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Installation Instructions For #65001 Striker Cold Shot

2nd Edition August 2007

Parts List:

(1) Cold Shot control module
(1) Cold Shot display module
(1) Cold Shot wire harness
(1) Ignition relay harness
(1) 2 quart water/methanol tank with level sensor and cap
(1) Water/methanol 12V pump
(1) Water/methanol 12V solenoid
(1) ¼" tube fittings and nozzles
(1) 25 feet of ¼" tubing
(2) Plastic bags with connectors and terminals
(1) Plastic bag with hardware
(1) Plastic bag with terminals

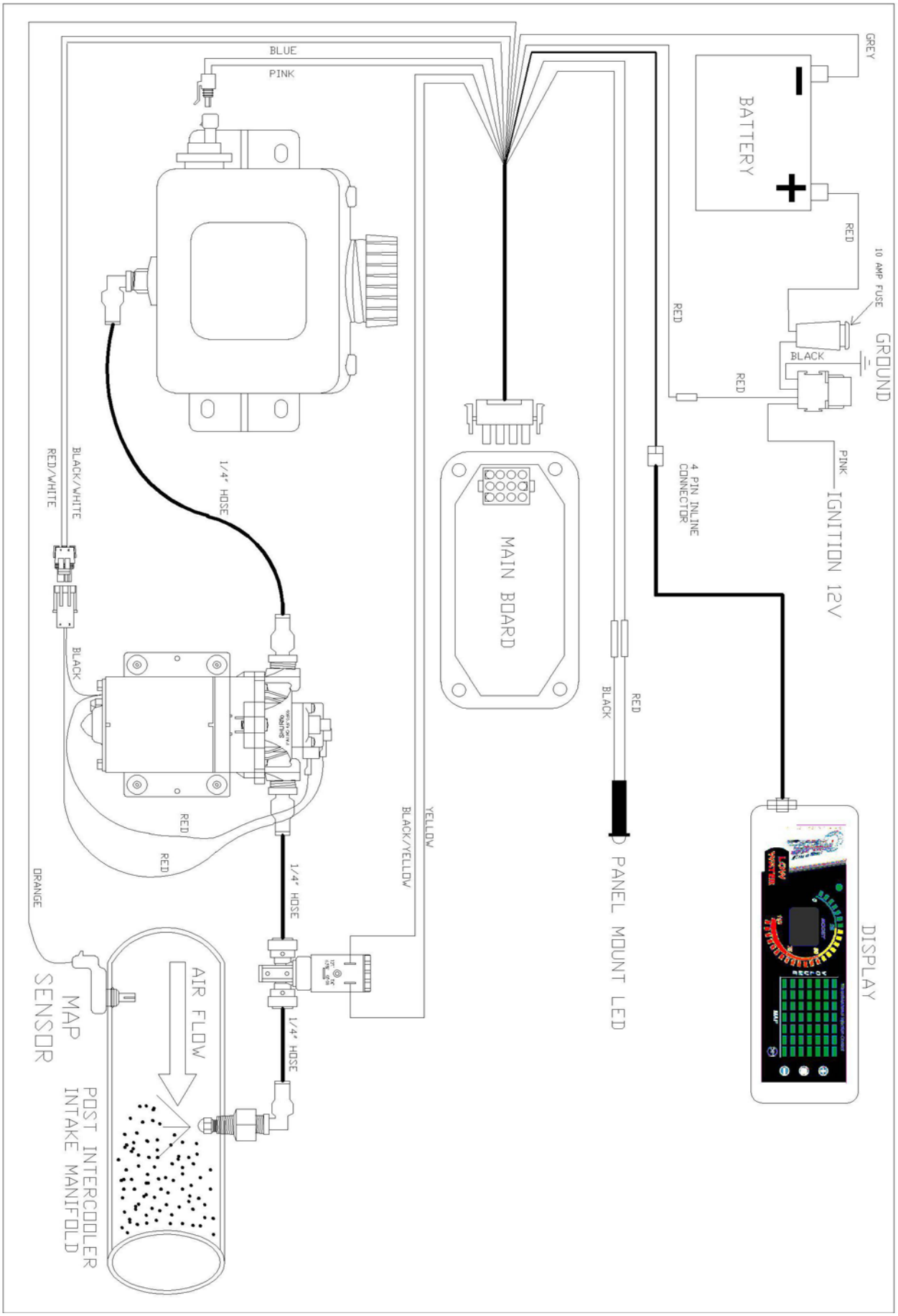
Turbo diesel vehicle performance is hindered by high intake, combustion chamber and exhaust air temperatures. Premature turbo charger failure is directly related to exhaust air temperatures; the hotter the exhaust, the shorter lifespan of the turbo charger. The debilitating effects of high intake and exhaust air temperatures are overcome by injecting a water/methanol solution into the post intercooler intake plenum. Due to high velocity and turbulent intake air, both the water and methanol mix with and partially evaporate into it. The evaporation process absorbs heat from the air with a result of cooler intake air temperatures. Cooler air is denser with oxygen than hot air. More fuel can then be added to the combustion. Leftover droplets of the water/methanol solution travel into the combustion chamber during the intake stroke of the diesel engine. At combustion, the water/methanol droplets evaporate and burn. This evaporation absorbs heat from the burnt diesel fuel resulting in a cooler exhaust gas temperature. The methanol burns to become carbon dioxide and water. This extra water evaporates and absorbs more heat from the burnt diesel fuel. Add-on diesel performance chips, down-loaders and controllers modify fueling strategies of the stock PCM controlling the diesel engine. More fuel equates to more turbo boost, better performance and hotter exhaust temperatures. Injecting water/methanol into a turbo diesel engine allows for a performance enhancer to be used without the damaging effects of the higher exhaust temperatures. A water/methanol injection system is ideal for those consumer's vehicles used for hauling heavy loads or performance applications.

Tool List:

SAE wrench set
Razor blade knife or straight blade
Long-nose pliers
Phillips and flat head screwdrivers
Drill and drill bits
¼"-18 NPT tap
3/8 Ratchet with SAE and Metric sockets
Teflon tape or paste
Blue Loctite
Wire stripers/crimpers
Roll crimp style crimpers (see picture)
Self tapped screw driver bit
Flash light or drop light
Heat shrink gun
Bench grinder or Dremel tool or file
Distilled water and methanol

Roll crimp style terminal crimpers.
Available at your local RadioShack.

Generic Installation Schematic:

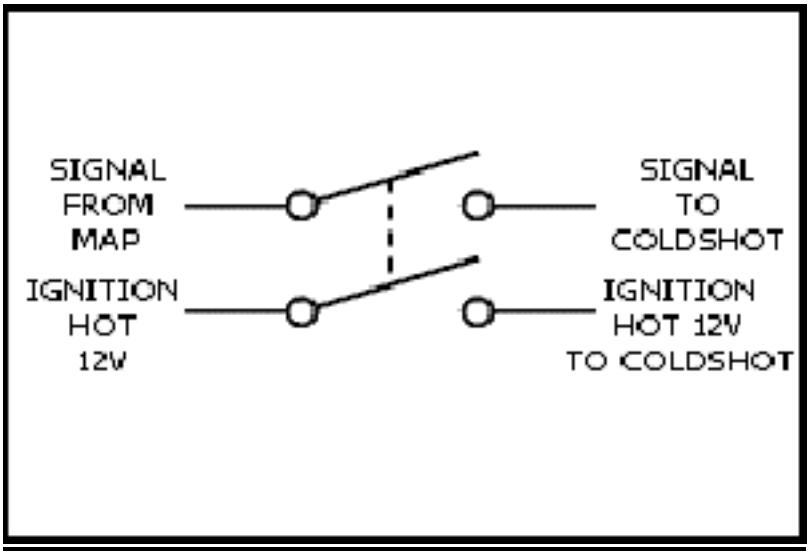


NOTE:

If you wish to install an on/off switch for your Striker ColdShot ,it **MUST** be done in the following manner.

Obtain a double pole/single throw switch (Painless Performance Products # 80513). This switch will have two inputs & 2 outputs. See diagram below. The dotted line represents that both contacts switch together, not that they are connected electrically

Switch the ignition hot (Pink) wire on one side of the switch, and the MAP sensor signal (Orange) on the other side.

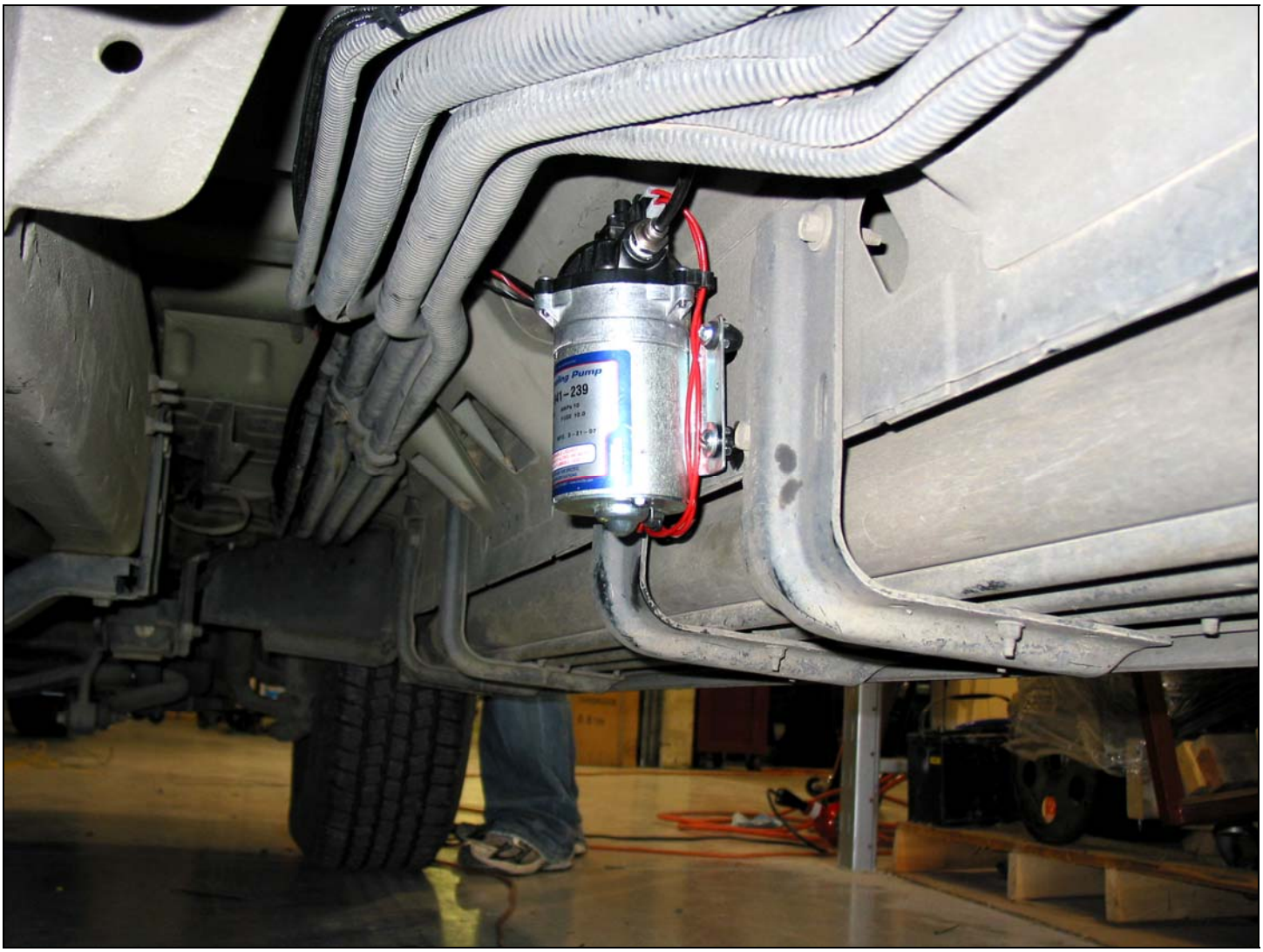


Cold Shot Component Installation 7.3L/6.0L Powerstroke:

Please thoroughly read these instructions before you begin any of the installation process. Make sure the ignition is off, the key out of the column **and disconnect both batteries**.

Water/Methanol Pump

Thread the two 3/8" NPT – ¼" quick connect fittings into the pump. **Do not over tighten these fittings into the pump.** Mount this pump below and as close to the 2 quart reservoir as possible using four of the ¼"X20X2" bolts, nuts and washers. Make sure to mount the pump away from heat, moisture and road debris. It does not matter which way you mount the pump, it will pump at any angle. On this Excursion we mounted the pump underneath on the passenger side. See picture below.



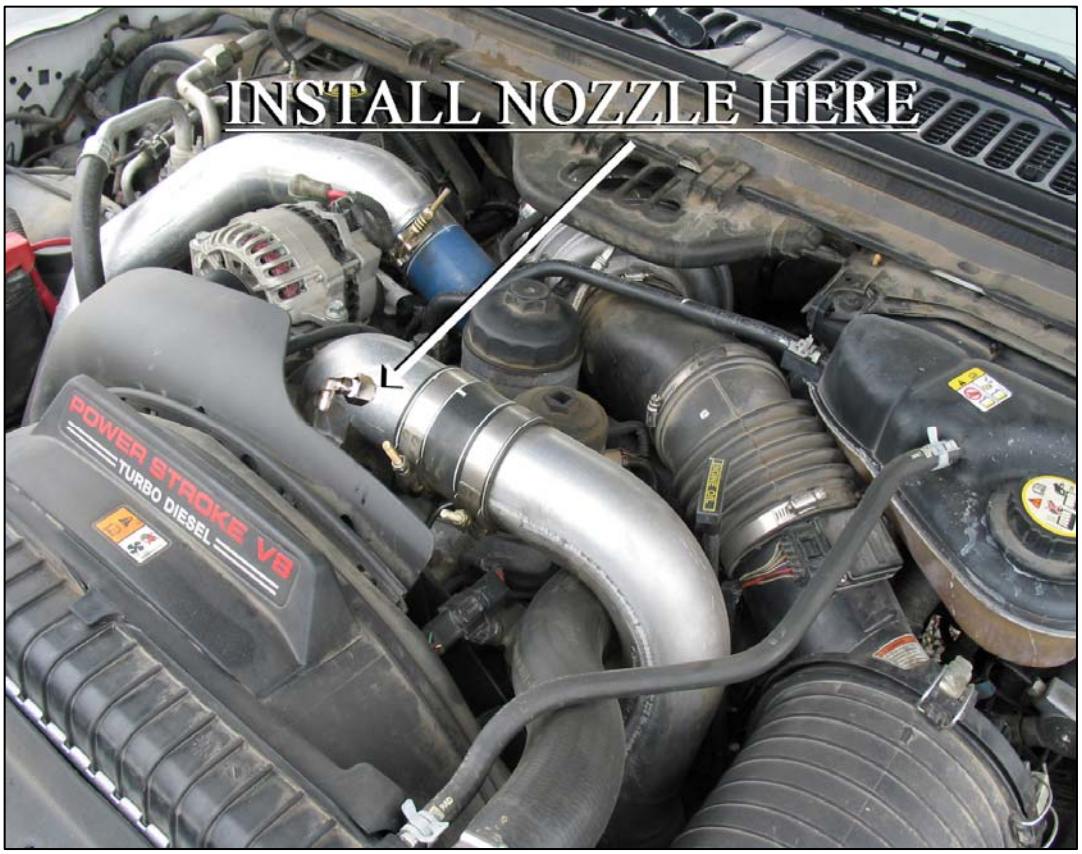
2 Quart Reservoir

Install one of 90 degree ¼" pipe fittings into the bottom of the tank. This is pipe thread so you only need 3-4 turns into the tank to seal correctly. Mount the reservoir higher than the pump but still easily accessible for filling. Use four of the ¼"X20 bolts, nuts and washers to do this. You may have to build a custom bracket to hold the reservoir in place. On the Powerstroke vehicles it is difficult to find a mounting solution for this tank in the engine compartment. You may find it necessary to mount the tank in the bed of the truck or in the rear of the passenger compartment on the Excursions.

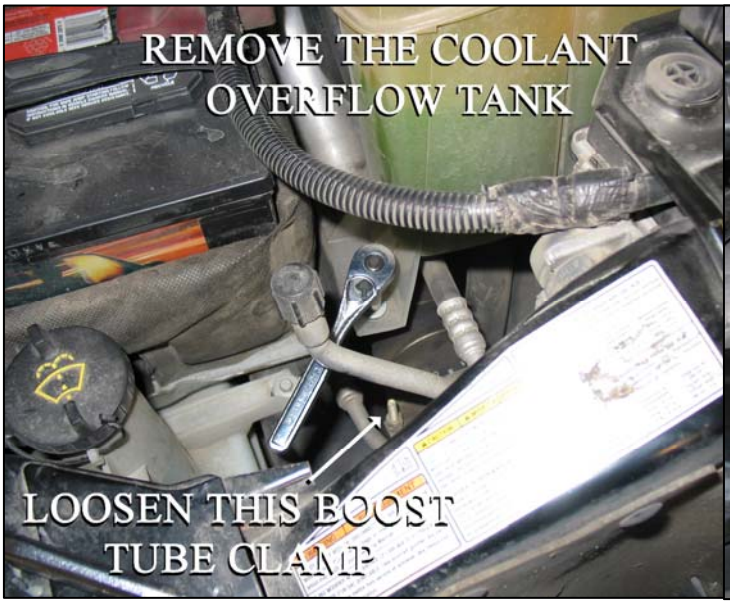
Nozzle Installation

In order to install the nozzle into the intake manifold you will need to remove the boost tube attached to it. For the 7.3L loosen the boost tube clamp shown in the picture below.

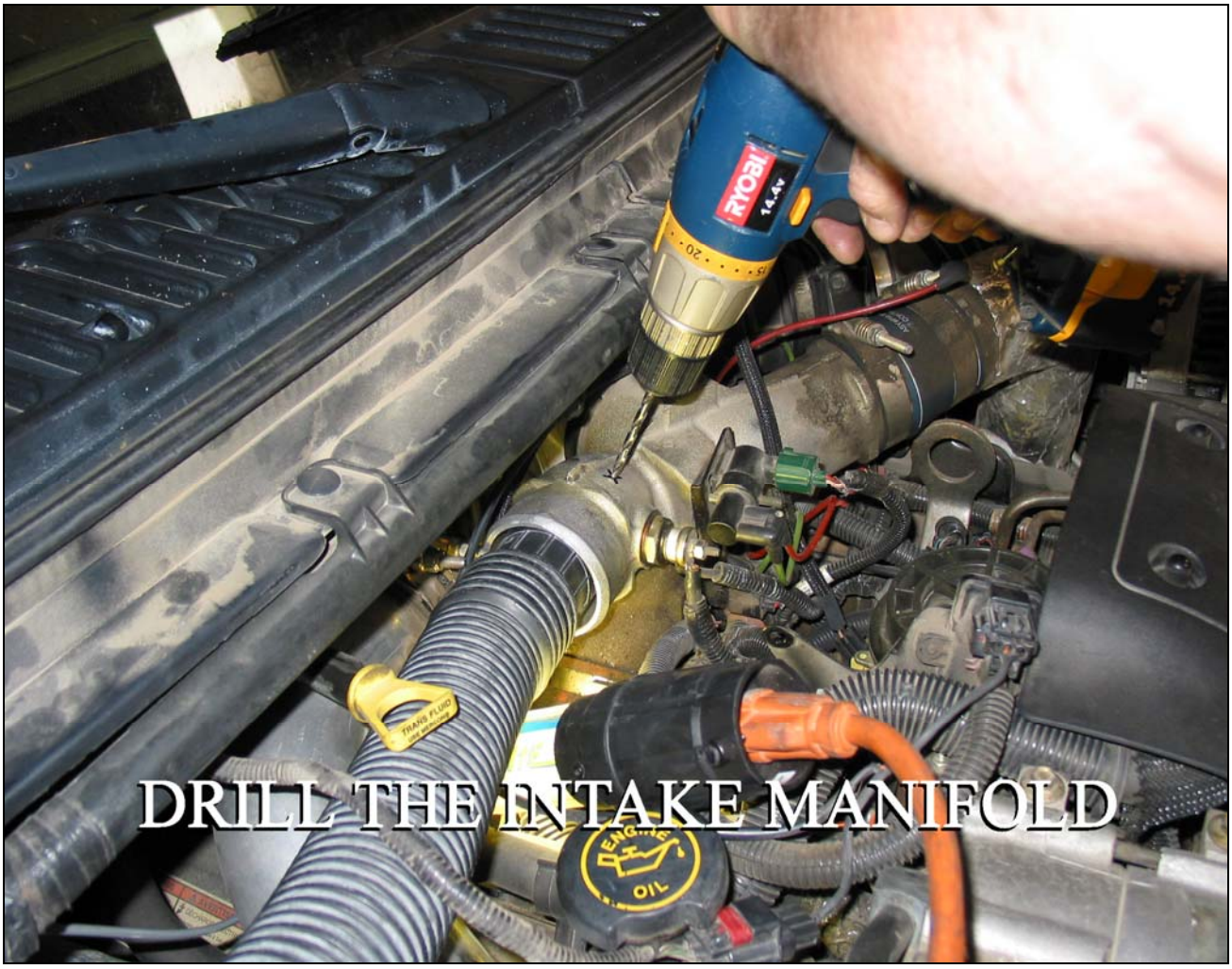
On 6.0L Powerstroke trucks the nozzle is installed as pictured to the right. The intake manifold can be removed from the engine or left on it when you drill and tap for the nozzle installation. Loosen and remove the boost tube attached to the intake manifold. Then either drill and tap the intake or remove the intake from the engine and then drill and tap it.



