



How to cut and assemble Reusable Hoses



Using aluminum vice jaws will help protect the Fitting from scratching while performing the next steps; the fitting may be wrapped with tape for added protection.



Cutting stainless steel hose is easy. Wrap the fitting with duct tape or masking tape at the desired length.



Hose may be cut with a hack saw; the best size hack saw blade is a 32-teeth-per-inch.



A shear cutter or a radial blade or chop saw will work the best to keep the braids from fraying. After the cut carefully remove the tape and trim the frayed ends if necessary



Place the end of the socket in a vice and insert the hose through the smooth end until the hose aligns with the bottom of the threads inside the socket end; It is important to mark the outside of the hose at the end of the socket. This will show you if the hose has “pushed out” of the socket end during the assembly process, if so, it will leak when used.



It is extremely important to lubricate the inside of the socket end and the outside threads of the fitting. Use standard 30 weight oil or lubricant.



By holding the hose and not the socket end, start the hose on the nipple of the hose end and use a twisting motion while inserting the hose into the socket end. Continue pushing on the hose until the threads of the socket end can be engaged. Some sizes may require the use of extra force to engage the threads at this point.



Next, it doesn't matter which portion, either the socket end or the nipple is secured in a vice with the aluminum vice jaws. Using a suitable wrench tighten the threads onto the cutter. A crescent type wrench is not recommended as it may slip and damage the outside of the hose end. Tighten the socket end until it is within .”060-080” of bottoming out. Recheck your mark on the hose and if it is within 1/16’ inch of the socket end you should be ok. If not, disassemble the hose end, re-cut the hose and start the assembly process again.

Clean the inside of the hose assembly with a cleaning solvent. Blow any residue out with compressed air. It is strongly recommended that you test the completed hose assembly for leaks prior to putting it into service on your vehicle. Be sure to lubricate the “B” nut threads before installing on an adapter.

How to cut and assemble PTFE Hoses



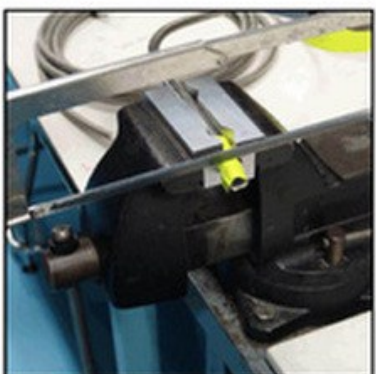
Using aluminum vice jaws will help protect the Fitting from scratching while performing the next steps; the fitting may be wrapped with tape for added protection.



Place the socket on the hose prior to wrapping tape for cutting. If there is a concern about scratching, the socket may be wrapped with tape for added protection.



Cutting stainless steel hose is easy. Wrap the hose with duct tape or masking tape at the desired length.



Hose may be cut with a hack saw; the best size hack saw blade is a 32-teeth-per-inch.



A shear cutter or a radial blade will work the best to keep the braids from fraying. After the cut carefully remove the tape and trim the frayed ends if necessary.



Using a small pick or a screw driver, carefully move the stainless steel braids away from the PTFE inner liner, this is required to allow the nipple to slide onto the PTFE inner liner free of any steel braids.



Once the compression sleeve has been seated, place the fitting end in the vice and push the PTFE inner liner with the socket onto the hose end.



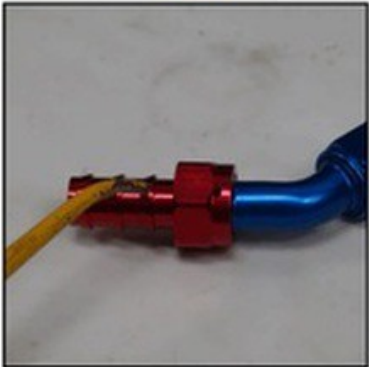
Screw the socket onto the hose end by hand, once you have engaged a few threads you will then be able to use a wrench to finish tightening the hose end to the socket.

Clean the inside of the hose assembly with a cleaning solvent. Blow any residue out with compressed air. It is strongly recommended that you test the completed hose assembly for leaks prior to putting it into service on your vehicle.

How to cut and assemble Push-lok Hoses



Cut the hose with either a sharp blade or tubing cutters



It is extremely important to lubricate the inside of the hose and barbed end of the fitting; use standard 30 weight oil or lubricant.



Using a twisting motion press the hose to the bottom of the hex nut on the fitting.



Clean the inside of the hose assembly with a cleaning solvent. Blow any residue out with compressed air. It is strongly recommended that you test the completed hose assembly for leaks prior to putting it into service on your vehicle.

READ THIS FIRST!

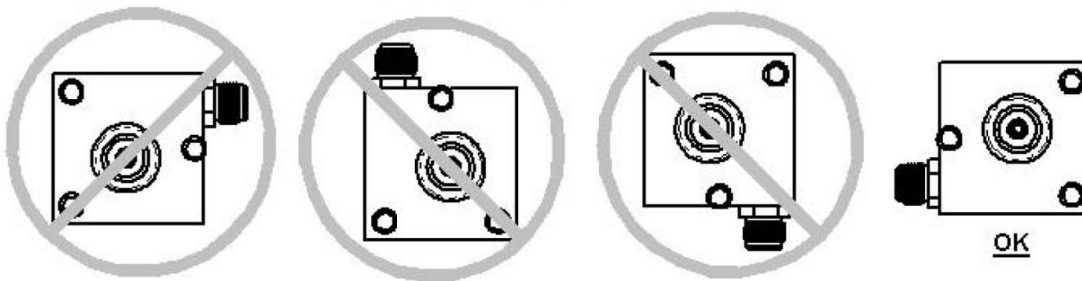
Improper installation of the pump and/or poor cooling system maintenance can result in poor pump performance, pump damage, and/or engine damage.

