

Installation of the PWR Radiator in a SVX

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edited by enstele

Set up your work area.



Give yourself enough space to get in, under and around, while carrying something as wide as a radiator. I have a cut down mattress box laid down to absorb spills and leaks, a shop vac to vacuum crud. The tools you will need - a 10mm crescent or socket, 12mm socket, compatible socket wrench, flathead screwdriver, Philips head screwdriver, pocket knife or something to cut rubber and thin plastic, small shark toothed saw, preferably of the Swiss Army variety or you can use a Dremel tool.



I recommend changing the lower hose if you are missing your plastic engine shroud as it tends to get beat up more by the elements. Here is my new steel hose with billet clamps. The clamps are a lot bigger than I thought, but they can be made to work.

You'll need at least 2 gallons of coolant. You will need a 7/8" box wrench, jack and jack stands, a fluorescent work light, and gobs of paper towels. Here is why I leave cardboard on the garage floor:

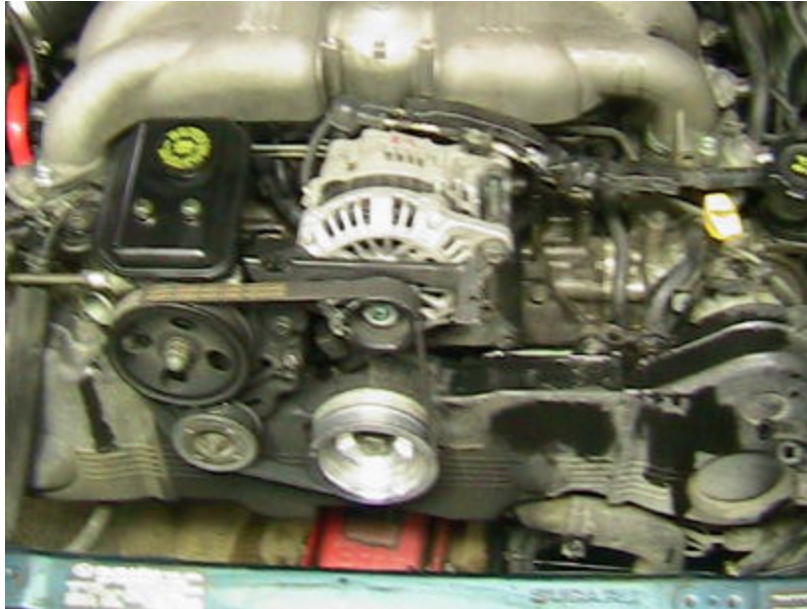


Drain all the coolant and it should never be used again. Use the thumbscrew drain on the bottom of the radiator to drain it. You'll need something to catch transmission oil as it is routed through the bottom of the radiator. You don't have to change it, but it is a good time to do it. Even if you drain it completely from the pan, you will get some run off through the radiator hoses. After everything has drained, disconnect the hoses.



When you pull your radiator out, it should look something like this:

If you don't have an external transmission filter and cooler attached in some fashion to your OEM radiator, it would be a good time to do so. Next unclip the power connectors for the fans. The one on the right ("left hand" facing from the driving position) is a little easier than the left ("right hand" from the driving position) which might require a flathead to get leverage on the clip. Pop the 12mm bolts out of the left and right bushing brackets holding it down. You don't have to remove the upper radiator hose from the engine, but it makes removing the radiator a lot easier if it's out of the way.



At this point, the radiator will lift straight up and out leaving a nice gaping hole. Use this time to clean up the front of your engine.

