

v 1.0

AutoCommand®

Remote Control Car Starter

Models 28636 - 28638

**With Full Keyless Entry
& Security Alarm Features**

Installation Manual

For use on automatic vehicles only.

For gasoline or diesel vehicles.

Delux Long-Range 'Super-het' model

 **DesignTech**
INTERNATIONAL, INC.

7955 Cameron Brown Court
Springfield, Virginia USA
Tel: (703) 866-2000; Fax: (703) 866-2001
www.designtech-intl.com

Congratulations on your purchase of the AutoCommand® Remote Car Starter. This Remote Car Starter system allows you to start the car by remote control from the comfort of your home or office in order to cool it down in the summer or heat it up in the winter.

This Remote Car Starter system is for automatic transmission cars only. It is an extremely sophisticated system with multiple built-in safety and security features.

The DesignTech Remote Car Starter:

- Will start your car by remote control, and run the heater, defroster, or air conditioner to warm up or cool down the car.
- Is designed to start the car if it is in park, and only if the hood is closed.
- Will attempt to start the car for up to six seconds, but no longer (to avoid damage to the starter motor). Should the car not start, or if it stalls after starting, the remote car starter will make two further attempts to start it.
- Keeps the headlights on to let you know the car is running, and has the ability to use your transmitter to light your way when walking to the car at night.
- Will not let the car be driven without the key in the ignition.
- Shuts itself off automatically after 10 or 15 minutes (you choose the run time - consult your installer) if you are delayed coming to your car (20/30 min for diesels).
- Will shut off if the brake pedal is pushed, the hood is opened, or the transmission is shifted out of park - unless the key is in the ignition and in the "run" position.
- The QUICK STOP™ option using the transmitter will allow you to remove the key while leaving the car running with the doors locked for either 10 or 15 minutes.
- The COLD START OPTION™ using the transmitter starts the car automatically should the temperature drop below either 0°F (-18°C) or if the battery voltage drops below 11 volts.
- Lock and Unlock the doors and open the trunk as well as control security alarm features with the transmitter.
- Comes with a built-in starter kill relay to prevent vehicle theft.
- Comes with a plug-in Flashing status LED.
- DAILY START™ feature allows you to have the vehicle automatically start up at the same time 24 hours later. Great if you go to or leave from work at the same time each day.
- Using the built-in DAYTIME RUNNING LIGHTS feature you can automatically turn on your lights 10 seconds after the key is turned to the ignition position or the brake is depressed.
- Is quality engineered, microprocessor controlled, and made in the USA to provide many years of reliable use.

!! WARNING !!

Do not hook this remote car starter into a manual transmission vehicle. Doing so could cause serious property damage, personal injury, and will void all warranties. DesignTech International, Inc. will not be held responsible for any resulting damages or injuries if this remote car starter unit is installed in a stick shift vehicle.

Tools required to install the AutoCommand® unit:

- ◇ Test meter
- ◇ Wire cutters/strippers
- ◇ Pliers
- ◇ Screwdrivers
- ◇ Drill and 1/4" drill bit to mount the switch & 5/16" bit for the LED.
- ◇ Soldering iron and solder

We highly recommend that all connections be soldered for a long lasting connection.

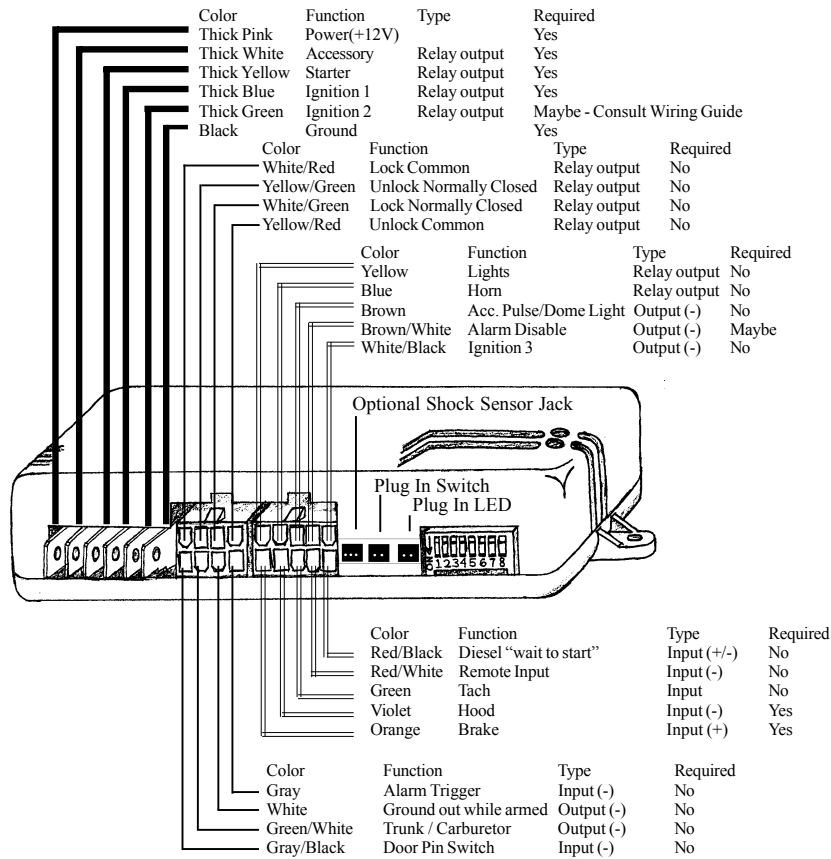
Parts list

- 1 Remote Car Starter module
- 1 Miniature 3 button transmitter
- 1 Control harness (10 position)
- 1 Accessory harness (8 position)
- 6 Power & Ignition wires and one short pink battery wire with fuse holder.
- 1 Model 20038 includes all of the above parts plus
 - shock sensor
 - siren
 - an additional 3 button transmitter
- 1 Parts Baggy

Parts kit in plastic baggy:

- Extra YELLOW Starter Kill wire
- External LED with plug-in connector
- 2 Butt connectors for starter kill.
- Control switch with plug-in connector
- 30 Amp Green fuse
- Small ring terminal for ground wire
- 2 Cable ties
- 2 Antenna clips with for mounting antenna
- Alcohol pad for cleaning windshield for antenna clips
- Pin switch, washer, nut and tab connector (for hood)
- Yellow "Warning" label
- "Protected by DesignTech" window decal

AutoCommand Wire Harness



For vehicle specific wiring information -- consult the Blue Sheet for general information and consult our Web sit for more specific information. www.designtech-intl.com.

!! WARNING !!

If you are working on a newer car, you may notice bright yellow tubes or harnesses underneath the steering column area. These are the "SRS" or AIR BAG wires. DO NOT tamper with these wires in any way, since this could result in personal injury and/or damage to the air bag system.

