



INSTALLATION INSTRUCTIONS

COOLANT EXPANSION TANK







WARNINGS:







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 AS IT IS POISONOUS.

STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1	3mm 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 criss-cross sequence (as shown), then tighten each bolt to 50 in-lbs.	
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	Place the included fill neck receiver onto the tank, oriented to best fit the application.	
	Thread locker		
		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	Lubrication oil	Before installing the two ORB adapter fittings, lubricate the O-rings with light oil. Secure the 10AN ORB plug into the bottom port (shown) and the 6AN ORB to barb banjo fitting to the top side port.	
	3/8" Allen wrench		
	22mm wrench	Next, confirm there is a crush washer on both sides of the 12AN banjo and hand tighten the bolt.	
9	Flat head screwdriver	Pry the 2 tabs (rear and right side) outwards to release the OEM coolant tank from it's mounts.	
10		Squeeze the plastic tabs and pull away to release the O-ring hose fitting from the OEM coolant tank. Catch any coolant that may spill out.	
		NOTE: For Focus ST models, this coolant line will not be a rubber hose. Instead it will be a hard plastic molded tube. Ford Focus RS shown.	
		If possible, temporarily plug and cap the two open connections to avoid spilling coolant.	

11	Pliers	Flip the OEM coolant tank on its side to access the 3/4" hose connection underneath.	
		Use pliers to move the gray spring clamp back on the hose a few inches. This gray OEM spring clamp will be reused.	
		Pull the hose off the tank and catch any coolant that may spill out.	
		If possible, temporarily plug and cap the two open connections to avoid spilling coolant.	
12	Bucket	Pour the remaining coolant into a container. It will be reused.	
13		Ford Focus RS Only: Unsnap the 3 clips holding the OEM 5/16" coolant rubber hose that runs along the front core support.	
		Ford Focus ST Only: This hard plastic tube that will be replaced is much shorter than the RS model shown. Read below for more details.	
14	Diagonal Cutter	The coolant line that runs between the OEM "Y" fitting and the coolant tank needs to be replaced.	
	Heat Gun	Ford Focus RS Only: This connection is at the front of the vehicle near the hood latch. Cautiously remove and discard the OEM pinch clamp (shown) that secures the 5/16" coolant rubber hose to the "Y" fitting. Be careful not to break the plastic "Y" fitting.	
		Ford Focus ST Only: This connection is behind the RH headlight. Using a heat gun, cautiously warm up the plastic hard tubing at the "Y" fitting connection. Be careful not to overheat this area.	
15	Pliers	Remove the line from the "Y" fitting and catch any coolant that may spill out. If possible, temporarily plug and cap the two open connections to avoid spilling coolant.	
		Find the included 5/16" heater hose and insert it onto the OEM "Y" fitting.	
		Secure using one of the included spring clamps, as shown.	
16		Route the replacement 5/16" hose towards the coolant tank.	
		Ford Focus RS Only: Tuck the rubber hose underneath the OEM A/C clamp just on top of the OEM fan shroud.	

17a	Pliers	<p>Ford Focus RS Only:</p> <p>Locate the large diameter coolant hose that was connected to the coolant tank. Find where it connects to the engine's coolant junction.</p> <p>To dislodge the OEM black spring clamp, Radium recommends using "flexible hose clamp pliers" (shown).</p> <p>NOTE: This OEM black spring clamp will NOT be reused.</p>	
	Rotary Cutting Tool	<p>Ford Focus ST Only:</p> <p>Locate the large diameter coolant hose that was connected to the coolant tank. Find where it connects to the engine's coolant junction (shown).</p> <p>Use a rotary tool, such as a Dremel, and a metal-cutting disc (Dremel P/N 426) to cut off the non serviceable metal band. It is also recommended to use some non-flammable rags or cardboard to catch the dust and sparks from the cutting process.</p> <p>Discard the remains of the OEM clamp.</p>	
		<p>Before pulling off the 3/4" hose from the plastic junction (shown), plug the open 5/16" heater hose. This will avoid a siphoning affect and keep coolant from draining out of the engine.</p>	
18			
19	Hose cutter	Find the replacement 3/4" heater hose in the kit. Cut it to no less than 13" long.	
	Pliers	Lubricate the hose and push it on to the plastic junction. Using pliers, slide on the gray OEM spring clamp that was removed in step 11.	
20		Find the -12AN hose end in the kit. Install it in to the 3/4" heater hose installed in the previous step. NOTE: This pushlok connection DOES NOT require any clamps.	
21	Tape	Use an open ended 10mm wrench and use tape (not included) to stick the included nut in place, as shown.	
	10mm Wrench		

22	4mm Allen wrench	<p>Find the Radium mounting bracket and two M6 button head screws in the kit.</p> <p>As shown, secure the mounting bracket using a 4mm Allen wrench and the open ended wrench from the previous step.</p>	
	10mm wrench		
23	4mm Allen wrench	<p>Position the coolant tank in place. Temporarily install the 3 included M6 flat head bolts.</p> <p>Check the clocking of the large lower banjo fitting. Remove the tank and readjust if necessary. Torque the banjo bolt to specification listed on the hex head.</p> <p>Apply a medium strength threadlocker to the M6 bolts and fully tighten.</p>	
	Thread locker		
24	1-1/4" wrench	<p>Secure the hose end to the banjo fitting using a 12AN wrench (or 1-1/4" wrench).</p> <p>Be sure to position the hose clear of the aluminum A/C bracket that is located just underneath the hose.</p>	
25	Hose cutter	<p>Route the 5/16" heater hose from earlier steps to the coolant tank. Measure and cut the hose to length (33" total is typical). Push the hose onto the barb and install the included spring clamp.</p> <p>Attach the included 7/32" hose to the overflow barb. Route this hose downwards through the sheet metal hole underneath the coolant tank.</p>	
	Pliers		
	11/16" wrench		
26	Coolant	<p>Fill the tank reusing the original coolant.</p> <p>Start the engine. Monitor the sight tube until the engine is warm enough to open the thermostat. Trapped air will naturally bleed into the coolant tank. If necessary, add enough coolant just to cover the sight tube when the engine is FULLY warmed up.</p> <p>Install the pressure cap.</p> <p>Installation Complete</p>	