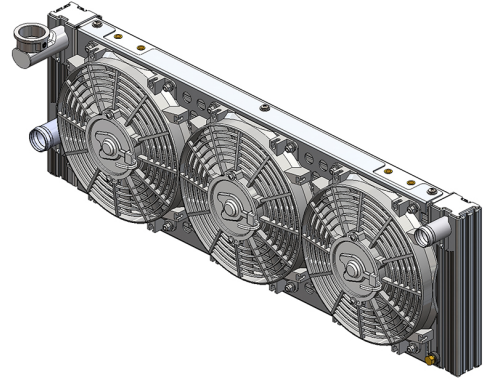




Flex-a-Fit[®]
ALUMINUM RADIATORS



Cherokee XJ Radiator & Fan Kit Kit #67108 or Cherokee XJ Radiator Only Kit Kit #67100

Fits 1987-2001 Jeep Cherokee XJ

Note: Manual transmission preferred; automatic transmission requires a remote cooler. (pt. #4116XJ available)

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

- Radiator 1 ea.
- Pre-Mounted Fans (Optional) 1 ea.
- Instruction Sheet 1 ea.
- Warranty Card 1 ea.
- Flex-a-lite Decal..... 1 ea.
- *Hardware Kit 1 ea.
- *Wire Bundle (Optional)..... 1 ea.
- *VSC Kit (Optional)..... 1 ea.
- *Wiring Kit (Optional)..... 1 ea.

* Hardware Kit Includes: A/C to rad. mounting bracket (1ea.), 1/4" flat washer (6ea), 5/16" barb to 1/8" barb NPT hose fitting (1ea), pan head screw 1/4-20 x 5/8 (6ea)

* Wiring Kit Includes (Optional): yellow butt connector (6ea), blue tap-in connector (1ea), fuse tap ATO (1ea), fuse tap ATM mini (1ea), nylon tie strap (12ea), yellow 3/8 ring connector (2ea), pink female spade connector (3ea), fuse holder (1ea), fuse 40 amp

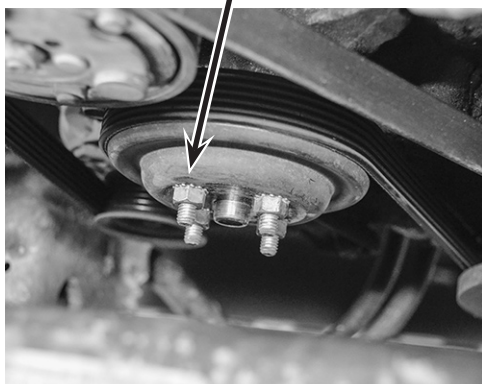
* VSC Kit Includes (Optional): module VSC (1ea), temp probe coiled (1ea), plastic probe cover cap (1ea), screw 1/2" (2ea), pink female spade connector (2ea)

INSTALLATION INSTRUCTIONS

Removal of Existing Fan, Shrouds & Radiator

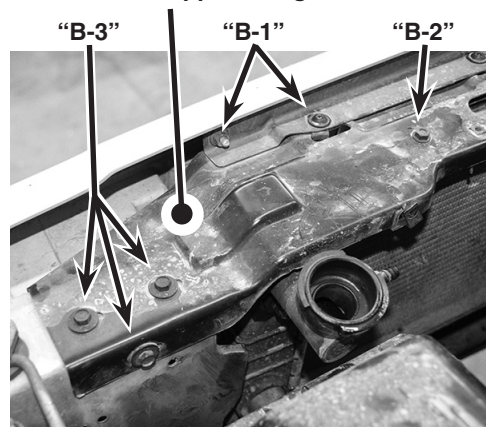
1. **BE SURE THE ENGINE IS COOL BEFORE PROCEEDING.**
2. Disconnect negative (-) battery cable from battery.
3. Remove overflow hose from radiator filler neck and move out of the way.
Note: When removing the bolts and plastic clamps along top of the radiator that secure the overflow hose to radiator support, you are unbolting the top of both clutch and electric fan shrouds.
4. Disconnect the electrical connector attached to the electric fan and move it out of the way. Remove the electric fan shroud assembly by pulling it upward and out.
5. Pull clutch fan shroud upward and out.
6. Remove clutch fan assembly, then place the nuts you removed off of the pulley back on to the pulleys studs (see Detail A).
7. Drain coolant from radiator. Drain is located on lower passenger side of radiator.
8. Disconnect top and bottom radiator hoses from radiator and let remaining coolant drain.
9. Remove the Torx bolts securing center hood latch bar on top of radiator support. Remove the Torx bolts and 10MM nuts along top of radiator support securing the long "L-bracket" (see Detail B-1). Remove 10MM nuts 2ea. along top of radiator releasing rubber mounts below radiator support (see Detail B-2). Along top of radiator remove 10 MM bolts securing radiator support at right and left sides of support (see Detail B-3).
10. Lift and remove the long radiator support.