After loosening both boost tube clamps on the 7.3L, work the boost tube away from the intake manifold and the intercooler. You don't have to completely remove the boost tube out of the engine compartment. Just push it far enough away so you can put a shop rag inside the intake manifold.



On the 7.3L, before you drill the intake manifold, take a look at the intake air heater and where it is installed. Remember that the nozzle you are installing will protrude into the intake manifold. Make sure to drill the hole for the nozzle in a place that will leave you some room for the nozzle to be inserted and not interfere with the intake air heater.

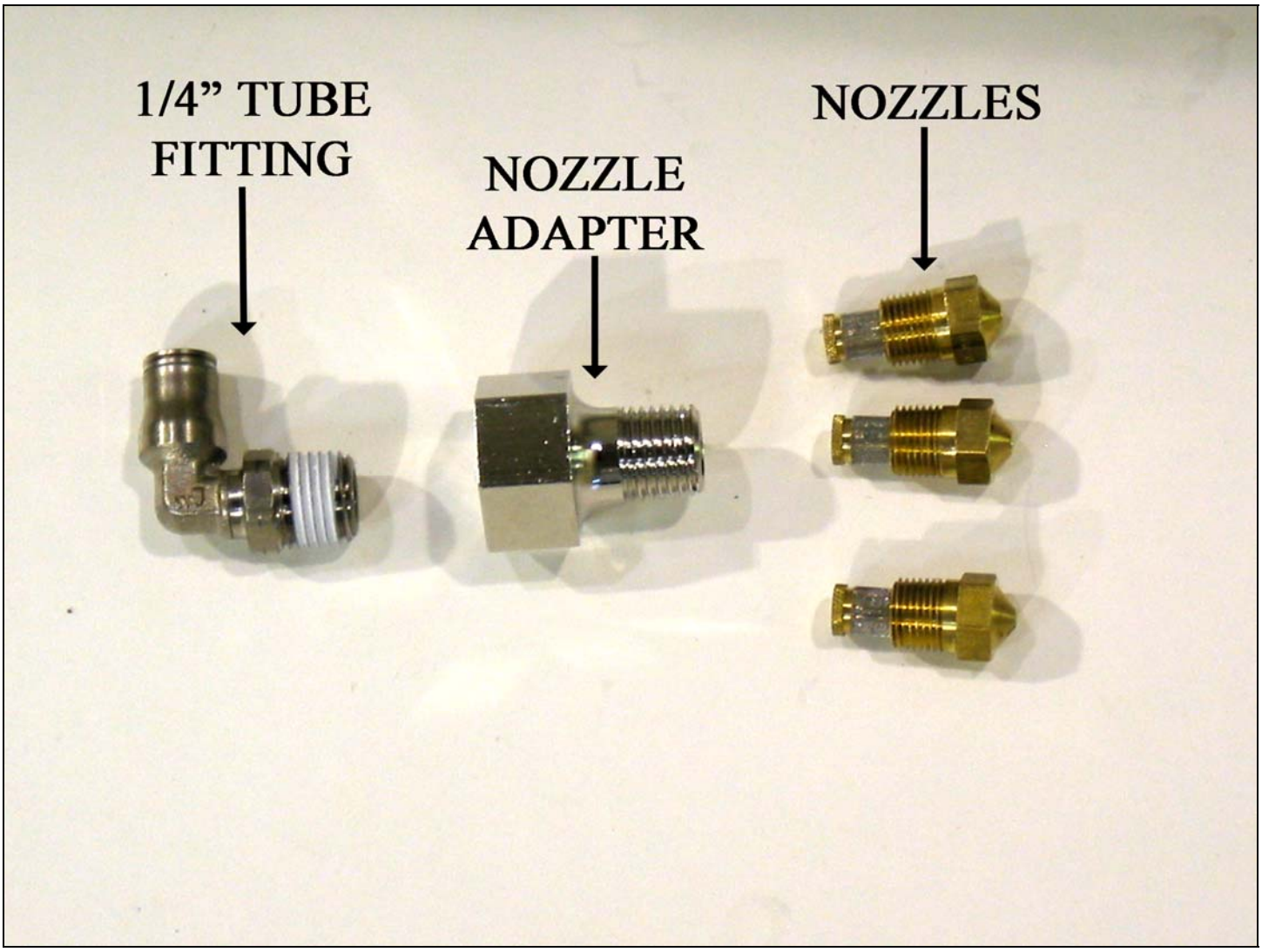


On the 7.3L and the 6.0L (if you have not removed the intake from the engine) either push a shop rag into the intake manifold or use a vacuum to catch the metal shavings from the drilling and tapping. Drill the intake manifold with a pilot bit. Then drill the intake manifold with a 7/16" drill bit. Now take your ¼"-18 NPT tap and tap the intake manifold. Remember that pipe thread is tapered. The further you run the tap in, the more the nozzle will protrude into the intake manifold. Pipe thread only needs 2.5 to 3.5 turns to seal properly.

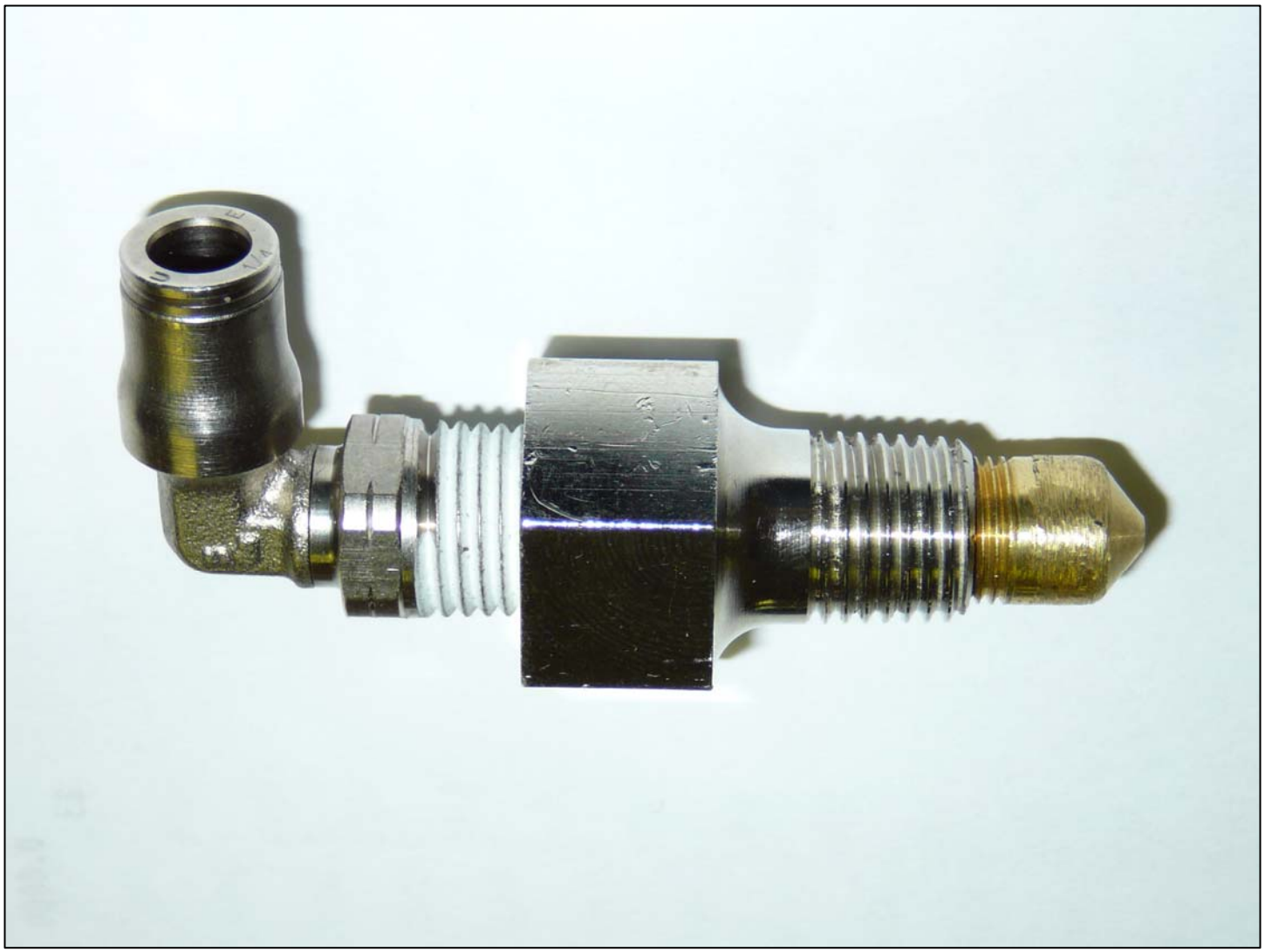
You must now select the nozzle for your Cold Shot system. We have provided you three different nozzles. Each nozzle is stamped on the hex edge with a label. See below for the flow for each nozzle. **See the page 67 for more information on nozzle sizing.**

NOZZLE	GALLONS PER HOUR
MW-C	6.4
MW-D	10.0
MW-E	14.5

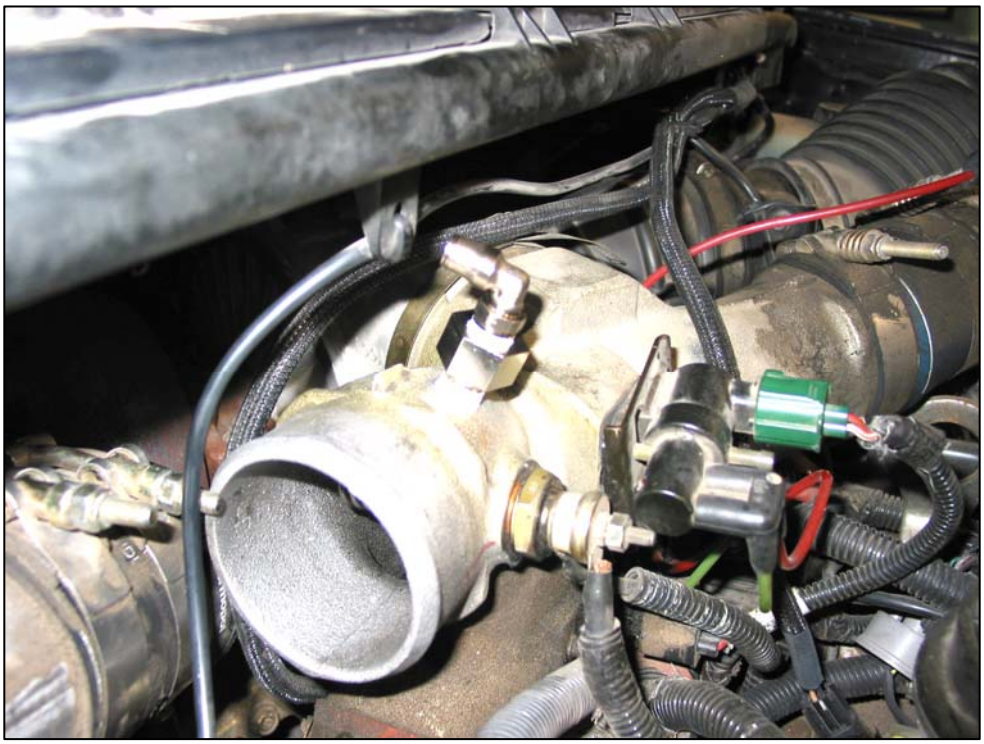
After you select the nozzle, unscrew the filter screen from the back of the nozzle. Make sure the spray side of the nozzle is facing towards the floor when you do this because there is a pellet inside the nozzle housing that will fall out. Leave this pellet in the nozzle housing. Put a little blue Loctite on the threads of the filter screen and reinstall it into the nozzle housing.



There are two ways to install the nozzle, adapter and fitting into the intake manifold. Either install the nozzle adapter into the manifold first and then the nozzle into the adapter from inside the intake or install the nozzle into the nozzle adapter and then grind down the head of the nozzle so it will fit into the ¼"-18 NPT hole you tapped in the manifold. We suggest the first method if you have removed the intake manifold from the vehicle and the second if you have not. If you choose the second method, try to not grind all of the flat areas from the nozzle head. This will aide uninstalling the nozzle from the adapter if you choose to change the nozzle in the future. The picture below shows the nozzle, adapter and fitting assembled. Notice it is pictured with the nozzle head ground down so it will fit into the ¼"-18 NPT hole in the manifold.

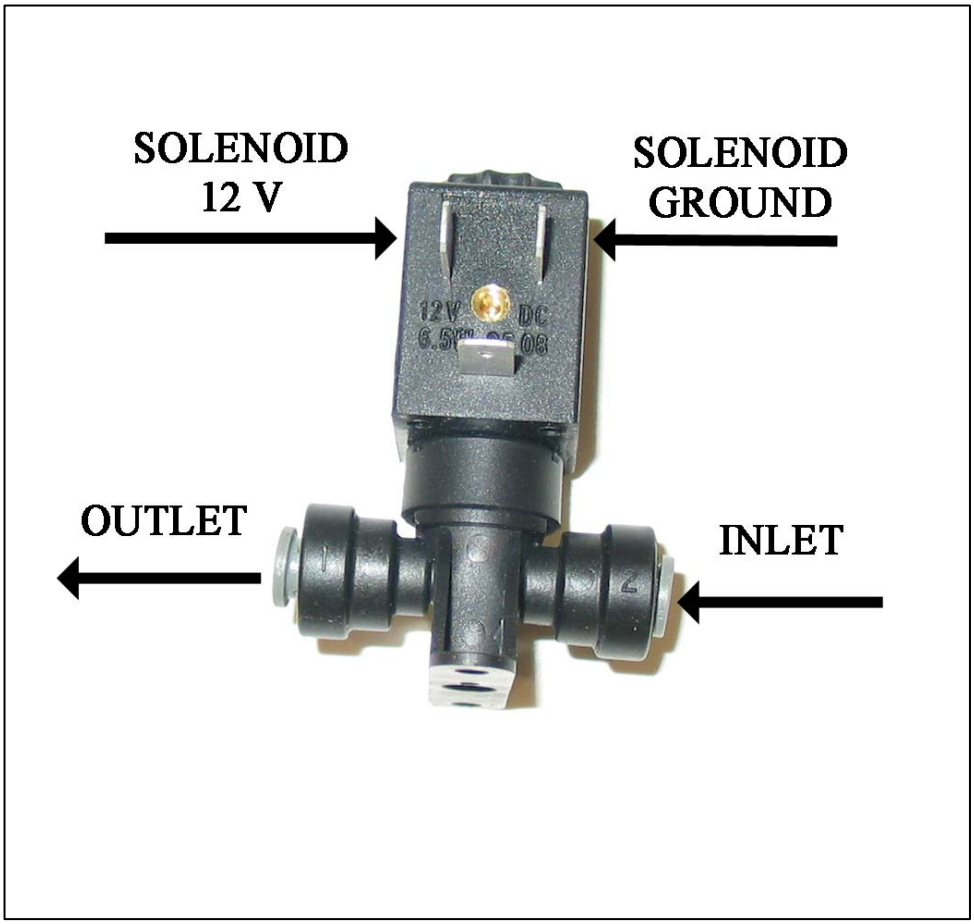


Install the nozzle, adapter and fitting assembly into the intake manifold. Use some pipe thread sealant to seal the threads. See picture below.

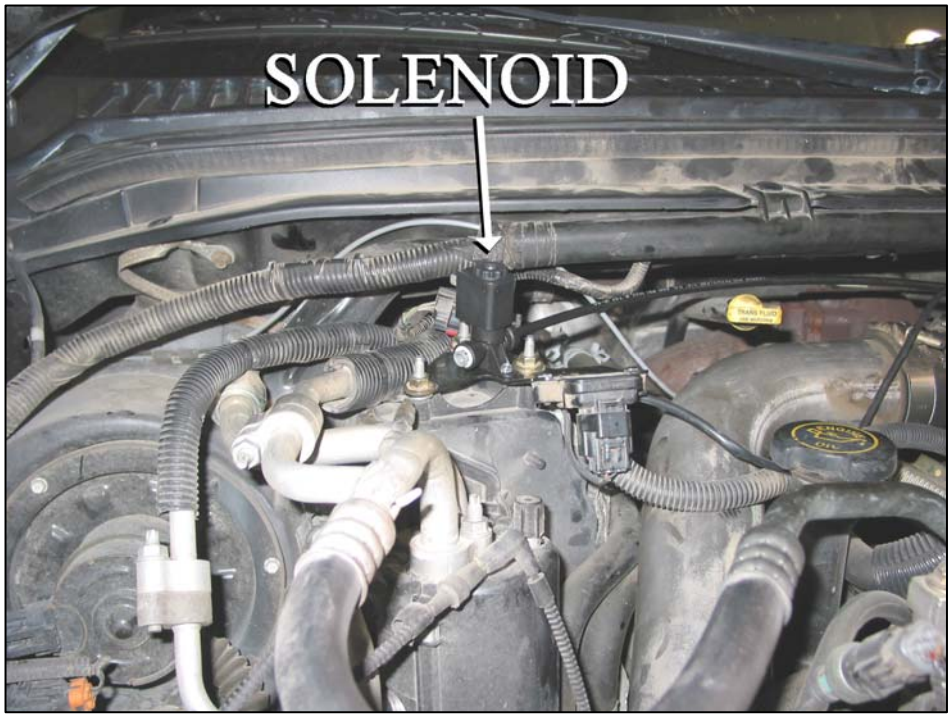


Solenoid Installation:

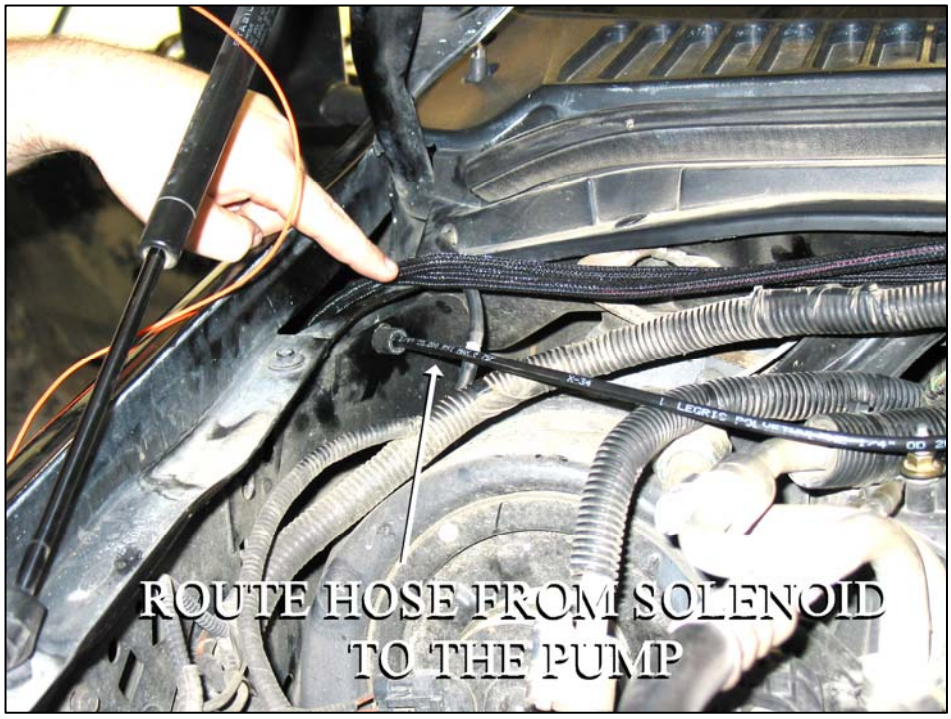
Take the solenoid of the box it was shipped in. The solenoid is marked for the inlet and outlet. See the picture to the right.



Mount the solenoid with two of the supplied self tap screws. It is best to mount the solenoid as close to the nozzle as possible. To the right is pictured where we mounted this solenoid on the MAP sensor bracket for the Powerstroke truck. After you have mounted the solenoid, cut a piece of the supplied ¼" tubing to go between the solenoid and the nozzle. Use a razor blade to cut the tubing and make sure to cut it straight with no burrs remaining on the edges. Push the tubing into port 1 on the solenoid and then into nozzle.



Next, route the ¼" tubing from the solenoid to the pump and from the pump to the 2 quart tank. Make sure to cut the tubing with a razor blade and cut it straight with no burrs on the ends. Use some of the included tie wraps to secure the tubing away from sharp edges, moving parts on the vehicle and anything that gets hot. Notice in the picture to the right that we used some fuel tubing around the plastic tubing to protect the ¼" tubing from the sharp edges of the hole we routed it through.

