



## INSTALLATION INSTRUCTIONS

**KIT INCLUDES:** 1 Shroud and 2 Shroud Wings

Please read and review all of the instructions prior to any temporary or permanent installation of this fan shroud.



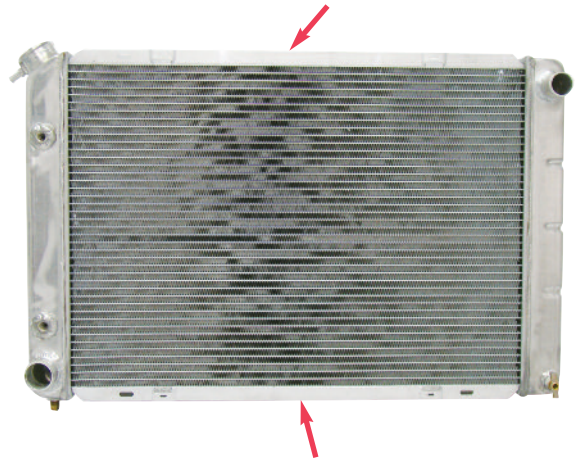
**Carefully plan your project.** The components you are working with are essential to your vehicle cooling system and should be handled with care. Please think through each step of your assembly to avoid damage to your shroud and radiator.

**Step #1:** Temporarily mount the fan(s) to the shroud.

**NOTE ~** This shroud has been designed to be mounted to the radiator side channels. Please note the illustrations below:



**PHOTO 1: DOWN FLOW RADIATOR**  
*If your radiator looks like this,  
your side channels are here.*



**PHOTO 2: CROSS FLOW RADIATOR**  
*If your radiator looks like this,  
your side channels are here.*

**Step #2:** Temporarily position the shroud on the engine side of the radiator while the radiator is in the vehicle. We recommend you temporarily center the shroud on the radiator. Please note the location of the other engine mounted devices and drive belts as it's necessary to find a location for the fan shroud which does not interfere with other components.

Several vise grip type tools or small C-clamps will make holding the shroud and/or wings easier to determine any clearance issues and your desired mounting location.

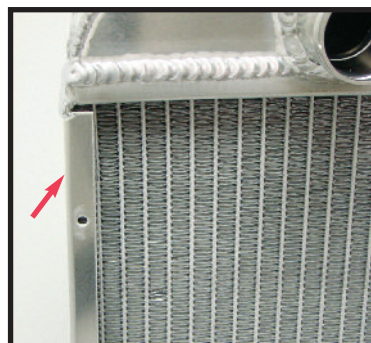
**Step #3:** Next determine the use of or positioning of the fan shroud wings. **If you have a crossflow radiator**, you may choose to use the fan shroud and wings to cover the engine side "radiator face" or you may choose not to use the wings and leave much of the "radiator face" uncovered to enhance the "ram air" effect on radiator cooling at cruising speeds. **If you have a downflow radiator**, you will need to use the wings as a mounting surface and attachment point to the side channels of this radiator. The wings may be attached to the shroud with rivets, sheet metal screws or welded. **Please Note:** Do not allow the wings to touch or sit flat on the face of the radiator core as this will block all airflow and could chaff and damage the radiator fins or tubes. Additional mounting instructions for both crossflow and downflow radiators are noted further in these instructions.



**DO NOT** mount your shroud to the radiator tanks, tubes or the radiator core as this may damage your radiator. Any attempt to drill, rivet or screw your fan shroud into a radiator tank or tube will cause the radiator to leak and become unusable.

**NOTE ~** Most side channels fold out and away from the core as noted in **PHOTO 1 AND 2**. Some radiators have side channels which fold over the radiator core as noted in **PHOTO 3**.

If your side channel folds over the radiator core, extreme caution should be used when either drilling through the side channel of the radiator or permanently mounting the shroud to the radiator. Safety items like a “drill stop” may be necessary for this installation. If you are unable to drill through this “fold over” style channel, other mounting fabrication must be considered to mount the fan shroud to this type of radiator.



**PHOTO 3: FOLDED OVER RADIATOR SIDE CHANNEL.**

If you have a crossflow radiator continue on with Steps #4 - #8 and then skip to Steps #13 & #14. If you have a downflow radiator skip to Step #9 - #14.

## **CROSSFLOW RADIATOR INSTALLATION:**

**Step #4:** Mark your desired **TOP** shroud mounting position on the radiator as shown in **PHOTO 4**.

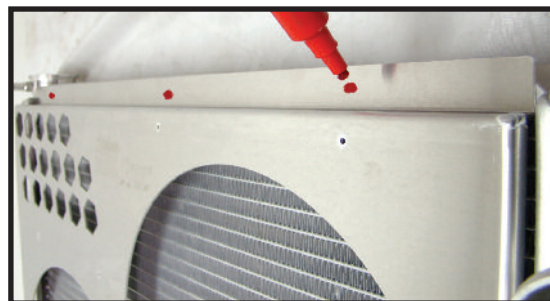
**Step #5:** After marking the final shroud mounting position, remove the shroud and radiator from the vehicle for ease and safety prior to any drilling or before permanently mounting the shroud to the radiator.

**Step #6:** With the radiator out of the vehicle lay it flat “engine side up” on your work surface. Reposition the **TOP** of your fan shroud using your previously noted marks.