Replace nuts to secure pulley



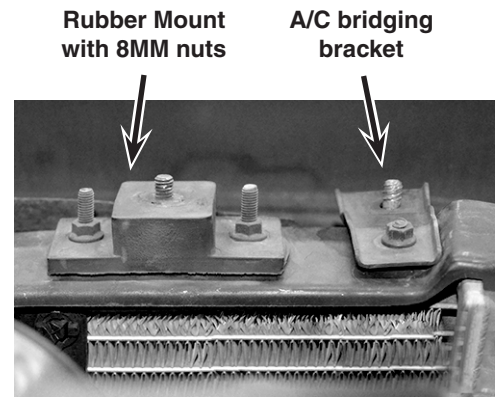
(Detail A)

Radiator Support, long



(Detail B)

11. Remove 8 MM nuts 4ea. securing the rubber mounts to the top of radiator. Then remove mounts.
Note: It may be necessary to pry rubber mounts to separate them from radiator. **(see Detail C)**
12. Remove short brackets that bridge between top of radiator and A/C condenser. Save nuts attached to A/C studs for use on new radiator install. Note: Some vehicles will have this bridging bracket formed into the long radiator support. **(see Detail C)**
13. Disconnect transmission coolant lines from radiator and gently move lines out of the way (if applicable).
14. Remove radiator by lifting up and out of the engine compartment. Try to minimize spillage of fluids when removing radiator. Rags and / or plugs may be used during this process.
15. Clean out any debris (leaves, bugs, dirt, coolant) from bottom cross member where the original radiator used to rest.



(Detail C)

Note: For automatic transmission equipped vehicles.

We choose 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 Jeep Cherokee XJ 1987 - 2001, part #4116XJ.** Flex-a-lite makes a full line of transmission coolers along with customized mounting options.

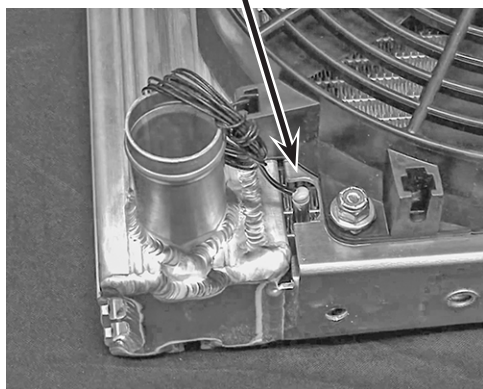
For more mounting options, call Technical Assistance at: 1-877-767-0554 or FAX: (253) 922-0226.
or visit www.flex-a-lite.com

Installation of Radiator and Fan Combo #67108
or Radiator only #67100

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

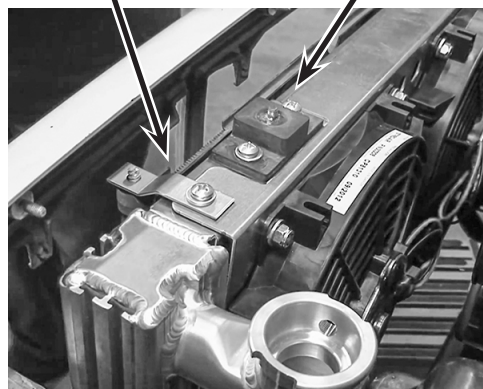
1. Start by placing the temperature probe (Optional) in the radiator by pushing the probe through the fins of the radiator. Leave ¼ or less protruding from the surface of the radiator for optimum performance. **(see Detail D)** (Note: Optional thread-in probe pt. #32050 is available)
2. Gently lower the radiator (or fan / rad combo) into engine compartment. Inset lower studs 2ea. into the lower condenser brackets, then into the rubber bushings along bottom cross member.
3. Find the original rubber mounts removed from top of the old radiator. Attach mounts on to the new radiator using the supplied pan head ¼-20 x 5/8" screws and washers. **(see Detail E)**
4. Attach bridging brackets 2ea. between top of new radiator and A/C condenser by removing the outer screws that secure the top fan shroud to the radiator, placing the bracket onto the condenser stud, then reinstalling the previously removed screw. Secure A/C side of bracket with previously saved nut. **(see Detail E)**

Temperature probe installation location



(Detail D)

Bridging bracket Top Rubber mount



(Detail E)

Reattach the long radiator support across top of new radiator:

- Align the studs in the top rubber mounts and pass through the obround slots.
- Along top of radiator reattach 10 MM bolts securing radiator support at right and left sides of support.
- Reinstall 10MM nuts securing long radiator support to rubber mounts underneath.

