Frequently Asked Questions

Will the Kuehl Condenser upgrade get damaged behind the rear tire from stones or heat from the exhaust?
The rearward mounted Kuehl Porsche 911 930 Fender Condenser is designed and positioned to avoid damage from flying objects and heat. The durable Kuehl Condenser assembly (consisting of the condenser, blower fan, stainless steel bracket and vibration mounts) is protected with a high impact plastic Stone Guard. The fan is mounted on the outboard side (facing the outer fender) and draws cool outer air through the condenser, pushing it toward the engine/exhaust side. A stainless steel heat shield protects the barrier hose leading to and from the Kuehl Condenser. There are hundreds of Kuehl units on the road today and none have suffered from a stone hit or melt down.

Will I have to do any cutting or hacking of fender area in my Porsche 911 or 930 ?
No. The Kuehl Porsche 911 930 Fender Condenser simply mounts in the LH rear fender area, sitting on top of existing mount points in the fender area. It fits like a glove, and once installed it is nearly invisible and does conflict with the body lines or appearance of the Porsche 911 or 930.

Will my tires hit the Kuehl Condenser(s)?
No. We installed many Kuehl Condensers in various Porsche 911 and 930 models with various tire an wheel sizes and have never come across a combination of rim or tire size that touches the Kuehl Porsche 911 930 Fender Condenser system. To give you an idea as to how far back the rearward mounted Kuehl unit is, imagine looking directly at the side of your rear tire of your Porsche 911 or 930 (you are facing perpendicular to the LH side of the body). Locate the edge of the rearward portion of the outer fender. The Kuehl's Stone Guard is just behind that area. The same is true for the Duehl Kuehl condenser which is mounted in front of the LH rear tire.

How much does the Kuehl Porsche 911 930 Fender Condenser upgrade weigh?
The rearward (behind the LH rear tire) Kuehl Condenser assembly weighs approximately 7 lbs, less than a gallon of gas.

How do you fit two condensers (the Duehl Kuehl and main Kuehl Condensers) in the Porsche 911 or 930 LH rear fender?
That is easy. Above we explained the rearward Kuehl unit is mounted behind the tire. The Duehl Kuehl unit fits just as easy in front of the tire, again mounted on existing mount points and protected with a Stone Guard.

Do the Kuehl Condensers upgrades have fans?
Yes. Both units have full time blower fans pre-attached that pull in cooler outside air. The fans run full time, whenever the compressor is operating. The Kuehl Condenser fans are protected with an in-line fuse and are turned on by an ac relay we provide. The fans draw a minimum of electrical current and will not put any strain on your battery or 911 930 charging system. All Kuehl Porsche 911 930 Fender Condenser system upgrades include complete wiring, crimp terminals, fuse, relay and a simple schematic that makes hook up easy.

Can I use R134a refrigerant with the Kuehl system.
Yes. As a matter of fact the Kuehl Condenser system was designed specifically for R134a. And, you can use R12 if you wish.

Does the Kuehl Condenser system upgrade eliminate the Porsche 911 or 930 factory deck lid condenser or front condensers?
No. The Kuehl Condenser's supplement the stock factory Porsche condensers, they run in series with the stock Porsche condensers. For earlier 911's, typically before 1978 when these cars more frequently came with *factory air* (front and rear deck lid condensers), the 911 had just the engine deck lid condenser. For these early Porsche models we recommend the rear ward main Kuehl unit and the Duehl Kuehl unit running is series with your existing deck lid condenser: so you would have 3 condensers, the original Porsche deck lid unit, the Kuehl and the Duehl Kuehl upgrades. For Porsche 911 and 930 models from 1978 through 1989 with *factory air* (two orgininal condensers), we recommend, depending upon how hot your climate region is, color of car, etc. typically adding the rearward Kuehl unit, so once again you are running 3 condensers. For extreme cooling upgrade requirements you would use both Kuehl condenser units so you would have 4 condensers.