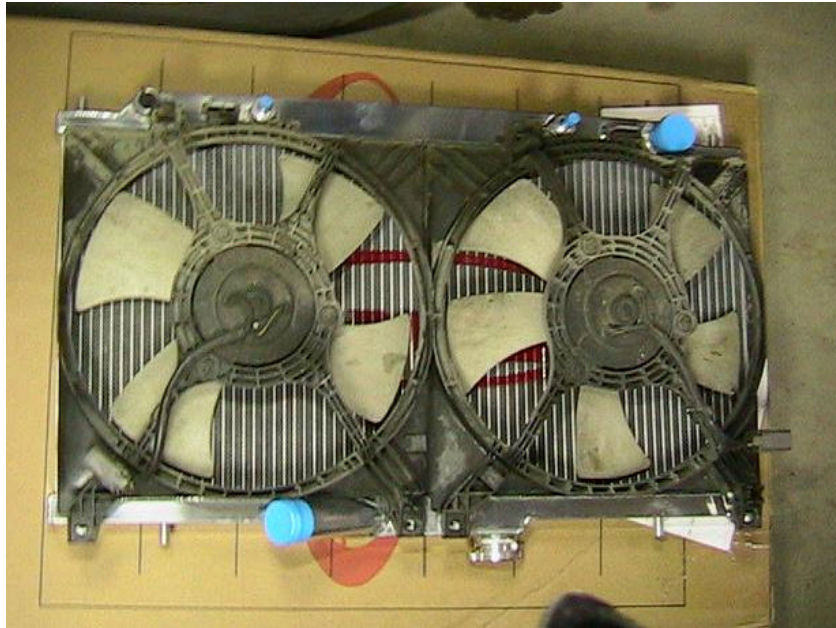
Here is a side by side comparison of the new and old radiators:

Back

Front



I weighed the old and new radiators on the bathroom digital scale, and the old radiator, clad with dirt was 11 lbs and the PWR weighed 13 lbs. After cleaning everything up, it's time to install the fans.

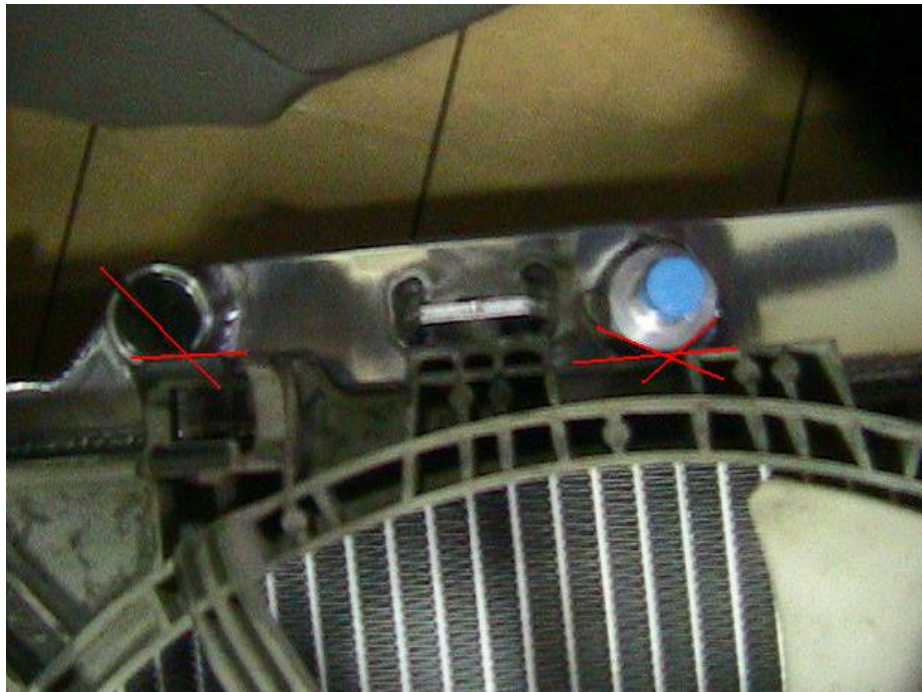


Time to bolt'er down. Or is it? Not so fast.