Installation instructions continued from previous page

5. Reattach the long “L-bracket” with previously removed Torx bolts and 10 mm nuts.
6. Reattach the center hood latch bar with previously removed Torx bolts to top center of radiator support.
7. Attach and secure top and bottom radiator hoses to new radiator.
8. Attach barbed fitting to threaded hole on filler neck. Note: using Teflon tape will help to ensure a better seal.
9. Attach overflow hose to barbed fitting. Secure hose along radiator support with stock plastic clamps and bolts.
10. Fill radiator / cooling system with vehicle manufacturer recommended coolant.

Note: BE SURE that all moving parts of the engine and electrical fan assembly are clear of each other before proceeding!

Wiring Instructions Model #67108



FOLLOW THESE INSTRUCTIONS CAREFULLY TO AVOID DAMAGING THE CONTROL UNIT, FAN MOTORS, AND YOUR VEHICLE! WHEN CRIMPING WIRES, ALWAYS USE A QUALITY CRIMPING TOOL (DO NOT USE PLIERS OR OTHER DEVICES).

1. Locate a mounting point for the VSC (variable speed control) unit:

Locate a mounting point for the VSC near inlet (upper hose) side of the radiator. The control unit should be placed close to radiator inlet (upper hose) if possible. On the passenger side, upper fire wall, next to hood hinge may be a convenient location. Attach the control unit using the screws provided.

2. Wire the fan motors (refer to Wiring Diagram, on page 4):

After the VSC has been mounted, route a length of the thick (10 AWG) red wire and a length of the thick (10 AWG) black wire from the VSC to the fan motor wires. The motor wires have pre attached yellow butt connectors. Connect the butt connector with the three red motor wires to the thick red wire. Connect the butt connector with the three black motor wires to the thick black wire.

3. Connect the fan wires to the VSC:

Using the yellow butt connectors provided, connect the red wire you attached to the fan motor wires to the yellow wire on the VSC. Connect the black wire from the motor wires to the purple wire on the VSC. (see wiring diagram)

NOTE: Failure to do this will result in incorrect operation and damage to fan motors!

4. Connect power leads:

Determine the length needed to run thick red and black wire from the VSC to the battery terminals and trim appropriately. Crimp a large yellow ring connector to one end of the each wire and connect the black wire to the negative (-) battery terminal, but **Do Not** connect the red wire yet. Using butt connectors, connect the fuse holder provided in line with the red wire. The fuse and fuse holder will protect the fan motors and your vehicles electrical system from damage.

5. Ignition controlled power source:

Locate fuse box. Find a circuit that is “hot” when the key is in the “ON” position. **NOTE: DO NOT use the DRL or brake/taillight fuse, or any fuse directly related to the fuel or ignition system.** Attach the included fuse tap to fuse. Attach a female connector to the thin red wire provided and connect to the fuse tap. Trim the wire so that it will reach the VSC. Attach pink female connector to other end of wire and connect to terminal #9 on VSC.

6. Fan operation with air conditioning:

Locate the wires coming from the A/C compressor. Determine which wire is ground and which is positive by using a volt meter. Connect or splice the thin green wire to the positive (+) wire of the A/C compressor using the blue “Piggy-Back” connector. Determine length of wire needed to reach VSC. Route green wire then trim to length. Attach a pink female connector to the wire. Connect this wire to terminal #8 on VSC.

7. Temperature sensor:

Determine the length of wire needed to reach the VSC. IMPORTANT: Strip the insulation back about 1” and fold the wire onto itself to effectively double the thickness of the wire before connecting the pink female connectors as shown. (see Detail F) Attach temp probe wires to terminals #10 & 11 on the VSC. Both wires need to be connected but it doesn’t matter which wire goes to each terminal.



