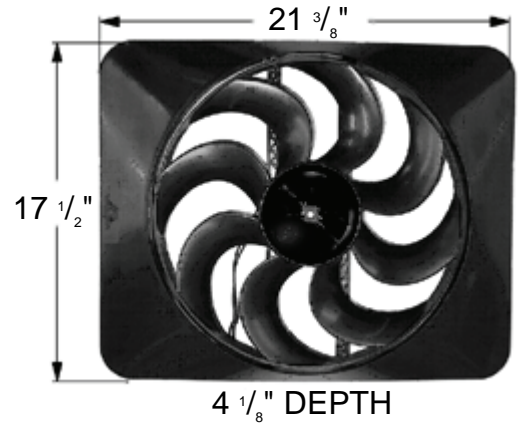




Black Magic
TREME 485
Jeep Wrangler
1987 - 2006



INSTALLATION INSTRUCTIONS

Step 1: Remove Existing Fan & Shroud

If radiator overflow bottle is connected to the fan shroud, remove it and set it aside. This will be installed with the new shroud.

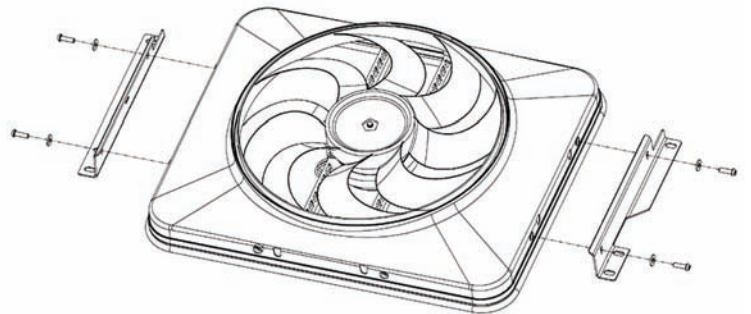
Step 2: Mount Side Brackets to Shroud

Mount bracket number 33485 to left side of shroud, and bracket number 33487 to the right side. Use the bolts and washers provided. *NOTE: Leave the brackets loosely mounted for now; you will adjust and tighten them in Step 6.*

Step 3: Overflow Bracket

If your radiator overflow bottle was mounted to the O.E. shroud, you may use an optional bracket kit to mount the overflow bottle to the new shroud. Flex-a-lite p/n 30927 mounts overflow bottles on '97-up 4-cylinder models, and Flex-a-lite p/n 30928 for '97-up 6-cylinder models.

Call 800-851-1510 to order.



Step 4: Locate mounting point for control

Locate a mounting point for control near passenger side of radiator. Control needs to be placed within 18" of radiator inlet hose on passenger side. You may want to mount next to radiator on fender well or the corner of the fan shroud. Mount control using screws provided.

Step 5: Wire fan

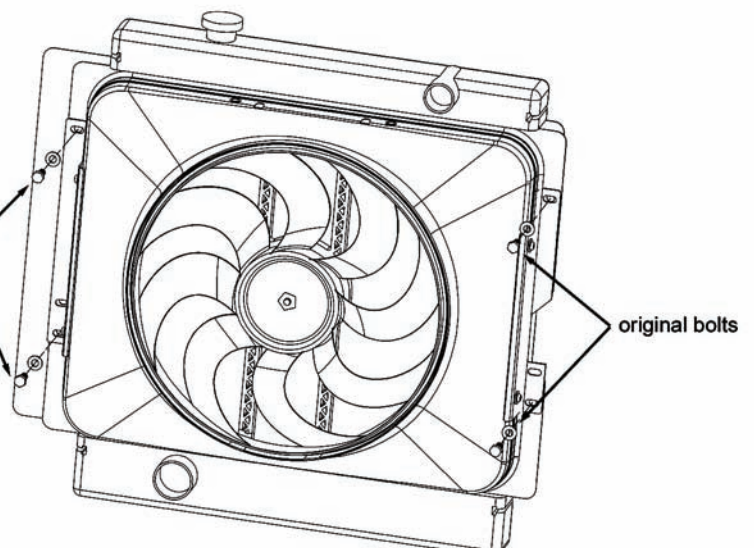
Route the motor wires through shroud. Drill a $\frac{1}{4}$ " hole to pass the wires through.

