

C6 Steering Wheel Swap for Radio Upgrade To Enable Steering Wheel Audio Controls

Overview: This is a step by step how-to to upgrade a 2005-2006 C6 steering wheel without audio controls to a 2007-2011 steering wheel with audio controls (to work with an aftermarket steering wheel control compatible head unit, or a stock NAV 2008+ unit as well) **WITHOUT** the need to replace the steering column harness. So using this method there is no need replace the stock steering column harness with the 19153095 steering column harness and it's fairly easy, so follow along and is quite a bit cheaper by not having to replace the steering column harness.

GM Parts Required:

2007+ C6 Steering Wheel with Audio Controls

2007+ Air bag

19153097 – Coil Kit – Steering Wheel Clock Spring

Other:

After market head unit and interface capable of being controlled by steering wheel controls or a 2007+ Bose Radio or NAV Radio (which has pinouts enabled for steering wheel controls)

Other Parts Required:

If using an aftermarket steering wheel controllable head unit, you need to make sure the interface you're using is capable of being controlled using steering wheel controls the most commonly used ones are the PAC RP5-GM11 or the PAC GM1A-RST, there're other made by other manufacturers that'll work also.

Various Harness Components which were ordered from www.mouser.com
I would strongly suggest ordering a few spares of each of the terminals listed below just in case one or more gets damaged during the install !

Qty 2 – 12146447 - 20/22 gauge Delphi 12146447 Micro-pack 100 female terminal (for the C1/X1 radio connector) <https://www.mouser.com/ProductDetail/Aptiv-formerly-Delphi/12146447-L?q=sZQYg3m6JlbM7tW9xPtyUg%3D%3D>

The following is optional, any type of three pin connector will work for this purpose. Because the connector sees no moisture, it doesn't need to be a sealed one such as the one shown here.

Qty 3 – 12045773 - 18/20 gauge Delphi 12045773 Metri-pack 150 Male terminal (for the jumper harness) <https://www.mouser.com/ProductDetail/Aptiv-formerly-Delphi/12045773-L?q=sDIE0rdXB%2FL1VBIfpO%252BVsnQ%3D%3D>

Qty 3 – 12048074 - 16/18 gauge Delphi 12048074 metri-pack 150 Female terminal (for the jumper harness) <https://www.mouser.com/ProductDetail/Aptiv-formerly-Delphi/12048074-L?q=sDIE0rdXB%2FL1wPNznsaV8RA%3D%3D>

Qty 1 – 12110293 - 3 cavity Delphi 12110293 Metripack 150 female connector (for the jumper harness) <https://www.mouser.com/ProductDetail/Aptiv-formerly-Delphi/12110293qs=%2Fha2pyFaduh2z7zciJZEqS27fD9vDdYO4U2j5Xu9i0TJ8BRA8R2uHA%3D%3D>

Qty 1 – 12129615 - 3 cavity Delphi 12129615 Metripack 150 male connector (for the jumper harness) <https://www.mouser.com/ProductDetail/Aptiv-formerly-Delphi/12129615?qs=%2Fha2pyFaduh2z7zciJZEqVBuIOYgtFy7m4mmYI%2FVZN%2FicOV0Ri4Ikg%3D%3D>

Qty 2 – 12052845 - Delphi 12052845 Metri-pack 150 connector TPA lock - 3 cavity (for the jumper harness) <https://www.mouser.com/ProductDetail/Aptiv-formerly-Delphi/12052845?qs=%2Fha2pyFadugppNiUvEwMGA8AcFo06%2F7R7zICOhGcR%252Bc%3D>

Qty 6 – 15324982 - Delphi 15324982 Connector wire seal 18-20 gauge (for the jumper harness) <https://www.mouser.com/ProductDetail/Aptiv-formerly-Delphi/15324982?qs=%2Fha2pyFaduh2z7zciZEqZ0qY5UyQtchKCfS1zML5XZvSSnLlz2AOg%3D%3D>

Other:

Qty 1 – PCS-TAPE – Wiring harness tape (Non-adhesive, dry vinyl) (for wrapping the jumper harness)

Some 18-20 gauge wire (I suggest 3 four foot lengths of each red, brown and purple colors) A few thin plastic tie straps

Let's Get Started...

Important: Prior to disassembly, ensure the battery has been disconnected for approx 10 minutes to prevent accidental air bag deployment.