Battery gases are explosive. Do not smoke while working near the car's battery.

!! CAUTION !!

When fishing wires through the car's firewall, be sure to protect them from sharp metal edges and from hot surfaces on the engine.

NOTE: Some installers hook a battery charger up to the vehicle's battery during the installation. This is fine, but it must be removed before running the vehicle under remote car starter control.

INSTALLATION INSTRUCTIONS

1 BEFORE YOU START

Take this time to read through the entire installation manual. Reading the manual now will save significant time in the long run. **ALL STEPS ARE CRITICAL.**

The installation information section or our web site www.designtech-intl.com is available 24 hours/day to provide you with up to date vehicle wiring information for your particular vehicle if needed.

Wire Harnesses: Always check your wire harness before installing to make sure that it matches the list/drawing on page 4 of the manual. You can use the **BLUE WIRE COLOR SHEET** to help determine the colors of the wires in your vehicle -- but be sure to always check these using a volt-meter since vehicle wire colors can change from year to year in vehicles.

When you have read the entire manual, and paid close attention to every step, start the installation by putting the Yellow **WARNING STICKER** under the hood. Pick a surface that is readily visible with the hood open and will not be easily covered with grime. Make sure that the surface is clean and grime free before applying the sticker.

All dipswitches should be OFF (up position) during the installation.

POWER & IGNITION WIRES

The AutoCommand® module (large black box) will be installed under the dash, once all wiring has been completed. **Do not mount the module at this time because you will need to check the diagnostic lights as the installation progresses.** Locate (or drill a hole) in the firewall to run all of the long wires (12 AWG PINK, 18 AWG YELLOW, VIOLET, GREEN, and BLUE) through the firewall to the engine compartment. The remaining short wires stay in the passenger area. Leave about a foot of length at the harness end under the dash for ease of working and visual access to the diagnostic lights.

(Note: Always connect up the *Black* and *Pink* wires before connecting up any of the other wires.)

2 Black Wire	Ground
--------------	--------

Optimum ground connection is critical for proper operation of this unit, as well as transmitter range. Connect this **BLACK** wire to a very good clean chassis ground in the driver's side kick panel area. Use the small red ring terminal if needed. The metal bracing around or beneath the dash board is not adequate.

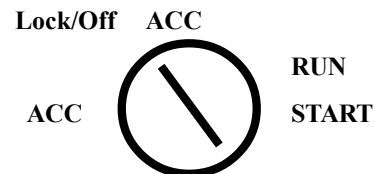
3 Long Pink & Short Pink Wire	Power (+12V)
-------------------------------	--------------

The **LONG PINK** wire goes through the fire wall and connects to the **SHORTER PINK** wire with fuse holder. **We recommend getting power directly at the battery +12V terminal.** Connect the ring terminal on the SHORT PINK wire to the +12 volt terminal of the battery. Strip back some insulation and then solder the two ends of the PINK wires together, or use the Yellow Butt connector to connect these. Either way, you must have a very good connection. Install the 30 Amp green fuse.

As soon as the Pink (Power) wire is connected the GREEN LED will come on and go out. (If the unit is already initialized, the GREEN LED will come on for several seconds while the RED LED flashes 4 times.)

NOTE: WE STRONGLY RECOMMEND GETTING POWER AT THE BATTERY. ALSO, FAILURE TO INSTALL THE FUSE HOLDER AND 30 AMP FUSE TO THE PINK WIRE VOIDS ALL PRODUCT WARRANTIES, BOTH WRITTEN AND IMPLIED!

Ignition Key Diagram for Steps 4-7



4 Thick Blue Wire	Ignition 1
-------------------	------------

Attach the **Thick BLUE** 14 gauge wire (Ignition 1) to the ignition 1 wire coming off the key switch behind the steering column. This is a wire which shows positive (+12v) on the test meter in the run **and** start position, but is off in the lock/off and accessory position.

5 Thick Green Wire	Ignition 2
--------------------	------------

Most cars (especially newer cars) have a second ignition wire that is necessary. Use the **Thick GREEN** 14 gauge (Ignition 2) wire for this connection. This is a wire that shows positive (+12V) on the test meter in the run position. It may be best to leave this wire until the end to determine whether the vehicle needs this wire to operate some of the accessories. Note -- setting dip-switch option 10 (described in Step 29) will cause this wire to be off during crank.

6 Thick White Wire	Accessory
--------------------	-----------

Attach the **Thick WHITE** 14 gauge wire to the accessory wire coming off of the key switch behind the steering column area. This is a wire which shows positive (+12v) on the test meter in the run and accessory position, but is off in the start and off position.

7 Thick Yellow Wire	Starter
----------------------------	----------------

Attach the **YELLOW** 14 gauge wire to the starter wire coming off of the key switch in the steering column area. This wire is hot (+12V with a meter) in the start position only. It is off in all other positions.

CONTROL HARNESS

8 On/Off Plug-in Control Switch
--

This switch must be installed for the remote starter to operate. Mount the switch then plug this switch harness into the AutoCommand module at the 2 pin white connector. (See diagram on page 4).

Mount the control switch so that the “On” position is facing upward. Connection of this switch is mandatory.

9 Red/Black Wire Diesel “wait to start” / PAGER Control Harn.
--

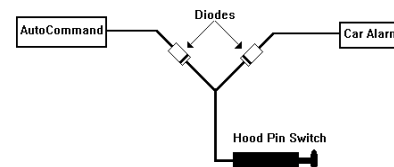
This wire is used in diesel vehicle applications - and is optional. This wire can be hooked up to the “wait to start” light’s switched wire behind the dash, or directly to the glow plug wire. The sense wire must change state when the Wait to Start light turns on. If dip switch option 9 (described in Step 29) is set, this wire will feed information to the remote starter as to when to begin starting the vehicle.

This wire can also be used with DesignTech’s Nationwide Pager (model 28010). In Data-Link mode, one can control all features of the remote starter via any telephone. If the pager is used in Data-Link mode, this wire cannot be used for Diesel applications. Follow the separate Pager directions for installation.

10 Violet Wire	Hood Pin Switch	Control Harness
-----------------------	------------------------	------------------------

The hood pin switch must be installed for the unit to initialize and work properly. It prevents operation of the remote starter when the hood is open. Attach the **VIOLET** 18 gauge wire to the supplied pin switch using the hardware provided. Be sure to have a good ground connection.