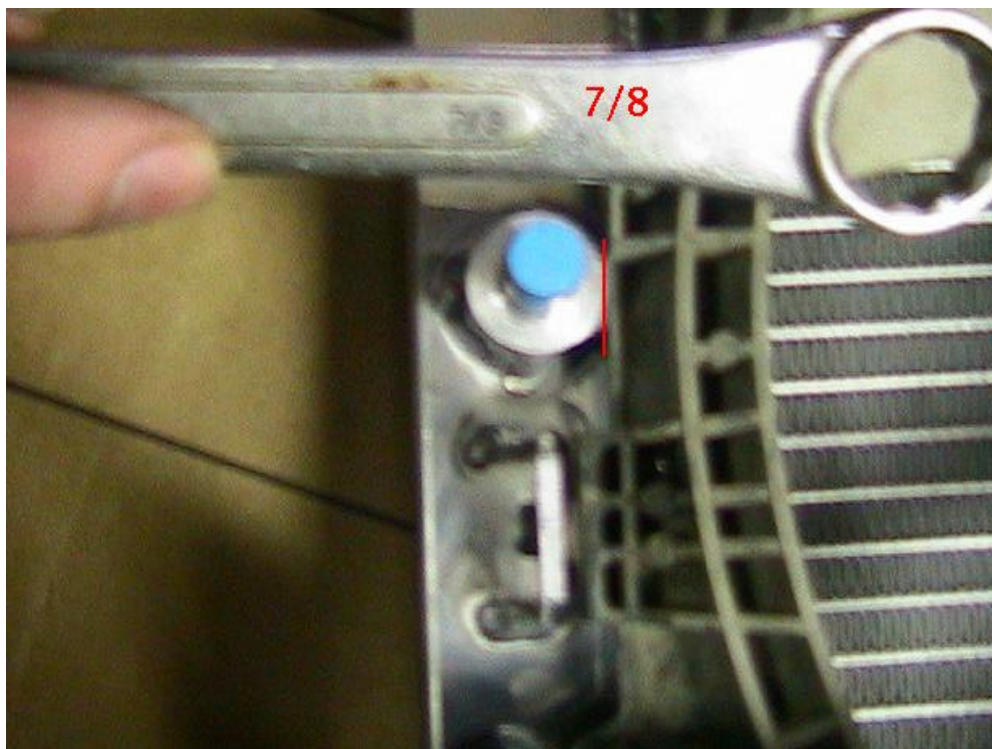
There's seems to be a few minor miscalculations in PWR's measurements. The holes don't exactly line up and certainly this is a pain, but fixable.



Let's look at how everything is fitting up. At the bottom of the radiator, the thumb screw drain "valve" and 7/8" nut fitting for the transmission oil hose make firm contact with the fan shroud.



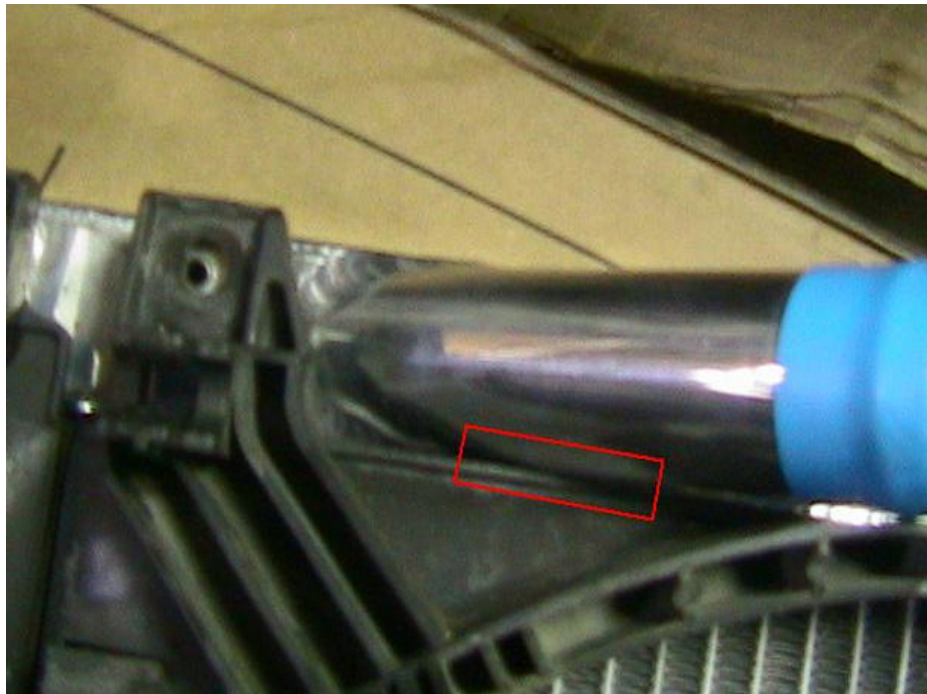
This is corrected easily with a 7/8 box end wrench. The valve is plastic, so it will bend and turn with the fans attached, though a quick couple of file strokes and it'll pass freely.