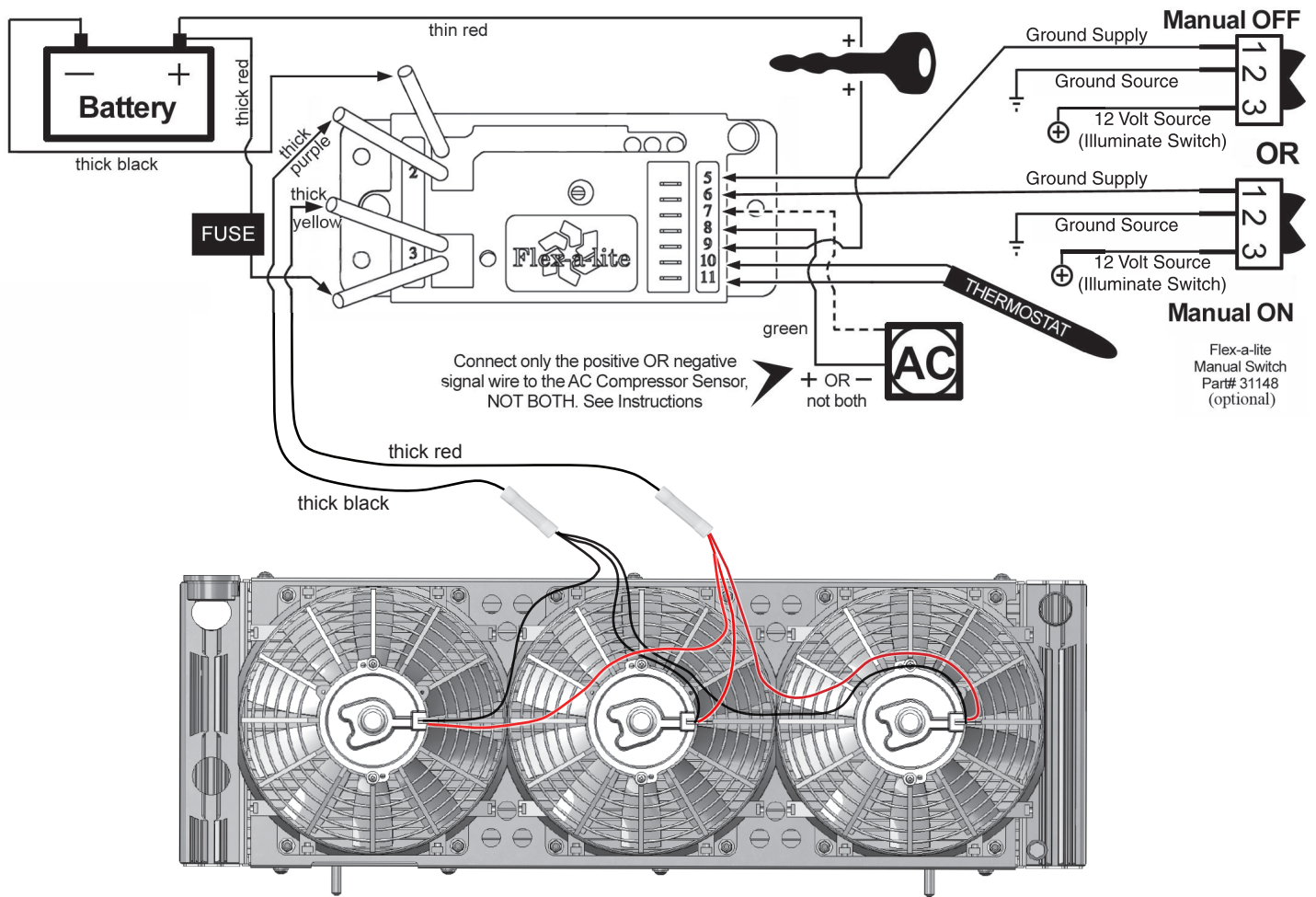
(Detail F)

8. Manual Switch: (Optional Purchase Part #31148)

If manual switches (Flex-a-lite #31148) have been purchased, attach them as follows: To override engine temperature signal and turn fans off, connect the switch to terminal #5 on VSC to send a negative (-) signal. To override engine temperature signal and turn fans on, connect the switch to terminal #6 on the VSC so that a negative (-) signal is sent.

