INSTALLATION INSTRUCTIONS  
Removal of Existing Fan, Shroud & Radiator  
(Instructions shown are for Rad. / Fan kit #52180C3. Installation of Rad. / Fan kit #52181C3 should be similar)

1. **BE SURE THE ENGINE IS COOL BEFORE PROCEEDING.**
2. Disconnect cable from negative post of battery. Battery is located inside the car, behind driver’s seat, within an enclosure.
3. Removal of hood is recommended for better access to engine compartment.  
   Note: Take note of hood and hinge alignment for reinstallation later. 
   Note: Enlisting the help of other people will greatly reduce the risk of damage to the hood or fenders.
4. Drain cooling system by first removing fill cap on expansion tank (if equipped) and then loosening the petcock on the bottom of the radiator on the driver’s side. Allow coolant to drain until finished.
5. Remove the upper radiator hose from radiator inlet tube and move out of the way.
6. Loosen the alternator bracket to relieve tension on the fan belt, then remove belt.
7. Remove bolts (2ea.) securing top of fan shroud to radiator support. (see Detail A)
8. From below the vehicle; remove short nut and bolt sets (2ea.) holding shroud mounting flanges to “L” brackets bolted to lower splash shield plate. (see Detail B)
9. On stock fan configurations remove clutch and clutch fan. If the factory clutch and clutch fan have been replaced with a direct drive mechanical fan, slide fan shroud toward engine to reach the front of the mechanical fan. Reach in between shroud and radiator to access fan mounting bolts. Remove bolts and then fan. (see Detail C)

---

**Note:** Always read instructions and verify kit contents prior to installation.

- **Radiator** .................. 1ea.
- **Pre-Mounted Fan** ............. 1ea.
- **Bracket, 27-1/2” extension** .... 1ea.
- **Instruction Sheet** .................. 1ea.
- **Flex-a-lite Decal** ............. 1ea.
- ***Hardware Kit** .................. 1ea.
- ***Wiring Kit** .................. 1ea.

**Hardware Kit Includes:** top radiator mounting bracket (2ea), hex bolt 5/16-18 x 1-3/4" (2ea), hex bolt 5/16-18 x 2" (4ea), flat washer 5/16 (6ea), fender washer 5/16 (2ea), lock nut 5/16 (2ea), rubber spacer 5/16 hole (2ea), T-bolt (4ea), flat washer 1/4 (4ea), lock nut 1/4 (4ea), aluminum spacer block (2ea), adhesive backed foam strip (4ea), fitting for radiator overflow (1ea)

**Wiring Kit Includes:** control module (1ea), red 10 gauge wire (12ft.), black 10 gauge wire (12ft), red 14 gauge wire (8ft), green 14 gauge wire (5ft), tie straps (6ea), fuse holder (1ea), 40 amp fuse (1ea), fuse tap ATO (1ea), fuse tap ATM mini (1ea), rubber probe cap (1ea), temp. control knob (1ea), blue tap-in electrical connector (1ea), yellow ring connectors (2ea), yellow butt connectors (4ea), blue female spade connectors (3ea), yellow female spade connector (4ea), screw 1/4-20 x 1/2 (2ea)

---

Rev. 07-30-12  99181  Page 1 of 6
10. Remove fan shroud. **Note:** Rotating the fan shroud will help with removal.

11. Disconnect the small overflow hose from the barbed fitting attached to filler neck of radiator. **Note:** This hose routes back to the Expansion tank.

12. Remove the lower radiator hose from radiator outlet tube and move out of the way.

13. Disconnect both transmission coolant lines from radiator (if applicable). Cap / plug lines to prevent transmission fluid from draining out.

**Note: For automatic transmission equipped vehicles.**

We chose not to install a transmission cooler within our radiator's side tank. This maximizes the cooling efficiency of both your engine and transmission. If your vehicle is equipped with an automatic transmission, you will need to install an aftermarket transmission cooler. **We have developed an auxiliary direct fit transmission cooler kit for the Corvette 68'-82', part #4116C3.**

Flex-a-lite makes a full line of transmission coolers along with customized mounting options. For more mounting options, call Technical Assistance at: 1-877-767-0554 or FAX: (253) 922-0226. or visit [www.flex-a-lite.com](http://www.flex-a-lite.com)

14. Remove bolts (2ea.) securing mounting bracket that holds top of radiator. The bracket is located top center of radiator and attaches to engine side of radiator support. *(see Detail D)*

15. Remove radiator from vehicle by carefully lifting up and out parallel with angle of radiator support. **Note:** The bottom of the radiator is held in place with studs and rubber grommets that align with brackets at bottom of radiator support. These grommets will be used with the new radiator. If the grommets are still attached to the old radiator you will need to remove them and re-seat them back into the lower radiator support brackets. *(see Detail E)* **Note:** If installing kit #52181C3, verify rubber cushions within lower cradles have remained in place.