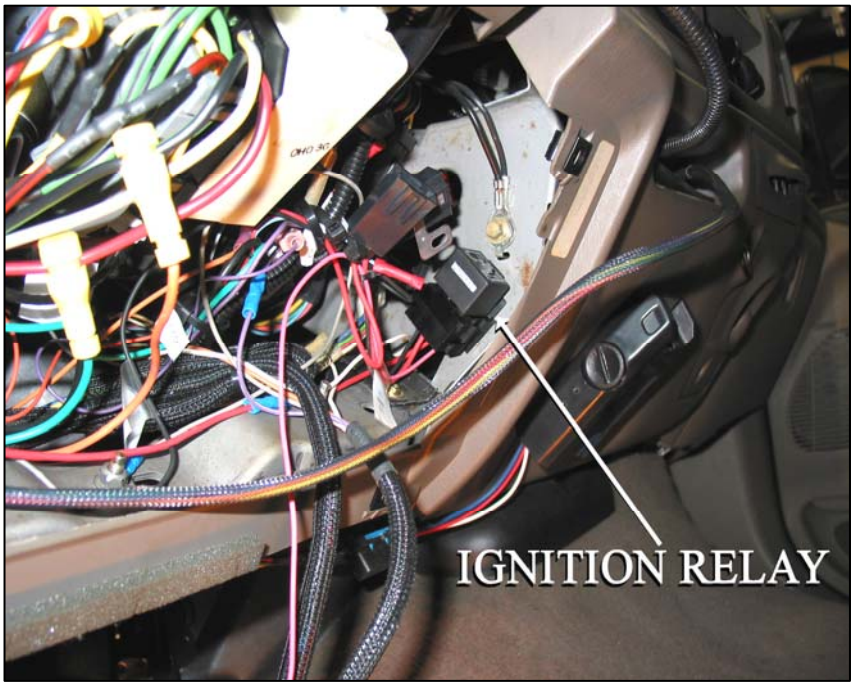


Cold Shot Electrical Installation Powerstroke:

Ignition relay harness:

To the right is a picture of the included ignition relay harness. This relay will supply the 12 volts needed to power the module and all of its components. Mount the relay and fuse inside of the vehicle and run the battery + wire out to the engine compartment.

First, mount the relay and fuse holder underneath the dash. You will need to remove the plastic panel from under the steering column. Use the supplied self tap screws to drill through and mount the relay to the metal support in the picture below. Second, connect the wires as listed on the next page.



Battery +

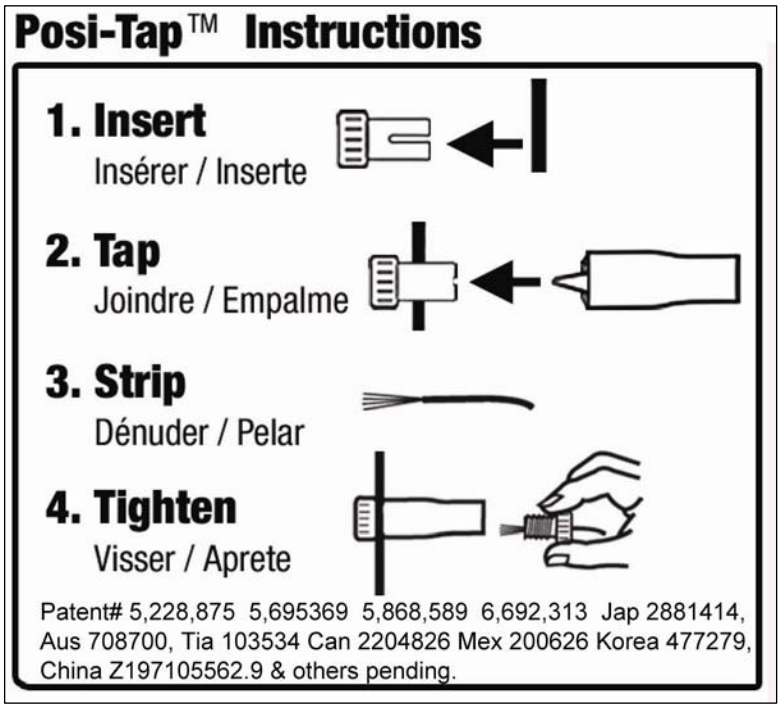
Connect this wire using one of the supplied ring terminals to the positive post of the battery.

Ground

Connect this wire using one of the supplied ring terminals to a good ground.

Ignition 12V

Connect this wire to an ignition hot 12 volt wire. See the chart below for possible sources for this ignition hot. All wires listed are located underneath the steering column and come from the ignition switch connector wire bundle. Use one of the supplied Posi-Tap wire taps to do this. See the picture to the right for instructions on how to use this type of wire tap.

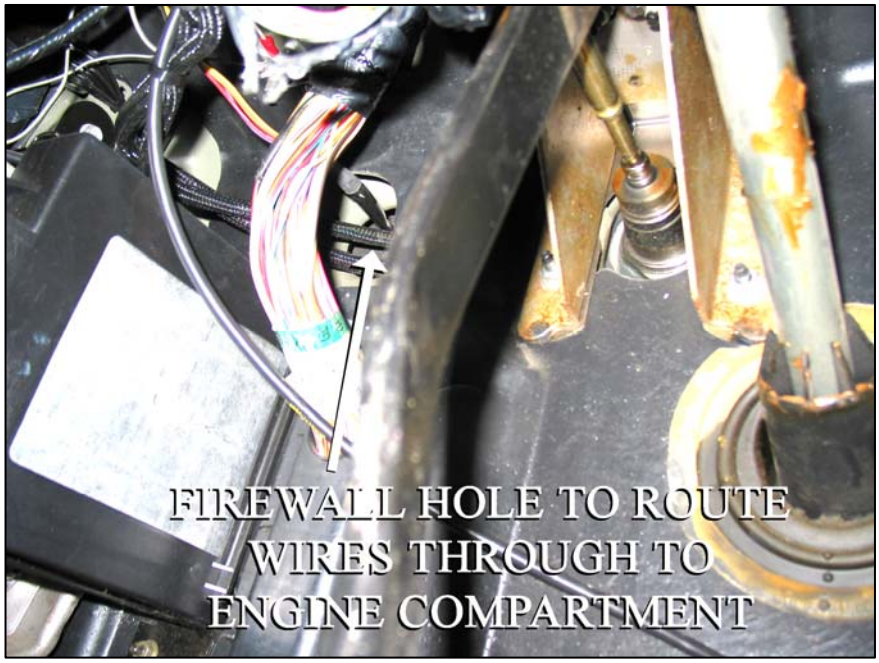


Ignition 12V wire chart

Ford	1994-1997	Powerstroke	Black/Lt. Green
Ford	1999-2006	Powerstroke	Small Red/Black

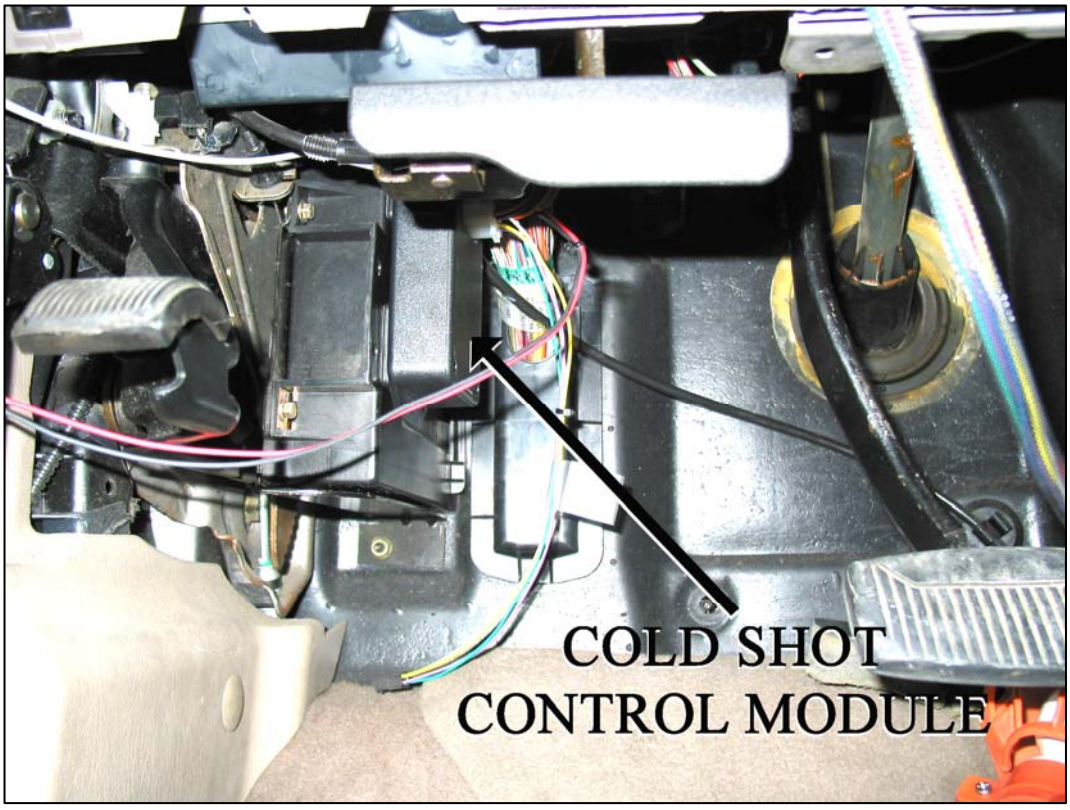
Relay Output

Connect this wire to the wire labeled as **Main 12V** on the Cold Shot harness. This is the power output wire from the relay harness and will supply key on 12 volts to the Cold Shot controller.



Cold Shot wire harness:

Mount the control module inside of the passenger area. The picture to the right shows where we mounted the module on our test vehicle. Use some Velcro strips to mount the module here or use two of the supplied self tapping screws to mount it somewhere else. **This module is not waterproof so mount it away from any sources of moisture.**



Included in this kit is the main wire harness for the Cold Shot water/methanol injection system. Plug the 12 pin connector into the Cold Shot control module after you have it mounted. All of the wires are labeled to assist your installation. Route the wires labeled as the following out to the engine compartment: Pump 12V, Pump GND, Solenoid 12V, Solenoid GND, 12V LVL SNS OUT, LVL SNS IN, and MAP Signal.

Wire Connections:

POWER AND GROUND

MAIN 12V- This wire connects to the butt splice on the wire labeled **Relay Output** on the ignition relay harness.

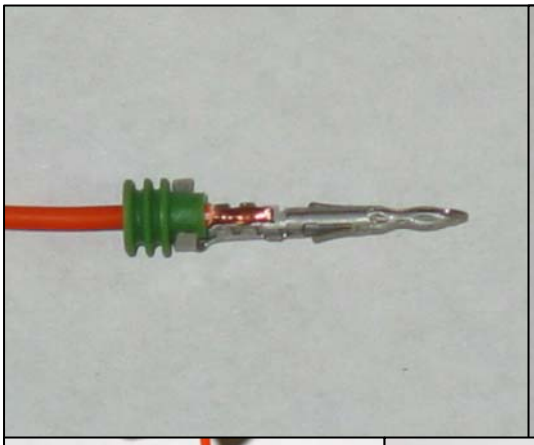
MAIN GND- This wire connects to a chassis ground source. Underneath the dash there are many good grounding points. You may use one of the already existing mounting bolts for this ground or use one of the supplied self tapping screws to create your own grounding point. Check this ground source with a volt meter to make sure you have a good one.

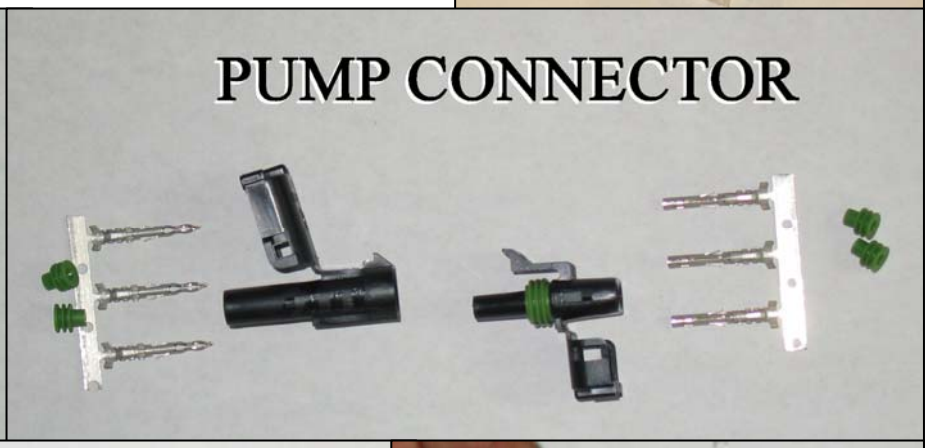
PUMP WIRES

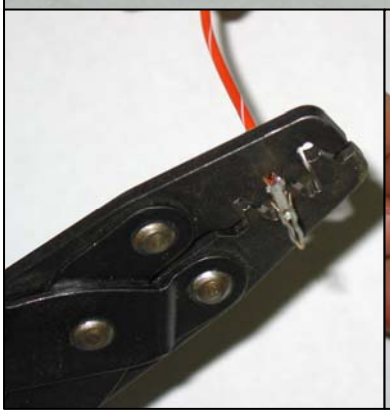
Use the supplied two pin male and female connectors to connect these two wires to the pump. The terminals used for these connectors require the roll crimp style crimpers. See the picture on page 2. These crimpers are available at your local Radio Shack. You do not have to use these connectors to hook up your pump. You can use two of the supplied heat shrinkable butt connectors instead. If you ever want to uninstall this kit from the truck it is easier to unplug the connectors than to cut and re-splice the butt connectors.

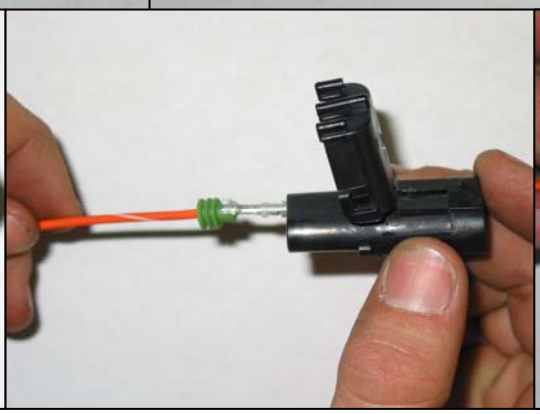
PUMP 12V- This wire connects to the red wire on the pump.

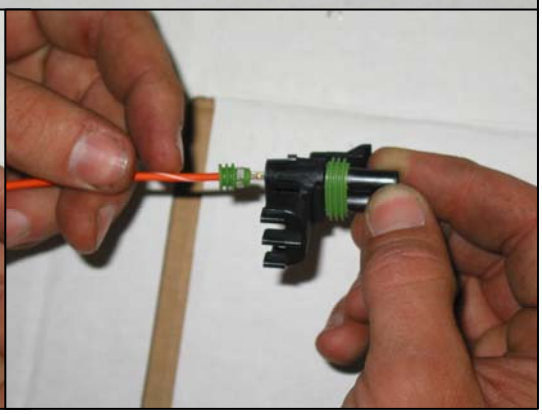
PUMP GND- This wire connects to the black wire on the pump.











SOLENOID WIRES

You will notice the solenoid has three terminals on it. Connect the two following solenoid wires to either of the two vertical terminals on the solenoid using the supplied heat shrinkable female .250 spade terminals. Do not connect anything to the third horizontal terminal. See picture on page 18.

SOLENOID 12V- This wire connects to the solenoid on either of the terminal posts.

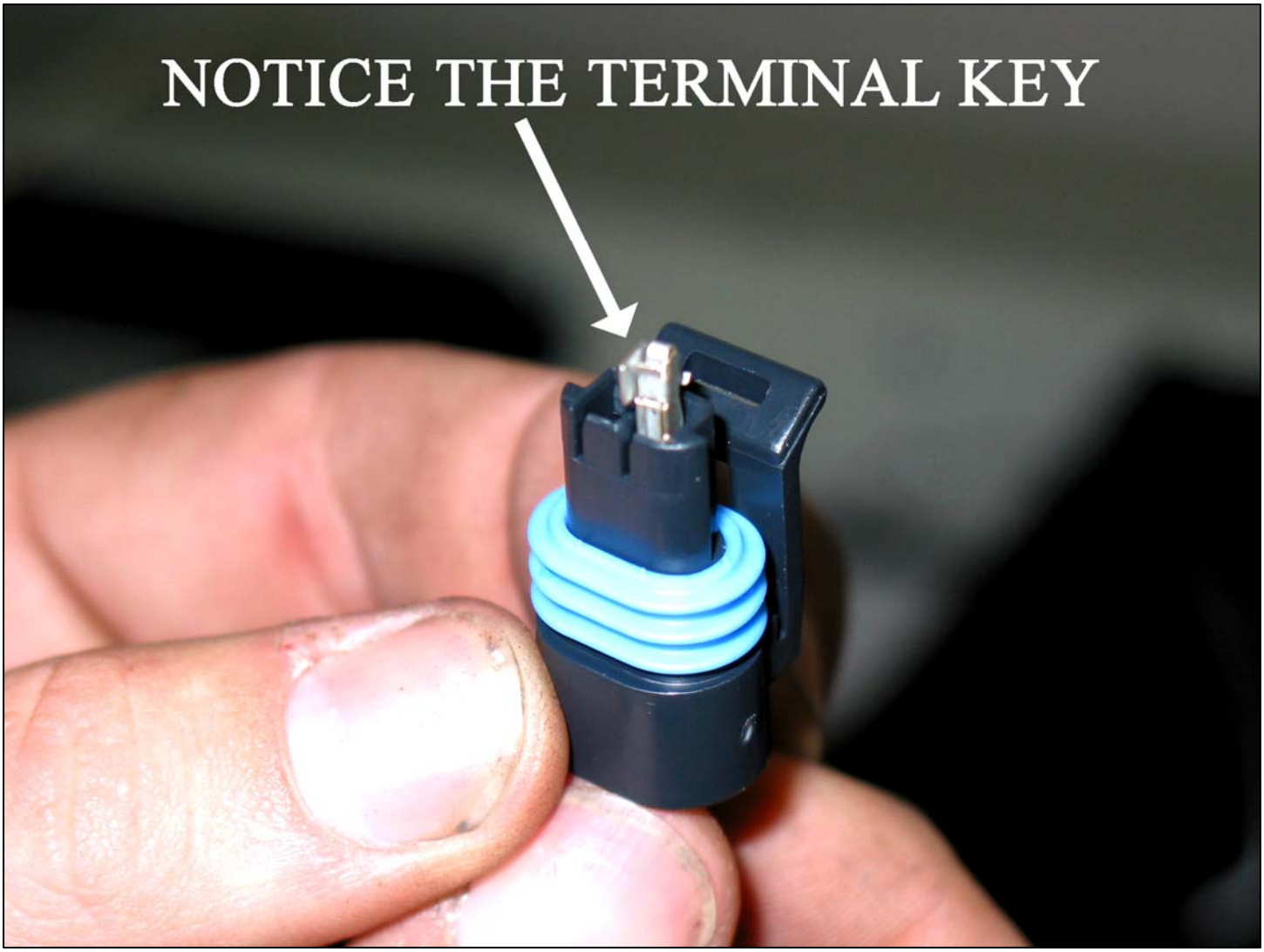
SOLENOID GND- This wire connects to the solenoid on either of the terminal posts.

LEVEL SENSOR WIRES

The level sensor provided with this kit is already installed into the two quart tank. Also provided is the connector and terminals used to with this level sensor. Again, you will need the roll crimp style crimpers to crimp these terminals. **Push the wires through the connector first, then strip and crimp the terminals to the wires.** The terminals have keys on them that you will have to line up in order to pull the terminals into place in the connector. See the picture below for move explanation.