9. Reattach negative (-) battery cable to battery.

WIRING DIAGRAM - MODEL #67108



Initial Start-up and Adjustment Procedure:

1. Turn ignition on. After 6 seconds, LED #L4 should light up (Refer to wiring connections diagram). If not, check to make sure that there is 12 Volts at terminal #9 on VSC. The delay is to allow starter to start the vehicle without the fans drawing any power.
2. With your engine running, engage the A/C. The fans should come on and cycle with the A/C compressor. LED's #L1, L3 and L4 should be lit when fans are running. If they do not turn on, verify that the A/C clutch is engaged and make sure you have a positive signal when the clutch is engaged at terminal #8 on the VSC. Shut off A/C and let engine continue to idle, or drive the vehicle a short distance to bring the engine to operating temperature (IMPORTANT: You must monitor the vehicles temperature gauge).
3. Verify that operating temperature has been reached by feeling the upper radiator hose. Hot water should be flowing through hose into the radiator. If the fans have not cycled on yet, slowly adjust the screw counter clockwise on the VSC until the fans cycle on. Turning the screw further in this direction will keep the engine at a lower temperature, and turning clockwise will keep the engine at a higher temperature. (See VSC Diagram) NOTE: THE TOTAL MOVEMENT OF THE ADJUSTMENT SCREW IS ABOUT 3/4 OF A TURN. TURNING THE SCREW BEYOND THE LIMITS WILL DAMAGE THE UNIT! Once desired temperature is set, let the engine continue to idle and make sure the fans will cycle to maintain desired temperature. When fans are running, LED.s #L1 and L4 should be lit.

More Variable Speed Control features:

At the set temperature, the fans will come on at 60%; this reduces the load on your charging system. If the temperature rises, the fan speed will increase. If your set temperature is 195°F, then between 195° and 205° the fan speed will increase from 60% to 100%. So after a 10-degree rise from the set point, the fans will be running at 100%.

Note: Visit our website www.flex-a-lite.com to register product for warranty and review warranty policy.

Note: To view these instructions or to view a video of this product installation, visit www.flex-a-lite.com or call 1-877-767-0554 for assistance.



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.

Troubleshooting the Variable Speed Controller

Problem	Possible Cause	How to find out	Solution
Fans do not turn on regardless of temperature.	Ignition wire not hooked up to proper source.	Make sure you have a switched source hooked up to terminal number 9. Turn your key on and LED #4 should light after 5-6 seconds.	If there is no light, then provide a 12 volt source to terminal number 9.
LED #4 lights up, but my fans still do not turn on.	Thermistor probe may not be hooked up properly.	Remove the thermistor probe from the circuit board. Place a jumper across terminals 10 & 11.	Remove the connectors and make sure that the 22 gauge wire is doubled up before the new connector is installed to ensure proper contacts.
I have tested the thermistor probe but the fans still do not turn on.	Fuse to battery positive post blown. Wires attached to short wire leads 1 & 4 aren't properly hooked up.	Inspect the fuse in the holder. Check for ground and power through lines hooked to short wire leads 1 & 4.	Replace fuse. Hook up wires to short wire leads 1 & 4 to ground and power, respectively, to battery.
Fans still do not come on.	Motors wired improperly.	Remove the wires from terminals 2 & 3 and hook them directly to power and ground to check motors.	Check wiring to motors to ensure they are wired properly. If motors do not spin after checking wiring to them, call tech support at 1-800-851-1510.
Fans come on and it seems like they are only at 100% instead of the initial 60%.	They are actually on at 60% and haven't reached 100% yet.	Ground terminal 6.	This is the fan at 100%
Fans do not come on until the temperature is very hot.	Thermistor probe not located in optimum position. Temperature set to high.	Check location of thermistor probe. Locate temperature screw in center of VSC. Note: maximum of rotation of screw is ¾ of a turn!	Thermistor should be located nearest the upper radiator hose. Turn adjustment screw until fans come on. Turning further in this direction will keep engine at a lower temperature.
Fans were working properly but have suddenly shut down.	Usage of a chassis ground and/or alternate source for power other than positive terminal on battery.	Trace wire from short wire leads 1 & 4 to find source.	Move to posts on the battery.
I turn my engine on and the fans come on but the engine is cold.	A/C lead hooked to the wrong terminal. A/C turned on.	Trace the wire hooked to either number 7 or 8 terminal and check polarity of the wire. Check if defrost activates a/c or if the a/c is on.	Hook the wire to the proper terminal on the a/c compressor and the corresponding terminal at the VSC. Shut off a/c or leave on as this is normal operation.

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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.