If you already have a hood pin switch which is being used by a car alarm system, you may share the wiring -- but be sure to diode isolate each wire going to the hood pin switch. See following diagram:



11 Orange Wire	Brake Shut-off	Control Harness
-----------------------	-----------------------	------------------------

The **ORANGE** 18 gauge wire will disable the remote starter when the brake pedal is pressed down. This is an added anti-theft safety feature. This connection is usually made under or behind the brake pedal linkage at the switch. Connect the **ORANGE** wire to the wire that receives +12V only when the brake pedal is pressed down. Any +12V input on this wire will shut off the AutoCommand®. In some cars, the ignition must be on to see power at the brake wire. **This wire must be hooked up. This is a critical safety feature.** This connection is also required for several options discussed later.

NOTE: With the Valet switch connected and in the ON position, pushing on the brake pedal with the hood open (hood pin switch at ground) at this time will cause the ignition wires to power up unless the unit has been initialized as described in the next step.

12 Initializing the Remote Starter

BEFORE THE CAR WILL START FOR THE FIRST TIME, YOU MUST INITIALIZE THE REMOTE STARTER WITH THE HOOD OPEN.

- A. The Remote Starter requires the installer to **open the hood, and press and hold the brake pedal**. If the unit is not initialized at this time -- this action will cause the ignition outputs to come on (i.e. the dash lights come on) informing you that the unit is not initialized.
- B. While depressing the brake (with the engine off and the hood open), turn the key to the “RUN” (not “start”) position.
- C. Put the car in GEAR from the PARK position.
- D. Put the car back in PARK and release the brake. The GREEN LED should have flashed twice when you did this -- then 2 seconds later, the Green LED will stay on while the Red LED will give 4 quick flashes. (The remote starter looks at the vehicle’s neutral safety switch and checks for an automatic transmission during this step.)
- E. Turn off the key and remove key from ignition.

You can confirm that the unit has been ‘initialized’ — simply turn the ON/OFF switch OFF and then ON. The GREEN LED (or dashmount LED) on the Auto-Command module will flash once immediately as the switch is flipped from the off

to the on position confirming that the unit has been 'initialized'. The ignition wires will also not come on when the brake is depressed if the unit is initialized.

IF THE UNIT DOES NOT INITIALIZE AT THIS TIME, see the purple Trouble Shooting Sheet.

13 Green Wire	Tach Input	Control Harness
----------------------	-------------------	------------------------

The Remote Starter has two ways of monitoring the car during the starting process. Either way will ensure a clean, accurate start. Read about both methods before deciding which one to use.

"No Tach™" Starting

This starting method **does not** require hooking up the **GREEN** tach wire. This method will start the car by reading the car's voltage before attempting to start, and then looking for a voltage increase when the alternator kicks in. This feature automatically takes into account voltage, temperature and the time since the vehicle was last run.

The "No-Tach™" starting method is preset at the factory (dip switch 3 OFF), and you can skip the rest of this step and proceed to Step 14 should you choose it. Note that some hard to start vehicles may require option 3 to be set for "extended crank".

Tachometer sensing

If the vehicle is generally hard starting (requiring a cranking time of more than 2 seconds) you will get more accurate starting with the tachometer sensing starting method. If you are installing the remote starter on a carbureted vehicle, you must use the tachometer sensing. This method starts the car by reading the engine speed (tach) information from a wire under the hood. If you choose tachometer sensing, connect the **GREEN** wire to the car's tach wire under the hood. After you have connected the **GREEN** wire, you need to teach the remote starter the vehicle's tach rate. Set the Tach rate as follows:

TACH RATE LEARNING

- A. Connect the GREEN wire to the car's tach wire under the hood.
- B. Turn the Control Switch OFF. Wait 5 seconds for the flashing of the GREEN LED to stop.
- C. On the remote starter module, make sure dip switch 3 is in the ON (down) position
- D. Start the car and let it get to a normal idle.
- E. Keep your foot clear of the gas pedal to prevent varying engine speed
- F. Flip dip switch #2 to the ON (down) position.
- G. Watch the RED LED. It will come on after 3 or 4 seconds, indicating the idle rate has been learned.
- H. RETURN DIP SWITCH #2 TO THE OFF (UP) POSITION (LEAVE DIP SWITCH #3 DOWN -- ON)

OPTIONAL STEPS

14 Yellow Wire	Headlights/Parking Lights	Control Harness
-----------------------	----------------------------------	------------------------

The optional **YELLOW** 18 gauge wire activates the low beam headlights or the parking lights with a built-in 15 amp 12 volt relay. This feature provides visual indication that the car has started. After the remote starter has successfully started the car, the lights will come on and stay on until the system shuts off, or until the key is inserted into the ignition and the car is driven. Hook the **YELLOW** wire to the low beam headlights or the parking lights if you desire this feature. (Note: There is a 15 Amp fuse in the case for the headlight circuit. This is the one furthest from the power wires. Check this fuse if you have no output).

15 Blue Wire	Horn/Siren (or Trunk)	Control Harness
---------------------	------------------------------	------------------------

This wire puts out a pulse once each time the remote starter starts the car. It also is used to confirm Lock and Unlock and in the various CarFinder® and Panic/Alarm modes.

The AutoCommands have a +12 volt relay output which can directly drive a horn or siren.

If connecting up to a horn, this **BLUE** wire goes to the positive wire for the horn. The ground side of the horn is probably already going to ground.

If connecting up to a siren, this **BLUE** wire goes to the positive wire for the siren and the black ground wire of the siren goes to ground. Note: See Step 29 Option 11 for changing from the factory setting of 'horn' mode to the 'siren' mode.

This output can also be used to supply a +12 volt relay output to power an electric trunk by setting option 22 (Described in Step 29). If set, the **BLUE** wire now acts like a 12 volt positive trunk output and the **GREEN/WHITE** wire referred to in Option 22 now acts as a negative (-) horn/siren output. This **GREEN/WHITE** wire is a negative transistor output which can be used to directly drive the negative going horn wire at the steering column.

16 Brown Wire Accessory Pulse/Dome LampControl Harness

The **BROWN** wire is the accessory pulse which gives you a quick pulse just before the car starts or stops. **This is a 500 mA transistor ground output which MUST drive a relay** (not included) which in turn will supply either ground or positive signal. This is important in some vehicles to control the defroster or to control the GM R.A.P. system, or to re-lock power door locks if the vehicle automatically unlocks them whenever the vehicle stops running.

You can also use the dip-switch option 20 (described in Step 29) to change this output to turn on the dome lamp when the doors are unlocked. **This is a 500 mA transistor ground output which MUST drive a relay** which in turn will supply either ground or positive signal to the door pin switch wire. Most GM vehicles, most Chrysler vehicles and most Japanese vehicles require a ground. Most Ford cars and trucks will require a positive +12 v output.

