INSTALLATION INSTRUCTIONS
FUEL PUMP HANGER
CHASER MARKII CRESTA

Document: 19-0290
Support: info@radiumauto.com

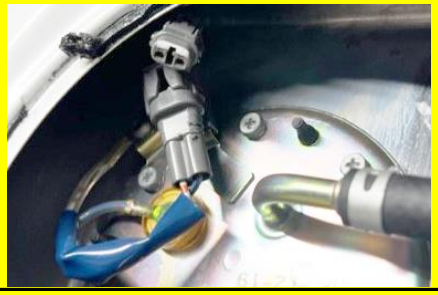
COLOR LEGEND FOR EACH STEP
FOR INSTALLING 1 OR 2 PUMPS
Follow YELLOW areas
FOR INSTALLING 1 PUMP
Follow YELLOW and ORANGE areas
FOR INSTALLING 2 PUMPS
Follow YELLOW and GREEN areas

CAUTION

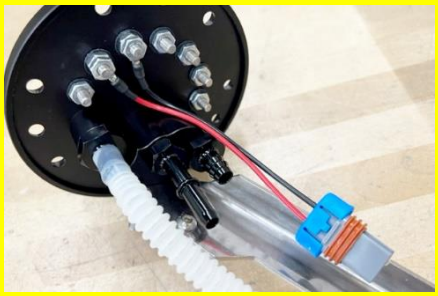
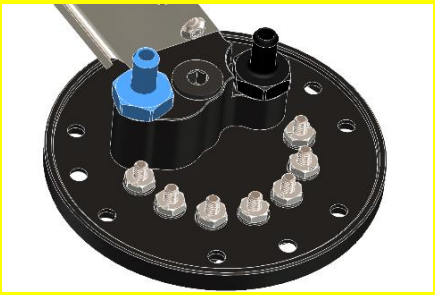
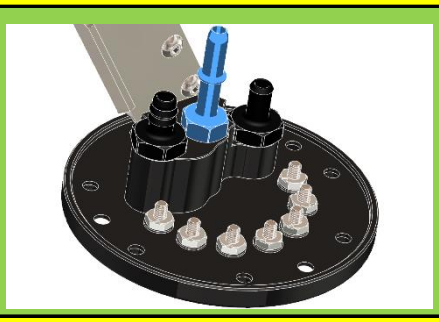
Only a qualified technician following applicable safety procedures should perform the installation of this product.
One must have knowledge in repair and modification of fuel systems and general vehicle modifications to install this product.
Gasoline and other fuels are flammable and can be explosive.
Only install in a well-ventilated location to minimize buildup of fuel vapors.
No sparks, open flames, smoking or other ignition sources are to be present. Draining and removal of all fuel from the fuel system is recommended.
Proper eye and personal protection is required at all times during installation.

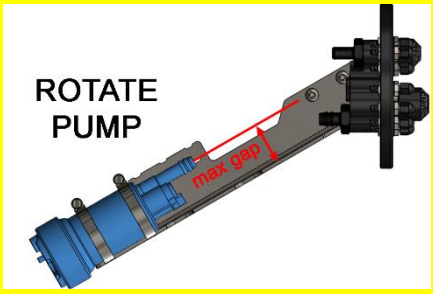
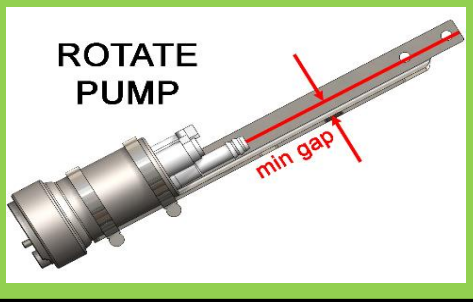
WARNING

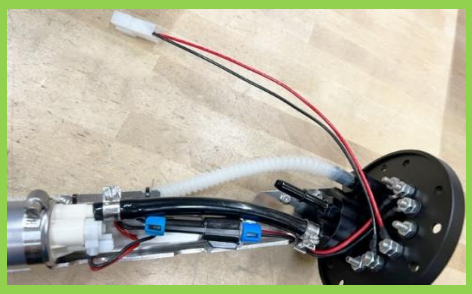
The fuel system is under pressure! Do not loosen any connections until relieving the fuel system pressure.
Consult a service manual for instructions on relieving fuel pressure safely. This product is designed for off-highway and racing use only.
Fuel system components may not be legal for sale or use on emissions controlled motor vehicles. Consult local, state, and federal laws.