Step 6: Mount fan assembly

You will use the mounting bolts from your O.E. fan shroud. Mount fan assembly to the radiator and tighten the bolts that hold the brackets to the radiator first. *NOTE: For late model vehicles equipped with A/C, it may be necessary to remove the knock-out from the right hand bracket (33487) for A/C line clearance. Smooth the edge with a file after removing the knock-out.*

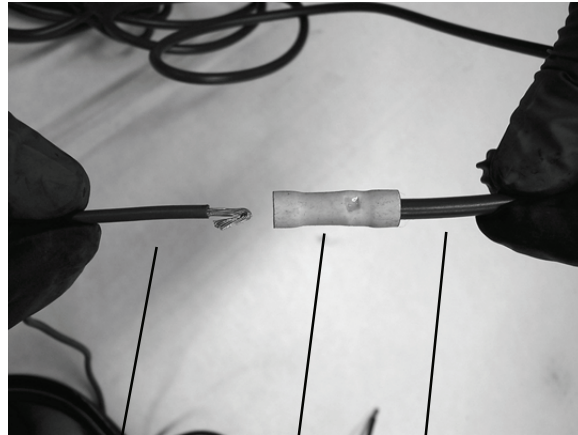
Use bolts from original shroud to attach fan to radiator

Put the fan into place. Before tightening the brackets, adjust the fan so that the rubber seal is contacting the radiator core and compress the seal about 50%. It may help to have a friend hold the fan against the core while tightening brackets.



Step 7: Wire the fan motors (refer to Wiring Diagram, below)

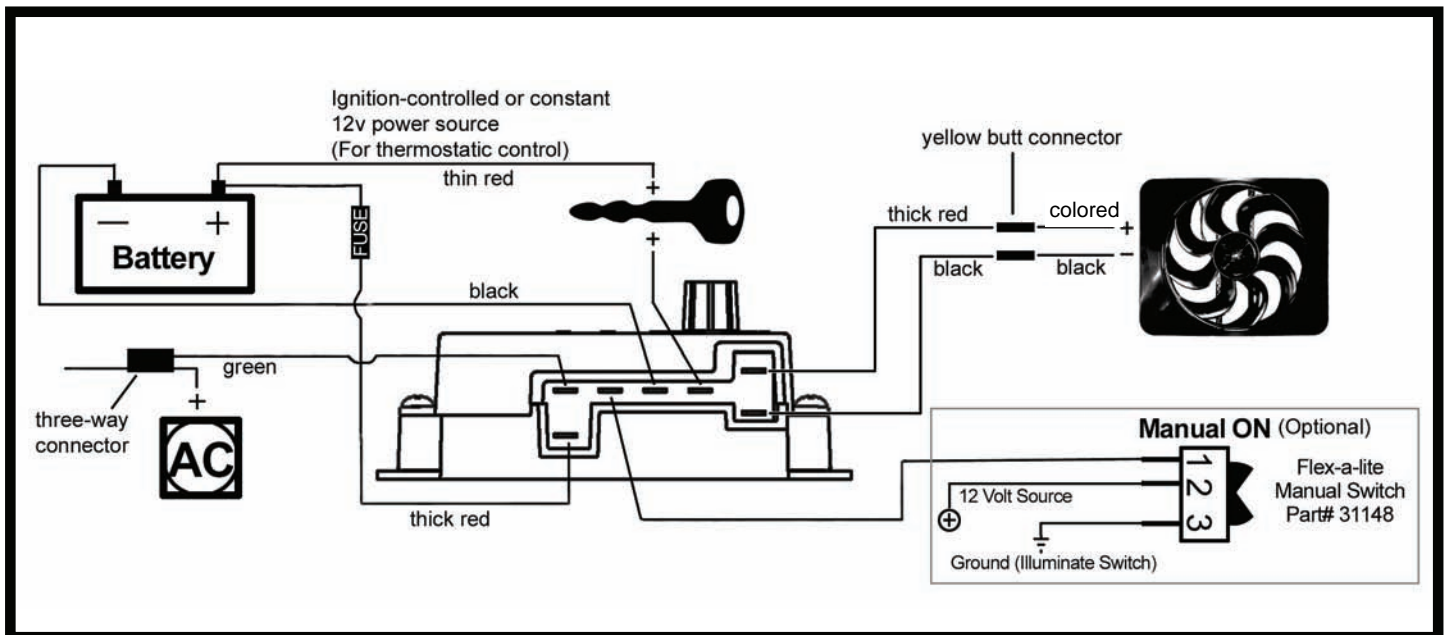
Using the yellow butt connectors provided, attach a length of the large diameter (10 AWG) *red* wire to the **colored** motor wire. Attach a length of the large diameter (10 AWG) *black* wire to the **black** motor wire. Once the fan is in place, these will attach to the control module. **Tip: Strip 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 (see *wiring diagram, next page*). If mounting the control somewhere else in the engine compartment, leave enough wire to reach the control module, but do not connect yet.



Crimp the motor wires to the large supplied wire.