16. Remove cap from filler neck of old radiator. **Note:** Save cap, it will be used with new radiator.

17. Remove the long & narrow plate at top of radiator support sandwiched between the top radiator mounting bracket and radiator support.

18. Remove foam strips located along both sides of radiator support opening.

19. From below the vehicle, and with weight of the vehicle on the ground, remove bolts (4ea.) securing front sway bar bushing brackets. Lower front sway bar then remove and discard splash shield plate. **Warning:** Removal of sway bar bushing brackets without the front suspension under load could cause injury. *(see Detail F)*

20. With splash shield plate removed, place supplied spacer blocks between vehicle frame and rubber bushing of sway bar. Reattach sway bar bushing brackets to frame with supplied longer 2" bolts & washers. *(see Detail G)* The purpose is to lower the sway bar enough to provide adequate clearance for the new electric fan assembly. Space blocks are necessary on both #52180C3 and #52181C3 kits.

---

**Installation instructions continued from previous page**

---

14. Remove bolts (2ea.) securing mounting bracket that holds top of radiator. The bracket is located top center of radiator and attaches to engine side of radiator support. *(see Detail D)*

15. Remove radiator from vehicle by carefully lifting up and out parallel with angle of radiator support. **Note:** The bottom of the radiator is held in place with studs and rubber grommets that align with brackets at bottom of radiator support. These grommets will be used with the new radiator. If the grommets are still attached to the old radiator you will need to remove them and re-seat them back into the lower radiator support brackets. *(see Detail E)* **Note:** If installing kit #52181C3, verify rubber cushions within lower cradles have remained in place.

16. Remove cap from filler neck of old radiator. **Note:** Save cap, it will be used with new radiator.

17. Remove the long & narrow plate at top of radiator support sandwiched between the top radiator mounting bracket and radiator support.

18. Remove foam strips located along both sides of radiator support opening.

19. From below the vehicle, and with weight of the vehicle on the ground, remove bolts (4ea.) securing front sway bar bushing brackets. Lower front sway bar then remove and discard splash shield plate. **Warning:** Removal of sway bar bushing brackets without the front suspension under load could cause injury. *(see Detail F)*

20. With splash shield plate removed, place supplied spacer blocks between vehicle frame and rubber bushing of sway bar. Reattach sway bar bushing brackets to frame with supplied longer 2" bolts & washers. *(see Detail G)* The purpose is to lower the sway bar enough to provide adequate clearance for the new electric fan assembly. Space blocks are necessary on both #52180C3 and #52181C3 kits.
Installation instructions continued from previous page

**Installation of Radiator and Fan Kits #52180C3 & #52181C3**

*Note: If your vehicle is equipped with an automatic transmission, an aftermarket transmission cooler kit should be installed during new radiator installation.*

Find the provided pressure sensitive foam strips (4ea.) and apply to radiator tanks at top and bottom of machined tank surfaces where radiator will be making contact with radiator support. The foam strips will help to isolate vibration between radiator tanks and radiator support. *(see Detail H)*

**Note:** When installing Rad. / Fan kit #52181C3 into vehicle, replacing a OEM 27-1/2" core, mount supplied optional bracket to lower right hand corner as shown. This bracket is needed to reach the passenger side bottom cradle. *(see Detail I)* Adjust as needed to mount securely.

1. Carefully lower the radiator / fan assembly into position nesting the protruding studs along the bottom of the radiator onto the lower brackets and into the grommets cradled within them.

2. Assemble the “L”-bracket sub-assemblies (2ea.). *(see Detail J)* Insert “T-bolts” (2ea. per bracket) through slots then loosely place ¼” washers and locknuts on bolt threads. Place 5/16” washer onto 1-3/4” long bolt then insert bolt through bracket. On other side of bracket slide rubber spacer onto bolt.

   - **Location of foam strip.**
     - Place foam strip at all four corners.

   - **(Detail H)**

3. Gently slide “T-bolts” of “L”-bracket sub-assemblies down channel of radiator end tank. Use the channel second from front as a starting point. *(see Detail K)* Do not tighten up “T-bolts” at this time. Insert 1-3/4” bolt through hole in radiator support, then loosely place fender washer and 5/16” locknut onto bolt threads. Once “L”-bracket sub-assemblies have been positioned on both sides of radiator, adjust alignment as necessary and tighten all hardware securing radiator to radiator support. **Note:** Make sure that the top foam strips of radiator are being compressed when tightening bracket hardware. *(see Detail K)*

   - **(Detail J)**

4. Re-secure the pulley to the water pump, then reinstall fan belt. Reinstallation of pulley to water pump flange will require shorter replacement bolts. **After being tightened, there should be no less than ¼” of clearance to the water pump. If they are too close, they may cause severe damage to the water pump upon start-up.**

5. Connect the upper and lower radiator hoses to the new radiator. Make sure they are properly clamped to the inlet and outlet tubes.

