation may result in property damage, personal injury, or death. (1) Never remotely start the vehicle with the vehicle in gear, and (2) Never remotely start the vehicle with the

keys in the ignition. The user must also have the neutral safety feature of the vehicle periodically checked, wherein the vehicle must not remotely start while the car is in gear. This testing should be performed by an authorized Directed Electronics, Inc. dealer in accordance with the Safety Check outlined in the product installation guide. If the vehicle starts in gear, cease remote start operation immediately and consult with the authorized Directed Electronics, Inc. dealer to fix the problem.


n After the remote start module has been installed, contact your authorized dealer to have him or her test the remote start module by performing the Safety Check outlined in the product installation guide. If the vehicle starts when performing the Neutral Safety Shutdown Circuit test, the remote start unit has not been properly installed. The remote start module must be removed or the installer must properly reinstall the remote start system so that the vehicle does not start in gear. All installations must be performed by an authorized Directed Electronics dealer. OPERATION OF THE REMOTE START MODULE IF THE VEHICLE STARTS IN GEAR IS CONTRARY TO ITS INTENDED MODE OF OPERATION. OPERATING THE REMOTE START SYSTEM UNDER THESE CONDITIONS MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY. YOU MUST IMMEDIATELY CEASE THE USE OF THE UNIT AND SEEK THE ASSISTANCE OF AN AUTHORIZED DIRECTED ELECTRONICS, INC. DEALER TO REPAIR OR DISCONNECT THE INSTALLED REMOTE START MODULE. DIRECTED

ELECTRONICS, INC. WILL NOT BE HELD RESPONSIBLE OR PAY FOR INSTALLATION OR REINSTALLATION COSTS.

→ **locking**

Pressing  for one second will lock the doors. The parking lights will flash once to confirm that the doors are locked.

→ **unlocking**

To unlock the doors press  for one second. The parking lights will flash twice to confirm that the doors are unlocked.

→ **ignition controlled door locks**



LOCK



If power door locks have been connected to your system, the vehicle's door will lock three seconds after the ignition has been turned on and unlock when the ignition



UNLOCK




note: If the ignition is turned on while the vehicle is remote started the doors will not lock until the remote start shuts off. To avoid being locked out of the vehicle, do not turn the ignition on until you are ready to drive the vehicle.

→ remote start

This feature allows you to remotely start and run your vehicle for a programmable period of time. This makes it possible to warm up the engine, as well as adjust the interior temperature of the vehicle with the climate control system. If interior heating or cooling is desired, the climate controls must be preset, and the fan blower must be set to the desired level prior to remote starting the vehicle.

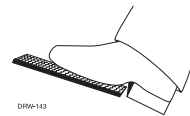
note: (1) Never remotely start the vehicle with the vehicle in gear, and (2) Never remotely start the vehicle with the key in the ignition.

To remote start the vehicle:

1. Press  on the transmitter twice within 3 seconds.
2. The parking lights will flash to confirm remote start operation.
3. Once the vehicle has started, it will run for the pre-programmed period of time (12, 24, or 60 minutes) or until a shut-down input is triggered.


When you are ready to drive the vehicle:

1. Insert the ignition key and turn it to the ON (not the START) position.
2. Press the brake pedal.



note: If the brake pedal is pressed before the key is in the ON position, the engine will shut down.

While the vehicle is running during remote start operation, the system will monitor the vehicle and will automatically shut down the engine if the system receives any of the following shutdown inputs:



- The brake pedal is pressed.
- The hood is opened.
- The shutdown toggle switch is put into the ON position.
- The pre-programmed run time has elapsed.
- The  button is pressed twice within 3 seconds.

short-run/turbo



Short run turbo mode keeps the engine running after arriving at you destination for a programmable period of 1, 3, 5 or 10 minutes. This allows the system's timer to conveniently cool down the turbo after you have left the vehicle.



To activate:

1. Park the vehicle and set parking brake.
2. Remove your foot from the brake pedal and leave the engine running.

3. Press and release the  and  buttons at the same time.
4. The lights will flash to indicate the remote start has entered short run turbo mode.
5. Turn off the key, the engine will keep running.
6. Exit and secure the vehicle.
7. The engine will turn off after the programmed run time.

timer mode

By pressing the remote  and **AUX** buttons the parking lights will flash 4 times and then start the vehicle and run for the set duration. The remote start can be shut off by the transmitter by pressing the remote start button  twice and remain in timer mode, but if any other shut down zones or the ignition becomes active the timer mode will cancel.