Colored motor wire
Large red wire
Yellow butt connector

Step 8: Wire the control module



Step 8a: Connect the motor wires to the control module (Red wire to the "M+" terminal and black wire to the "M-" terminal).

Step 8b: Disconnect the negative battery lead for safety while finishing the wiring. Use the large diameter red (10 GA) 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, ring, and butt connectors provided.

Step 8c: Use the large diameter black (10 GA) wire to run from the negative (-) battery terminal to the "G" terminal on the control module. Use the yellow female connector and ring connector provided.

Step 8d: Use the small diameter red wire (14 GA) 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. 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.

Step 8e: (Optional) For air conditioning control (if desired) connect the "C" terminal on the control module to the *positive* wire that triggers the A/C compressor using the small diameter green (14 GA) wire. Using a voltmeter, determine which wire coming from the compressor is the *positive* trigger wire. Use the 3-way connector (included) to tap into this wire and send a signal to the fan control module. The fan will cycle on and off with the A/C clutch when the A/C is turned on.

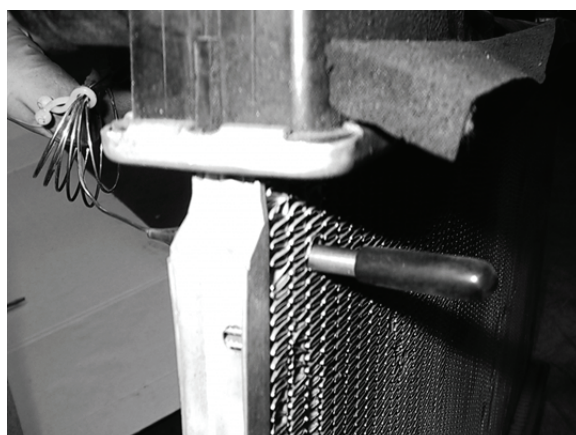
Step 8f: (Optional) For manual switch operation, use Flex-a-lite p/n 31148. Connect the switch as shown on the wiring diagram (previous page). Connect the "M" terminal on the control module to the "1" terminal on the switch. Connect the "2" terminal on the switch to a positive 12v power source. Connect 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!**
Note: You must use a diode protected switch, such as Flex-a-lite part # 31148, failure to do this will cause circuit board failure.

Step 8g: Use the zip ties provided to secure the wires and prevent them from interfering with fan blades, belts, and pulleys in the engine compartment. Reconnect the battery and insert the fuse provided.

Step 9: Insert the temperature probe into the radiator fins



Install temp. probe near inlet hose...



then replace the insulator cap.

Locate the inlet hose from the engine to the radiator. Remove the black insulator cap and insert the temp. probe through the radiator fins near the inlet hose. Reinstall the black insulator cap.

Step 10: Adjust the temperature control knob on the control box

If you disconnected any hoses or drained coolant to install the fan, reconnect the hoses and refill the radiator. Press the control knob (included in wiring kit) onto the control box shaft. Turn the knob clockwise until it stops. Start the engine and allow it to idle. Using a hand held thermometer (positioned near the inlet hose) or the vehicle's temperature gauge, monitor the temperature. When the coolant temp. is slightly above normal (or desired temp.), turn the knob counter-clockwise just until the fan turns on. From now on, the fan should activate at this temperature setting. Adjust as necessary to maintain desired temperature.

The Flex-a-lite Limited Warranty

Flex-a-lite Consolidated, 7213-45th 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 fan 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

Problem	Possible Cause	How to find out	Solution
Fan does not turn on regardless of temperature	"+" terminal on control box not connected to proper source	Trace wire connected to the "+" terminal. Use a voltmeter or test light to check for voltage.	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.
Fan still does not turn on	Fuse to battery positive post blown. Wires to terminals "B" and "G" aren't properly hooked up.	Inspect the fuse in the holder. Check for power and ground through lines hooked to terminals "B" & "G".	Replace fuse. Hook up wires for terminals "B" & "G" to battery and ground respectively.
Fan still does not turn on	Motor wired improperly	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.	Connect wires to correct terminals. If motor does not spin after checking wiring, call tech support at 1-800-851-1510.
Fan does not come on until the temperature is very hot	Temp. probe not located in optimum position Temperature set to high	Check location of temp. probe. Locate temperature adjusting knob on top cover of control box	Temp. probe should be located nearest the upper radiator hose. Turn knob counter-clockwise to set the control box to a lower temperature.
Fan was working properly but suddenly shut down	Usage of a chassis ground and/or alternate source for power other than positive terminal on battery	Trace wire from terminals "B" and "G" to find source.	Move to posts on the battery.
When engine is started, fan comes on even though engine is cold	Constant (always "hot") 12v source hooked to "C" terminal A/C or defrost turned on	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.	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.