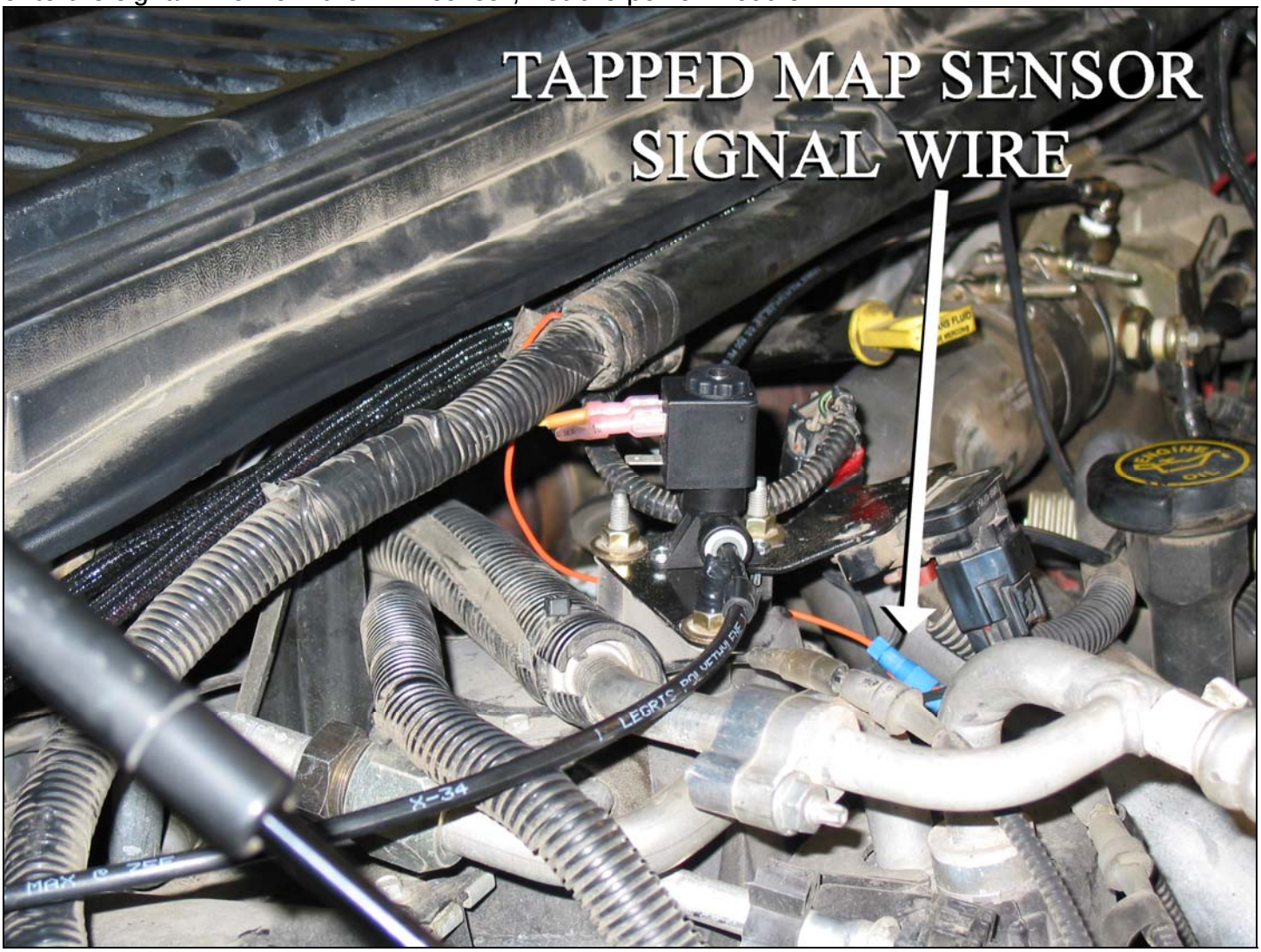
12V LVL SNS OUT- This wire connects to either terminal on the level sensor.

LVL SNS IN- This wire connects to either terminal on the level sensor.



MAP SENSOR WIRE

The Cold Shot injects water methanol according to MAP sensor signal. On the Ford Powerstroke the MAP sensor signal wire is a Lt. Green/Black and is located as the center pin of the three pin connector. Use one of the supplied Posi-Tap connectors to tap onto this the MAP SIGNAL wire from the Cold Shot harness. If you are running an aftermarket plug-in power module, make sure you tap onto the signal wire from the MAP sensor; not the power module.



Notice: When programming the Cold Shot module for your MAP sensor, use the 2.5 BAR setting.

DISPLAY A AND B CONNECTORS

Figure out where and how you want to mount the Cold Shot display. Plug the display A and B connectors together.

PANEL L.E.D. WIRES

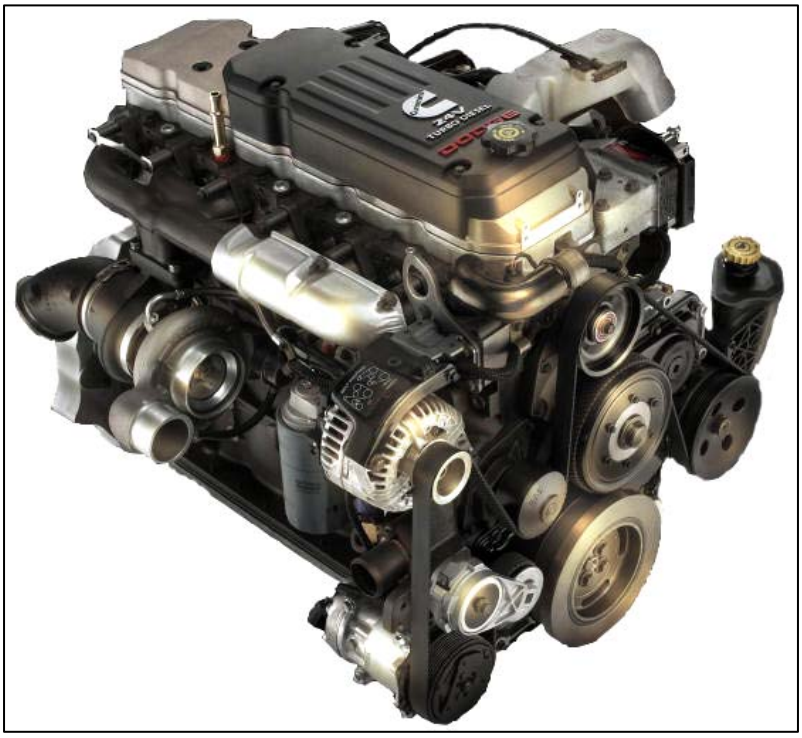
You have the option of unplugging the display from the main control unit after you have programmed it. If you are doing this, we suggest you connect the included L.E.D. to the L.E.D wires on the harness and then mount the L.E.D. where you can see it. This serves as an injection indicator. The light will illuminate when you are injecting into you engine. Note: You will not have a low water indication if you unplug the display module from the control module. This L.E.D. shows injection event only. Connect the wires black to black and red to red.

Go to page 63 for instructions on how to program your Cold Shot injection system.

Cold Shot Component Dodge Cummins 5.9L Installation:

Please thoroughly read these instructions before you begin any of the installation process. Make sure the ignition is off, the key out of the column **and disconnect both batteries**.

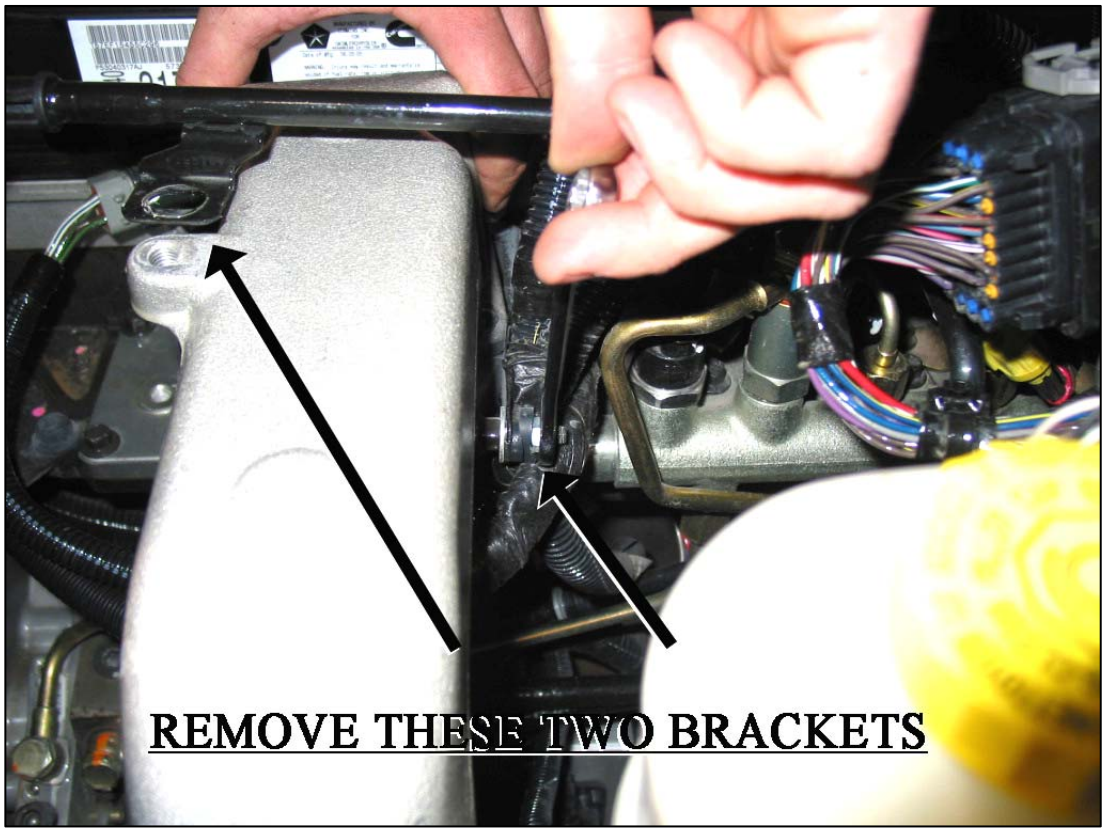
Please thoroughly read these instructions before you begin any of the installation process. **Look at the generic schematic on page 3.** It is recommended to purchase a replacement intake manifold gasket from your local Cummins or Dodge dealership before you begin installation. This gasket is usually reusable but with the large amounts of boost these Cummins engines are capable of, it is recommended to use a new one. The Dodge part number for this intake gasket is 1-05086721AB.



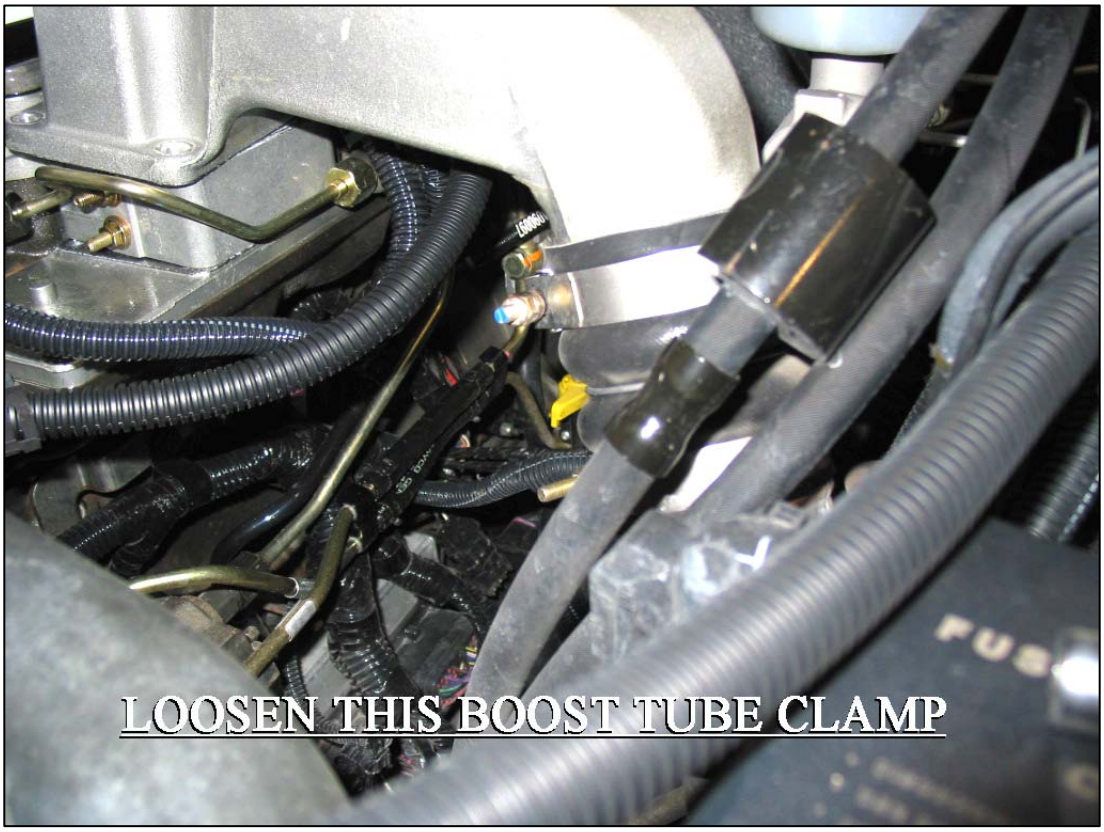
Intake Manifold Removal:

There are four bolts holding the intake manifold to the intake air heater and then to the engine head. Remove these four bolts.

Remove the bolt holding the oil dipstick tube bracket. Remove the bracket holding the wire harness on the back of the intake manifold.



Loosen the boost tube clamp on the intake manifold side.



Gently pull up on the intake manifold to unseat it from the intake air heater. Twist the manifold back and forth to work it out of the boost tube clamp. Cover the intake air heater with a shop rag to keep dirt from dropping into the engine head.

Nozzle Installation

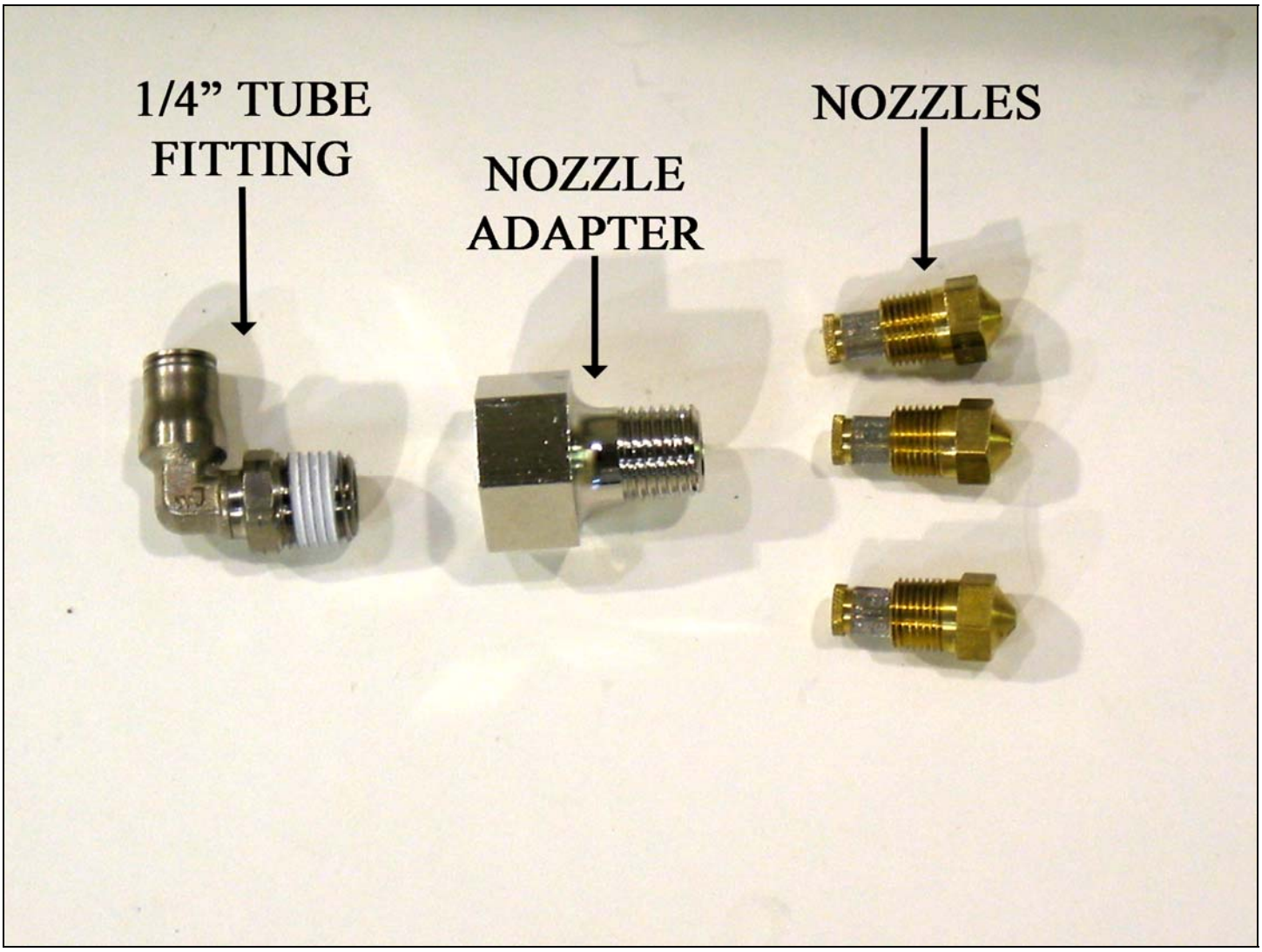
Determine where you want to install the injection nozzle into the intake manifold. Clamp the intake manifold into a vice or other stationary device. You may find it necessary to drill a small pilot hole for the 7/16" drill bit. Drill a 7/16" hole where you want the nozzle to be installed. Be sure to drill the hole straight into the intake manifold. A hole drilled crooked could prevent the pipe thread on the nozzle adapter from seating properly.

Next, tap the manifold with a ¼”-18 NPT tap. Again, be sure to run the tap straight into the manifold. It helps to lubricate the tap with tapping fluid or grease.

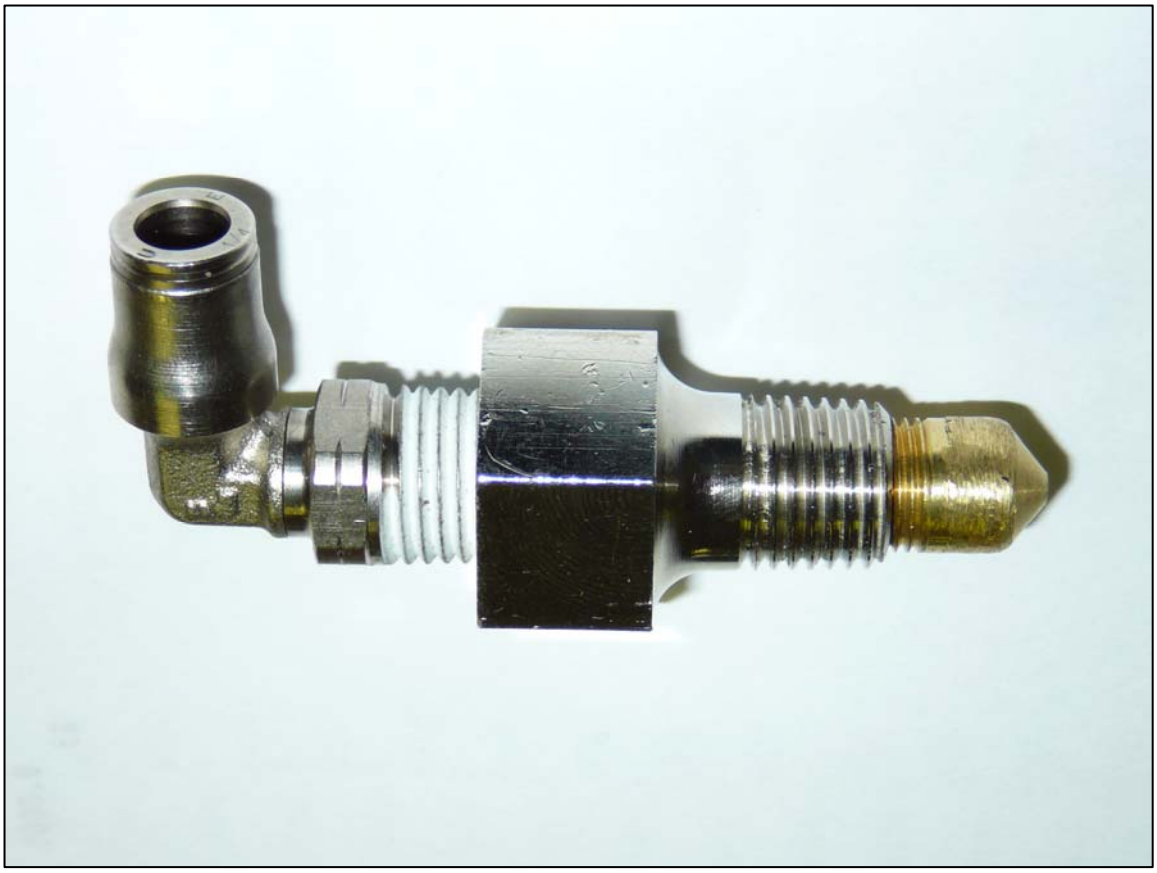
You must now select the nozzle for your Cold Shot system. We have provided you three different nozzles. Each nozzle is stamped on the hex edge with a label. See below for the flow for each nozzle. **See page 67 for more info on nozzle sizing.**

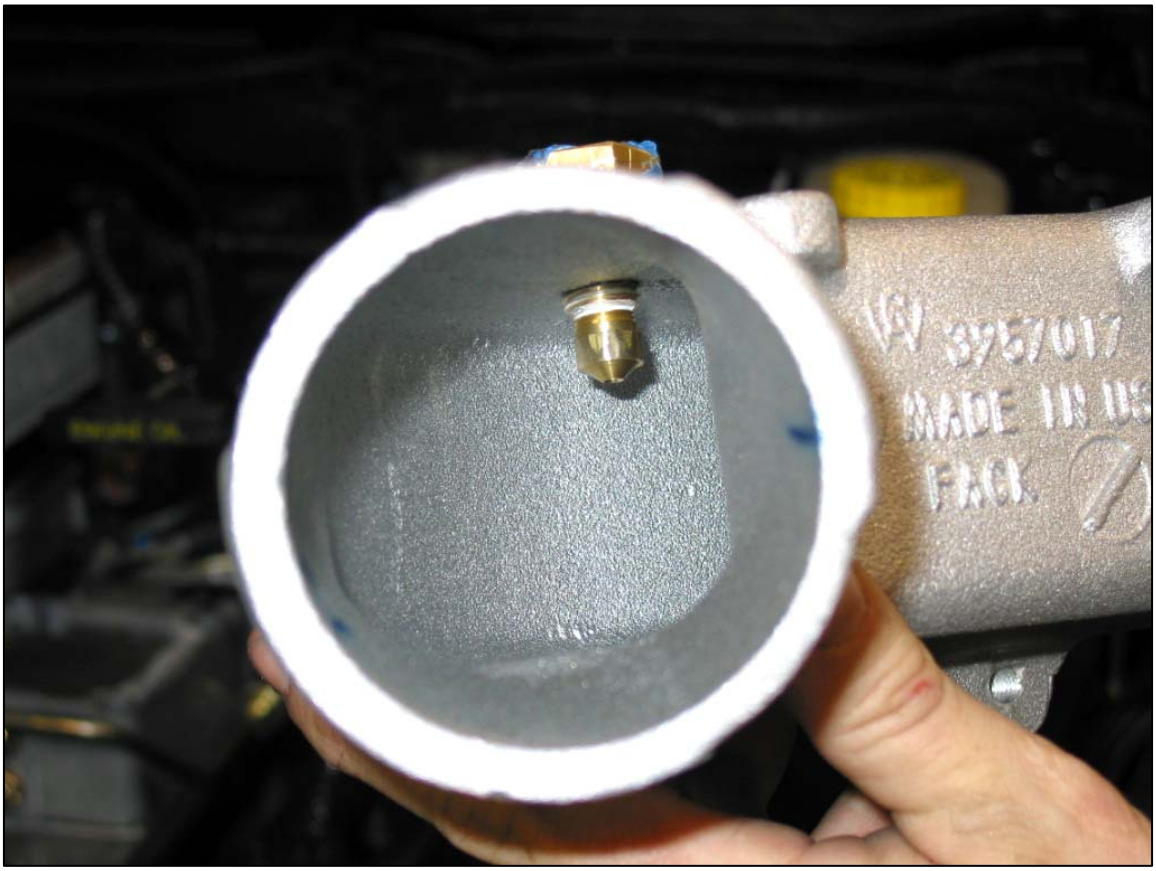
NOZZLE	GALLONS PER HOUR
MW-C	6.4
MW-D	10.0
MW-E	14.5

After you select the nozzle, unscrew the filter screen from the back of the nozzle. Make sure the spray side of the nozzle is facing towards the floor when you do this because there is a pellet inside the nozzle housing that will fall out. Leave this pellet in the nozzle housing. Put a little blue Loctite on the threads of the filter screen and reinstall it into the nozzle housing.