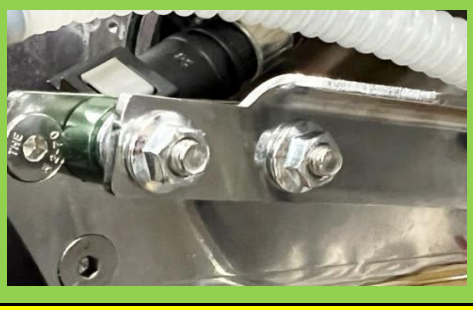
STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1	10mm Socket Wrench	**NOTE: There is no drain plug. Because pump access is on the front of the fuel tank, it MUST BE EMPTY prior to beginning, otherwise fuel will spill out into the trunk.** Pull upwards to break loose the RH and LH rear bench anchor points (LH locking tab shown). Remove the lower 4 seat back bolts. Next, unclip and free the seat belts from the upper shoulder retainers. Finally, lift the rear seat back straight up to unlatch the (hidden) hooks and free it from the vehicle.	
2	Flat Blade	Find the fuel tank access cover located in the center. This is held in place by RTV. Simply pry up to free it from the adhesion, as shown.	
3		Depress the thumb tab lock on the grey electrical plug and pull away, as shown.	
4		To relieve fuel pressure, start the car and allow the engine to stall. Next, temporarily unscrew the fuel filler cap to relieve air pressure.	

5	10mm Socket Wrench	Remove the negative battery terminal. CAUTION: Disconnecting the battery may cancel fault memories of some control units. Consequently, always cross examine any fault memories prior to disconnecting.	
6	Rag	There are 3 different types of OEM fuel line configurations. **1. Early Model Vehicles (shown):** Return and Feed Lines-While pushing the connectors further onto the metal pipes, squeeze the SAE quick connect locks. While squeezing the locks, carefully pull the fuel lines off. Catch any spilled fuel. Next, pry and remove the plastic SAE quick connect locks and reinsert them into the OEM fuel lines until they "click" in place.	
7	Rag Pliers 19mm Socket Wrench 14mm Socket Wrench	There are 3 different types of OEM fuel line configurations. **2. Mid Year Vehicles (shown):** Feed Line-To separate the 2 hex nuts, hold the larger hex and spin the smaller hex. Catch any spilled fuel. Return Line-Squeeze the OEM spring clamp and slide it down the OEM return line. Carefully pull the rubber hose off and catch any spilled fuel.	
8	Rag 14mm Socket Wrench 19mm Socket Wrench	There are 3 different types of OEM fuel line configurations. **3. Late Model Vehicles (shown):** Feed Line-To separate the 2 hex nuts, hold the larger hex and spin the smaller hex. Catch any spilled fuel. *NOTE: Because the regulator is built into the OEM fuel pump hanger, there is no external return line. After installing the Radium Fuel Pump Hanger, an FPR must be installed and a return line must be constructed for these specific vehicles.*	
9	8mm Socket Wrench Phillips Screwdriver	Remove the 7 perimeter M5x0.8mm bolts. For safety, do not use a power tool. NOTE: these 7 bolts will NOT be reused.	
10	Rag Bucket	To remove the pump assembly, pull up, rotate, and pivot back and forth to get the pump filter out of the tank. Catch any spilled fuel. Place the pump assembly into a bucket and transport to a workbench. Carefully pry the fuel tank gasket from the assembly. Inspect and replace if necessary. Toyota P/N: 77169-14010	