I was thinking of removing my stock deck lid condenser because I heard it puts to much heat in the engine compartment. Will the Kuehl upgrade units help me?
The benefit of the Kuehl Condenser upgrade is it *takes the load off the engine deck lid condenser*. The Kuehl upgrades reduce the heat output of the stock deck lid condenser by adding more condenser area and locating that condenser area outside of the engine compartment. By adding more condenser capacity you lower the ac system pressure. Lower system pressures mean less heat in the engine compartment. It is simple ac theory. Basically more condenser is better for the 911 and 930 systems.

Why would I also need the Duehl Kuehl Condenser upgrade?

It is all a matter of BTU's or elimination of heat (taking the heat in the car and putting outside the car). The more heat in the car or the higher the ambient temperatures (outside air temperature), the more condenser area you need. Many times you may have heard of the phrase or rating of central home air conditioners expressed in "tons". Think of the number of condensers in your system in the same manner. In most cases you will see a big improvement by just adding the rearward mounted Kuehl Condenser (located behind the rear tire). However, when outside temperatures rise above 95 F, or when you have high humidity or more than one occupant in the car, or your "personal cooling needs" (you have a high metabolism rate) are greater, then you need more condenser area, so you add the Duehl Kuehl option.

I have seen another condenser, like the Kuehl, advertised. They show in a picture of it getting 20 F at the vent! Does the Kuehl perform as well?

There have been many people trying to copy or mimic the Kuehl system product line. We have never seen the product you have mentioned in action, however, we have seen the product (which appears to basically be a condenser a few hoses). First, understand that putting a condenser in the rear fender is not a "new" idea. We simply improved the concept and have taken it to its end design. Our first prototypes, which probably resemble the unit you mentioned, were as they say "not for flight". The original Kuehl unit has gone through 4 major revisions to achieve the high level of performance that is seen and felt today. Second, as far 20F at the center vent? We have gone well below 20F many many times and we have recorded evaporator core temperatures as low as -9F with R134a. However, there is a basic problem you run into when you go below 32F at the evaporator coil (which cools your vented air). The a/c industry calls it "icing" which means frost or ice forms and collects in the evaporator's air passages between the coils. When ice collects the air cannot flow through the cooling fins so you significantly lose cooling efficiency; the vent air temperatures will rise up drastically. That is why there is temperature probe in the evaporator to shut down the compressor when the evaporator temperature drops much below 30F nominal so the evaporator can defrost. This past summer we ran some tests of our four condenser system upgrade in a 1987 black top Porsche 911 Cabriolet (convertible): with an outside air temp of 105F, typical summer humidity, high noon sun, our cockpit temperature measured at three places around the driver's head, using NIST traceable digital probes, was below 69F; actually nearing 66F at times. And, we were using R134a refrigerant ! Now maybe you don't see 105 F outside temperatures often, or maybe 66-69F is a bit too chilling for your bones (that's a whopping 36 degree differential), but that is what can happen when you use the recommended ac Kuehl upgrades and follow directions. Remember, what you need is a system that delivers cold air consistently under heavy heat and humidity loads. That is accomplished with the Kuehl systems upgrades, a proven and reliable design effort, and without twisted advertisements.

Why should I replace all my Porsche 911 or 930 air conditioning hoses with this "barrier" ac hose?

The typical factory air 911 or 930 ac system uses nearly 40 feet of outdated "non-barrier" hose. Non-barrier hose was designed over 50 years ago at a time when front engine cars dominated the consumer market. Most front engine cars have the majority of their ac components located in one area, near the front engine compartment, so they typically use less than 10 feet of rubber hose. The Porsche 911 and 930 ac systems have their components (compressor, condensers, evaporators) spread out from the front of the car to the back.

In comparison on non-barrier hose vs. barrier hose: Consider that the non-barrier hose leaks xxx parts per million of refrigerant per linear foot of hose. Multiply the number of feet times the leakage rate and you determine how often you will need to refill, or top-off the system. It is a well known fact that most Porsche 911 or 930 models need to be topped-off or recharged with refrigerant yearly or in many cases within monthly. And the more often you use the a/c system the quicker the refrigerant will leak out, and this usually happens when you need it the most.... in nice driving weather. Going back in time when non-barrier hose was first designed there was no concern about the cost of refrigerant or effect R12 would have on the atmosphere. The cost in your time and material to re-evacuate, charge and test a system yearly or more often is expensive. So, with the introduction of R134a in the mid 90's, the ac industry developed "barrier" hose which has an additional liner inside the rubber hose to reduce the leakage rate of refrigerants. All Kuehl Porsche 911 and 930 Condenser system upgrades come with a new set of barrier hoses, pre cut to length and crimped with SAE approved fittings. We now offer three different base line models of the Kuehl Condenser system, some have the minimum hose assemblies required to connect the unit, some have additional replacement hoses, and some have a complete set of hoses. Frankly, if it was my car I would upgrade and replace all the hoses and get it done with.

