



INSTALLATION INSTRUCTIONS

COOLANT EXPANSION TANK

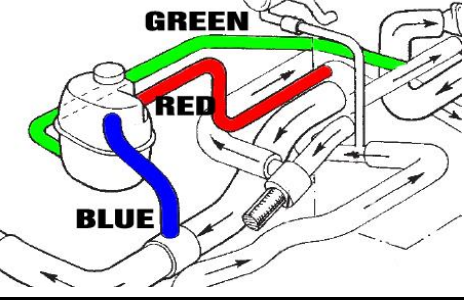
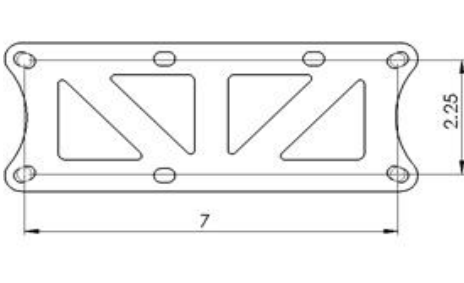
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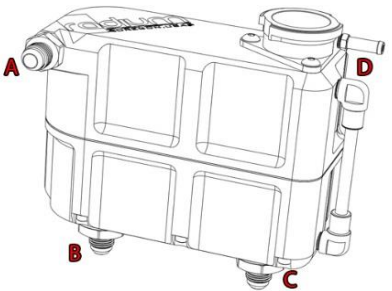
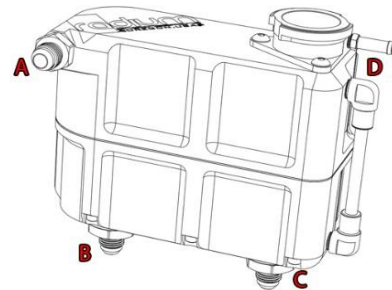
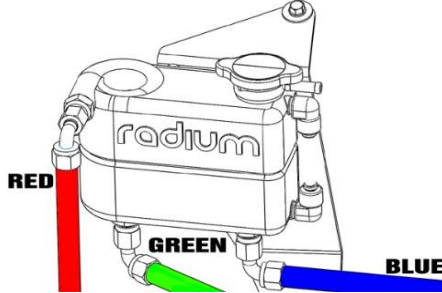
Document: 19-0131
Support: info@radiumauto.com

WARNING

DO NOT WORK ON THE COOLANT SYSTEM WHEN THE ENGINE IS AT OPERATING TEMPERATURE.
WAIT UNTIL THE ENGINE HAS COOLED AND THERE IS NO LONGER PRESSURE IN THE SYSTEM.
QUICKLY CLEAN UP ANY COOLANT THAT HAS SPILLED. ETHYLENE GLYCOL IS POISONOUS.

STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1	Metric Allen wrench	Unwrap the halves of the coolant tank and clean out any residual packaging material.	
	Torque wrench	Place the included gasket in between the 2 coolant tank halves.	
	Anti-seize	Using a 3mm Allen hex wrench, install the 7 included socket head bolts. It is recommended to use anti-seize on the threads to prevent galling.	
		Tighten all bolts evenly until snug in a crisscross sequence (as shown), then tighten each bolt to 38 in-lbs. using a calibrated torque wrench. WARNING: Do not overtighten!	
2		Hand-tighten both elbow fittings in the 1/8" NPT ports. Then add an additional 1.5 to 3 turns until tight. The tapered pipe threads are preimpregnated with Teflon so no addition lubrication is required.	
		In order to install the clear tubing, temporarily clock each fitting, as shown.	
		Verify that the included clear tubing is 81mm (+/-1mm).	
		Push-in and fully insert the tubing into either elbow fitting, as shown.	
3		Bend the tube just enough to get it into the opposing instant tube fitting, as shown. NOTE: the fittings might need to be rotated slightly.	
4	8mm open end wrench	Using an 8mm open end wrench, rotate the elbow fittings so they are in line with one another.	
		NOTE: if not tight enough, the elbow fittings may need to be rotated 360 degrees.	