Removing The Steering Wheel and Clock Spring...

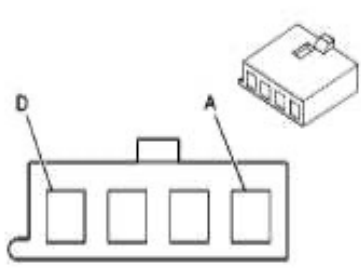
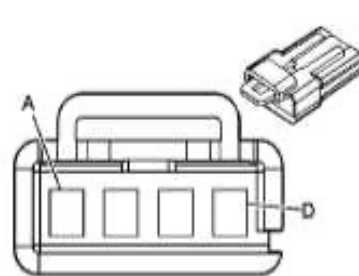
<http://forums.corvetteforum.com/c6-corvette-general-discussion/2592778-diy-steering-wheel-removal-and-clock-spring.html>

Remove the center console, HVAC controls and head unit.

<https://www.corvetteforum.com/how-tos/a/corvette-c6-how-to-install-aftermarket-navigation-368176>

Steering Wheel Wiring 101...

Model year 2005 and 2006 steering wheel coil clock springs have only two or four wires which connect to the steering wheel. These wires control the functions shown in the connector diagram below. Depending on your car the connector may only have two wires (pins A and B) in this connector

277 Inflatable Restraint Steering Wheel Module Coil to Steering Wheel Harness							
							
Connector Part Information		<ul style="list-style-type: none"> OEM: 12092162 Service: See Catalog 4-Way F Metri-Pack 150 Series (BK) 		Connector Part Information		<ul style="list-style-type: none"> OEM: 12092163 Service: See Catalog 4-Way M Metri-Pack 150 Series (BK) 	
Pin	Wire Color	Circuit No.	Function	Pin	Wire Color	Circuit No.	Function
A	YE	—	Horn Relay Control	A	TN	28	Horn Relay Control
B	BK	—	Ground	B	BK	1450	Ground
C	PK	—	Ignition 1 Voltage	C	PK	1039	Ignition 1 Voltage
D	PU	—	Remote Shift Selector Signal	D	PU	5526	Remote Shift Selector Signal

For the 2007 through 2011 clock spring, three additional wires were added to handle steering wheel audio and Bluetooth controls (7 wires total). The pinouts for the 3 additional wires on the new connector are pins 5, 6 and 7 shown below.

X277 Inflatable Restraint Steering Wheel Module Coil to Steering Wheel Harness							
Pin	Wire	Circuit	Function	Pin	Wire	Circuit	Function
1	0.35 GY	28	Horn Relay Control	1	0.35 BN	28	Horn Relay Control
2	0.35 D-BU	1450	Ground	2	0.35 BK	1450	Ground
				2	0.35 BK	1450	Ground (UK3)
3	0.35 D-GN	1039	Ignition 1 Voltage (MYC)	3	0.35 PK	1039	Ignition 1 Voltage (MYC)
4	0.35 BK	5526	Remote Shift Selector Signal (MYC)	4	0.35 PU	5526	Remote Shift Selector Signal (MYC)
5	0.35 PU	1491	Backlight Lamps Control	5	0.35 YE	1491	Backlight Lamps Control
6	0.35 BN	1375	Remote Radio Control Supply Voltage	6	0.35 PU/WH	1375	Remote Radio Control Supply Voltage
7	0.35 RD	1796	Steering Wheel Control Switch Signal	7	0.35 D-BU	1796	Steering Wheel Control Switch Signal

With the old clock spring removed you'll need to swap the old (black) four pin connector from the old clock spring with the wiring from (white) eight pin connector on the new clock spring harness. Below are pictures of the two connectors.

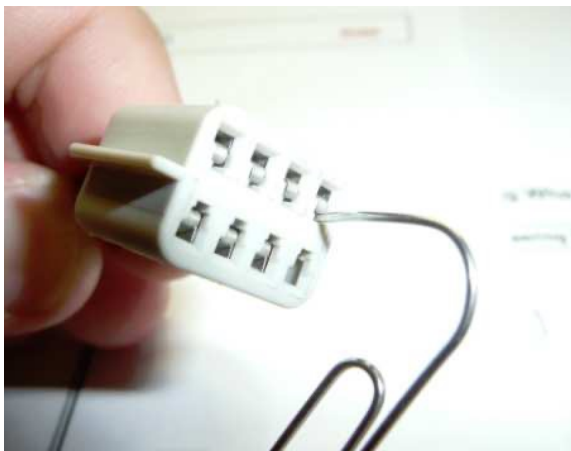
Old connector



New Connector



The pins can be easily removed from both connectors by inserting a small diameter pin (in this case a small paper clip) into the squares just below the pins on the end of the connector while pulling gently on the corresponding wire at the rear of the connector.