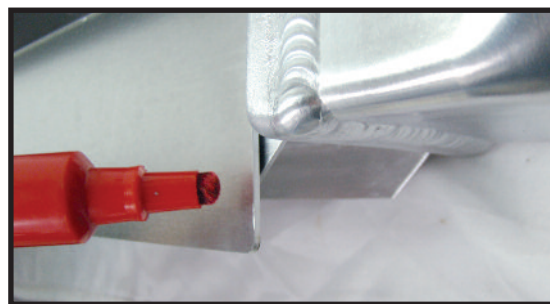
**Step #7:** You’ll note that this shroud was designed with a wider **BOTTOM** mounting flange. Mark and measure the bottom of this flange so it may be trimmed to match the bottom of the radiator side channel. (See **PHOTO 5**.) With the radiator mounting location determined, we recommend the excess bottom flange be trimmed as necessary to fit your application. Trimming is optional - if there is clearance, you may choose not to trim the bottom flange.

**Step #8:** With your shroud marked and placed on your radiator in the final mounting position, drill the desired mounting holes through the **TOP** and **BOTTOM** shroud flange and radiator side channels.

**Note ~** Prior to drilling we recommend you use small C-clamps to secure the shroud to the radiator.



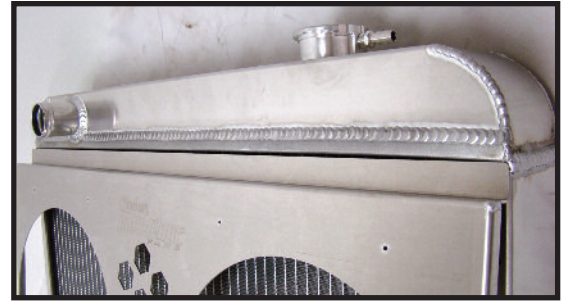
**PHOTO 4: Top of shroud marking mounting position on radiator.**



**PHOTO 5: Bottom of radiator side channel and shroud flange measured and marked.**

## DOWNFLOW RADIATOR INSTALLATION:

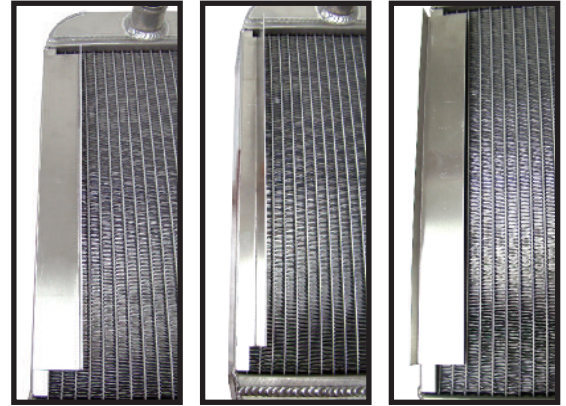
**Step # 9:** With the radiator out of the vehicle lay it flat “engine side up” on your work surface. Reposition the TOP of your fan shroud using your previously noted marks. See **PHOTO 6**.



**PHOTO 6:** Lay it flat “engine side up”

**Step # 10:** On both left and right sides of the shroud you will need to position and secure the wings to the shroud. An example is shown in **PHOTO 7**. Depending on your application, your final mounting position may vary.

**Step #11:** Depending on your application you may find it necessary to trim the wider **BOTTOM** flange of the shroud for proper fit as shown in **PHOTO 8**.



**PHOTO 7:** Wing attachment options. Right and Left side of the shroud. Position and secure the wings to the shroud.

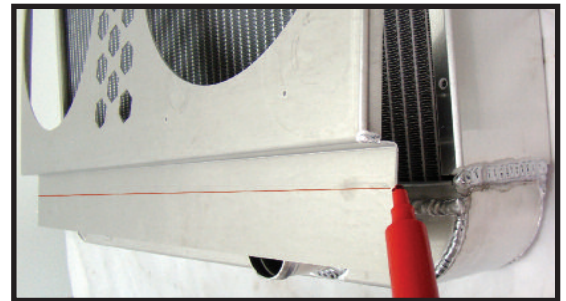
**Step #12:** When you have determined your final mounting position, mark and drill the desired mounting holes through the left and right shroud flange and radiator side channels.

**Note ~** Prior to drilling we recommend you use small C-clamp to secure the shroud to the radiator.

## FINAL INSTALLATION PROCEDURES:

**Step #13:** Remove the shroud from the radiator and permanently mount the fan(s) to the shroud. Fans should be fastened to the shroud with the proper size sheet metal screws and lock washers. We recommend a quality thread locker compound to be used on the screws.

**Note ~** Please remember fan housings are typically made of injected plastic, nylon or similar materials which will break if the wrong size fastener is used or if the fastener is over tightened. We have provided “pilot” or starter holes around the fan opening for our recommended fans. If you choose to use an alternative fan we recommend all screw locations be carefully marked and a pilot hole (starter hole) be drilled so the sheet metal screw starts easily. We do not recommend mounting the radiator fan to the shroud with pop rivets as the compression pressure of the rivets may damage the fan.



**PHOTO 8:** Trim the wider bottom flange. If necessary.

**Step #14:** Permanently mount your shroud to the radiator and install the complete assembly back into your vehicle.

*Northern offers a complete selection of cooling system plumbing, temperature control wiring, radiator mounting and modification products to complete your cooling system project. Please ask the location where you purchased this product for more details.*