17 Brown/White Alarm Disable Control Harness

The **BROWN/WHITE** wire will put out a quick negative pulse just before unlocking or starting the vehicle. This wire is used to turn off the factory alarm. Connect this Brown/White wire directly to the factory alarm disarm wire. This wire is usually located in the driver's kick panel. **Refer to the "factory disarm" column of the blue vehicle wiring guide to determine the color code of your particular vehicle.**

18 White/Black Wire IGN 3 / VATS Control Harness

The **WHITE/BLACK** wire is a 500 mA transistor ground output that acts just like the IGN1 or IGN2 relay outputs. It is active during **run** and **crank**. **This wire MUST be set up to power a relay.** With a relay, it can be used to power the third ignition wire at the ignition key.

The **WHITE/BLACK** wire comes on before anything else, and turns off 2.5 seconds after the last wires turn off. Consequently one of the most common uses for this wire is for a **VATS** disable wire. See SPECIAL CASES for using this with the VATS system.

19 Red/White Wire Remote Input Control Harness

The **RED/WHITE** wire can be used to trigger the AutoCommand to start from a source other than DesignTech's remote control transmitter. Giving this wire a negative pulse will cause the AutoCommand to start. Giving it another negative pulse will cause it to stop.

ACCESSORY HARNESS

20 Gray & Gray/Black Alarm Inputs Accessory Harness

Important Note: If you want to use the keyless entry features only - with no alarm functions - connect the **GRAY** wire to ground or set Option 24 (described in Step 29) for No Alarm mode .

The **GRAY** alarm input wire will accept any negative alarm input, including: shock sensors, perimeter sensors, etc. When connecting a shock sensor or microwave sensor, always use the **GRAY** wire. AutoCommand ignores this input during the remote starting and when the AutoCommand is running the vehicle, preventing false triggering.

Model 20038: If you are using the included plug-in Shock Sensor -- simply plug it into the 3 pin connector jack shown on page 4. The **GRAY** wire is in parallel with the Shock Sensor's output wire -- thus care needs to be taken (i.e. diode isolate this wire) if you want to use the **GRAY** wire for any other sensor as well.

If you are using a sensor or input that switches to (+) when triggered, you will need to reverse the polarity with a relay before connecting to the **GRAY** wire.

The **GRAY/BLACK** wire is normally for the door pin switch and will be temporarily disabled for the first 45 seconds of starting (this prevents vehicles with dome light that come on when starting from activating the alarm if the **GRAY/BLACK** wire is hooked to the door pin switch). This input is polarity selectable. This means you can set it to respond to a positive input or a negative input by setting the dip switch option 23 (described in Step 29). Factory setting is negative trigger and the option setting is positive (typically FORD vehicles).

Both inputs are isolated and independent. Since this unit is "last door arming" and "negative trigger", a faulty sensor will not affect the other sensor input and will not render the alarm inactive. You should diode isolate the inputs of two or more sensors on the same input wire.

21 Green/White Wire Trunk / Carb Accessory Harness

The **GREEN/WHITE** wire can be used for one of 2 functions. See the dip switch setting option #21 (described in Step 29) to choose the setting you want (factory setting is trunk). This output is a 500 mA negative transistor output. **You MUST have this output power a relay to either the trunk or the carburetor solenoid.** NOTE: If the remote starter is in the armed mode -- popping the trunk with the transmitter will disarm the alarm.

You can also swap the trunk and horn wires using option 22 (described in Step 29). This option is also described in Step 15.

22A Extra Yellow Starter Kill

These models have a built-in Starter Kill relay to immobilize the vehicle when the alarm is armed. You will need to cut the vehicle's Starter wire in half between the key cylinder and the starter solenoid of the vehicle. If you have already hooked up the Thick Yellow Wire in Step 7, cut the wire between where the Yellow wire is and the key. Now connect the solenoid (engine) side wire to the yellow starter wire that goes to the module where there are 6 spade connectors -- if not already done in Step 7. Now attach the extra Thick Yellow wire onto the tab connector of the remote starter that is protruding out of the opposite side of the module as the main power wires. Connect the other end of this wire to the remaining cut end of the keyside of the vehicle's starter wire that was cut in half earlier.

22B White Ground out while armed Accessory Harness

This **WHITE** wire is 400mA continuous negative transistor output which follows the Starter Kill output. This wire is active whenever the alarm of the remote starter is armed or the vehicle is running remotely under remote starter control. You can use the WHITE wire for any other special applications that are only active while the alarm is armed or running remotely.

23 Dash-mount LED Plug-In LED

This external LED gets plugged into the connector just to the left of the dip switches. This external LED can be dash mounted as desired. This LED will disable the GREEN LED on the unit. This becomes useful for checking diagnostics even if the unit is not visible. This LED will also blink on and off continuously when the remote starter is locked/armed. The LED mounts in a 5/16 inch hole.

24 Yel/Red & Yel/Green Door Unlock Accessory Harness Wht/Red & Wht/Green Door Lock

The **YELLOW/GREEN** wire is the NC (normally closed) contact of the on-board door unlock relay. The **YELLOW/RED** wire is the C (common) contact of the on-board door unlock relay.

The **WHITE/GREEN** wire is the NC (normally closed) contact of the on-board door lock relay. The **WHITE/RED** wire is the C (common) contact of the on-board door lock relay. Check the separate GREEN SHEET to determine which wire the correct lock/unlock wires in your vehicle.

To select lock polarity output:

The remote starter has a 15 amp fuse inside it's case to select lock polarity. This fuse is factory set at positive. (This fuse is the one closest to the power wires and connects the normally open contact of the relay to +12V or ground). The position furthest from the power wires is 'positive'. The closest position is 'negative'.

If your door locks are **positive**, keep the fuse set for positive as it comes from the factory. If your door locks are **negative**, open the unit and reverse the position of the fuse (as described in the above paragraph). If your door locks are **reverse polarity**, keep the fuse set for positive and cut the lock and unlock wires of the vehicle in half and follow the Green Sheet Keyless Entry Notes.

Check this chart for connecting to the 3 most popular locking styles:

AutoCommand Wire	Positive Polarity	Negative Polarity	Reverse Polarity
Yellow/Red	Connect to car's Unlock wire	Connect to car's unlock wire	Connect to car side, car unlock wire
Yellow/Green	NOT USED	NOT USED	Connect to door side, car unlock wire
White/Red	Connect to car's lock wire	Connect to car's lock wire	Connect to car side, car lock wire
White/Green	NOT USED	NOT USED	Connect to door side, car lock wire

REQUIRED FINAL STEPS

25 The Antenna

The black coax antenna wire with the clear plastic tube at the end receives the remote signal from the transmitter. Plug the coax antenna into the remote starter module. Snake the coax antenna around under the dash and up the inside of the right or left windshield post and over the top of the windshield. Use the 2 enclosed black clips to mount the last eight inches of the antenna to the windshield behind the rear view mirror and at least 2 inches down from the metal top of the vehicle. Clean the windshield with the alcohol pad provided for maximum adhesion of the black clips. Use the 2 double stick foam tape pieces to mount the plastic clips. The better exposed the last (clear tube) section is, the better the range performance. In many vehicles, you can get better range performance by mounting the antenna vertically hanging downward from the top of the windshield.