With the wires removed from both connectors, it's time to re-pin the old four pin connector with the corresponding wires on the new clock spring. Since harness wire colors can change from year to year it's better to focus on moving pins from location to location as pin locations within connectors usually don't change.

In this case, pin 1 (Horn Relay Control) from the new white connector was repined to pin A on the old black connector. Likewise, pin 2 (Ground) was inserted in pin B, pin 3 (Ignition 1 Voltage) into pin C and pin 4 (Remote Shift Selector Signal) into pin D.

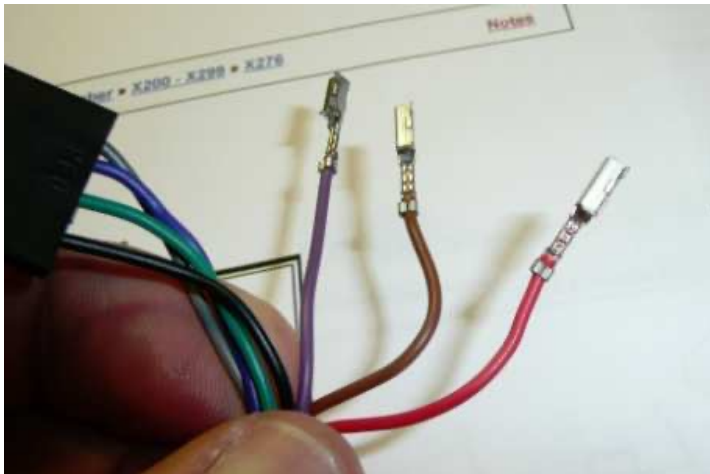


If your car only had 2 wires in the four pin connector, then you want to move the wires from pins 1 and 2 from the new connector, to pins A and B respectively to the old connector, the other two wires from pins 3 and 4 can either be cut off, or installed in pins C and D of the old connector, but they won't control anything if your cars not equipped with the remote shift selectors, as there's no corresponding wires in the connector it plugs into.

Don't forget to slightly pry the little tabs back out with a small screwdriver before reinserting them into the connectors to make sure they "click" into place.



This leaves the three “new” wires on the new clock spring harness without a connector for them to plug into. This is where you can improvise if you don’t have or want to buy the new steering column harness to plug into.



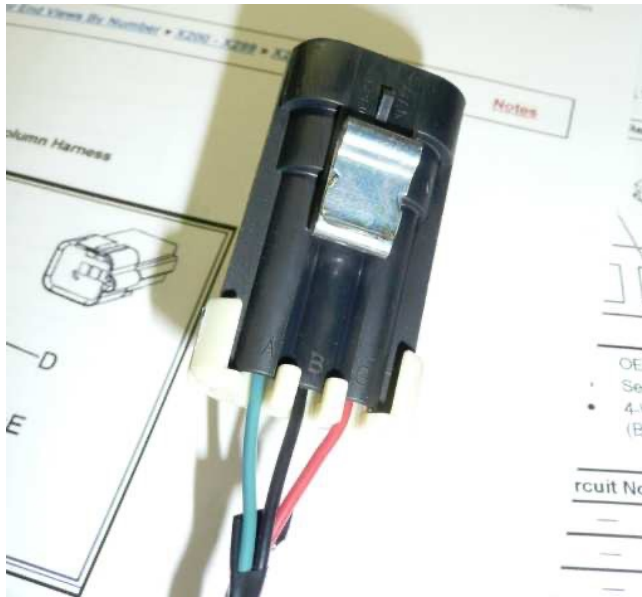
You can either add wires to these and solder and heat shrink the connections **OR** if you want to make these where they can be easily disconnected, Insert the three remaining wires into a new 3-cavity, Metri-pack 150 female connector purchased from Mouser, or any type of three pin connector. you may have (I personally used a 3 pin Deutche connector for mine shown here



however I didn't get any photos of it on my install) Keep track of which wire you inserted into which cavity as you will be making a new jumper harness that will connect to this in the next step. In this example pin C was the steering wheel control switch signal (red wire), pin B was the remote radio control supply voltage (brown wire) and pin A was the backlight lamps control (purple wire).