1. Press Timer mode buttons.
2. The vehicle will confirm with 4 parking light flashes.
3. A 1-second delay will start.
4. The system will start the car and will run for the specified duration, unless shut down by the remote start button . If shut down with the remote start button  the system will remain in timer mode.

5. The system will start every 3 hours until canceled by the brake, hood, or neutral safety shut-down wires.


important: Timer Mode should be used only in open areas. Never start and run the vehicle in an enclosed space such as a garage or carport.

To exit timer mode, turn the ignition switch on any time the engine is not running. The parking lights will flash 4 times, indicating timer mode has been exited.

→ valet take-over

The Valet® Take-Over feature allows the vehicle to remain running after the key has been removed from the ignition. This feature is useful for occasions when you wish to exit and lock the vehicle for short periods of time, but would like to leave the motor running and the climate controls on.

To perform Valet Take-Over:

1. Before turning off the engine, press and release  twice within 2 seconds (or press and release the optional Momentary switch twice).

2. Turn the ignition key to the off position.



3. The engine will continue to run until the pre-programmed time elapses or a shut-down input is received. (See the previous Remote Start section for a complete list of shut-down inputs.)

note: This feature will not work if the brake pedal is being pressed.

programming options

Programming options control your system's normal, operational set-up. Most options do not require additional parts, but some may require additional installation labor. Please contact your local retail dealer.

troubleshooting

- The ignition comes on, but the starter will not crank.
Does it start with the key in the ignition? If so, does the vehicle have an engine immobilizer?
Will it start with the brake pedal depressed? (Make sure to disconnect the brake shutdown when performing this test.)
If so, it may have a brake/starter interlock.
Is the correct starter wire being energized? Check by energizing it yourself with a fused test lead.

- The starter cranks for six seconds but does not start.
Either the wrong ignition wire is being energized, the system's ignition and accessory wires have been connected backwards, or the vehicle has two ignition circuits. Try acti-

vating the unit with the ignition key in the “run” position. If the vehicle then runs normally, retest your ignition system.

- The starter continues to crank even though the engine has started.

Has the tach wire been learned? See the Tach Learning section of this guide.

Is the tach wire receiving the correct information? Either the wrong tach wire has been used, or a bad connection exists.

- The climate control system does not work while the unit is operating the vehicle.

Either the wrong accessory wire is being energized or more than one ignition or accessory wire must be energized in order to operate the climate control system.

- The remote start will not activate.

Check harnesses and connections. Make sure the harnesses are fully plugged into the remote start module. Make sure there are good connections to the vehicle wiring.

Check voltage and fuses. Use a meter and check for voltage between the red wire in the 5 pin ribbon harness and the black ground wire. If you have less than battery voltage, check the and both 30A fuses on the relay satellite. Also make sure that the ground wire is going to a chassis ground and not to something under the dash.

- The remote start will activate but the starter never engages. Check for voltage on the purple starter wire two seconds

after the remote start becomes active. If there is voltage present, skip to Step 4. If there is not voltage present, advance to Step 2.

Check the 30A fuses.

Make sure the purple starter wire is connected on the starter side of the optional starter kill relay.

Does the vehicle have an immobilizer? Some immobilizer systems will not allow the vehicle to crank if active.

Check connections. The two red heavy gauge input wires on the relay satellite should have solid connections. "T-taps", or "scotch locks" are not recommended for any high current heavy gauge wiring. Also, if the vehicle has more than one 12-volt input wire, then connect one red wire to each.

- The vehicle starts, but immediately dies.

Does the vehicle have an immobilizer? The vehicle's immobilizer will cut the fuel and/or spark during unauthorized starting attempts.

Is the remote start programmed for voltage sense? If so, the start time may not be set high enough, or you may have to adjust the voltage threshold in programming. Voltage sense will not work on some vehicles.

- The vehicle starts, but the starter keeps running.

Is the system programmed for engine checking off or voltage sense? When programmed for either of these features, the engine cranks for the preprogrammed crank time regardless of how long it takes to start the vehicle to actually start. Adjust to a lower cranking time.

Was the Tach Learn successful? The LED must light solidly and brightly to indicate a successful learn.

Make sure that there is a tach signal right at the purple/white tach input wire of the remote start. If not, recheck the connection to the vehicle's tach wire and make sure the wire is not broken or shorted to ground leading to the remote start.