There are two ways to install the nozzle, adapter and fitting into the intake manifold. Either install the nozzle adapter into the manifold first and then the nozzle into the adapter from inside the intake or install the nozzle into the nozzle adapter and then grind down the head of the nozzle so it will fit into the ¼”-18 NPT hole you tapped in the manifold. We suggest the first method if you have removed the intake manifold from the vehicle and the second if you have not. If you choose the second method, try to not grind all of the flat areas from the nozzle head. This will aide uninstalling the nozzle from the adapter if you choose to change the nozzle in the future. The picture below shows the nozzle, adapter and fitting assembled. Notice it is pictured with the nozzle head ground down so it will fit into the ¼”-18 NPT hole in the manifold. Use some Teflon tape to seal the threads of the nozzle into the adapter and the threads of the adapter into the intake manifold.

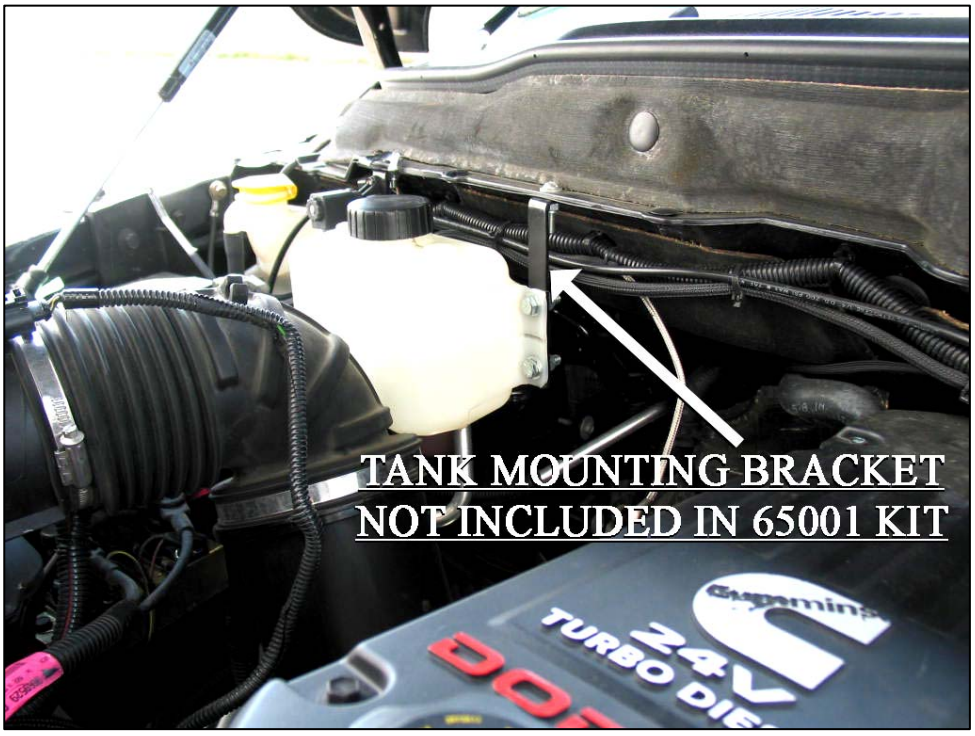



3957017

Reinstall the intake manifold onto the engine. Reinstall the boost tube and clamp and tighten. Reinstall the dipstick tube bolt and the wire bracket on the back side of the intake. Tighten all fasteners.

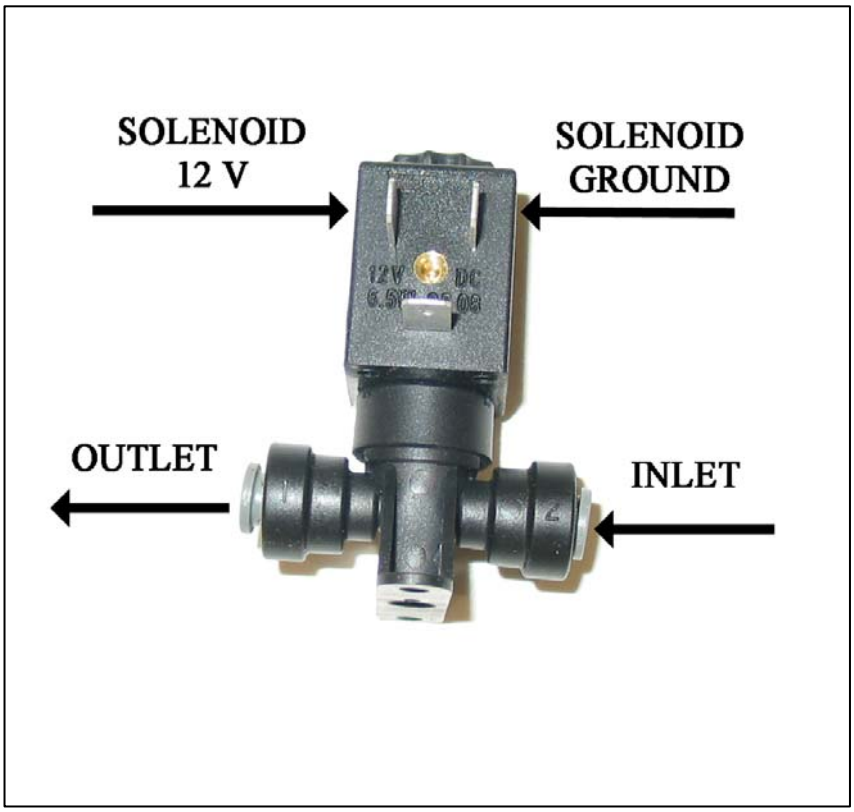
2 Quart Reservoir

In the next step you will need to find a safe place to mount the 2 quart tank. We suggest you mount it in the engine compartment or in a tool box. We have supplied you with the needed mounting hardware but you will have to build your own bracket. If the tank is mounted in the engine compartment keep in mind you should mount it as far away from the engine as possible. The tank is made from a very durable HDPE plastic. Plastic will melt if it gets hot enough. Keep away from the engine, turbo and exhaust. Pictured to the bottom/right is an ideal mounting solution. Before you mount the tank, thread in one of the 90 degree quick connects fittings into the bottom of the tank.



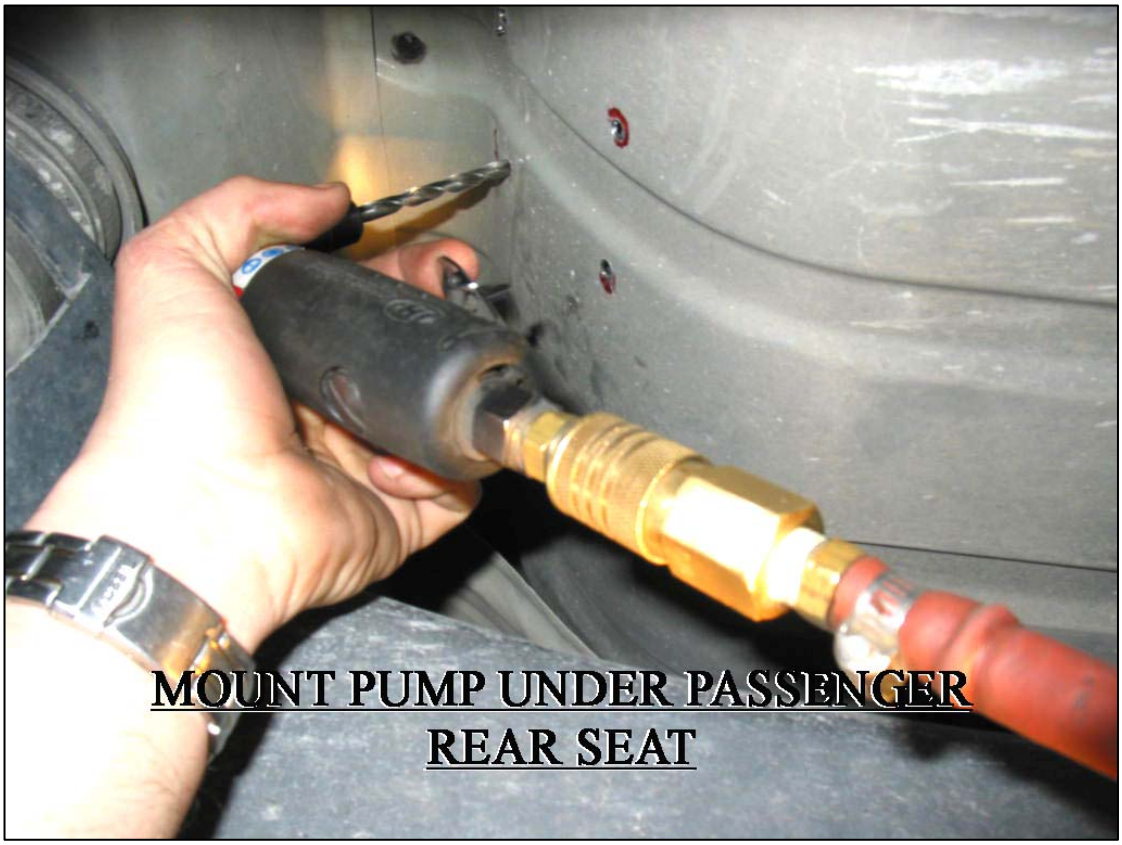
12 Volt Solenoid

Now mount the water/methanol solenoid using two of the supplied self tap screws. There is an in and out of this solenoid. Looking at the solenoid you will see on the ports a 2 and a 1. The 2 port is in and the 1 port is out. The 2 port comes from the pump. The 1 port goes to the nozzle. Keep in mind you will be pushing a ¼" tube into both ports of this solenoid. Leave room for these ¼" tubes. Mount the solenoid accordingly. The picture on the previous page shows the solenoid mounted just to the left of the 2 quart tank. Cut a piece of the ¼" tubing to go between the outlet of the solenoid and the nozzle you installed into the intake manifold. Use a razor blade to make a straight clean cut.



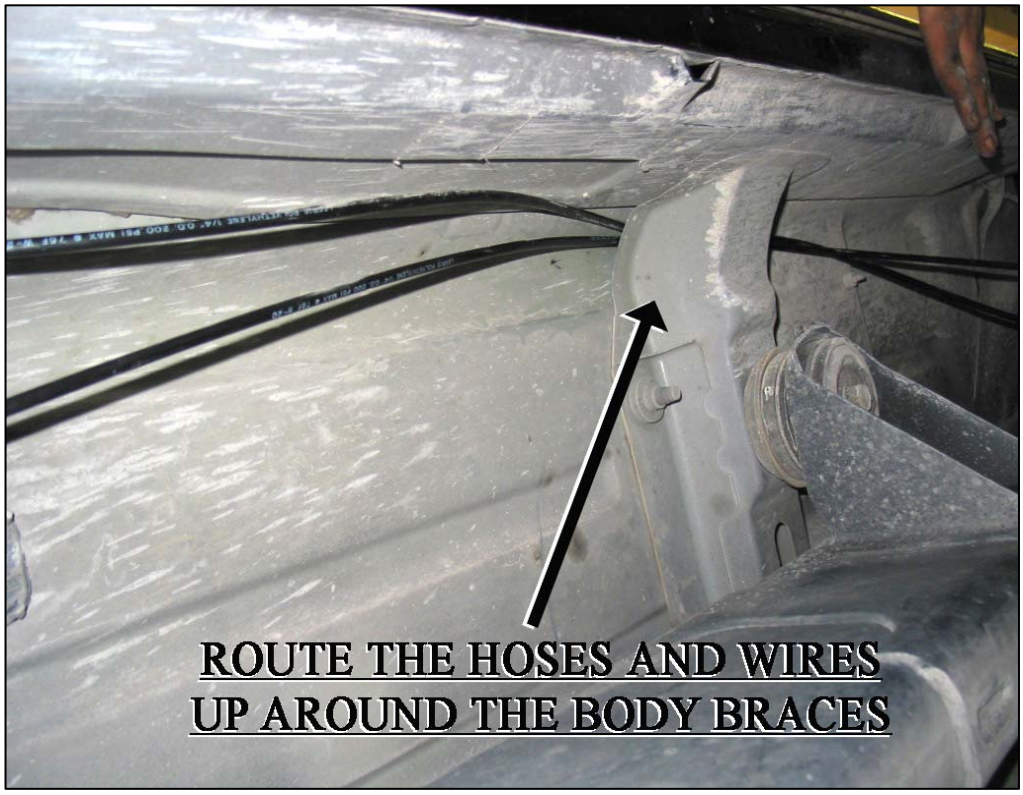
Water/Methanol Pump

You are now going to mount the water/methanol pump. First, thread the two 3/8" NPT – ¼" quick connect fittings into the pump. **Do not over tighten these fittings into the pump.** We have found on these Dodge trucks there is an ideal area for this pump just under the right rear passenger seat. See the picture below.



You can mount the pump any where you want as long as it is at the same level or below the 2 quart reservoir. Frame rails and in-bed tool boxes are also great places to mount the pump. Drill four holes to match the mounting holes in the pump bracket. Use four of the supplied ¼"-20 bolts, washers and lock nuts to mount the pump.

Cut one end of the ¼" tubing with a sharp razor blade and insert it into the pump. Note the pump is directional. Look at the pump housing for the directional arrows. You must connect the water/methanol supply tube from the 2 quart reservoir to the suction side of the pump. After connecting this suction line to the pump, route the tube up to the 2 quart reservoir and insert it into the quick connect fitting there. Connect the output side of the pump to the input side of the water/methanol solenoid.



Cold Shot Electrical Installation 5.9L Cummins:

Ignition relay harness:

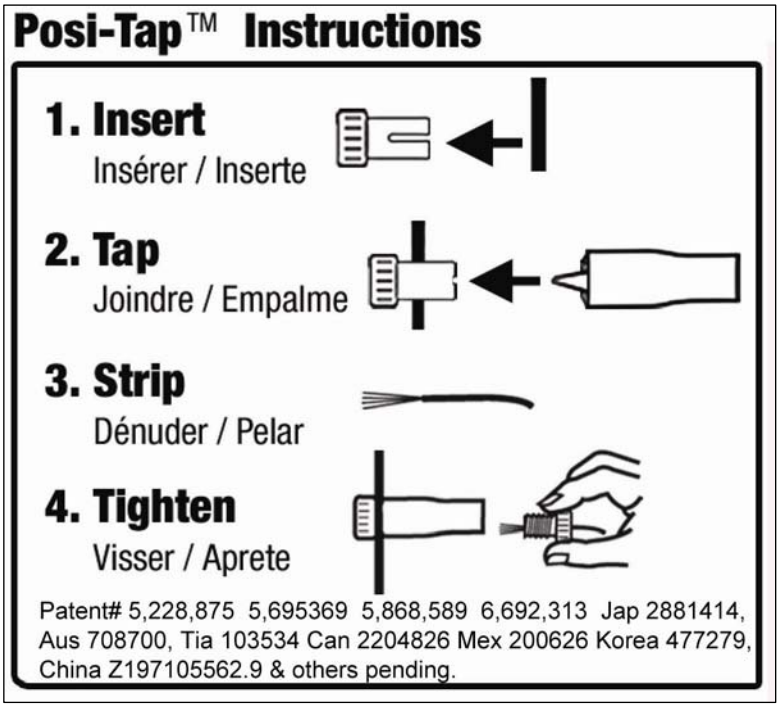
To the right is a picture of the ignition relay harness included in this kit. This relay will supply the 12 volts needed to power the module and all of its components. Mount the relay and fuse inside of the vehicle and run the wire labeled (battery +) out to the engine compartment.

First, mount the relay and fuse holder underneath the dash. You will need to remove the plastic panel from under the steering column. Use the supplied self tap screws to drill through and mount the relay to the metal support. Second, connect the wires as listed on the next page.

Battery +
Connect this wire using one of the supplied ring terminals to the positive post of the battery.

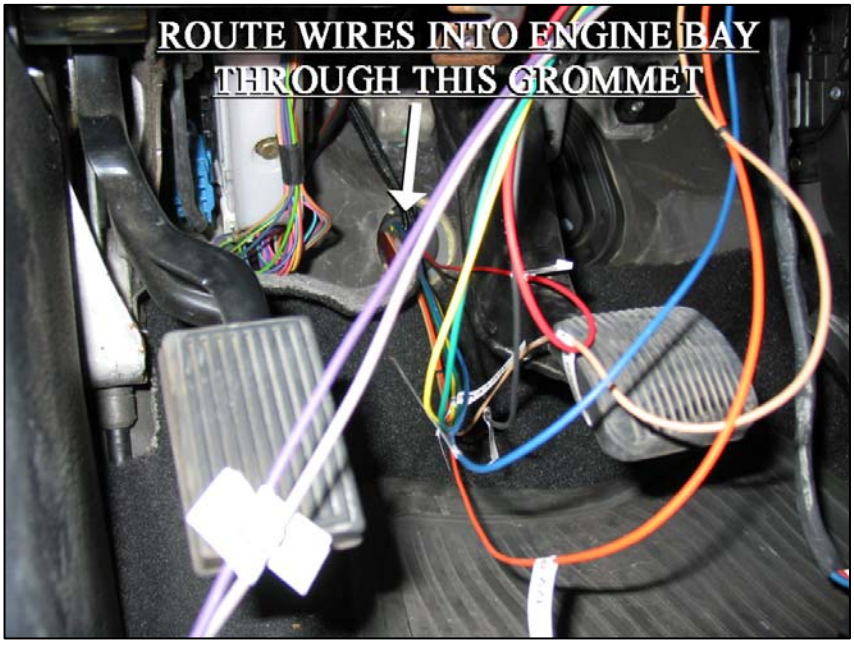
Ground
Connect this wire using one of the supplied ring terminals to a good ground.

Ignition 12V
Connect this wire to an ignition hot 12 volt wire. See the chart below for possible sources for this ignition hot. All wires listed are located underneath the steering column and come from the ignition switch connector wire bundle. Use one of the supplied Posi-Tap wire taps to do this. See the picture to the right for instructions on how to use this type of wire tap.