What is the difference between "reduced" barrier hose and standard barrier hose.?

"Reduced" barrier hose is smaller in diameter than standard barrier hose. Is there a benefit? No, not really. The weight saving is so small, "nominal" as they say, and you have to change all of your hose clamps to accommodate the smaller diameter.

I heard that when your original hoses get old, and the oil soaks in them, you get a natural barrier so refrigerant won't leak out?

False assumption and just rumors. I would prefer to think of this as a concept or theory rather than a fact for many reasons. First, if you think back to the early introduction of a/c in the 911 or 930, it was a known fact that the systems had to be "topped off" or re-charged every few years. The cause for the leakage was not the compressor, condenser or evaporator in most cases but rather it is the nearly 40 feet of non-barrier ac hose typically found in the 911 and 930 Porsche models which was the cause for the leakage. Second, it is a known fact that non-barrier hose leaks so many parts per million of refrigerant at a given pressure over a given period of time. The ac industry realized that with either R12 or R134a (with its small molecule) a given amount of leakage was expected in non-barrier hose. With the new environmental requirements to reduce CFC's and HCF's (refrigerants and related products) in the atmosphere the ac industry came up with a simple and cost effective solution, which is "barrier" hose. Though some attempts were made in trying "liquid sealants or additives" as a cheap attempt to reduce leaks in the hoses, the ac industry discovered that in many cases these sealants or additives quickly gummed up and damaged the system components. It would be nice if we could simply swallow a magic pill to make the problem go away, however there is no cheap solution. You have to replace your hoses if you want a trustworthy system.

Are the ac hoses hard to replace in the 911 or 930. I see two that snake through the engine compartment?

The hoses are not difficult to replace. As a matter of fact most of the Kuehl hose upgrades are installed in the same places that your original hoses were located in. Replacing the hoses is usually half of your work. The Kuehl Condenser Installation Guide walks you through the sequence of hose removal and installation. The two hoses coming into the forward section of the engine compartment are really not that difficult to replace once you read the instructions of how and where. All you need to replace the hoses are standard inch size wrenches, a floor jack and two jack stands (common tools). We won't kid you on this section of your ac upgrade, the hoses are one half of the job, however, a very important part of the project if you want to eliminate refrigerant leaks.

What is the benefit of the Kuehl Porsche 911 930 Serpentine Evaporator upgrade ?

Your stock evaporator is a "tube and fin" construction; the first generation of coil design. Though tube and fin designs do their job, serpentine designed tubing is inherently more efficient. The Kuehl Serpentine Evaporator has more surface area than your stock evaporator and therefore offers you more cooling capacity. In the first step of installing the Kuehl Condenser system you will be opening up your evaporator box to inspect and clean your evaporator, as well you will be re-sealing the box with our improved gasket system. Chances are you may find your stock evaporator is reaching the end of its life cycle. Since you want to do a thorough job (and do the job right the first time), now is the time to consider improving the output of the evaporator section.

I have seen another serpentine evaporator that looks like the Kuehl and it is cheaper. How do the two units differ?

The "cheap" copy of the Kuehl is smaller in size and mass compared to the actual Kuehl unit. The original Kuehl has more refrigerant channels and surface area; like comparing a little refrigerator to a large refrigerator. You'll have more cooling capacity with the Kuehl unit, and experienced technical support as well. And, unlike the copy-cats who literally throw a bunch of parts in a box (good luck getting phone support), the original Kuehl Evaporator is pre-assembled and includes complete installation instructions with pictures and much much more. You get what you pay for is the saying, especially when it comes to upgrades.

Why do you include a new drier with the system?