Since we aren't replacing the steering column harness, you'll need to fabricate a new jumper harness from the new 3-cavity clock spring connector to the rear of the radio / NAV unit. Cut three, 4 foot long sections of bulk wire of each color (red, brown, and purple), then on one end, crimp and solder Metri-pack 150 MALE connectors, and inserted them into a new 3-cavity, Metri-pack 150 male connector, or equivalent three pin connector. **If used, don't forget to install the connector wire seals over the wires before you crimp and solder on the connectors!**

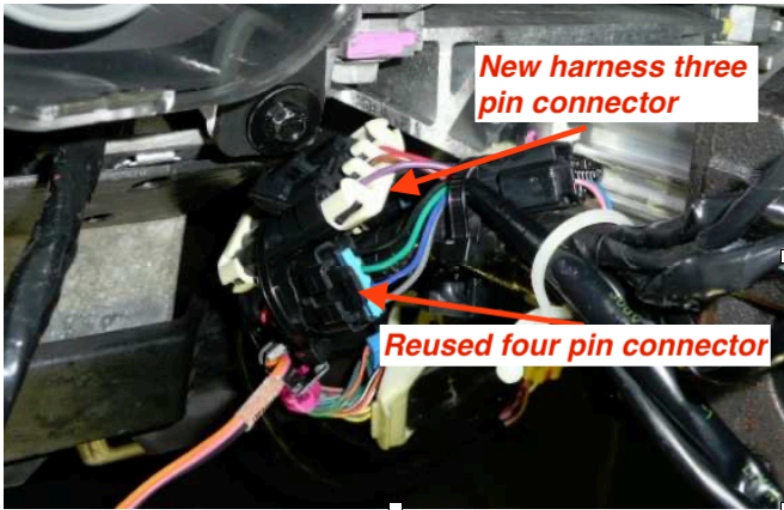


To make it simpler to keep track of the wires ideally you want to use pink, brown and purple wires, **however in this example** red, green and black wires were used and associated to the red, purple and brown wires from the clock spring harness. If color matching isn't for you then just label them accordingly with a small piece of masking tape and make sure the labels agree with the pin locations you inserted them into in the male connector.

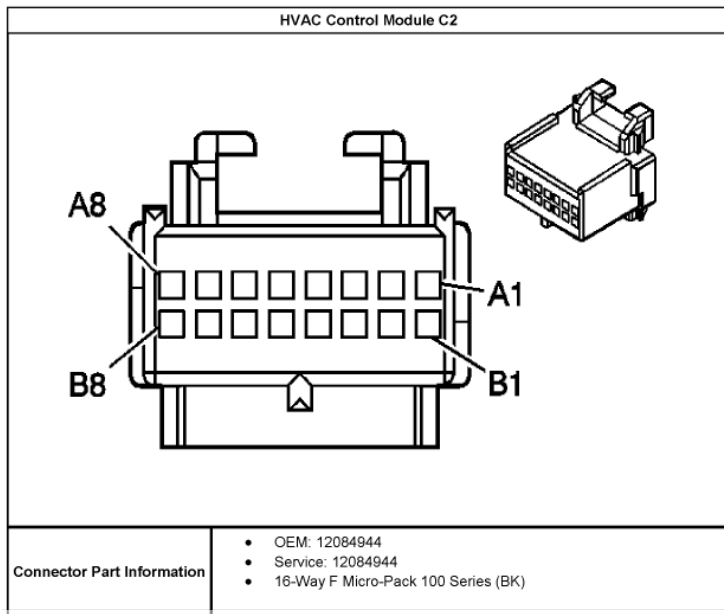
At this point you can install the new clock spring to the steering column and route the wires per the old clock spring you removed. (Reference the instructions linked above if necessary).