The wiring section of the installation is now complete. Be sure to tape off all unused wires so as to prevent short circuits, and mount the module securely under the dash. When tying up and mounting, be sure to avoid any moving parts (steering column, pedals) and sharp edges.

26 Trying the Unit Out

NOTE: Failure to properly install the hood pin switch and the Control Switch could result in serious personal injury. All safety features provided must be installed.

WARNING: Be prepared to apply the brake during this testing. Close the hood, fully apply the emergency brake, and place the vehicle in Park.

Note: Some installers hook up a battery charger to the battery during installation. This is fine, but the remote starter will not function properly until the charger is removed. Remove the charger before final testing.

1. Once all the wiring is checked and is correct, turn the control switch from Off to On once. (The green LED on the module or external dash mount red feedback LED if plugged in should flash once then go off.) Note that these LED will actually glow dim when in the off position.
2. Now put the car in park, then press and hold the middle button on the transmitter.
3. When the remote control radio signal is received, the HORN, if hooked up, will honk quickly.
4. After this, power will be applied to IGN1, IGN2, and then START.
5. When the car's rpm go above 500, the START wire will lose power and the ACCESSORY and LIGHTS will be turned on a few seconds later.
6. The car will continue to run for ten minutes, or until the car is taken out of park, the hood is opened, the brake is depressed, or the transmitter is pushed again. Please check out each of these safety features.
7. The remote starter will also turn off if the car stalls, but in this case it will try starting the car up to 2 more times, waiting a little longer between tries.
8. The tan USER TIPS & NOTES and Wallet Card gives you further details regarding the daily use of this product. Refer to this sheet for further functions and features.

NOTE: If you unit does not respond at all to the transmitter, you may need to follow the Transmitter Learning on the next page.

27 TRANSMITTER LEARNING

Your transmitter is factory coded to one of over 16,000,000 different codes. The remote starter module can learn the codes of up to 4 different transmitters. Once power and the Control switch have been hooked up to the module, the codes can be learned. **The transmitter should have already come from the factory taught to the remote starter module. If your unit does not respond to the transmitter in any way -- then you must teach the AutoCommand® the code of the transmitter with the following procedure -- otherwise -- skip this step:**

With the Valet Switch in the ON position:

1. On the remote starter module, put the dip switch marked "1" to the on (down) position.
2. Watch the green or external dash-mount red LED as you press and hold the left LOCK button on the transmitter down. When the LED & dash lights come on, the module has learned the transmitter code. Stop pressing on the transmitter button
3. To learn additional transmitters (up to 3 more), simply push the left LOCK button on another transmitter for a few seconds until the green feedback light & dash lights comes on.
4. **RETURN DIP SWITCH #1 TO THE UP OFF POSITION!!! A few seconds later the LED and dash lights flash 4 times signifying exiting this mode.**

NOTE: Teaching new transmitters erases all previously learned transmitters. Thus you must learn all current transmitters at the same time.

28 Trouble Shooting with the Self Diagnostics

The remote starter unit comes with a complete built in diagnostic routine. It tells you why the remote starter wouldn't start the car or why the unit shut the car off the last time. To activate the diagnostic mode, simply turn the control switch OFF. In a few seconds, the GREEN LED on the remote starter module will flash 1 to 12 times to tell you what the problem was. See the chart on the following page for an explanation of the flashes.

Note: If the hood is open when the control switch is turned off, the light output will flash the diagnostic code. This will allow you to see the code from outside the vehicle.

Why the remote starter shut off the last time:

- 1 flash 10/15 minute time out -- i.e. nothing unusual happened.
- 2 flashes Brake pushed/Hood opened/Auxiliary kill input received
- 3 flashes No Tach or Stalled. May be missing an ignition wire which powers up the alternator. Or in tach mode -- you may be missing the correct tach wire.
- 4 flashes Received another remote input from the transmitter
- 5 flashes Transmission was shifted into gear.
- 6 flashes Low battery voltage, or alternator not coming up. Either low battery voltage or you are missing one of the necessary ignition wires needed to run the vehicle. When you locate it -- simply connect it to the AutoCommand's IGN2 wire. If low battery, start vehicle with key and recharge battery.
- 7 flashes An alarm input was activated.
- 8 flashes Overcurrent. One of the transistor outputs is driving an output with too heavy a load. You must have this output drive a relay.
- 12 flashes Control Switch was turned off or a wire to the switch has been cut.

This self diagnostic mode can also tell you why it started the last time. To know why the unit started the last time, simply hold your foot on the brake while you turn the control switch off. The diagnostic code is as follows:

Why the remote starter started the last time:

- 1 flash The unit has not started yet since it was last powered up.
- 2 flashes Received a radio signal input from the transmitter to start.
- 3 flashes N/A.
- 4 flashes Temperature reached 0°F in Cold Start mode.
- 5 flashes Voltage reached 11 volts in Cold Start mode.
- 6 flashes Received a start command from the optional Pager unit.
- 7 flashes Started from 24 hour daily start feature.

29 DIP SWITCH SPECIAL SETTINGS

The remote starter unit has 8 dip switches on the side of the case which allow for programming of special options and features. The first 3 dip switches have already been used in earlier steps for transmitter learning, and tach rate learning. DIP switch numbers 4 - 8 are used for selecting up to 31 options other than those that have been set at the factory. Some options may alter the way the remote starter operates, some options turn on special features for your particular installation. (See the next page for a detailed description of each option.)

You will not need to use these special switches in most situations. The factory settings will operate most vehicles. **You must turn the Control Switch OFF to program any features.** (Note that when turning off this control switch the LED will flash a few times giving the diagnostic code described in Step 28. Ignore this by waiting a few seconds for it to finish before programming your new Dip Switch settings.)

#	ON - Down	OFF - Up	Factory Setting
1	Learn TX	Normal use	OFF
2	Learn tach	Normal use	OFF
3	Tach mode	"No-Tach" mode	OFF
4	(Programing switch)		OFF
5	(Programing switch)		OFF
6	(Programing switch)		OFF
7	(Programing switch)		OFF
8	(Programing switch)		OFF

#1 is for teaching the transmitter(s). See step 27.

#2 is for teaching the AutoCommand's tach rate. See step 13.