Here is where you'll need something sharp and serrated unless you have a drill press. Take a small, slim saw tooth blade and run it through any bolt hole that does not align with the mounting points on the radiator.



The red lines in the picture need to be cut. As you are changing the center of the mount you will need extra space for the washer.



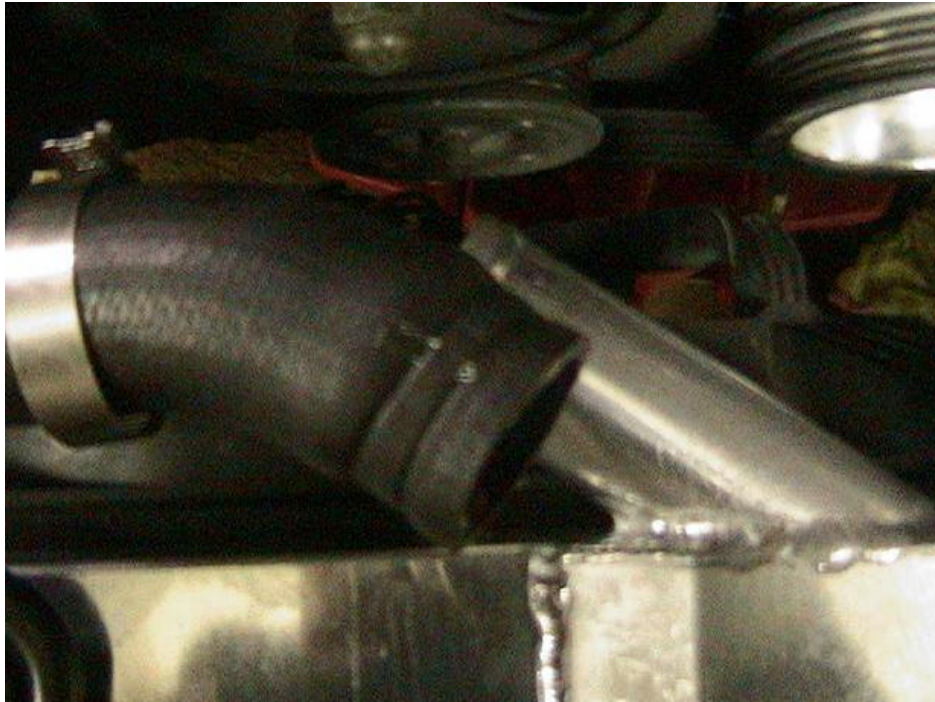
Near the upper radiator hose neck, the fan assembly makes contact with the hose. I found it impossible to reconnect the hose without some cutting of the fan shroud.



Cut a section out of the plastic as shown in red. I cut it vertically into tabs that I could break off easily, and then smoothed it out with a sideways motion.



If you don't make the cut in the plastic, your hose will look like this. It's kinked, stressed, and does not line up properly.