11	3/8" Wrench 3/8" Socket Wrench	Install the included wiring harness(es) for the following pumps: AEM 50-1200, Walbro GSS342, Walbro F90000267/274/285 NOTES: 1. As depicted, these wires must be strategically oriented towards the center of the fuel hat to not interfere with the fuel tank gasket. 2. Connect the red wire to the PUMP1 (or PUMP2) "12V" stud. 3. Connect the black wire to the PUMP1 (or PUMP2) "GND" stud. 4. When securing the jam nuts, hold the studs on the opposite side to prevent them from turning.	
12	Wire Stripper Wire Crimper Heat Gun 3/8" Socket Wrench 3/8" Wrench	Follow this step if installing: TI Automotive E5LM, Deatschwerks DW400 or DW440, Bosch BR540, Fuelab 49614, Protec 11928. -A flying lead pump harness (not included) is required. This is typically provided by the pump manufacturer. -Install the included ring terminals and heat shrink as shown. -When securing to the electrical studs, reference the fuel hat labeling. For brushless pumps: W=White, R=Red, B=Black, G=Green. -These wires must be strategically oriented towards the center of the fuel hat to not interfere with the fuel tank gasket. -To prevent the studs rotating, a second wrench is required.	
13	1/4" Allen Wrench Oil Lubrication 5/8" or 16mm Wrench	For small outlet barbed fuel pumps, such as Walbro GSS342 and AEM 50-1200, replace the barbed fitting with the smaller variation (shown) provided in the kit. First, lubricate the O-ring then tighten. NOTE: These fuel pumps require the smaller inner diameter tubing and clamps included in the kit.	
14	1/4" Allen Wrench Oil Lubrication 5/8" or 16mm Wrench	For **dual fuel pump applications**, replace the 6AN ORB port plug in the second fuel pump port for the included SAE quick connect adapter fitting (shown blue). First, lubricate the O-ring and tighten.	
15	Cutter	Both large ID and small ID tubing are provided to match the "PUMP 1" outlet. These cut lengths are suggestions. Altering may be required. **Small ID Tube:** 5.1" (131mm) AEM 50-1200 **Large ID Tube:** 4.9" (124mm) Bosch BR540 **Large ID Tube:** 4.9" (124mm) Deatschwerks DW400 **Large ID Tube:** 5.7" (145mm) Deatschwerks DW440 **Large ID Tube:** 5.8" (148mm) Protec 11928 / Fuelab 49614 **Large ID Tube:** 3.9" (99mm) Ti Automotive E5LM **Small ID Tube:** 5.3" (134mm) Walbro GSS342 **Large ID Tube:** 5.4" (136mm) Walbro F90000267/274/285/295	
16	9/32" Nut Driver	As shown, secure the straight (non convoluted) tubing to the outlet barb using one of the EFI hose clamps. Loosely place another EFI hose clamp over the tubing as shown. NOTES: 1. The AEM 50-1200 pump may require low heat to temporarily soften the tubing. Be careful not to over-heat and melt the tubing. 2. There are 2 different sets of EFI clamps based on the diameter of the barbs/tubing used.	

17	Oil Lubrication	Lubricate the barb under the fuel hat for "PUMP1". Lubricate the other side of the straight (non convoluted) tubing. Gently apply force until the tube is fully seated. NOTE: Do NOT apply heat on this side of the tubing connection. It is NOT required. Do not tighten this EFI hose clamp yet. The fuel pump will first need to be rotated into the proper position.	
18	Screwdriver 9/32" Nut Driver	Rotate the fuel pump until the outlet is furthest away from the bracket, as shown. There are 2 sets of worm-drive clamps included in the kit based on the fuel pump diameter. Wrap 2 of the appropriately sized clamps through the bracket slots and around the fuel pump and tighten. Now the upper EFI hose clamp can be tightened.	
19		Install the sock filter onto the fuel pump inlet.	
20		Plug in the "PUMP1" electrical connector.	
21	9/32" Nut Driver	**For dual fuel pump applications**, secure the correct diameter convoluted tubing to the second pump outlet, as shown. NOTES: 1. The AEM 50-1200 pump may require low heat to temporarily soften the tubing. Be careful not to over-heat and melt the tubing. 2. There are 2 sets of EFI clamps based on the barbs/tubing diameter. 3. If installing a Ti Automotive E5LM pump, a check valve will need to be installed if the 2 pumps will be staged. Consider installing RADIUM 20-0798 PUMP OUTLET ADAPTER, CHECK VALVE, 10MM BARB.	
22	Screwdriver	**For dual fuel pump applications**, lay the second fuel pump into the provided stainless steel bracket. Wrap 2 of the proper sized worm-drive hose clamps around the fuel pump. Orient the fuel pump within the bracket exactly as shown and tighten the clamps. NOTE: This time the outlet barb is closest to the mounting bracket. Install the sock filter onto the fuel pump inlet.	