Ignition 12V wire chart

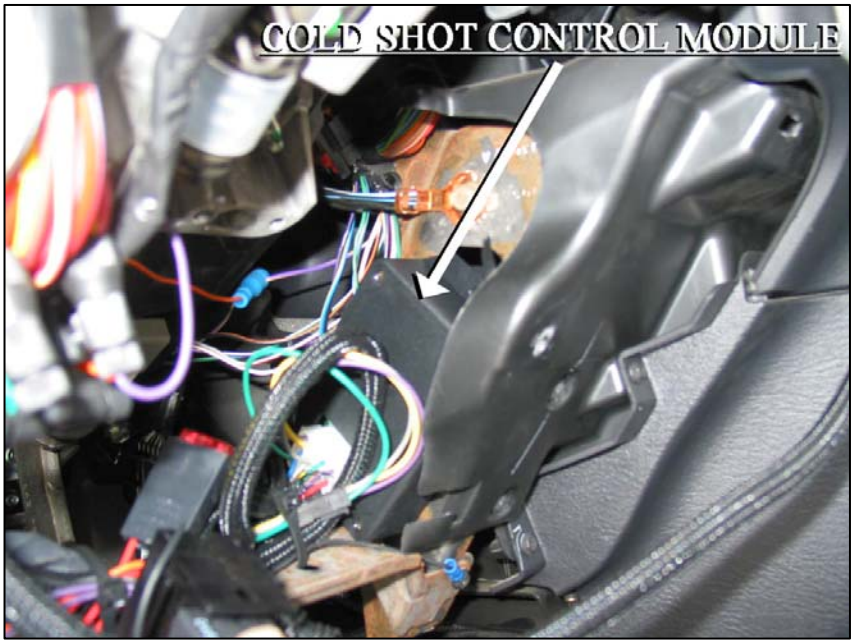
Engine Model	Model Year	Key-on Wire
Dodge Cummins Diesel	1994-2002	Black/Orange
	2003	Black/White
	2004-2005	Pink/Yellow
	2006-2007	Large Pink/Lt.Green



Relay Output
Connect this wire to the wire labeled as **Main 12V** on the Cold Shot harness. This is the power output wire from the relay harness and will supply key on 12 volts to the Cold Shot controller.

Cold Shot wire harness:

Mount the control module inside of the passenger area. The picture to the right shows where we mounted the module on our '05 Cummins truck. Use two of the supplied self tapping screws to mount it here. **This module is not waterproof so mount it away from any sources of moisture.**



Included in this kit is the main wire harness for the Cold Shot water/methanol injection system. Plug the 12 pin connector into the Cold Shot control module after you have it mounted. All of the wires are labeled to assist your installation. Route these wires to the engine compartment; Pump 12V, Pump GND, Solenoid 12V, Solenoid GND, 12V LVL SNS OUT, LVL SNS IN, and MAP Signal.

Wire Connections:

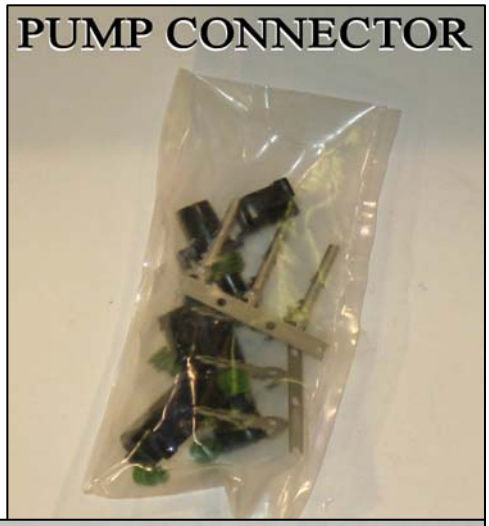
POWER AND GROUND

MAIN 12V- This wire connects to the butt splice on the wire labeled **To Main 12V** on the relay harness.

MAIN GND- This wire connects to a chassis ground source. Underneath the dash there are many good grounding points. You may use one of the already existing mounting bolts for this ground or use one of the supplied self tapping screws to create your own grounding point. Check this ground source with a volt meter to make sure you have a good one.

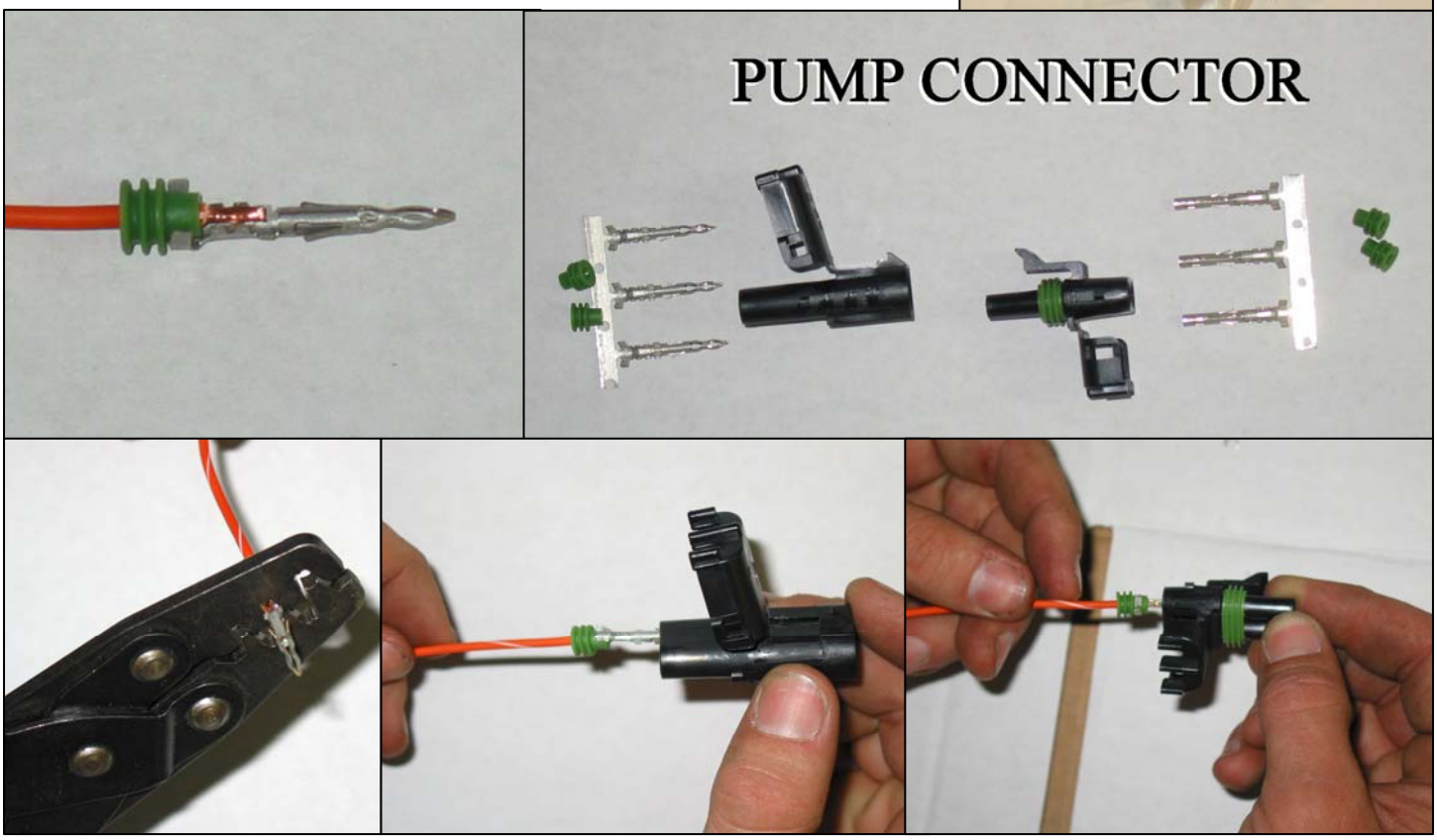
PUMP WIRES

Use the supplied two pin male and female connectors to connect these two wires to the pump. The terminals used for these connectors require the roll crimp style crimpers. See the picture on page 2. These crimpers are available at your local Radio Shack. You do not have to use these connectors to hook up your pump. You can use two of the supplied heat shrinkable butt connectors instead. If you ever want to uninstall this kit from the truck it is easier to unplug the connectors than to cut and re-splice the butt connectors.



PUMP 12V- This wire connects to the red wire on the pump.

PUMP GND- This wire connects to the black wire on the pump.



SOLENOID WIRES

You will notice the solenoid has three terminals on it. Connect the two following solenoid wires to either of the two vertical terminals on the solenoid using the supplied heat shrinkable female .250 spade terminals. Do not connect anything to the third horizontal terminal.

SOLENOID 12V- This wire connects to the solenoid on either of the terminal posts.

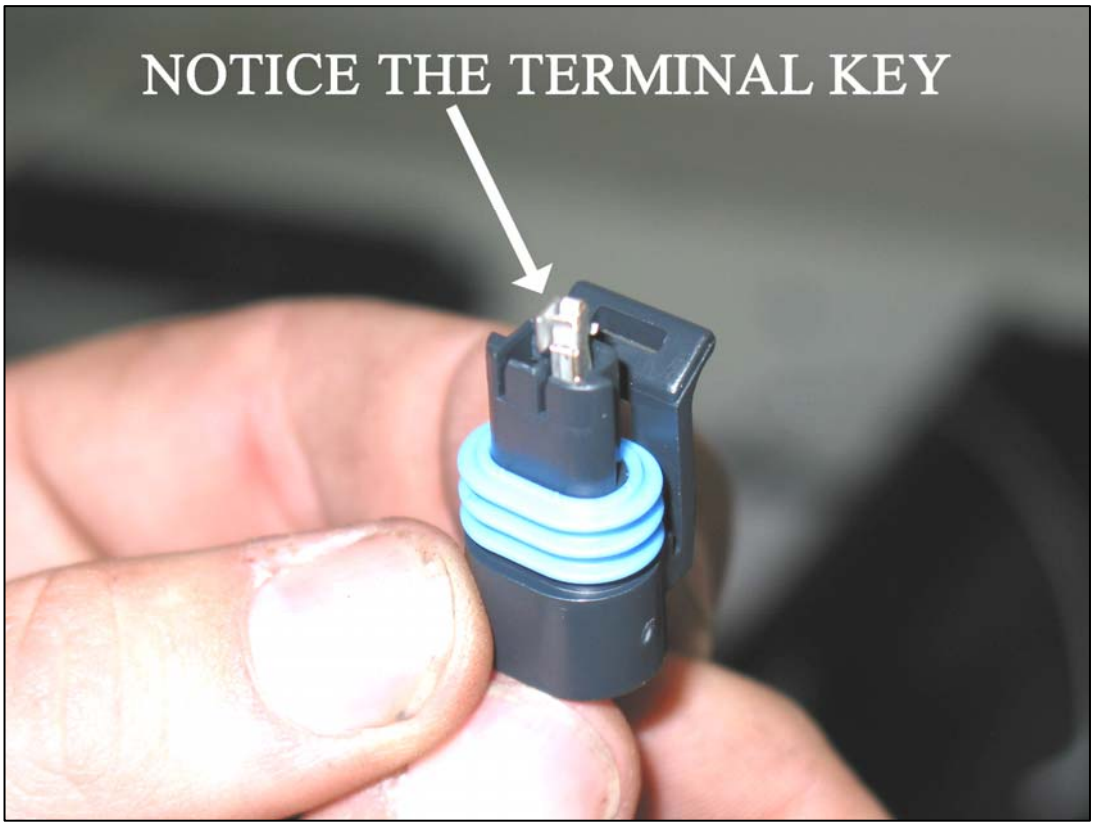
SOLENOID GND- This wire connects to the solenoid on either of the terminal posts.

LEVEL SENSOR WIRES

The level sensor provided with this kit is already installed into the two quart tank. Also provided is the connector and terminals used to with this level sensor. Again, you will need the roll crimp style crimpers to crimp these terminals. **Push the wires through the connector first, then strip and crimp the terminals to the wires.** The terminals have keys on them that you will have to line up in order to pull the terminals into place in the connector. See the picture below for move explanation.

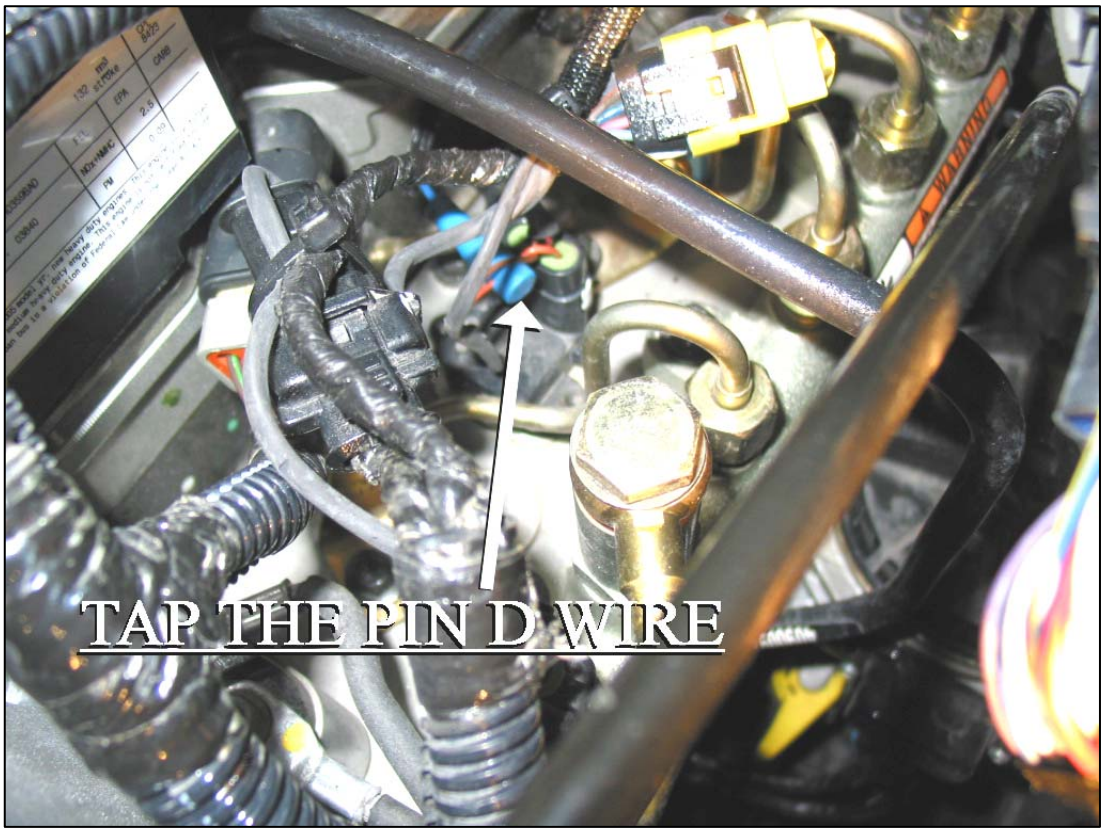
12V LVL SNS OUT- This wire connects to either terminal on the level sensor.

LVL SNS IN- This wire connects to either terminal on the level sensor.



MAP SENSOR WIRE

The Cold Shot injects water methanol according to MAP sensor signal. On the Dodge Cummins tap the wire in pin D of the MAP sensor connector. Use one of the supplied Posi-Tap connectors to tap onto this the MAP SIGNAL wire from the Cold Shot harness. If you are running a plug in power module, make sure you tap onto the signal wire from the MAP sensor; not the power module.



Notice: When programming the Cold Shot module for your MAP sensor, use the 4 BAR setting.

DISPLAY A AND B CONNECTORS

Figure out where and how you want to mount the Cold Shot display. Plug the display A and B connectors together.

PANEL L.E.D. WIRES

You have the option of unplugging the display from the main control unit after you have programmed it. If you are doing this, we suggest you connect the included L.E.D. to the L.E.D wires on the harness and then mount the L.E.D. where you can see it. This serves as an injection indicator. The light will illuminate when you are injecting into you engine. Note: You will not have a low water indication if you unplug the display module from the control module. This L.E.D. shows injection event only. Connect the wires black to black and red to red.

Go to page 63 for instructions on how to program your Cold Shot injection system.

Cold Shot Component Dodge Cummins 12 Valve 5.9L Installation:

Please thoroughly read these instructions before you begin any of the installation process. Make sure the ignition is off, the key out of the column **and disconnect both batteries**. Please thoroughly read these instructions before you begin any of the installation process. **Look at the generic schematic on page 3.** It is recommended to purchase a replacement intake manifold gasket from your local Cummins or Dodge dealership before you begin installation. This gasket is usually reusable but with the large amounts of boost these Cummins engines are capable of, it is recommended to use a new one.

You will need to purchase the following parts in addition to what is provided in this kit.

1) MAP sensor- we suggest purchasing part number 05139278AA (this is a 4 bar MAP sensor) from your local Cummins or Chrysler dealer. Please contact Painless Performance at 800-423-9696 to receive the connector to this MAP sensor at no charge.
2) 1/8"-27NPT to ¼" barb, brass fitting
3) ¼" rubber tubing to run between the MAP sensor and intake manifold

Intake Manifold Removal:

There are four bolts holding the intake manifold to the intake air heater and then to the engine head. Remove these four bolts. Remove the bolt holding the dipstick tube to the intake manifold. Then, loosen the boost tube clamp and remove the intake manifold. See the picture below.

Nozzle Installation

There are two holes to be drilled and tapped for the installation of the ColdShot onto a 12 valve Cummins engine. The first is hole is for the water/methanol nozzle. The second is for a nipple fitting that will be connected to the boost reference tube for the MAP sensor. In our installation we used a brass 1/8”-27NPT to ¼” barb fitting. This fitting is not included in the kit.

Determine where you want to install the injection nozzle into the intake manifold. Clamp the intake manifold into a vice or other stationary device. You may find it necessary to drill a small pilot hole for the 7/16” drill bit. Drill a 7/16” hole where you want the nozzle to be installed. Be sure to drill the hole straight into the intake manifold. A hole drilled crooked could prevent the pipe thread on the nozzle adapter from seating properly.

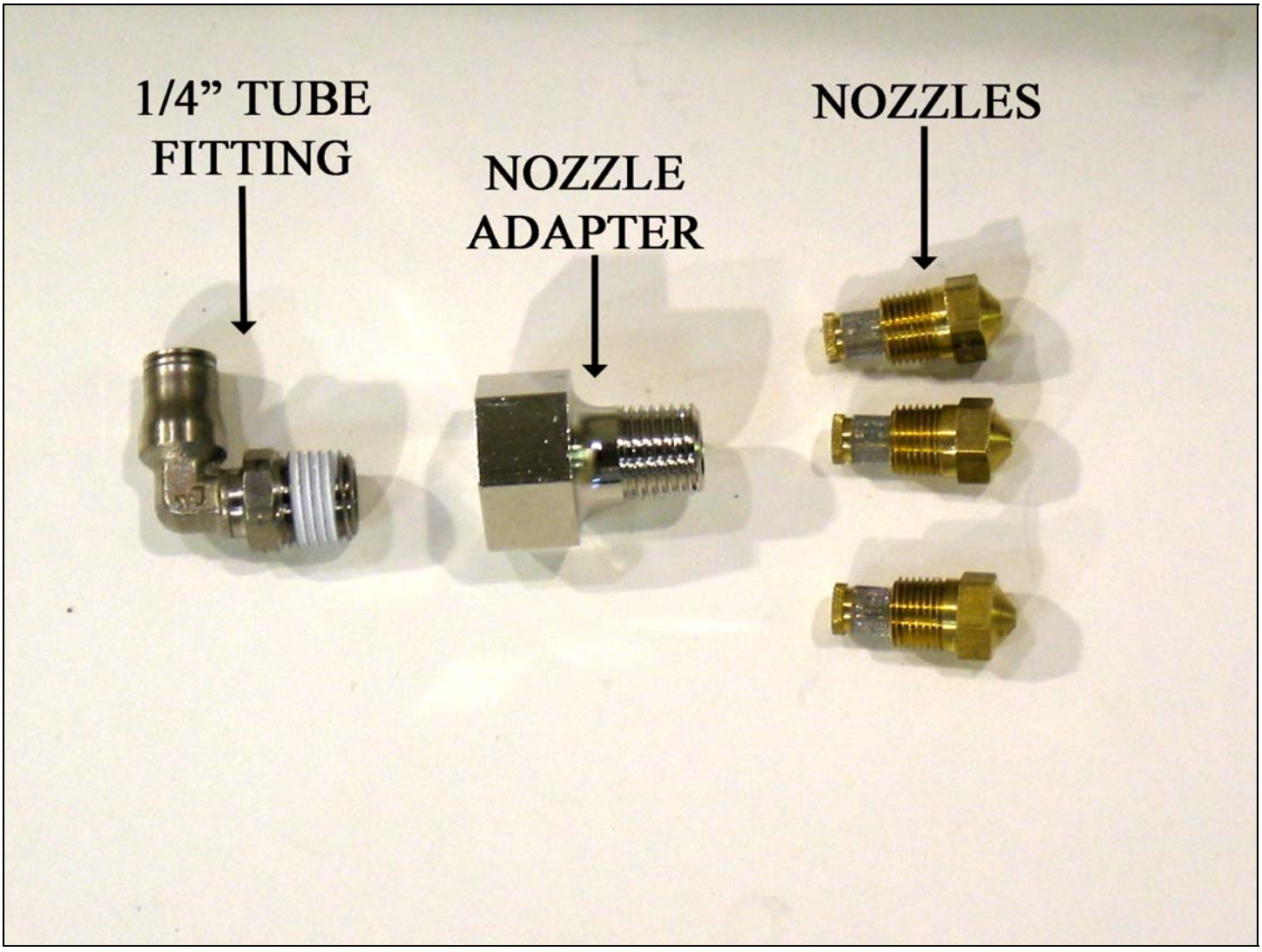
Next, tap the manifold with a ¼”-18 NPT tap. Again, be sure to run the tap straight into the manifold. It helps to lubricate the tap with tapping fluid or grease.