#3 sets the starting method. The normal setting is up. In this position, the remote starter uses "No-Tach" starting. If you wish to use the tach to start, and you have connected the **GREEN** wire, set this switch down (On). See Step 13.

The following list explains the settings as they come from the factory and the options you may set, if you choose to do so:

	FACTORY SETTING	OPTION SETTING
Option #	(2 Flashes)	(1 Flash)
Option 1	Not used	
Option 2	10 minutes	15 minutes
Select this option to increase the standard run time to 15 minutes.		
Option 3	Normal crank	Extended Crank
This option will increase the amount of time the AutoCommand engages the starter. This is useful for older vehicles or vehicles with throttle body fuel injection that may take longer to start. This adds 50% more crank time.		
Option 4	Normal Crank	Super Crank
Same as option 2, but 100% more crank time. This option applies even if Option 2 is set.		
Option 5	Normal Voltage	Ignore Voltage Metering
Selecting this option for Diesel vehicles tells the AutoCommand to ignore up to a .5 volt dip below the voltage reading it takes when in the NO-TACH mode. This is useful when using the NO-TACH starting on a diesel with many electrical accessories.		
Option 6	Gasoline engine	Diesel engine
This option allows the AutoCommand to be installed in a diesel vehicle. In this mode the run times are doubled.		

Option #	FACTORY SETTING (2 Flashes)	OPTION SETTING (1 Flash)
Option 7	Enable Required	No Enable Required
The AutoCommand has a safety feature which requires the user to 'set' the control switch by turning it off and on once each time the user leaves the vehicle. This is called 'enabling the unit'. You can disable this feature by choosing the option "no enable required".		
Option 8	Normal	Daytime Running Lights
This option will turn the headlights on about 10 seconds after it sees the key in the ignition position -- and turn if off when the key is removed from the ignition.		
Option 9	Normal	Diesel "Wait to Start"
This option will control the time before cranking the diesel vehicle by looking at the 'wait to start' light of the vehicle. Simply hook the Red/Black Input wire of Step 9 up to the wire behind the 'wait to start' light. Also set option 6 for diesels.		
Option 10	Normal	IGN 2 off during Crank
This option will turn off IGN 2 during crank. This is required on some newer vehicles.		
Option 11	Horn Pulsing	Siren Constant
Changes the thin blue wire from pulsing output for horn to constant output for a siren.		
Option 12	Chirp with locks	Silent lock/unlock/start
This option will eliminate the chirp with Start, Lock and Unlock.		
Option 13	Active Arming	Passive Arming
Active arming--Requires the owner to actively arm the car with the remote control. Passive arming--Automatic arming after the key is removed and the door is closed.		
Option 14	Normal	Lock Follow Ignition
This option locks the door when the key is in the ignition.		
Option 15	Normal	Unlock Follow Ignition
Selecting this option will unlock doors when key is removed from ignition.		
Option 16	Normal	Double Lock Pulse
This option will pulse the lock output wire twice instead of once for normal mode.		
Option 17	Normal	Double Unlock Pulse
This option will pulse the unlock output wire twice instead of once for normal mode.		
Option 18	Short lock pulse	Long lock pulse
This option will increase the door lock time from 0.6 seconds to 3 seconds for vehicles with vacuum locking systems. (many European vehicles).		
Option 19	N/A	

Option #	FACTORY SETTING (2 Flashes)	OPTION SETTING (1 Flash)
Option 20	Accessory Pulse	Dome Lamp
Accessory pulse puts out a brief pulse output after the remote starter starts or stops the vehicle. When set, this output can be used to turn on a defroster that requires a momentary pulse or could be used to control GM RAP (retained accessory power) output. Dome lamp will come on when you unlock the door for 20 seconds		
Option 21	Trunk	Carb output
Converts the Green/White wire, normally the trunk output, into an output that will control a carburetor solenoid. Set this option if you plan on using a carburetor kit to pump the gas pedal before starting the car with the remote starter.		
Option 22	Horn - Relay Trunk - Transistor	Trunk - Relay Horn - Transistor
Factory: Blue wire (+12 volt relay output) has Horn function & Green/White wire (neg. transistor) has Trunk function Option: Blue wire (+12 volt relay output) has Trunk function & Green/White wire (neg. transistor) has Horn function		
Option 23	Negative Door Pin	Positive Door Pin
This option will change the polarity of the door pin switch input.		
Option 24	Alarm Mode	No Alarm Mode
This option will turn off the alarm features if not desired.		
Options 25-30	N/A	
Options 31	Reset all	

PROGRAMMING OPTIONS:

If you do not want any special features -- DO NOTHING and skip this section. If you want to change to one of the options, TURN THE CONTROL SWITCH OFF and make sure dip switch #1 and #2 are up (Off). Wait 6 seconds for the Green LED on the remote starter module (or the external LED) to stop flashing and then continue with the following procedures:

* Set programming switches (4, 5, 6, 7 & 8) to the correct order for the first item you would like to set. All five switches must be set according to the chart on the next page.

* Press the MIDDLE button on the transmitter. The green LED on the remote starter module or the external plug-in LED will flash ONCE to indicate that the remote starter has changed the selected feature from the factory setting to the **option setting**. Pushing the middle button again will give you 2 flashes of the LED and will change the setting back from the option setting to the **factory setting**. You can go back and forth as often as needed.

* Repeat this procedure for each feature you choose to adjust from the 31 options.

* When you have adjusted all of the settings that need to be changed, reset all the switches to the UP (or OFF) position (towards the LEDs). This is the normal use position.

FOR OPTION	SET SWITCHES				
	4	5	6	7	8
Normal Factory Setting/Option	UP	UP	UP	UP	UP
1) Not used					
2) 10 min./15 min. Run Time	UP	UP	UP	DOWN	UP
3) Normal/Extended Crank	UP	UP	UP	DOWN	DOWN
4) Normal/Super Crank	UP	UP	DOWN	UP	UP
5) Norm/Ign. Meter Voltage	UP	UP	DOWN	UP	DOWN
6) Gasoline/Diesel	UP	UP	DOWN	DOWN	UP
7) Enable/No enable	UP	UP	DOWN	DOWN	DOWN
8) Normal/Daytime Lights	UP	DOWN	UP	UP	UP
9) Norm/Diesel Wait Start	UP	DOWN	UP	UP	DOWN
10) Normal / IGN2 off dur crank	UP	DOWN	UP	DOWN	UP
11) Horn Pulse/Siren Const.	UP	DOWN	UP	DOWN	DOWN
12) Chirp/Silent Lock/Unlock	UP	DOWN	DOWN	UP	UP
13) Active/Passive Arming	UP	DOWN	DOWN	UP	DOWN
14) Normal/Lock after Ign.	UP	DOWN	DOWN	DOWN	UP
15) Normal/Unlock after Ign.	UP	DOWN	DOWN	DOWN	DOWN
16) Norm./Dbl. Pulse Lock	DOWN	UP	UP	UP	UP

