

SPECIAL
POINTS OF IN-
TEREST:

- DO NOT TIE INTO OEM EXHAUST
- KEEP EXHAUST TAILPIPES SHORT
- PREVENT STARTER FAILURES
- AVOID MODIFICATIONS

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TYING INTO THE TRUCK EXHAUST- A BAD IDEA

As with all products, the early years of development are often remembered for trials, errors and successes. Sometimes the lessons are easy ones, but many are not. The important thing is to avoid repeating the same mistakes over and over.

One of the most common assumptions is to "TIE-IN" to factory truck infrastructure. For newcomers to the APU world, the concept of interconnection sounds sexy and simple.

But watch out! You are going to invite disaster and heartache. We will explain several areas of assumption (a bad word) to educate others based on our early mistakes.

EXHAUST- This will drive you insane if you have attempted to plumb the APU exhaust into the factory truck stacks. Why? Because high velocity turbo exhaust from the main truck engine WILL make its way into the valve entry of the little Kubota APU. Kiss your warranty of the APU engine goodbye!! But that is just the beginning. Check valves are a waste of time and only create other problems.



The assumptions of noise reductions are also proven false, as the end result offers no difference. I remember in the early days our experimentation when we tried many different exhaust combinations. Most had adverse effects in spite of some very clever people who implemented what seemed like good ideas at the time. The come-backs and re-do's from broken exhaust flanges, check valves, flex pipes, muffler clamps and even mufflers themselves left us scratching our heads.

The reason is because of severe vibration and twisting effects of the truck. Frames flex. Cabs float. Exhaust pipes from the main engine vibrate. And so does the APU engine inside the box. No matter

what we did, the costs of these efforts mounted. At one point I calculated that we had burned through a minimum \$25,000 in parts and labor expenses just to reach our current conclusion. Ouch! It was like buying a new Harley and throwing it in the garbage can! That is why we don't integrate into truck exhaust.



APU's come with their own
exhaust for a reason

SOOT WILL CLOG THE EXHAUST IN LONG PIPES

When starting the APU engine from inside the truck, LET GO of the start button when you hear the engine start up.

Don't alter or modify your APU

You might ruin your investment

Exhaust tailpipes from APU's need to be kept short, which is why you will see many manufacturers of these products do so. Why?

Because the small openings of the exhaust ports from 1-2 cylinder engines are often 1-1 1/2" in size and can CLOG up with soot in a long tailpipe. We have seen clogging take place in as little as 3 months.

APU engines fall into the class called "Off Road" meaning that the emissions are not as clean as the larger and sophisticated OEM truck engines with electronic ignition. When exhaust is exiting the small APU engine,

Keep Exhaust Pipes Short!



THIS PHOTO IS AN IDEA THAT WON'T WORK!

CLOGGING WILL OCCUR-GUARANTEED!

the soot can begin to condensate and collect into large clumps-especially if someone attaches a long "Harley Pipe" or extended flex hose routing to the back of the truck frame or any other distance longer than 3 feet.

The consequence is extreme back pressure from a congested tail pipe which can stop an engine from even starting! Avoid extending the tailpipe too long and do not tie into the truck exhaust. Always keep exhaust tailpipes short in length.

Preventing Starter Damage

The Frigette APU comes with a high quality Nippon-Denso starter as a factory standard component. Starters have a tough job to do-they must launch a diesel engine from a cold start to a running condition in almost all seasonal temperatures. However, there are things that people can do to extend starter life and prevent the expense of having to buy a new one. First, ensure that your unit has a good glow plug. With-

out it, the engine will not pre-heat in cold temperatures. Second, make sure your oil choice in the Kubota engine is always a 5W40 all season viscosity. We have learned that cold temps have an amazing thickening effect on standard 15W-40 grades of oil in this particular engine. 5W-40 works best!! Thirdly, make sure that all electrical loads (i.e. block heaters, micro-waves, coffee pots) are turned

OFF before starting the APU. That goes for the A/C compressor also. Turn it OFF before start up. Lastly, make sure fuel filters are clean and new elements replaced as needed. Clogged fuel filters create a major problem for a fuel pump to suck fuel and get an engine started. In winter, make sure fuel gelling additives are put in the diesel tanks.

When starting the unit from inside the cab, when you hear the engine fire, let go of the start button. Holding it down too long after the engine has started running will definitely KILL the starter prematurely.