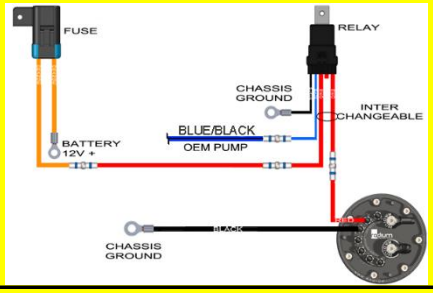
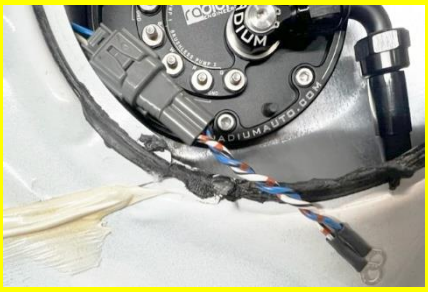
23		**For dual fuel pump applications,** find the extension harness if installing one of the following: Walbro GSS342, Walbro F90000267/274/285/295, or AEM 50-1200. As shown, plug this harness into the second pump.	
24	3/8" Wrench 3/8" Socket Wrench	**For dual fuel pump applications,** find the second fuel hat pump harness if installing one of the following: Walbro GSS342, Walbro F90000267/274/285/295, or AEM 50-1200. Connect the red wire to "PUMP2 12V" and black wire to "PUMP2 GND". NOTES: 1. Orient the wires towards the center of the fuel hat. 2. To prevent the studs rotating, a second wrench is required.	
25	3/8" Wrench 3/8" Socket Wrench	**For dual fuel pump applications** installing TI Automotive E5LM, Bosch BR540, Fuelab 49614, Protec 11928, Deatschwerks DW400 or DW440: -A flying lead pump harness (not included) is required. This is typically provided by the pump manufacturer. -Install the included ring terminals and heat shrink as shown. -When securing to the electrical studs, reference the fuel hat labeling. For brushless pumps: W=White, R=Red, B=Black, G=Green. -Orient the wires towards the center of the fuel hat. -To prevent the studs rotating, a second wrench is required.	
26		Install the OEM fuel tank gasket (Toyota P/N: 77169-14010) to the underside of the fuel hat. NOTE: For proper orientation, there are rubber 3 indicators. Push these through the fuel hat.	
27		**For single fuel pump applications,** insert the pump assembly into the fuel tank.	
28		**For dual fuel pump applications,** note that both pumps can NOT physically be inserted into the tank at the same time. The second pump will be secured to the main assembly while inside the fuel tank. First, insert the second pump assembly halfway into the fuel tank, as shown.	

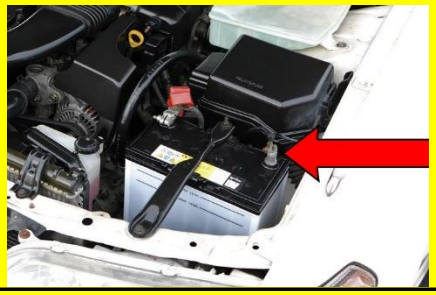
29		**For dual fuel pump applications,** insert the main fuel pump assembly halfway into the fuel tank, as shown.	
30	Oil Lubrication	**For dual fuel pump applications,** pull the female SAE quick connect hose out of the fuel tank. Lubricate the male quick connect fitting. As shown, fully insert the female SAE quick connect until a "click" is felt.	
31		**For dual fuel pump applications,** plug in the second fuel pump connector.	
32		**For dual fuel pump applications,** pull the second pump out just enough to lineup up the 2 holes to the studs.	
33	8mm Socket Wrench	**For dual fuel pump applications,** install the provided M5x0.8mm flange nuts, as shown. NOTE: Because these nuts are steel, a magnet can retrieve them if accidentally dropped.	
34		Push all excess wiring and plumbing to the LH (your right) of the vehicle. Although not likely to happen, this will prevent fuel level float interference. Carefully lower the pump assembly into the fuel tank. Be sure nothing gets pinched or hung up.	

35	4mm Allen Wrench	Lineup the fuel hat with the threaded fuel tank holes and secure using the 7 provided M5x0.8mm socket head screws. This cutaway picture depicts how the assembly would look if it were visible.	
36	Oil Lubrication 4mm Allen Wrench	**Early Model Vehicles** If the OEM feed and return hoses will be reused, install the SAE quick connect fittings (shown). Push each OEM hose onto the new SAE quick connect fittings until a "click" is felt. NOTE: Be sure to lubricate all O-rings prior to installing.	
37	Oil Lubrication 4mm Allen Wrench	**Mid Year Vehicles and Late Model Vehicles** RETURN LINE: Mid Year-Install the barbed adapter fitting shown. Late Model-Because the OEM FPR is built into the OEM fuel pump hanger, there is no external return line. An FPR must be installed and a return line must be constructed. FEED LINE: Install the 6AN male adapter fitting shown.	
38	10mm Socket Wrench	**Mid Year Vehicles and Late Model Vehicles** Find the fuel line inspection cover just below the pump inspection cover. Unscrew the 3 nuts and remove the cover, as shown.	
39	Flat Blade	**Mid Year Vehicles and Late Model Vehicles** Pry the tabs to dislodge the 2-piece plastic clamshell. NOTE: The loose plastic clamshell will NOT be reused.	
40	10mm Wrench	**Mid Year Vehicles and Late Model Vehicles** Follow the fuel lines upwards and find the 2-bolt bracket. Remove the 2 nuts, as shown. Dislodge the 2-bolt bracket from the fuel tank.	