	4	5	6	7	8
17) Norm./Dbl. Pulse Unlock	DOWN	UP	UP	UP	DOWN
18) Short/Long Locks	DOWN	UP	UP	DOWN	UP
19) N/A	DOWN	UP	UP	DOWN	DOWN
20) Acc. Pulse/Dome Light	DOWN	UP	DOWN	UP	UP
21) Trunk/Carb. Output	DOWN	UP	DOWN	UP	DOWN
22) Horn-Trunk/Swap	DOWN	UP	DOWN	DOWN	UP
23) Neg./Pos. Door Pin Switch	DOWN	UP	DOWN	DOWN	DOWN
24) Alarm / No Alarm	DOWN	DOWN	UP	UP	UP
25-30) Not applicable					
31) Reset all	DOWN	DOWN	DOWN	DOWN	DOWN

Factory Anti-Theft Systems

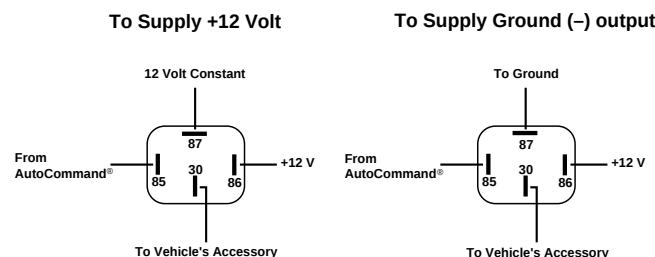
Many vehicles come with an anti-theft system that must be temporally bypassed for the vehicle to be remotely started. Some systems use a resistor in the key. Others use a transponder—a small device in the key that communicates a high security code to the vehicle before the vehicle will successfully start. Check the following list of vehicles below. If your vehicle is listed, your vehicle has an Anti-Theft System that the remote starter **MUST** temporally bypass in order to start the vehicle. More information about the factory anti-theft systems and vehicle wire colors can be found at DesignTech web page www.designtech-intl.com. DesignTech has developed a Universal Alarm Bypass Module, model #20402, that will temporally bypass the factory anti-theft systems when using the remote starter. Check with your local retailer/installer to purchase this Universal Alarm Bypass Module, model #20402 or contact DesignTech directly.

List of vehicles and the types of security systems:

Acura 3.2TL 98+	Transponder	GMC Jimmy 98+	Passlock II
Acura RL 98+	Transponder	GMC Safari 98+	Passlock II
Audi A4,A6,A8 98+	Transponder	GMC Suburban 98+	Passlock II
BMW (all 97+)	Transponder	GMC Yukon 98+	Passlock II
Buick LeSabre 90 -96	VATS	Honda Accord 98+	Transponder
Buick Park Ave 91 -96	VATS	Honda Prelude 98+	Transponder
Buick Park Ave 97+	Transponder	Jeep Grand Cherokee 99	Transponder
Buick Regal 93 -96	VATS	Jeep TJ (Wrangler)99	Transponder
Buick Riviera 93 -96	VATS	Lexus (all 97+)	Transponder
Buick Roadmaster 93 – 96	VATS	Lincoln Continental 97+	Transponder
Buick Skylark 96 -98	Passlock I	Lincoln Mark VIII 97+	Transponder
Cadillac Allante	VATS	Lincoln Navigator 97+	Transponder
Cadillac Brougham	VATS	Lincoln Towncar 97+	Transponder
Cadillac Catera	Transponder	Mercedes (all 97+)	Transponder
Cadillac Deville 92 -96	VATS	Mercury Cougar 99	Transponder
Cadillac DeVille 99	Transponder	Mercury Mystique 97+	Transponder
Cadillac Eldorado 89 -98	VATS	Mercury Sable 96+	Transponder
Cadillac Fleetwood 90 -96	VATS	Nissan Maxima 98+	Transponder
Cadillac Seville 90 -98	VATS	Oldsmobile Intrigue 98+	Passlock II
Cadillac Seville 99	Transponder	Olds.Cutlass 97+	Passlock II
Chevrolet Venture 99	Transponder	Oldsmobile Achieva 95-98	Passlock I
Chevy Astro Van 98+	Passlock II	Oldsmobile Alero 99	Passlock II
Chevy Blazer 98+	Passlock II	Oldsmobile Aurora	VATS
Chevy Camaro 86 -99	VATS	Oldsmobile Bravada 98	Passlock II
Chevy Cavalier 96+	Passlock	Oldsmobile Eighty-Eight	VATS
Chevy Corvette 88 – 99	VATS	Oldsmobile Ninety-Eight	VATS
Chevy Lumina 96 -99	VATS	Oldsmobile Silhouette 99	Transponder
Chevy Malibu 97 -99	Passlock II	Pontiac Bonneville 89+	VATS
Chevy Monte Carlo 96 -99	VATS	Pontiac Firebird 88+	VATS
Chevy Pickup Full-size 98+	Passlock II	Pontiac Grand Am 96 -98	Passlock
Chevy S-10 98+	Passlock II	Pontiac Grand Am 99	Passlock II
Chevy Suburban 98+	Passlock II	Pontiac Grand Prix 92 – 96	VATS
Chevy Tahoe 98+	Passlock II	Pontiac Montana 99	Transponder
Chrysler Concorde 98+	Transponder	Pontiac Sunfire 96+	Passlock
Chrysler Sebring Conv 98+	Transponder	Porsche (all 97+)	Transponder
Chrysler LHS 99	Transponder	Saab (all 97+)	Transponder
Dodge 300 M 99	Transponder	Saturn 97+	Factory
Dodge Intrepid 98+	Transponder	Toyota Avalon 98+	Transponder
Ford Contour 97 +	Transponder	Toyota Camry 98+	Transponder
Ford Expedition 97+	Transponder	Toyota Land Cruiser 98+	Transponder
Ford Explorer 98+	Transponder	Toyota Solara 99	Transponder
Ford Mustang 98+	Transponder	Toyota Supra 98+	Transponder
Ford Taurus 96 +	Transponder	Volkswagen Passat 98+	Transponder
		Volvo (all 98+)	Transponder

HOW TO USE A RELAY

Many of the optional steps require a relay to be hooked up. The most common relay used for this type application is the Bosch type relay (Radio Shack Cat.#275-226). Use the diagram below for a typical hookup. If you have another relay then you need to know that pins 85 and 86 in this diagram relate to the coils of the relay. Pin 30 is the 'common', and pin 87 is the 'normally open' contact. If your relay has a pin 87A in the middle it is the normally closed contact and is not used.