Determine where you want to install the barbed nipple fitting for the boost reference tube. If you are using the same fitting we used, drill a letter R or 11/32” hole and tap it with a 1/8”-27NPT tap. Go ahead an install this barb fitting into the intake manifold.

You must now select the nozzle for your Cold Shot system. We have provided you three different nozzles. Each nozzle is stamped on the hex edge with a label. See below for the flow for each nozzle. **See page 67 for more info on nozzle sizing.**

NOZZLE	GALLONS PER HOUR
MW-C	6.4
MW-D	10.0
MW-E	14.5

After you select the nozzle, unscrew the filter screen from the back of the nozzle. Make sure the spray side of the nozzle is facing towards the floor when you do this because there is a pellet inside the nozzle housing that will fall out. Leave this pellet in the nozzle housing. Put a little blue Loctite on the threads of the filter screen and reinstall it into the nozzle housing.

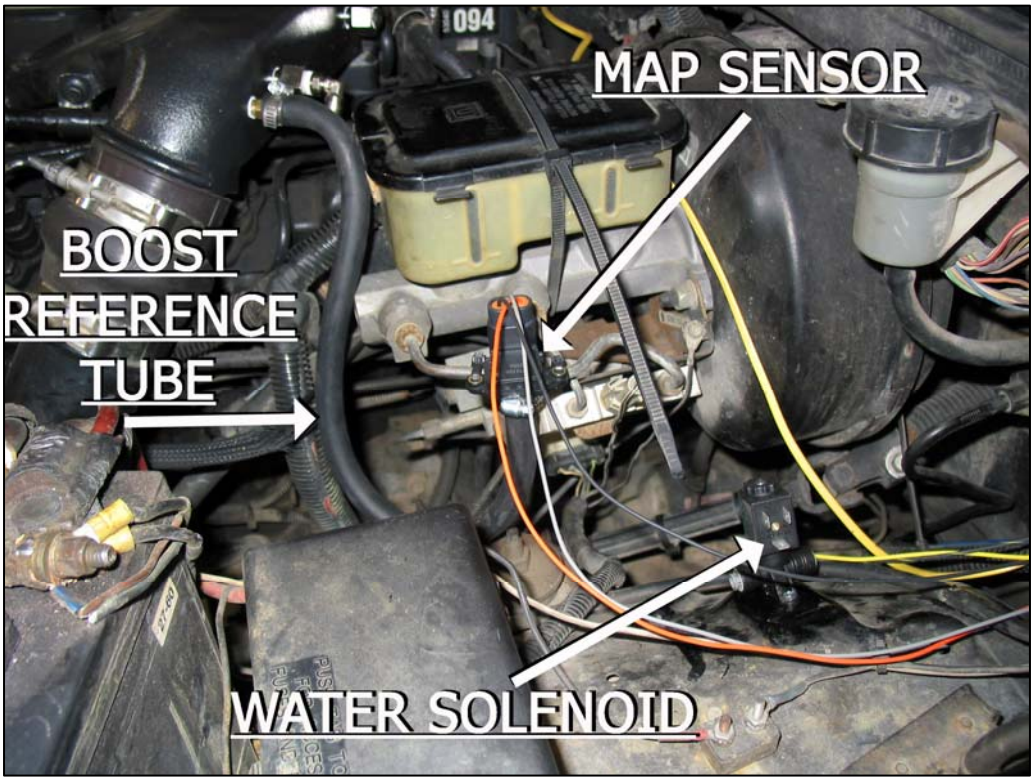


There are two ways to install the nozzle, adapter and fitting into the intake manifold. Either install the nozzle adapter into the manifold first and then the nozzle into the adapter from inside the intake or install the nozzle into the nozzle adapter and then grind down the head of the nozzle so it will fit into the ¼”-18 NPT hole you tapped in the manifold. We suggest the first method if you have removed the intake manifold from the vehicle and the second if you have not. If you choose the second method, try to not grind all of the flat areas from the nozzle head. This will aide uninstalling the nozzle from the adapter if you choose to change the nozzle in the future. The picture below shows the nozzle, adapter and fitting assembled. Notice it is pictured with the nozzle head ground down so it will fit into the ¼”-18 NPT hole in the manifold. Use some Teflon tape to seal the threads of the nozzle into the adapter.

Thread the nozzle into the intake. Make sure to seal the threads with some Teflon tape.

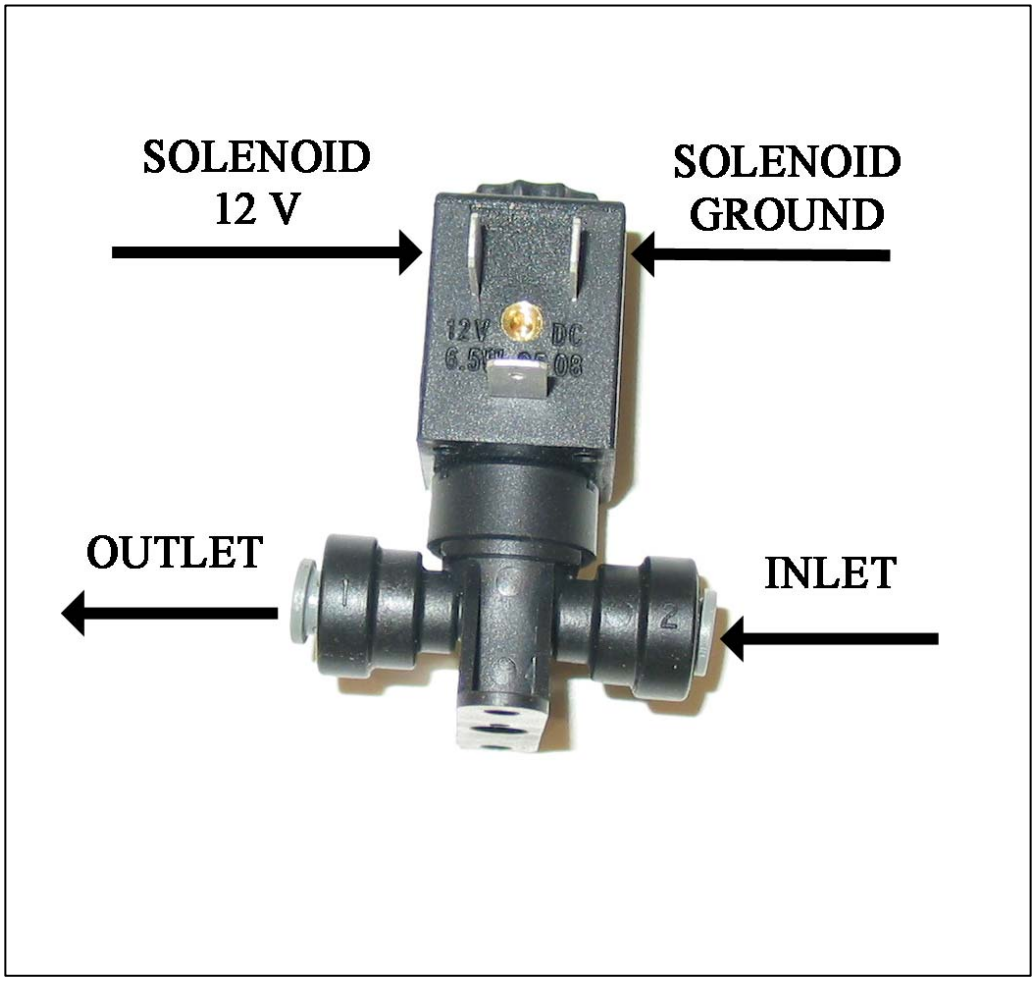
Reinstall the intake manifold onto the engine. Reinstall the boost tube and clamp and tighten. Reinstall the dipstick tube bolt to the intake. Tighten all fasteners.

Mount the MAP sensor where ever you see fit. Route the ¼” boost reference tube from the intake manifold over to the MAP sensor. Use hose clamps to secure the boost reference tube on each side.



12 volt water solenoid

Mount the water solenoid to the driver side fender-well using two of the self tapping screws provided in the kit. See picture to the right for a description of how this solenoid is connected. Notice the #2 port is the inlet from the pump and the #1 port is the outlet to the nozzle. Keep in mind you will be pushing a ¼” tube into both ports of this solenoid. Leave room for these ¼” tubes. Mount the solenoid accordingly. Cut a piece of the ¼” tubing to go between the outlet of the solenoid and the nozzle you installed into the intake manifold. Use a razor blade to make a straight clean cut.



Water/Methanol Pump

You are now going to mount the water/methanol pump. First, thread the two 3/8" NPT – ¼" quick connect fittings into the pump. **Do not over tighten these fittings into the pump.** We mounted the pump on our 1995 test truck on the driver's side, underneath the bed. You can mount the pump anywhere it is safe from road debris. You can mount the pump any where you want as long as it is at the same level or below the 2 quart reservoir. Frame rails and in-bed tool boxes are also great places to mount the pump. Drill four holes to match the mounting holes in the pump bracket. Use four of the supplied ¼"-20 bolts, washers and lock nuts to mount the pump. See the picture below.

2 Quart Reservoir

In the next step you will need to find a safe place to mount the 2 quart tank. We suggest you mount it in the engine compartment or in a tool box. We have supplied you with the needed mounting hardware but you will have to build your own bracket. If the tank is mounted in the engine compartment keep in mind you should mount it as far away from the engine as possible. The tank is made from a very durable HDPE plastic. Plastic will melt if it gets hot enough. Keep away from the engine, turbo and exhaust. Before you mount the tank, thread in one of the 90 degree quick connects fittings into the bottom of the tank.

7 Gallon Reservoir

On our 1995 test truck we installed a 7 gallon reservoir in the bed. The part number for this upgrade kit is 65021 and is available through your local Painless Performance dealer.

Cut one end of the ¼" tubing with a sharp razor blade and insert it into the pump. Note the pump is directional. Look at the pump housing for the directional arrows. You must connect the water/methanol supply tube from the 2 quart reservoir to the suction side of the pump. After connecting this suction line to the pump, route the tube up to the 2 quart or 7 gallon reservoir and insert it into the quick connect fitting there. Connect the output side of the pump to the input side of the water/methanol solenoid.

Cold Shot Electrical Installation 5.9L Cummins:

Ignition relay harness:

To the right is a picture of the ignition relay harness included in this kit. This relay will supply the 12 volts needed to power the module and all of its components. Mount the relay and fuse inside of the vehicle and run the wire labeled (battery +) out to the engine compartment.

First, mount the relay and fuse holder underneath the dash. You will need to remove the plastic panel from under the steering column. Use the supplied self tap screws to drill through and mount the relay to the metal support. Second, connect the wires as listed on the next page.

Battery +

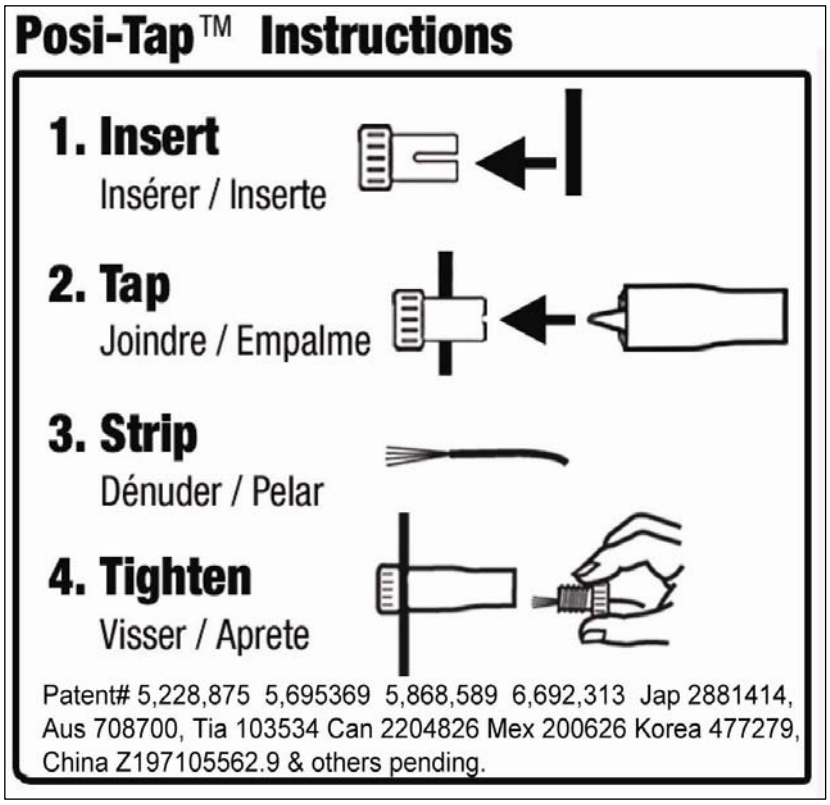
Connect this wire using one of the supplied ring terminals to the positive post of the battery or the fuse block post shown in the picture above/right.

Ground

Connect this wire using one of the supplied ring terminals to a good ground.

Ignition 12V

Connect this wire to an ignition hot 12 volt wire. See the chart below for possible sources for this ignition hot. All wires listed are located underneath the steering column and come from the ignition switch connector wire bundle. Use one of the supplied Posi-Tap wire taps to do this. See the picture to the right for instructions on how to use this type of wire tap.



Ignition 12V wire chart

Engine Model	Model Year	Key-on Wire
Dodge Cummins Diesel	1994-2002	Black/Orange

Relay Output
Connect this wire to the wire labeled as **Main 12V** on the Cold Shot harness. This is the power output wire from the relay harness and will supply key on 12 volts to the Cold Shot controller.

Cold Shot wire harness:

Mount the control module inside of the passenger area. The picture to the right shows where we mounted the module on our '05 Cummins truck. Use two of the supplied self tapping screws to mount it here. **This module is not waterproof so mount it away from any sources of moisture.**

Included in this kit is the main wire harness for the Cold Shot water/methanol injection system. Plug the 12 pin connector into the Cold Shot control module after you have it mounted. All of the wires are labeled to assist your installation. Route these wires to the engine compartment; Pump 12V, Pump GND, Solenoid 12V, Solenoid GND, 12V LVL SNS OUT, LVL SNS IN, and MAP Signal.

Wire Connections:

POWER AND GROUND

MAIN 12V- This wire connects to the butt splice on the wire labeled **To Main 12V** on the relay harness.

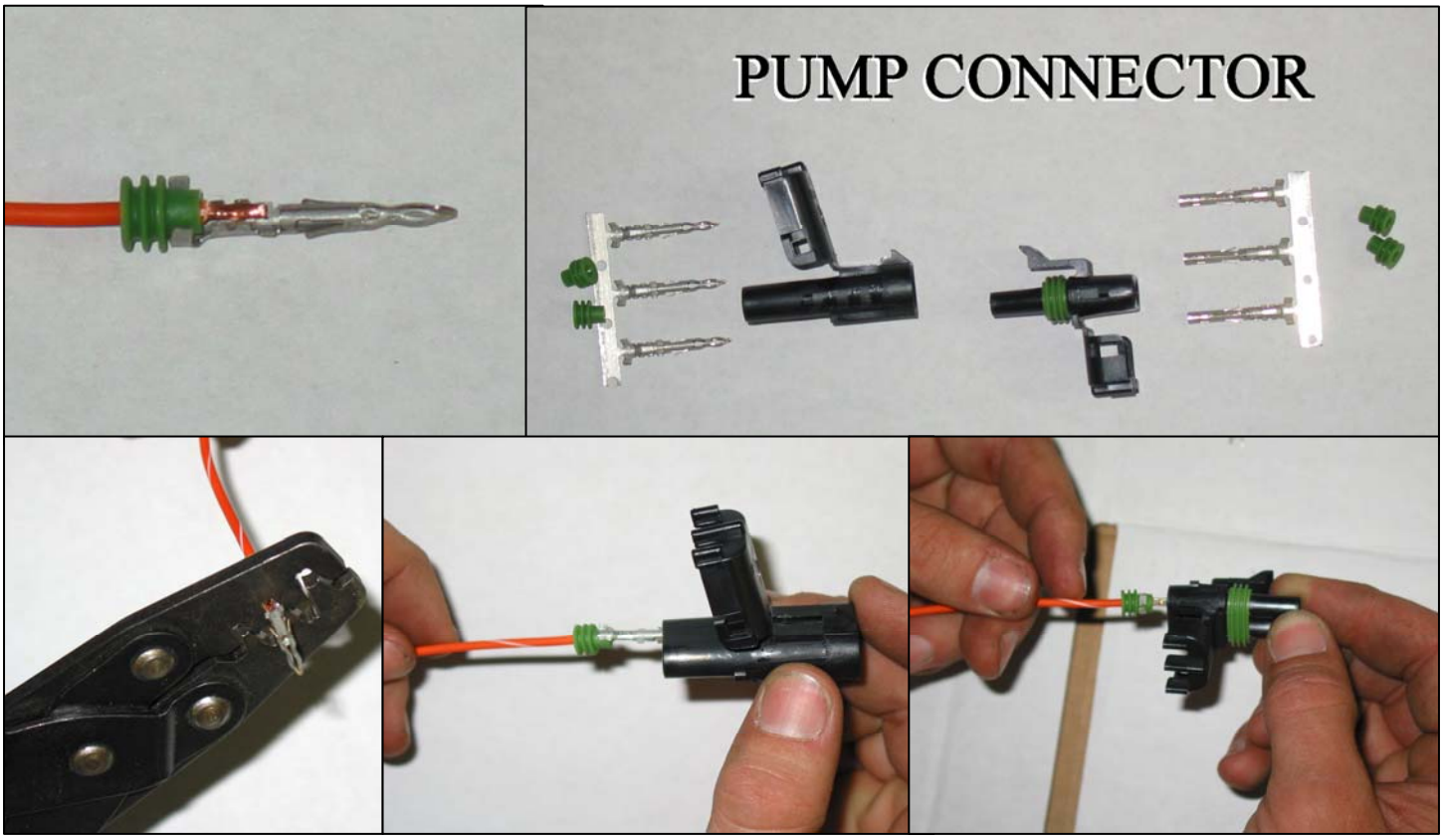
MAIN GND- This wire connects to a chassis ground source. Underneath the dash there are many good grounding points. You may use one of the already existing mounting bolts for this ground or use one of the supplied self tapping screws to create your own grounding point. Check this ground source with a volt meter to make sure you have a good one.

PUMP WIRES

Use the supplied two pin male and female connectors to connect these two wires to the pump. The terminals used for these connectors require the roll crimp style crimpers. See the picture on page 2. These crimpers are available at your local Radio Shack. You do not have to use these connectors to hook up your pump. You can use two of the supplied heat shrinkable butt connectors instead. If you ever want to uninstall this kit from the truck it is easier to unplug the connectors than to cut and re-splice the butt connectors.

PUMP 12V- This wire connects to the red wire on the pump.

PUMP GND- This wire connects to the black wire on the pump.

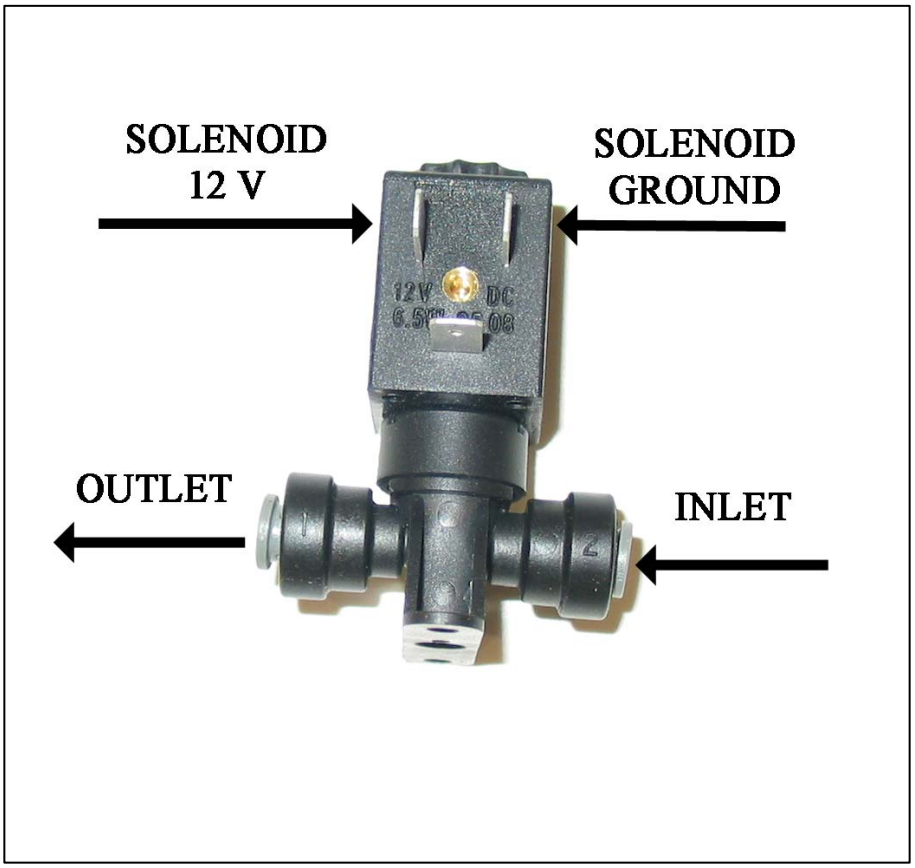


SOLENOID WIRES

You will notice the solenoid has three terminals on it. Connect the two following solenoid wires to either of the two vertical terminals on the solenoid using the supplied heat shrinkable female .250 spade terminals. Do not connect anything to the third horizontal terminal.