41	10mm Socket Wrench	**Mid Year Vehicles and Late Model Vehicles** Safely lift the vehicle. Be sure to use jack stands. From underneath, follow the fuel lines to find where they enter the trunk. As shown, remove the 2 bolts.	
42	Rag Pick	**Mid Year Vehicles and Late Model Vehicles** From inside the vehicle, pull the plastic clamshell upwards. To disengage the fuel lines, first push the SAE quick connectors further onto the pipes. Next, squeeze the colored locks. Finally, pull to release. Catch all spilled fuel. As shown, remove the colored lock from the feed line. This is the RH fuel line (pictured to the left).	
43		**Mid Year Vehicles and Late Model Vehicles** The portion of the clamshell shown will be reused but it must be modified.	
44		**Mid Year Vehicles and Late Model Vehicles** Cut the plastic clamshell in half and grind down, as shown. The portion pictured at the top, will NOT be reused.	
45	10mm Socket Wrench	**Mid Year Vehicles and Late Model Vehicles** Press the plastic piece back into place from inside the vehicle, as shown. Secure from underneath the vehicle using the two OEM bolts.	
46	5/64" Allen Wrench Oil Lubrication	**Mid Year Vehicles and Late Model Vehicles** Remove the retaining bolt and the green lock from the provided SAE quick connector. Lubricate the internal O-rings. Press the SAE quick connector all the way onto the fuel feed line, as shown.	

47	5/64" Allen Wrench	**Mid Year Vehicles and Late Model Vehicles** Reinstall the green lock and the retaining bolt, as shown.	
48		**Mid Year Vehicles and Late Model Vehicles** Route the provided hose exactly as shown.	
49		**Mid Year Vehicles and Late Model Vehicles** To reinstall the OEM SAE quick connectors, push the fuel lines on until a "click" is felt.	
50	Pliers	**Mid Year Vehicles** Push the OEM return hose onto the return barb and secure using the OEM spring clamp.	
51	10mm Wrench	**Mid Year Vehicles and Late Model Vehicles** Resecure the 2-bolt bracket to the fuel tank.	
52	11/16" Wrench	**Mid Year Vehicles and Late Model Vehicles** Tighten both hose ends. NOTE: An aluminum wrench can prevent surface finish marring.	

53		A relay and fuse are required for high current pump applications and/or each additional pump installed. Depicted is a Radium P/N: 17-0031 DIY Fuel Pump Wiring Kit (not included) for a single pump. NOTES: 1. If using multiple pumps, this wiring schematic may apply for the additional pump unless the pumps will be staged by an adjustable pressure switch (Radium P/N: 20-0236) or an ECU. Neither scenarios are detailed in this instruction manual. 2. For brushless pumps, follow the manufacturer's wiring instructions.	
54	Pick	**Single (low current) fuel pump ONLY** Depress the plastic locking tab and slide the electrical connector to free it from the OEM fuel pump hanger top.	
55	Electrical Cutters	**Single (low current) fuel pump ONLY** When cutting off the OEM electrical connector, leave enough slack in case the OEM fuel pump hanger will need to be reinstalled in the future.	
56	Wire Strippers Wire Crimpers Heat Gun	**Single (low current) fuel pump ONLY** Strip some insulation off the wires. Slide a short piece of small heat shrink over each wire. Crimp the small ring terminals to the wires. Slide the heat shrink over the crimped area. Heat the tubing until they fully shrink.	
57		**Single (low current) fuel pump ONLY** Reconnect the OEM connectors together, as shown.	
58	8mm Wrench	**Single (low current) fuel pump ONLY** Connect the ring terminals to the fuel hat as follows: OEM Blue/Black Wire ------> "Pump1 - 12V" OEM White/Black Wire ------> "Pump1 - GND" Do not overtighten the acorn nuts and risk spinning the terminals.	

59	10mm Wrench	Reconnect the battery.	
60		Turn the ignition switch ON to prime the pump. Check for fuel leaks. Start the engine and check for leaks.	
61		Reinstall the access panels and all other OEM components in reverse order. **20-0940 INSTALLATION COMPLETE**