For several reasons: (a) the drier does three things, it filters out contaminants, removes moisture that can damage your system or prevent it from working correctly, and it acts like a reservoir for liquid refrigerant, (b) chances are your drier is not new in most cases, and (c) driers tend to hold an amount of old refrigerant oil and you want to start off with a known quantity of good oil when you recharge the system.

What is the difference the Kuehl Vent and the Tri-Kuehl Vents?

The center Kuehl Vent fits all "factory air" cars, typically from 1978-1989, which have a vent located behind the center console in the bulkhead or fire wall. The factory vent, called the "bow tie" vent for its shape, blows ac air on the floor. The center Kuehl vent takes that air, through a flexible tube, and directs it through a full louver vent which easily mounts above the center console and behind the ashtray. The center Kuehl vent does interfere with movement of the ashtray. The Tri-Kuehl vents fit factory air cars, typically from 1978-1985. The layout during those years for the ac system "side" vents had a small narrow louver (more like a defrost vent) located on the left and right side of the dash. The small narrow vents inhibited air flow. In 1986 they increased the size of the side mounted vents. The Tri-Kuehl vents include our center Kuehl vent and two additional Kuehl vents that mount under the knee pad and channel the air from the small narrow vent into the larger Kuehl Vent (like having a 1986 dash at 1/10th of price and headaches).

If I need a new compressor, which one should I pick?
For most 911's through 1983 you would use the Kuehl-Sanden option to replace the old Yorks. For 911's from 1984-1989 you would use our Kuehl option to replace the Nippon For most turbo's up to around 1983 you would use the Kuehl-Sanden option to replace the old Yorks; however around 1982-1983 there could be either a York or and early design Nippon on the turbo. For turbo's from 1984-1989 they used a later design Nippon where you would use our Kuehl unit.

My car is not "stock", I have modified the body or engine. Will the Kuehl system work in my car?
If your car has factory installed ac or has a few of the common factory ac components, we can help you put together a Kuehl system. You'll probably want to chat about your car and the project before ordering, so we always to discuss the project with you before hand.

I've got common wrenches and tools, can I install this myself?
Yes. We designed the Kuehl systems to be installed on the ground (you don't need a lift) and our installation guidelines are pretty thorough with pictures and text that walk you through the installation.

I don't see any order form or online page to order by the internet. How do I order my Mr. Ice Project?
Griffiths' selling philosophy is a bit old fashion. We prefer to discuss the project with you prior ordering to help insure your success from the get-go.

After I order my Mr. Ice Project how long will it take for me to get it?
Typically your project package will take 1 week to assemble. Most Mr. Ice Projects are put together in 1 to 3 boxes. Domestically we ship by either Federal Express or United Parcel Service. For international sales the method of shipment may include postal methods. Shipments leave our New Jersey facility Monday through Friday. Transit times for normal, ground delivery, for destinations on the east coast range from 2-4 days, for mid west 4-5 days, and for the west coast 5-8 days. Second day and next day air freight is available as well. If you provide us your email address we will provide you with tracking numbers so you can check the delivery progress.

Once my Mr. Ice Project boxes arrive what should I do?
After you order do some pre-planning. Pick the day you will start the project. Clean up the garage and layout out your tools to get ready. When the boxes arrive: count the boxes, open them up. Make cup of tea or open a Beck's or Bass Ale (not too many) and read the Installation Guideline manuals, use the item list to verify you got all your parts. Our Installation Guidelines will walk you through the installation process in a logical fashion; we have been doing this for years and many of our customers have helped us the documentation so it is written in "layman's terms".

Can I charge the system with refrigerant?
Only if you have the right equipment and the experience. It's not worth the cost the to buy evacuation pumps, service gauges and hoses or refrigerant leak detectors unless you intend to use them often. The final part of evacuation, charge and test should be left up to an experienced automotive ac tech. However, you can do all the installation work yourself naturally (we designed the the Mr. Ice Projects for you to install, or if you wish you can have your favorite mechanic do the work).

What if I run into a problem or have a question with the installation?
In most cases you won't have any problems as our installation guidelines are pretty thorough; many suggestions from customer's have been incorporated in the process. However, we want to see you succeed with your Mr. Ice Project so you can always call our toll free number or drop us an email. Since we designed and manufacture the systems, we are ready and able to support you.