5		Inspect the tubing. If it is not get completely straight, the tube is most likely slightly too long, as shown.	
		To fix, rotate the elbow fittings back as before. Simultaneously push the retaining locks flush to release the tube from the each elbow fitting.	
		Shorten the tube slightly, then reinstall.	
6		Make sure the area shown in the picture is free of dirt and debris before proceeding.	
		Place the included O-ring into the groove around the fill neck opening.	
7	3mm Allen wrench Thread locker	Place the included fill neck receiver onto the tank, oriented to best fit the application. Apply a medium strength thread locker and install the 3 included socket head bolts using a 3mm Allen hex wrench, as shown. Torque to 48 in-lbs. (5.4Nm).	
8	Factory service manual	Before installing, note the functionality of the vehicle's coolant system. As a reference, the diagram to the right represents a Lotus 2ZZ-GE. Red: Hot water air-bleed coming from the cylinder head. Green: Coolant returning from the tank to the thermostat housing. Blue: Radiator air-bleed and bypass when thermostat is closed. If the Radium expansion tank is replacing a factory coolant header tank, it is possible that hoses will just need to be cut and/or extended.	
9	Lubrication oil 3/4" wrench 1" wrench	Before installing the 3 included adapter fittings, lubricate the O-rings with light oil. Secure the two 10AN ORB to 6AN male fittings into the bottom ports and the 6AN ORB to 6AN male fitting to the side port. NOTE: The tank's internal chambers are divided vertically down the middle for the swirl mechanism, but small passages on the top and bottom allow water to flow throughout the complete tank.	
10	Marker 1/4" Drill	The coolant tank should be mounted so that the cap is at the highest point of the cooling system. Stay away from hot exhaust components as well. Look for a flat surface, such as a firewall. Fabrication may be necessary. Before assembling the mounting bracket to the coolant tank, use the bracket as a template to scribe marks through the bracket's 4 outer holes. NOTE: measurements shown are inches. Drill the four holes and/or insert rivet nuts (not included) for either M6 or 1/4" screws (not included).	

11	Thread locker	The mounting bracket will be secured to the coolant tank using the 3 inner slotted bolts holes. Apply a medium strength thread-locker to the three M6 bolts. Secure the bracket to the coolant tank using a 4mm Allen hex wrench.	
	4mm Allen wrench		
12		Swirl Pot Inlet (A): This port is used as for hot incoming water. Drain Back Suction Outlet (B): This port typically routes water back just upstream of the water pump. Air Bleed Inlet (C): This port is commonly used to bleed air from the system. It should connect to the highest point of the engine. Overflow Purge Outlet (D): When the pressure of the coolant system exceeds the cap's rated pressure, hot coolant is released through this barbed fitting. Attach a hose down underneath the vehicle or install an overflow tank that can be used to catch and return the excess coolant.	
13		If installing in a GM LS V8 engine, refer to the connections below: Port A: Connection from steam tube system on cylinder heads. Port B (or C): Plumb to the water pump inlet fittings on the suction side, also referred to as "Heater in". Port C (or B): Plumb to high point of radiator. This will allow any air bubbles trapped in the radiator to travel up the coolant tank.	
14	11/16" wrench	Find the included -6AN push-lok hose ends in the kit. Push the hose (not supplied) onto the barbs. Depending on the hose, lubrication maybe required such as a drop of light oil. Use a non-marring 11/16" open end wrench and carefully tighten the hose ends to the 3 coolant tank port fittings. If different size hoses are required, different adapters for the coolant tank may be needed. The bottom ports female threaded for 10AN ORB female. The upper port is 6AN ORB female.	
	Light oil		
15	Coolant	When filling the engine's coolant system, unscrew any available air bleed that may be in the system (example shown). Opening air bleed screws alleviates a potential air lock. Fill the coolant system slowly until each bleed location spews coolant. Only fill the tank until the sight tube registers half full. NOTE: The level will naturally rise as the engine warms up from heat expansion.	
16		If the optional pressure cap was not purchased, a standard 32mm "import" cap will suffice. Reference the radiator cap product page at www.radiumauto.com for more information. These caps are defined as "Type-A" style. NOTE: There are pressure rating variations. Start the engine and monitor the coolant temperature. Check for leaks throughout the system. If the temperature continues to climb towards 212F (100C), there are likely trapped air bubble(s). A quick and effective remedy is using a coolant re-filler, such as OTC P/N: 75260 (pictured).	