6. Install the provided pipe-nipple for the coolant overflow hose into filler neck of the radiator. Attach & secure the small overflow hose onto previously installed pipe-nipple.

7. Fill radiator / cooling system with vehicle manufacturer recommended coolant until coolant level stabilizes then attach cap formerly detached from removed radiator. Continue filling cooling system through expansion tank until “Cold Fill Level” is reached. Replace expansion tank cap and check for leaks before proceeding.

**Note:** BE SURE that all moving parts of the engine and electric fan (where applicable) are clear of each other before proceeding!!

---

**Rev. 07-30-12  99181  Page 3 of 6**
1. Locate a mounting point for the control near inlet side of radiator. Control needs to be placed within 18" of radiator inlet hose. You may want to mount next to radiator on fender well or the corner of the fan shroud. Mount control using the screws provided.

2. Using the yellow butt connectors provided, attach a length of the large diameter (10 AWG) red wire to the colored motor wire. Attach a length of the large diameter (10 AWG) black wire to the black motor wire. Once the fan is in place, these will attach to the control module. **Tip: Strip an additional 1/8" of insulation from the motor wires and fold them over to increase the thickness of the wire where it will slide into the butt connector.** If mounting the control module to the fan shroud, the motor wires can be connected now. If mounting the control somewhere else in the engine compartment, leave enough wire to reach the control module.

3. Connect the motor wires to the control module (colored wire to the “M+” terminal and black wire to the “M−” terminal).

4. Use the large diameter red (10 AWG) wire to run power directly from the battery positive (+) terminal to the “B” terminal on the control module. Connect the fuse holder in-line with this wire, as shown, but do not insert the fuse yet. Use the yellow female spade, ring and butt connectors provided.

5. Use the large diameter black (10 AWG) wire to run from a clean surface on the engine block or head to the “G” terminal on the control module. Use the yellow female spade and ring connector provided.

6. Use the small diameter red wire (14 AWG) to connect the “+” terminal on the control module to a positive power source. **NOTE: Attaching this wire to an ignition-controlled source will shut off the fan when the engine is turned off. Note: Do Not connect the “+” terminal wire to the ignition switch, ignition coil, or fuel pump.** Attach this wire to an uninterrupted (always hot) power source to allow the fan to continue running after the engine is shut off. Use the blue female connector and fuse taps (included) if necessary.

7. If the vehicle is equipped with air conditioning, a **mandatory** connection is needed to cycle the fan on and off with the A/C clutch when the A/C is turned on. Create a connection between the “C” terminal on the control module and the positive wire that triggers the A/C compressor. Using a voltmeter, determine which wire coming from the compressor is the positive trigger wire. Use the included 3-way connector and small diameter green wire (14 AWG) to tap into this wire and send a signal to the “C” terminal on fan control module.

8. (Optional) For manual switch operation, use Flex-a-lite p/n 31148. Connect the switch as shown on the wiring diagram. Connect the “M” terminal on the control module to the “1” terminal on the switch. Connect the “2” terminal on the switch to a positive 12v power source. Connect terminal “3” on the switch to a good ground (for switch illumination). **NOTE: To prevent thermostatic activation (if only manual switch operation is desired), omit the lead to the “+” terminal of the control box. “B”, “G”, “M+” and “M−” must remain connected. If not using a Flex-a-lite manual switch, do not connect a ground wire to the switch!**
Limited Radiator Warranty

Flex-a-lite Consolidated warrants its aluminum radiators to be free from defects in materials and workmanship for a period of one year from the date of purchase at retail by the original purchaser. This warranty is extended only to the first purchaser of any such radiator at retail. If the Flex-a-lite radiator is used in any racing application, repaired or altered, this warranty is considered null and void, it also does not cover any radiator repaired or altered in any way. If products such as transmission cooler or electric fan are attached with cable ties or similar fasteners that run through the radiator core, the warranty is voided.

This warranty does not cover labor, materials not manufactured by Flex-a-lite, or shipping charges. The retail purchaser is responsible for the appropriate use and application of the product. This warranty does not cover the effects of physical or chemical properties of water, steam, or other liquids used in the radiator. Radiators used without an adequate proportion of premium quality antifreeze/coolant are not covered by this warranty. Flex-a-lite aluminum radiators require a correct proportion of quality coolant, which contains aluminum corrosion inhibitors in the formula.