Alteration and Modification

There is an old saying in his business- "The path to Hell is paved with good intentions". Many times a good idea simply goes wrong, even though it seemed like it would work. It is important to know and understand the evolution of the Frigette APU is a result of years of experience. When an end

user purchases an APU that is still under warranty-Please, DO NOT ALTER, OR MODIFY IT! This action of "a good idea" will probably void or damage the factory warranty coverage, and nobody wants that to happen. Chances are we have a valid explanation to discourage the re-engineering attempt.

Every so often we will hear of an idea that is good and deserves further investigation and testing to see if it proves right. Anyone who has a good recommendation is welcome to contact their regional Frigette representative or our factory tech service dept. We do listen and are always trying to improve our product. Theories need to be proven first, which is a good policy to have.

ATRI List of Idling Compendium

For a really good comprehensive chart on where the laws are, and if idling is limited or banned entirely, check out the "ATRI Compendium List for Idling rules".

Cut and paste this link to your web browser. Then Print a copy for yourself and keep it as a reference.

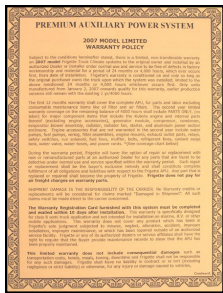
http://atri-online.org/index.php?option=com_content&view=article&id=164&Itemid=70.

Another excellent source of government information compiled monthly that you can electronically subscribe to is called the "NATIONAL IDLING REDUCTION NEWSLETTER" To subscribe, contact brenda@anl.gov

Log on to these websites for excellent information on idling laws



Warranties Apply To Original Owner Only



Frigette warrants its APU's to be free of defects in material and workmanship for a limited two year 4000 hour period on all brand new units.

First year covers parts and labor on everything except fluids, filters, and belts up to the 4000 hour limit.

In the second year, if there are any

remaining hours left from the original 4000 hours, the warranty enters a phase covering major components only-No labor.

Major components include the basic Kubota engine and internal components (no external accessories), compressor, condenser, starter, control panel, the

generator head, the evaporator assembly, the aluminum box case and the radiator and fan.

The warranty is applicable to the original owner only, and is not transferrable to any subsequent owner of the truck, or the APU.

This policy has always been in effect since the very beginning.

Frigette APU's are NOT made for Boats/RV's or Pickup's

Its March and we just completed the Louisville Truck Show again. In the space of three days, we talked to hundreds of interested buyers contemplating an APU purchase. This year, I had four people who asked if our unit could be rigged up for a boat. One person asked if we could put it in an RV. Another asked if he could use it in his pickup truck. In past years, we have learned that dealers have tried to attach

them on to the tongue of a utility trailer, on to step-vans and even inside a Sprinter van. The answer is always NO.

Here is why- These systems are engineered to fit a class 8 over the road truck and are packaged for this specific application.

Anyone who is inexperienced with generators will inevitably miscalculate the provisions for airflow science, exhaust limitations, cooling properties, heat,

vibration and noise.

Believe me- It takes a very proficient expert to do this job right. Sometimes they also make mistakes. Although it might look like a sure sale, it is often best to totally avoid the temptation of trying to customize a Frigette APU for a job it was never designed for.

There are companies in other industries who specialize in applications other than our class 8 truck world.



Frigette
TRUCK CLIMATE SYSTEMS

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Newsletter topics or questions?
Contact- kholze@scsfrigette.com

Frigette Truck Climate Systems manufactures fuel efficient anti-idle solutions for the over the road heavy duty truck market. With volatile energy costs and increasing idling legislation, trucking operators seek a better alternative to wasteful fuel burning practices. The Frigette APU delivers the ultimate compact package of comfort heating and cooling performance, battery charging and household electricity. The days of engines idling in parking lots is over. Make your next investment a Frigette APU.



Frigette APU Specifications

Cooling BTU's	12,000
Heating BTU's	10,000
Evaporator Blower	330 CFM
Refrigerant	R134a
Engine Make	Kubota EA300
Engine Cooling	Liquid Cooled
Fuel	Diesel
Battery Charging	60 amps DC
Household Power	3300 watts AC
System Weight	418 approx.
Enclosure Material	Aluminum
Duplex Plug-ins	Four
Airflow Ductwork	Yes
Optional Step for box	Yes
Dimensions	30.5" x 25.5" x 16"



A Frigette APU has ability to fit under the passenger door of many trucks when competitors can't!