I suggest using non-adhesive electrical harness wrap tape to secured all three wires together from the rear of the male Metri-pack 150 connector to the other end of the jumper harness

With the new clock spring installed you can connect the jumper harness to the new clock spring harness. Then route the new 3 wire jumper harness wires to follow the clock spring harness down the bottom of the dash. From there towards the front of the car and around the back of the center console where the radio / HVAC resides (there is another existing harness already in place that I followed) and used zip ties to secure it to the existing harness. At this point the wires can be trimmed to length as needed leaving enough slack to reach the needed connection points.



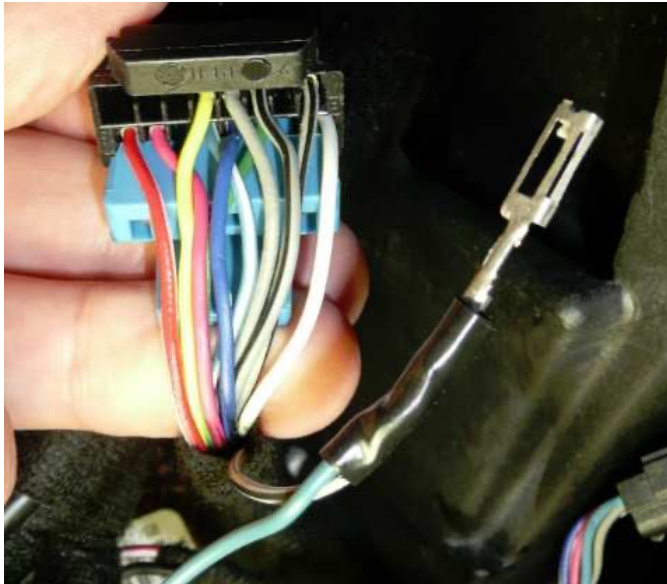
Once the jumper harness is routed to the location of the radio / NAV area we can make the final connections. The **Backlight Lamps Control** (purple) wire needs to be spliced into a lamp control wire in the C6. There is basically one in every connector that powers a switch that is backlit. **I personally chose to tap into the Orange/White illumination wire between the interface and the head unit wiring on my aftermarket system**, another option is one in the HVAC control harness just below the radio/NAV for proximity shown here.



- Connector Part Information
- OEM: 12084944
 - Service: 12084944
 - 16-Way F Micro-Pack 100 Series (BK)

Pin	Wire Color	Circuit No.	Function
A1	WH	193	Rear Defog Relay Control
A2	—	—	Not Used
A3	L-GN	5962	Inside Air Temperature Sensor Blower Control
A4	D-BU	2181	Passenger Heated Seat Control Module Status Signal
A5	L-BU/WH	181	Driver Heated Seat Control Module Status Signal
A6	—	—	Not Used
A7	PK	639	Ignition 1 Voltage
A8	RD/WH	1240	Battery Positive Voltage
B1	GY/BK	1458	Instrument Panel Lamp Supply Voltage 4
B2	GY/BK	1357	Instrument Panel Lamp Control
B3	GY/BK	754	Blower Motor Speed Control
B4	GY	5961	Passenger Seat Temperature Control Signal
B5	YE	182	Driver Seat Temperature Control Signal
B6-B8	—	—	Not Used

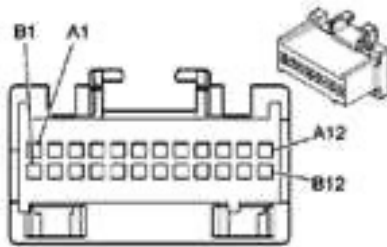
The wire shown here was in the C2 connector (of the three HVAC control panel connectors it is the one closest to the passenger side of the vehicle) and was in pin location B2 (Instrument Panel Lamp Control). First remove the pin from the connector and spliced into it a 1/2 inch or so below the end of the pin. **Be sure to remove the blue pin lock first.**



After splicing into the wire, solder the two wires together and wrap with adhesive electrical tape then reinsert the pin back into the B2 pin of the C2 connector. You can also add a tie strap to the harness bundle just above the sheathing for more support.