Thank you for purchasing one of the best remote electric engine coolant pumps in the industry. Like any other quality mechanical device, proper installation and maintenance of the pump will provide a long life of worry-free performance. Please follow the guidelines listed below.

A dirty cooling system will not only damage the pump, but it does not remove heat as efficiently from the engine. Particles suspended in the coolant (rust, dirt, machining residue, etc.) have been known to prematurely wear impellers, and cause seal failure. **Flush the entire cooling system before installing the pump.** This should be done after any modifications to the cooling system (changing fittings, hoses, etc.), as those modifications can loosen dirt and rust in the engine, heater core, or radiator. It is always good practice to flush the radiator after the vehicle has been sitting for more than four weeks.

Always install the pump so that it can drain completely when the cooling system is drained. This will help rid the pump of dirt and debris, and will help prevent freeze problems in the winter. The pump can be mounted in any vertical orientation. There is only one proper horizontal orientation that provides adequate draining as shown below.

HORIZONTAL MOUNTING POSITIONS



Use any two of the three cover mounting bolts to secure the pump. Do **NOT** remove all three cover bolts at the same time, as this may cause the cover seal to dislodge from its retaining groove, which may cause it to leak.

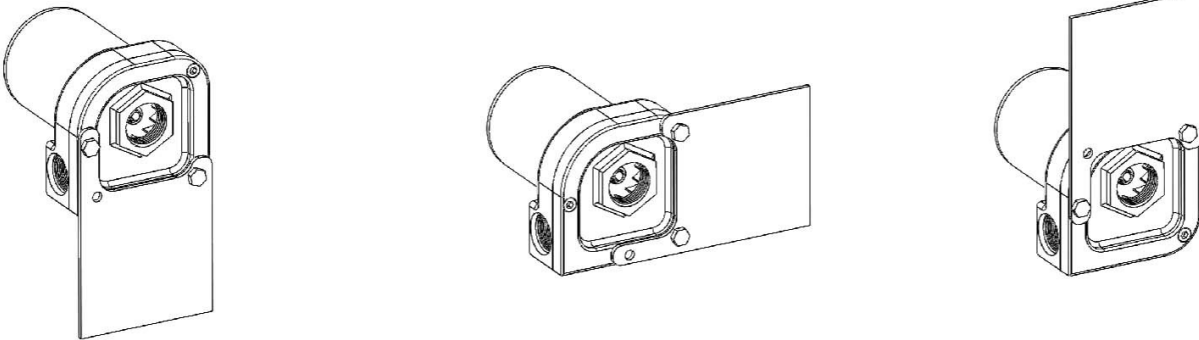
The pump must have a flooded suction at the inlet. Always install the pump near the lowest point in the cooling system. The best location is to connect the pump directly (or with a very short hose) to the radiator outlet. **Do not run the pump dry – it will cause seal failure!**

Always connect the pump to a switched and fused electrical circuit. The switch should be rated for 6 amps at 12 volts D.C. The fuse (or circuit breaker) should be sized between 15 amps and 30 amps. An electrical harness was provided with the pump. The yellow lead should be routed to positive. The black lead should be routed to negative.

Pump Mounting Kit Instructions

These instructions apply to the Pump Mounting Kit only. See separate Pump Installation instructions for proper mounting orientation, electrical requirements, etc. Read these instructions completely before proceeding.

Step 1) Select a Mounting Bracket orientation. Review the diagrams below and select the bracket orientation most suitable to your application.



Keep in mind your orientation may be vertical instead of the horizontal orientation shown above.

Step 2) Attach the Mounting Bracket to the vehicle. The bracket can be formed as required to fit your vehicle, but be careful to keep the area near the pump as flat as possible. Once you have selected a mounting location and orientation, the bracket can be welded or bolted to the vehicle.

Step 3) Hold the pump in position on the bracket and note where the mounting holes line up with the two existing Cover screws. Remove ONLY those two Allen screws, leaving one screw undisturbed. Place the pump against the Mounting Bracket and install the two Hex Head screws (supplied with the Mounting Kit) through the bracket and into the pump where the Allen screws were removed. Tighten the Hex Head screws to approximately 12 Lb-Ft.

Caution:

Aluminum fittings are designed for typical automotive cooling systems. The maximum recommended working pressure is 50 psi. They may physically fit into higher pressure systems, but are not recommended for them.

O-Ring Boss Fittings:

O-Ring Boss fittings use an integral rubber o-ring to seal the fitting to the housing. No special sealing compound is required. However, it is highly recommended that the o-ring be coated with clear petroleum jelly (Vaseline™) before installation. This will help the seal “slide” into position easier.

O-Ring Boss fittings do not need to be extra-tight to seal. Tighten the fitting until the nut part of the fitting is in full contact with the housing. Over-torquing will not make the fitting seal better.

National Pipe Taper Fittings:

In order to give a leak-free joint, it is important with tapered fittings to get proper thread engagement without over-torquing. It is highly recommended that the male pipe threads be coated with a non-hardening pipe thread lubricant/sealant prior to installation. Such compounds are available at most hardware/lumber stores. Those lubricants/sealants with Teflon® give best results. Make sure the lubricant/sealant is suitable for aluminum.

37° Flare Fittings:

Flared fittings are designed to seal with proper torque applied to the female nut. Excessive torque will only result in fitting distortion, which results in a leaky joint. The best method is to tighten the nut to the minimum required to produce a physically tight joint – no more.