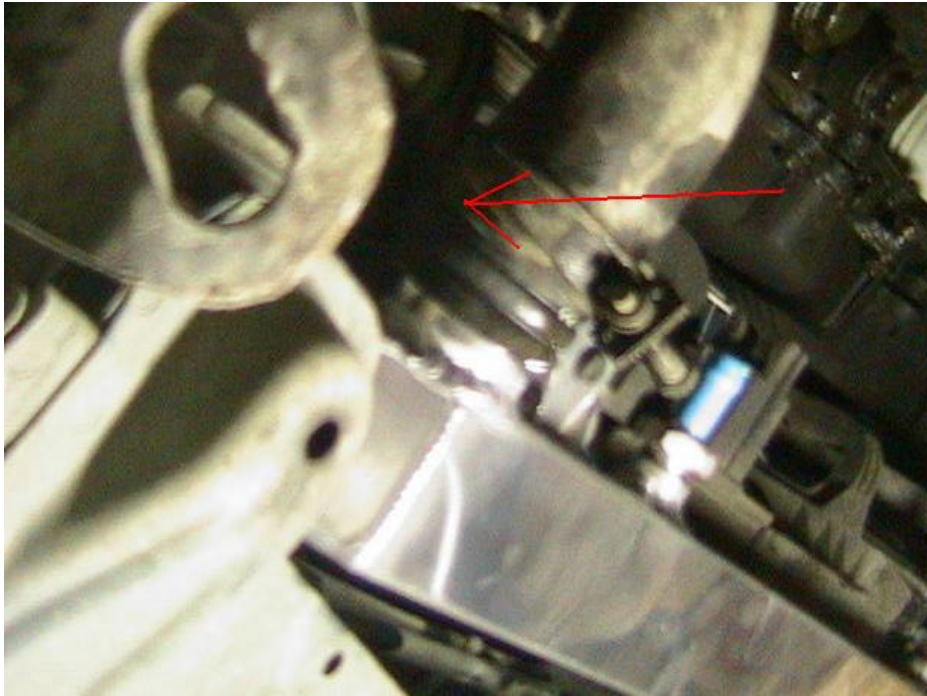


Improper alignment of the neck is partly at fault, but if you cut the designated area, the hose should slide on without much force, and is without the kink in the hose.



This is the way it looks after doing the slight modification to the plastic frame. Members have had the hoses rupture after putting in a new radiator when they did not replace them during the installation. It would be a good idea to replace the hoses when you put in the new radiator. It will help insure that you do not get stranded when out on a drive, or overheat your engine.

The lower hose has the same clearance problems that the upper hose has.



Here we can see the lower radiator hose which does not quite fit due to the lack of clearance around the fan assembly. You may need to cut or file some plastic so that it will attach securely.



With the fans secured to the radiator, it's time to drop the assembly into the slot. It just drops straight down. Two pegs should align with two holes in the middle of two platforms jutting in from the bumper. It may require a little force to get them in, but it should fit snugly and wobbles a bit, back and forth. It wobbles because we need to reattach the bushing brackets.

Here we encounter another problem.

Left Side



Right Side



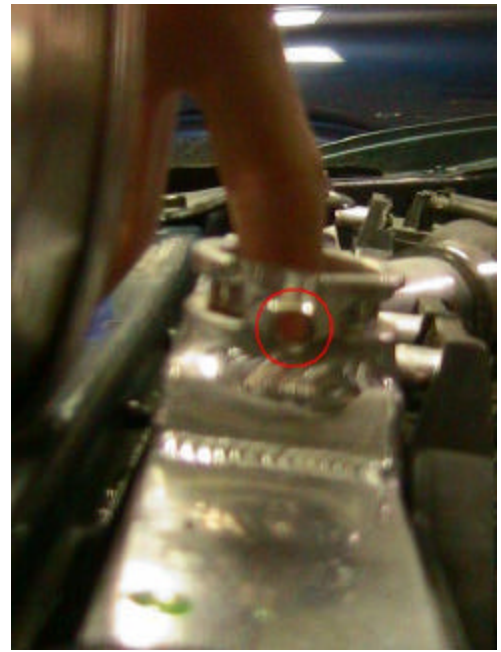
Here are some close ups of the bracket. As you can see there is major error in the alignment of a pretty vital mounting point.