With the only splice out of the way it's time to insert the other two jumper harness pins into the radio / NAV C1/X1 connector. Using the schematics it was easy to determine which two pin locations were the ones we need to populate which are A6 and A7. Unplug the connector from either the interface or Nav unit depending on your application, then **remove the blue pin lock from the "A" side of the connector.**



Connector Part Information

- OEM: 12110088
- Service: 12110088
- Description: 24-Way F Micro-Pack 100 Series (GY)

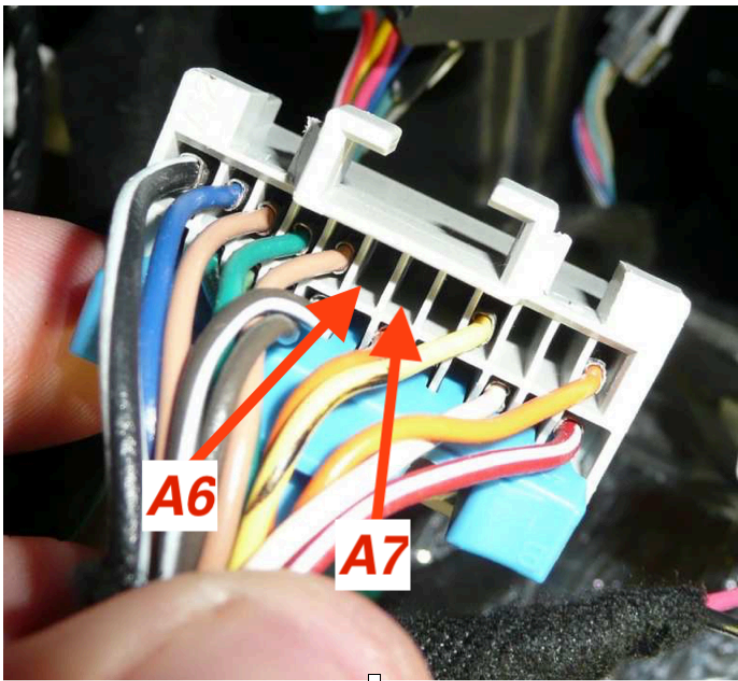
Terminal Part Information

- Pins: A1, A4, A8-A11, B1, B3, B6, B8-B11
- Terminal/Tray: 12146447/3
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12031876-1/J-35616-6 (BN)
- Pins: A12
- Terminal/Tray: 12146448/19
- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 12031876-1/J-35616-6 (BN)

Radio X1

Pin	Wire	Circuit	Function
A1	0.35 OG	1044	Radio Class 2 Serial Data
A2	-	-	Not Used
A3	0.35 PK	2060	Auxiliary Detection Signal (U65)
A4	0.35 YE	5172	FM Composite Signal
A5	-	-	Not Used
A6	0.35 PU	1375	Remote Radio Control Supply Voltage
A7	0.35 D-BU	1796	Steering Wheel Control Signal

On the **Remote Radio Control Supply Voltage** wire (brown wire from the clock spring) and the **Steering Wheel Control Switch Signal** (red wire from the clock spring) you'll crimp and solder on a Micro-pack 100 female connector to each wire as those will be inserted into empty A6 and A7 cavities in the radio/NAV C1/X1 connector



The **Remote Radio Control Supply Voltage** pin location is A6 and the **Steering Wheel Control Signal** pin is location A7. Insert the pins from the new jumper harness into their respective locations in the C1/X1 connector, Insert the (Brown wire from the clock spring in A6, and red wire from the clock spring in A7) making sure they're securely inserted.

Reinstall the blue pin lock, and plug the C1/X1 connector back in to either the interface or the Nav unit depending on your application. **Ensure you have the remote control wiring from your interface to the aftermarket head unit properly connected (see interface instructions)**, then you can reassemble the

steering wheel, the air bag, reconnect the battery, and test to ensure everything works correctly, your head unit should now be controlled by your steering wheel controls, and the steering wheel controls should illuminate when the head lights are turned on. If you installed a newer **stock** 2008+ Radio/NAV that's not native to your car, you will most likely need to have your local Chevy dealer remove the Theft lock by reprogramming it with the VIN of your vehicle using a Tech 2.

If you installed an aftermarket head unit, no further action is needed from the dealer, **however**, you may need to program your interface to each steering wheel control to suit your preferences (See your specific interface instructions on how this is done). If everything works correctly and set to your preference, finish installing the head unit, HVAC controls and dash.

If all was done correctly you should now have steering wheel controls on your 2005-2006 C6 Corvette, Enjoy ! If you have any questions or issues you can contact me via email at madsnp@tctwest.net