- The vehicle will start and run only for about 10 seconds. Is the remote start programmed for voltage sense? Try programming the unit for low voltage reference. If this does not work a tach wire should be used.

glossary of terms

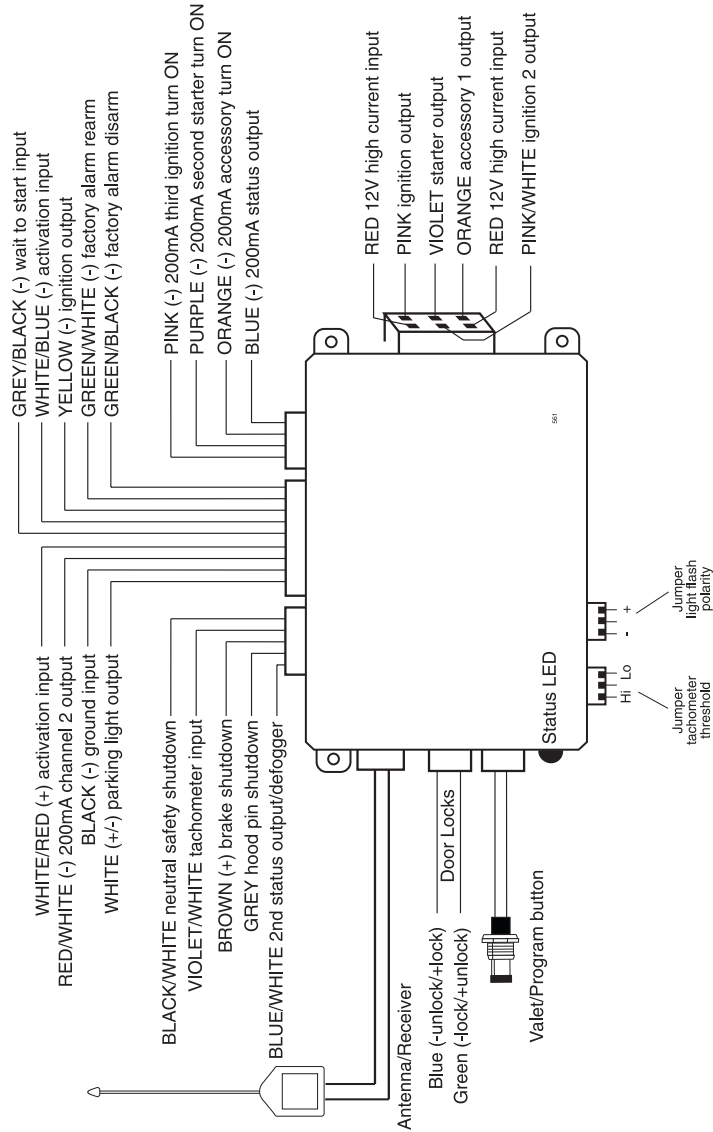
Control Unit: The “brain” of your system. Usually hidden under the dash area of the vehicle. It houses the microprocessor that monitors your vehicle and controls all system functions.

LED: A red light mounted on the side of the control unit. It is used when programming the unit.

Transmitter: A hand-held, remote control which operates the various functions of your system.

Valet Switch: A small button mounted at a discretionary location inside the vehicle. It is used for programming the unit.



wiring quick reference guide



Cut along dotted line and fold for a quick and easy reference to keep in your purse or wallet.

QUICK REFERENCE GUIDE:


To lock the doors using your remote

- Pressing  /  for one second will lock the doors. The parking lights will flash once to confirm the doors are locked.



To unlock the doors using your remote

- To unlock the doors, press  /  for one second. The parking lights will flash twice to confirm the doors are unlocked.

To remote start the vehicle

- Press the  button twice within 3 seconds. The parking lights will flash to confirm remote start operation.




To enter timer mode

- Press the  /  + **AUX** button simultaneously. The parking lights will flash 4-times for confirmation.

To exit timer mode

- Turn the ignition key On when the engine is not running. The parking lights will flash 4-times for confirmation.

To enter short-run/turbo mode

- Press the  /  +  button simultaneously while the engine is running. The parking lights will flash continuously.

The company behind this system is Directed Electronics, Inc.

Since its inception, Directed Electronics has had one purpose, to provide consumers with the finest vehicle security and car stereo products and accessories available. The recipient of nearly 100 patents and Innovations Awards in the field of advanced electronic technology, DIRECTED is ISO 9001 registered.

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