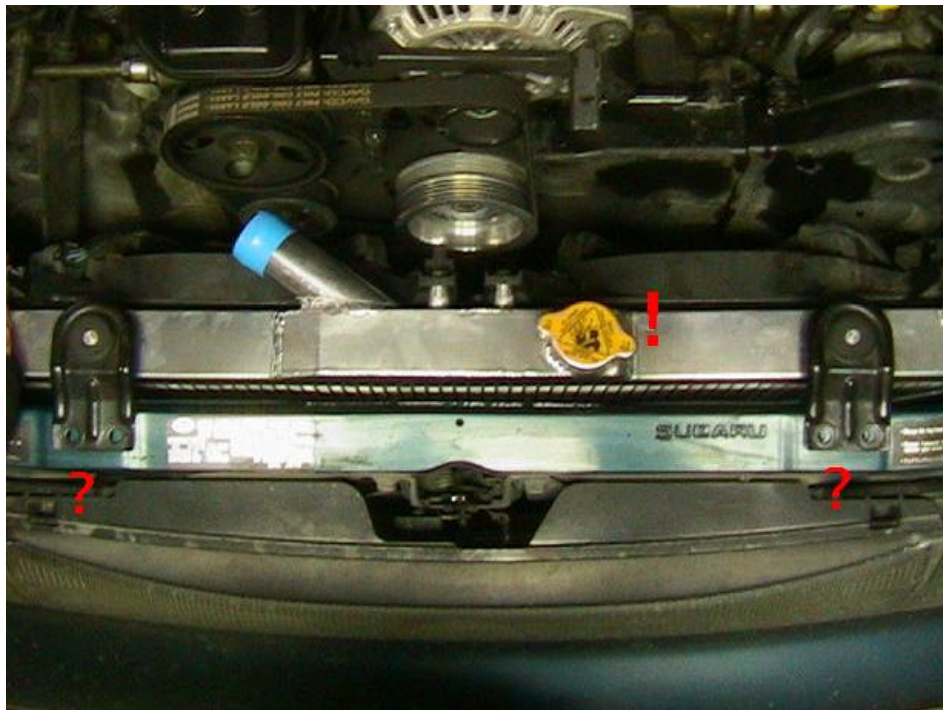
A slight twisting motion of both brackets will get you at least one hole for each side to secure the radiator. This will work for a short time until you have accurate holes drilled into your stock black brackets, or new ones custom made.

Before you forget, reconnect the power connectors for the fans.

It is now time to put the hoses back onto the radiator. Get out your screw drivers, small sockets, and that 10mm wrench if you need it to tighten the clamps around your rubber hoses. I suggest getting rid of those OEM double loop clamps in favor of the stainless steel hose clamps.



There is a small threaded hole in the side of the filler neck, which the overflow hose should connect to (arrow and red circle shows where this is located).