Claims for internal damage of the engine, components, or user's vehicles are not covered by this warranty. It is the responsibility of the Flex-a-lite product user to monitor engine operation and have proper detection devices installed to warn the user of overheating. Specific exemptions to the warranty include tube damage, ballooning or bursting from excessive engine operating temperature, internal corrosion due to inadequate proportions of antifreeze/coolant, or damage to radiator resulting from a collision damage.

Flex-a-lite shall not be responsible for damages to its product or injury to persons using the product when improperly opening radiator pressure caps, burst hoses, etc. Flex-a-lite shall not be responsible for injury or harm to persons or property caused by persons or vehicles using our products.

The purchaser's remedy for breach of this warranty, exclusive of all other remedies provided by law, is expressly limited to repair or replacement of any part or parts. All products returned for warranty consideration must be returned through the point of purchase with all transportation expenses prepaid. Upon receipt of the product, Flex-a-lite will examine the product to determine the condition and validity of the claim.

Radiators or products received, which were damaged in shipping, should immediately be reported to the shipping carrier as damaged, and claims of damage filed accordingly. Contact the transport carrier (UPS, truck line, etc.) for procedures in filing damage claim with the carrier or their agent. Do not return product damaged in shipping to Flex-a-lite.

Some states may not allow a limitation on the duration of any implied warranty. The above warranty may not apply to you. This warranty grants you specific legal rights, and you may have other rights, which vary from state to state.

The Flex-a-lite Limited Warranty
Flex-a-lite Consolidated, 7009-45th St. Ct. E., Fife, WA 98424, Telephone No. 253-922-2700, warrants to the original purchasing user, that all Flex-a-lite products to be free of defects in material and workmanship for a period of 365 days (1 year) from date of purchase. Flex-a-lite products failing within 365 days (1 year) from date of purchase may be returned to the factory through the point of purchase, transportation charges prepaid. If, on inspection, cause of failure is determined to be defective material or workmanship and not by misuse, accidental or improper installation, Flex-a-lite will replace the product free of charge, transportation prepaid. Flex-a-lite will not be liable for incidental, progressive or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may have other rights, which vary from state to state. The Flex-a-lite warranty is in compliance with the Magnuson-Moss Warranty Act of 1975.
# Troubleshooting the #180 electric fan

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>How to find out</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan does not turn on regardless of temperature.</td>
<td>“+” terminal on control box not connected to proper source.</td>
<td>Trace wire connected to the “+” terminal. Use a voltmeter or test light to check for voltage.</td>
<td>If there is no power to the “+” terminal, find an ignition-switched or constant 12v. power source and wire it to the “+” terminal on the control box.</td>
</tr>
<tr>
<td>Fan still does not turn on.</td>
<td>Fuse to battery positive post blown. Wires to terminals “B” and “G” aren’t properly hooked up.</td>
<td>Inspect the fuse in the holder. Check for power and ground through lines hooked to terminals “B” &amp; “G”.</td>
<td>Replace fuse. Hook up wires for terminals “B” &amp; “G” to battery and ground respectively.</td>
</tr>
<tr>
<td>Fan still does not turn on.</td>
<td>Motor wired improperly.</td>
<td>Check to see that the blue motor wire runs to the “M+” terminal and the black motor wire runs to the “M-” terminal on the control box.</td>
<td>Connect wires to correct terminals. If motor does not spin after checking wiring, call tech support at 1-800-851-1510.</td>
</tr>
<tr>
<td>Fan does not come on until the temperature is very hot.</td>
<td>Temp. probe not located in optimum position. Temperature set to high.</td>
<td>Check location of temp. probe. Locate temperature adjusting knob on top cover of control box.</td>
<td>Temp. probe should be located nearest the upper radiator hose. Turn knob counterclockwise to set the control box to a lower temperature.</td>
</tr>
<tr>
<td>Fan was working properly but suddenly shut down.</td>
<td>Usage of a chassis ground and/or alternate source for power other than positive terminal on battery.</td>
<td>Trace wire from terminals “B” and “G” to find source.</td>
<td>Move to posts on the battery.</td>
</tr>
<tr>
<td>When engine is started, fan comes on even though engine is cold.</td>
<td>Constant (always “hot”) 12v source hooked to “C” terminal. A/C or defrost turned on.</td>
<td>Trace the wire connected to the “C” terminal and make sure it is spliced into the positive trigger wire from the A/C compressor clutch. Check if defrost activates a/c or if the a/c is on.</td>
<td>Splice into the positive trigger wire to the A/C clutch and connect to the “C” terminal on control box. Shut off a/c or leave on as this is normal operation.</td>
</tr>
</tbody>
</table>