Diesel Vehicles

You must also set Option 6 to run in diesel mode. This may be all that is required in many installations.

However if possible, hook up the **RED/BLACK** wire from Step 9 to ensure the best possible starting.

The Wait-To-Start option 9 combined with Deisel option 6 is the best way to connect to a diesel vehicle. The Wait-To-Start wire for the 3 most popular deisel vehicles are as follows:

Ford	Pink/Black at Wait-To-Start light
Dodge	Orange/Black at Wait-To-Start light
Chevrolet	Lt Blue at Glow Plug in engine compartment

For Ford vehicles, you may find the vehicle tends to stall after a short period. You may need to set Option 5 "Ignore meter" for the vehicle to continue to run.

The Following installation accessories are available through your distributor or DesignTech. All prices are in US dollars. Shipping and handling are included.

#20061	Extra 3 button transmitter	\$49.95
#20051	Extra 1 button transmitter	\$44.95
#20059	Transmitter 3 volt lithium battery	\$7.95
#20402	Alarm Bypass Module	\$39.95
#20043	Bosch 30 amp relays	\$9.95
#20046	Carburetor kit	\$79.95
#20610	Shock sensor kit	\$49.95
#20612	Siren	\$49.95
#30021	Garage Door Receiver Unit	\$49.95
#20314	Long range cellular style antenna	\$59.85
#20519	Digital Multimeter	\$29.95
#20401	Universal Alarm Bypass Module	\$39.95

This device complies with Part 15 of the 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.

FCC ID: ELGSHRX & ELGSHTX DOC: _____
User is cautioned that changes or modifications not expressly approved by DesignTech could void the user's authority to operate this equipment.
Covered under US Patent Numbers: 5,024,186; 5,349,931 and 5,656,868


INTERNATIONAL, INC.
7955 Cameron Brown Court; Springfield, Virginia 22153 USA
Tel: (703)866-2000 or (800)337-4468
www.designtech-intl.com

USER INFORMATION

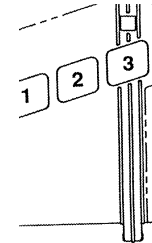
The tan colored USER TIPS & NOTES sheet and the Wallet Card gives you further detail regarding daily use of this product. Refer to this sheet for further functions and features. This product complies with both FCC and DOC requirements. Any modifications not expressly approved by DesignTech will void the user's authority to operate the equipment.

The transmitter button functions are as follows:

Button 1: Once - Lock doors/arm alarm
Again - Unlock doors/disarm alarm
Hold for 2 seconds - Panic alarm (horn and lights)

Button 2: Once - Start the car with all accessories left on
Again - Stop the car

Button 3: Once - Turn on the headlights for 25 seconds
Again - Turn off the headlights
Hold for 2 seconds - Pop Trunk / Unlock Doors / Disarm Alarm



The LED on the transmitter will display 3 different colors - Green for Button #1, Red for Button #2, and Yellow for Button #3. The unit is powered by a long life lithium battery. The transmitter and remote starter receiver module are FCC and DOC approved.

Important Note:

Make sure that all drivers who will be operating this unit are fully aware of the safety precautions installed and their limitations. Stress the importance of switching the control switch to OFF (the down position) every time the car is serviced. Show the user how the Control switch must be turned off and on again after pulling out the key before leaving the car. Give the user a copy of the tan colored page - USER TIPS AND NOTES so that they can familiarize themselves with the product.

If further assistance is required, call our Tech Hotline. Please have model number (20036, 20037 or 20038) and the diagnostic code (See Step 28) ready before calling tech support.


INTERNATIONAL, INC.
7955 Cameron Brown Court; Springfield, Virginia 22153 USA
Tel: (703)866-2000 or (800)337-4468
www.designtech-intl.com

LIMITED LIFETIME WARRANTY

DesignTech International, Inc. Warrants to the original consumer/purchaser that this product shall be free of defects in material and workmanship under normal use and circumstances for the period of time that the original owner of this product owns the vehicle in which it is installed. When the original consumer/purchaser returns the product pre-paid to DesignTech International Inc., 7955 Cameron Brown Court, Springfield, Virginia 22153, USA within the warranty period, and if the product is defective DesignTech International, Inc. will at its option repair or replace such.

This warranty shall constitute the sole liability of DesignTech International, Inc. concerning the product. DesignTech International, Inc. expressly disclaims all other warranties INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO PERSON, FIRM, OR CORPORATION IS AUTHORIZED TO ASSUME FOR DESIGNTECH INTERNATIONAL, INC. ANY OTHER LIABILITY IN CONNECTION WITH THE SALE AND USE OF THE PRODUCT. DesignTech International, Inc. and agents and distributors will bear no liability whatsoever for incidental or consequential damages or charges of any kind.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above disclaimer regarding incidental or consequential damages may not apply to you.

This warranty shall be effective only if the registration card is fully completed and mailed with proof of purchase to: DesignTech International, Inc., 7955 Cameron Brown Court, Springfield, Virginia 22153, USA within ten (10) days after date of purchase.

This warranty is void if the product or has been damaged or tampered with or if the product or any such parts have been opened. In all cases of damage during shipment, a claim must be filed with the shipping carrier and not with DesignTech International, Inc.

This warranty gives you specific legal rights; you may also have other rights which vary from state to state.

OUT OF WARRANTY REPAIRS

If the warranty card was not returned, or if you are not the original owner of the vehicle the product was installed in, DesignTech International, Inc. will at its option either (1) replace this product with a functionally similar (but not necessarily visually identical) refurbished product or (2) repair the original product and return it to the original consumer/purchaser after payment of repair/replacement charges have been received.

This registration card must be returned within ten (10) days of purchase.

Name _____ User's Age _____

Address _____

City _____ State _____ Zip _____

Phone Number: Home _____ Office _____

Place of Purchase _____ Date of Purchase _____

Product Purchased: 28636, 37 or 38 Price of Purchase: _____

Vehicle Make: _____ Vehicle Model: _____ Year: _____

This product was purchased for: ☐ Myself ☐ Spouse ☐ Relative ☐ Friend

How did you first become interested in this product?

☐ Retailer Newspaper Ad ☐ Magazine Ad ☐ In-Store Display

☐ Newspaper / Magazine Article ☐ Mail Order ☐ Friend / Relative

☐ In-Store Salesperson ☐ Other _____

_____ Please send me **FREE** information on other innovative DesignTech products



7955 Cameron Brown Court, Springfield, Virginia 22153, USA

Tel: (703) 866-2000 Fax: (703) 866-2001