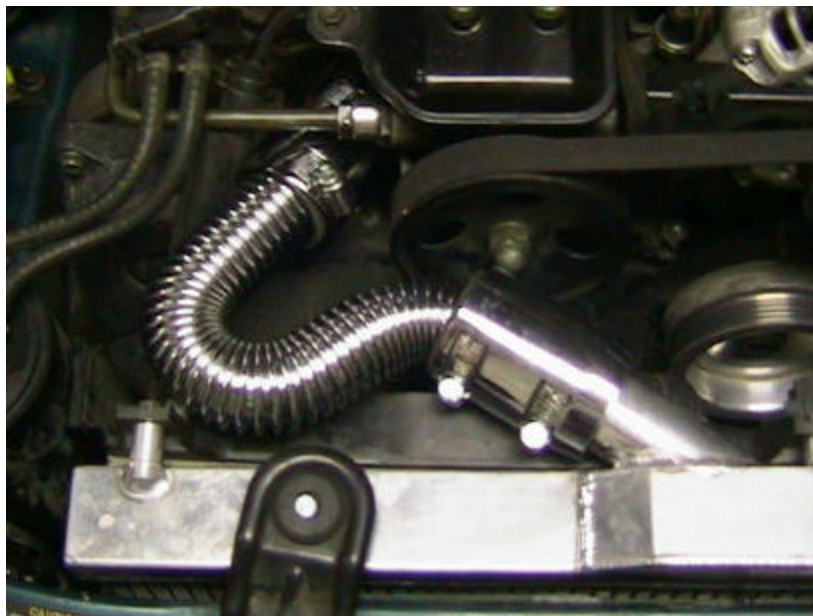
Another problem is the radiator cap. The neck is a little tall so that when the hood is closed, it hits one of the tabs of the cap, if it is not put on like in the picture above. This problem not only makes the hood difficult to close, but tweaking your cap will compromise its ability to keep the radiator under pressure. This can also be solved by cutting off one of the tabs so it does not contact the hood.

After all of the hoses are connected securely, and bolts are fastened down, you are ready to fill everything up with fluids.

Fill up your transmission if you drained it and fill up the coolant. When you are sure everything else is ready to go, start her up and let her idle a bit. Keep the radiator cap open and be ready to pour coolant in as it settles and the air burps out. Put some coolant into the reservoir so that as the car cools, it will siphon back into the radiator and top it off. Sometimes air will become trapped inside the system and when the car may start to over heat. Watch this closely when you do your test drive, and keep an eye on the temperature needle. It will probably take 2 gallons of coolant to fill it, give or take a few ounces. Be sure to check the fluid levels over the next couple of days.

Modification of the upper radiator hose.

Here is a steel flex radiator hose that was installed.



Fitting this steel flex hose into the SVX can be a bit harsh, especially with the PWR radiator due to it's longer and misaligned coolant duct. As it sits on my car there is about 1/4 to 3/8 an inch between the billet aluminum cap and the power steering pulley bolt.

The hose is steel and so contorted there is no chance of it moving. It is 12 inches in length and practically weightless.

4 mini sleeves called "reducers" came with the steel tube and aluminum caps. The larger tube is constructed more like a standard radiator hose.



Installation:

It came with instructions but I did not look at them.

After some fit testing I concluded the smaller sleeves are not necessary. The smallest does not fit, but the medium ones does, and only because it stretches as it has no threading. It's just a cylinder of rubber. Fitting it under the main sleeve will make it much tighter, but in the billet caps are hose clamps that do well enough to hold the main sleeve tight over the coolant ducts.

After removing the OEM style hose, simply slide the main sleeve inside either cap after removing the reducers. They are tight, so it helps to use pliers. If they won't slide into position, you probably have the PWR radiator, in which case you will need to take a deeper chunk out of the fan shroud under the coolant duct to accommodate the much larger cap and sleeve. The caps are not required, but will make the job much nicer.

Once that is done, tighten the outer clamp to the coolant duct of the radiator and block. Take the flex pipe and insert the radiator end first. Bend it as close to the radiator as you can or else it will not clear the power steering pulley. Grab it firmly and bend the rest of the length into a "U" and force it into the end cap / sleeve. The hose does re-bend, but do it as little as possible because metal this thin fatigues rather easily. Tighten down the inner clamps with a flat head screwdriver. Be careful not to apply too much pressure downward because as they tighten, you will push the clamps down and around into a position where they will be inaccessible to your screwdriver. Once the hose is tight, top your coolant off.

Synopsis: I give this item an A for effort and design, ease of installation as no difficulties were fault of its own, and mastering visual effect as well as function.

Side note: I think if you want to cut it to a shorter length, say 8 inches, it would fit even better. Cutting would require a hack saw.