SOLENOID 12V- This wire connects to the solenoid on either of the terminal posts.

SOLENOID GND- This wire connects to the solenoid on either of the terminal posts.

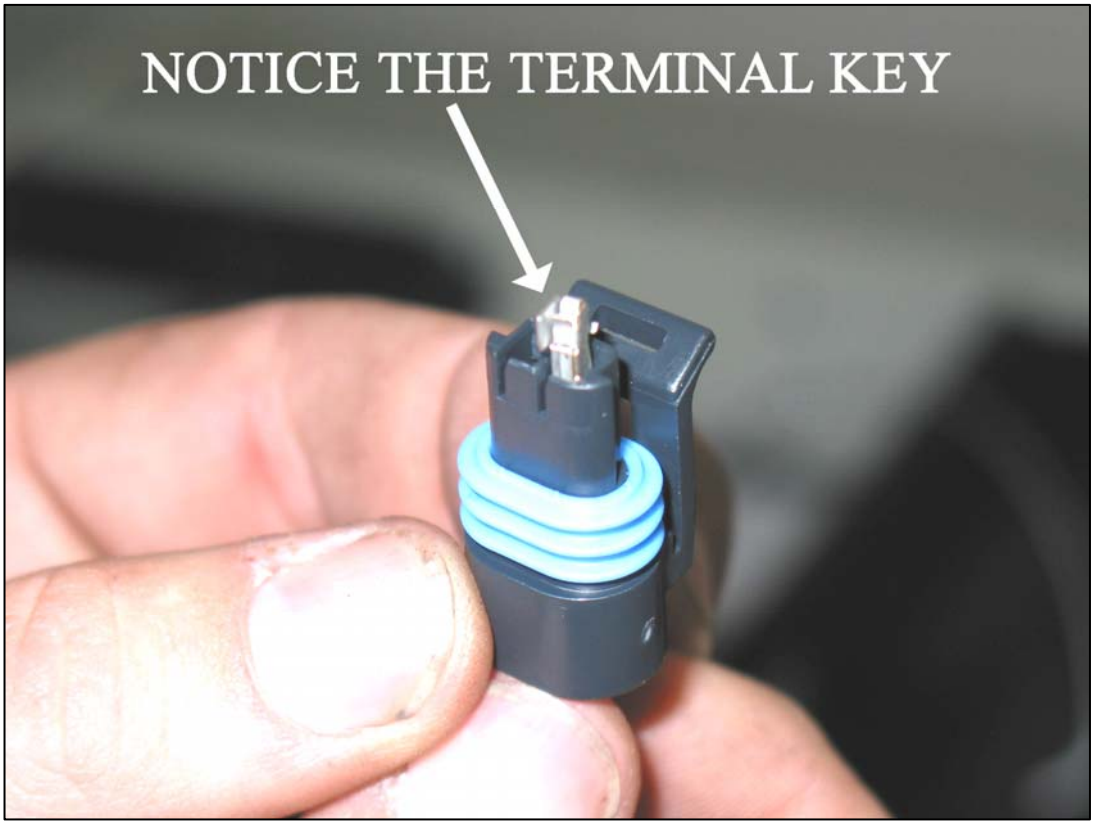


LEVEL SENSOR WIRES

The level sensor provided with this kit is already installed into the two quart tank. Also provided is the connector and terminals used to with this level sensor. Again, you will need the roll crimp style crimpers to crimp these terminals. **Push the wires through the connector first, then strip and crimp the terminals to the wires.** The terminals have keys on them that you will have to line up in order to pull the terminals into place in the connector. See the picture below for move explanation.

12V LVL SNS OUT- This wire connects to either terminal on the level sensor.

LVL SNS IN- This wire connects to either terminal on the level sensor.



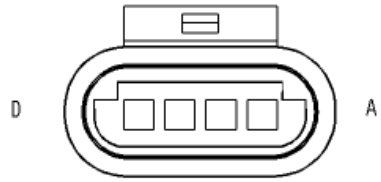
MAP SENSOR CONNECTIONS

Now you will need to run power, ground and a signal wire to the MAP sensor you added to your truck. Call Painless Performance at 800-423-9696 and they will send the connector you need at no charge. This is a pull to seat connector. Push the wires through the connector; crimp the terminal on the wire and then pull the terminal back into the connector.

Power- This is pin C on the MAP sensor connector. The 5 Volts needed for this wire can be sourced from pin 12 on the large, white Molex connector that plugs into the control module you mounted under the dash.

Ground- This is pin A on the MAP sensor connector. The ground needed for this wire can be sourced from pin 8 on the large wire Molex connector that plugs into the control module you mounted under the dash.

MAP Signal- This is pin D on the MAP sensor connector. Connect the wire labeled MAP SIGNAL on the main ColdShot harness to this pin.



SENSOR-TEMPERATURE/PRESSURE-MAP (DIESEL)

SENSOR-TEMPERATURE/PRESSURE-MAP (DIESEL) - 4 WAY

CAV	CIRCUIT	FUNCTION
A	K916 18BR/OR	SENSOR GROUND
B	K21 18DB/LG	INTAKE AIR TEMPERATURE SENSOR SIGNAL
C	F855 18PK/YL	5 VOLT SUPPLY
D	K37 18LB	BOOST PRESSURE SENSOR SIGNAL

Notice: When programming the Cold Shot module for your MAP sensor, use the 4 BAR setting.

DISPLAY A AND B CONNECTORS

Figure out where and how you want to mount the Cold Shot display. Plug the display A and B connectors together.

PANEL L.E.D. WIRES

You have the option of unplugging the display from the main control unit after you have programmed it. If you are doing this, we suggest you connect the included L.E.D. to the L.E.D wires on the harness and then mount the L.E.D. where you can see it. This serves as an injection indicator. The light will illuminate when you are injecting into you engine. Note: You will not have a low water indication if you unplug the display module from the control module. This L.E.D. shows injection event only. Connect the wires black to black and red to red.

Go to page 48 for instructions on how to program your Cold Shot injection system.

Cold Shot Component Installation Duramax:

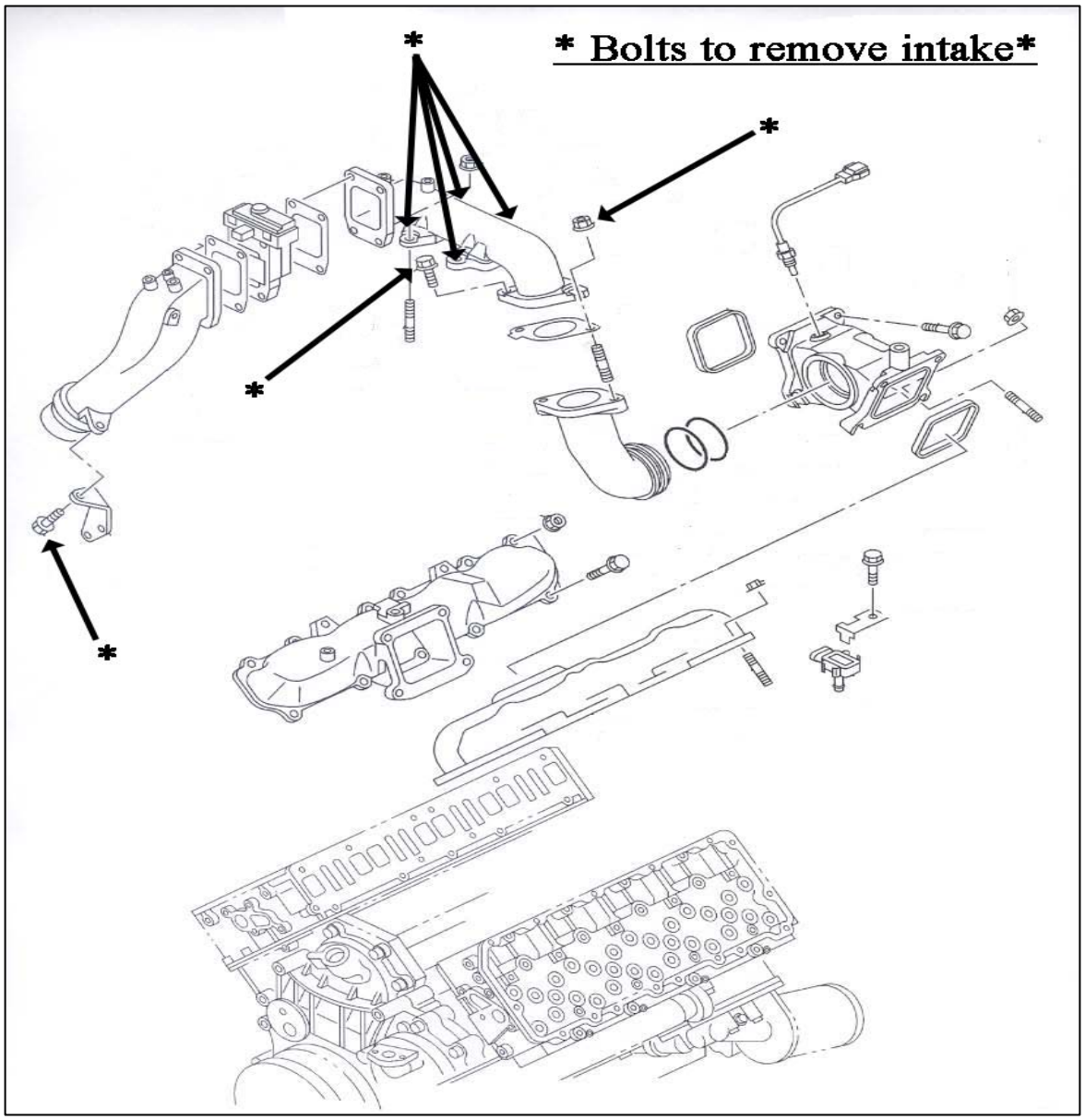
The vehicle featured for this Duramax section is a 2007 Chevrolet dually with an LBZ engine. Please thoroughly read these instructions before you begin any of the installation process. Make sure the ignition is off, the key out of the column and disconnect both batteries. See page three for a generic installation schematic.

Water/Methanol Pump

Thread the two 3/8" NPT – ¼" quick connect fittings into the pump. **Do not over tighten these fittings into the pump.** Mount this pump below and as close to the 2 quart reservoir as possible using four of the ¼"X20X2" bolts, nuts and washers. Make sure to mount the pump away from heat, moisture and road debris. It does not matter which way you mount the pump, it will pump at any angle. On this truck we mounted the pump underneath the bed. See picture below. Pay attention to the arrows on the pump housing. These arrows point in the direction the pump works. Route the ¼" tubing from the reservoir to the inlet of the pump. The route the ¼" tubing from the outlet of the pump to the solenoid. Always use a razor blade to cut the tubing straight and with no burs.

Nozzle Installation

Remove the cold air intake from the truck. Remove the air horn from the engine by loosening the clamp and the mounting bolt. Loosen and remove the boost tube connected from the intake manifold assembly to the intercooler. Unplug the intake air heater and the MAP sensor. Remove the bolts shown in the diagram below. Remove the intake manifold assembly.

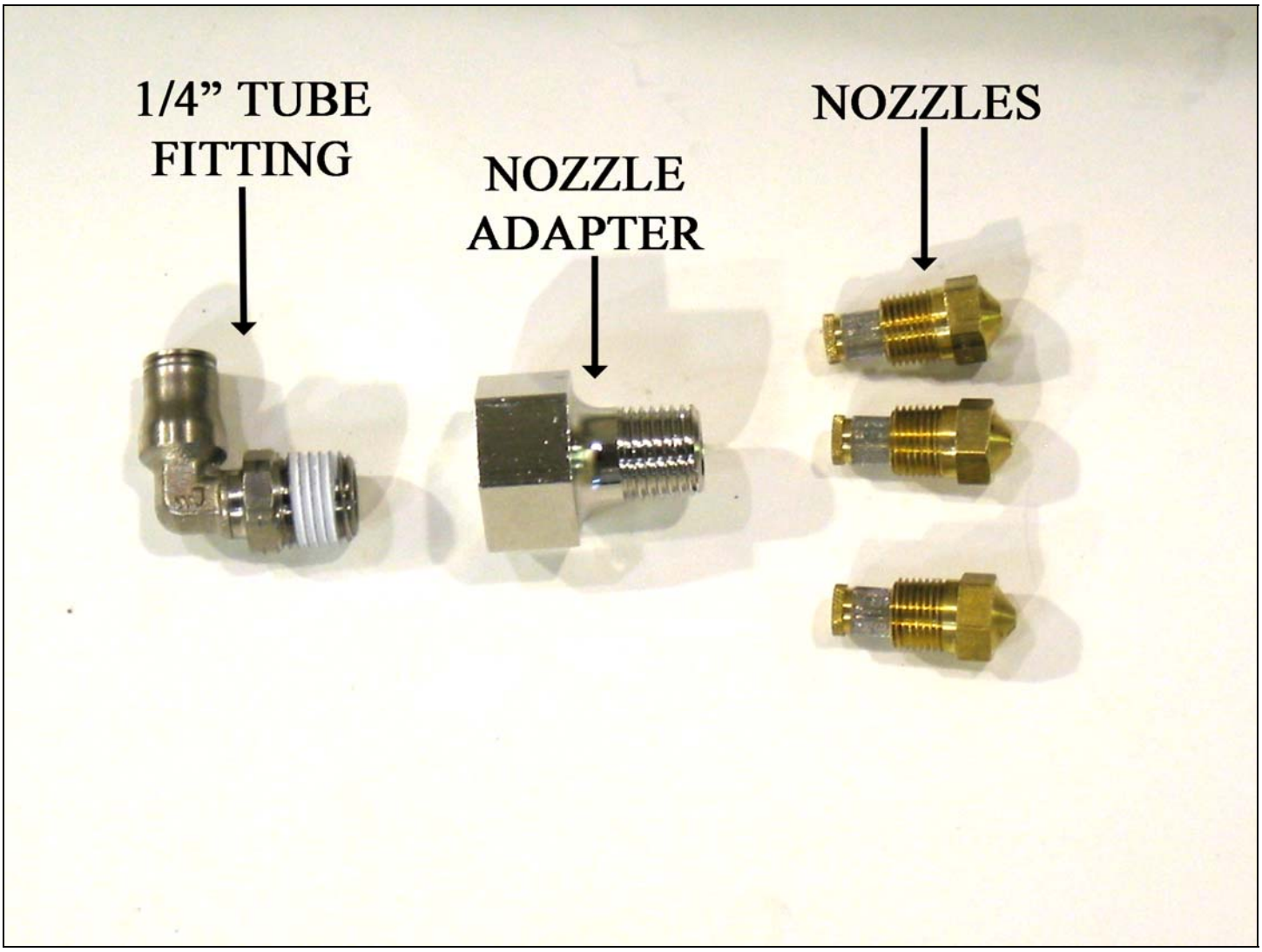


Mark where you want the nozzle installed and then drill the manifold with a 7/16" drill bit. Tap the manifold with a ¼"-18NPT tap. Remember that pipe thread is tapered. The further you run the tap in, the more the nozzle will protrude into the intake manifold. Pipe thread only needs 2.5 to 3.5 turns to seal properly.

You must now select the nozzle for your Cold Shot system. We have provided you three different nozzles. Each nozzle is stamped on the hex edge with a label. See below for the flow for each nozzle. **See page 67 for more info on nozzle sizing.**

NOZZLE	GALLONS PER HOUR
MW-C	6.4
MW-D	10.0
MW-E	14.5

After you select the nozzle, unscrew the filter screen from the back of the nozzle. Make sure the spray side of the nozzle is facing towards the floor when you do this because there is a pellet inside the nozzle housing that will fall out. Leave this pellet in the nozzle housing. Put a little blue Loctite on the threads of the filter screen and reinstall it into the nozzle housing.



There are two ways to install the nozzle, adapter and fitting into the intake manifold. Either install the nozzle adapter into the manifold first and then the nozzle into the adapter from inside the intake or install the nozzle into the nozzle adapter and then grind down the head of the nozzle so it will fit into the ¼”-18 NPT hole you tapped in the manifold. We suggest the first method if you have removed the intake manifold from the vehicle and the second if you have not. If you choose the second method, try to not grind all of the flat areas from the nozzle head. This will aide uninstalling the nozzle from the adapter if you choose to change the nozzle in the future. The picture below shows the nozzle, adapter and fitting assembled. Notice it is pictured with the nozzle head ground down so it will fit into the ¼”-18 NPT hole in the manifold. Use some Teflon tape to seal the threads of the nozzle into the adapter and the threads of the adapter into the intake manifold.

The picture to the right shows the nozzle ground down and threaded into the nozzle adapter.

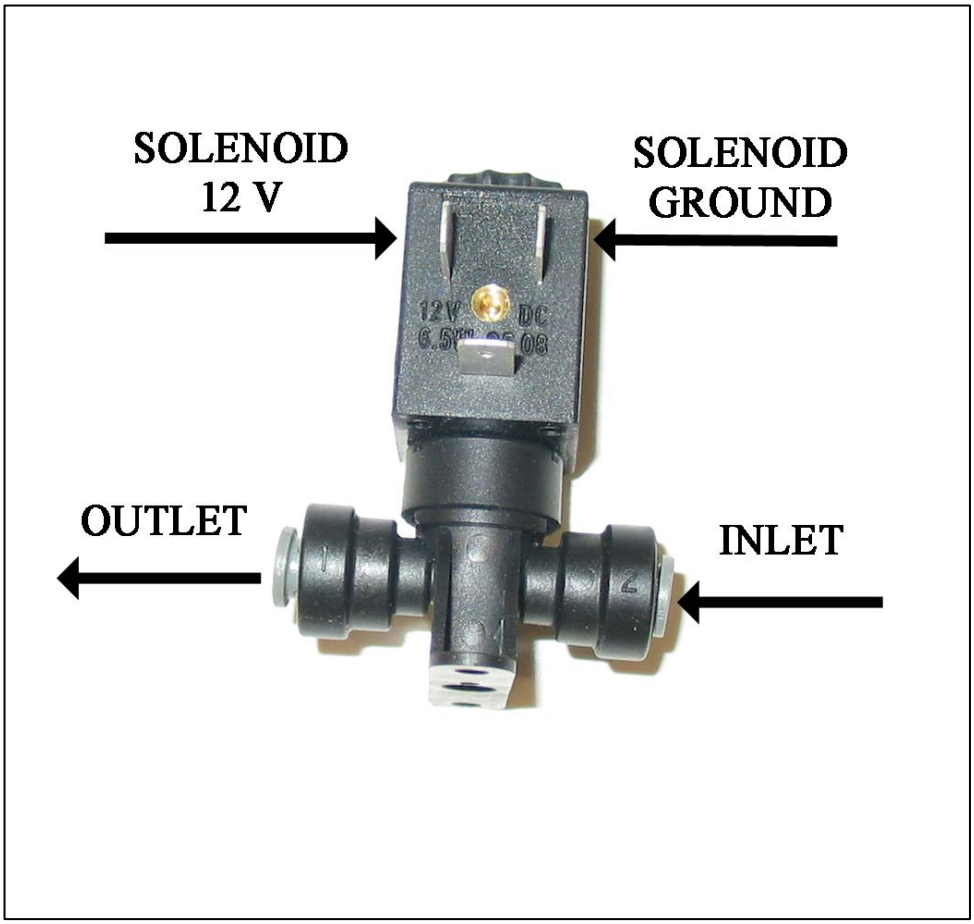
The picture to the right shows two nozzles installed into the intake manifold assembly. After you install the nozzle into the intake manifold assembly, reinstall the assembly onto the truck. Reinstall the air horn and cold air intake onto the truck.

V

INSTALLED NOZZLES

12 Volt Solenoid

Now mount the water/methanol solenoid. There is an in and out of this solenoid. Looking at the solenoid you will see on the ports a 2 and a 1. The 2 port is in and the 1 port is out. The 2 port comes from the pump. The 1 port goes to the nozzle. Keep in mind you will be pushing a ¼" tube into both ports of this solenoid. Leave room for these ¼" tubes. Mount the solenoid accordingly. The picture below shows the solenoid mounted underneath a support bracket. Cut a piece of the ¼" tubing to go between the outlet of the solenoid and the nozzle you installed into the intake manifold. Use a razor blade to make a straight clean cut.



2 Quart Reservoir

In the next step you will need to find a safe place to mount the 2 quart tank. We suggest you mount it in the engine compartment or in a tool box. We have supplied you with the needed mounting hardware but you will have to build your own bracket. If the tank is mounted in the engine compartment keep in mind you should mount it as far away from the engine as possible. The tank is made from a very durable HDPE plastic. Plastic will melt if it gets hot enough. Keep away from the engine, turbo and exhaust. Pictured to the bottom/right is an ideal mounting solution. This shows the tank inside a bed mounted tool box. Before you mount the tank, thread in one of the 90 degree quick connects fittings into the bottom of the tank.

Cold Shot Electrical Installation Duramax:

Ignition relay harness:

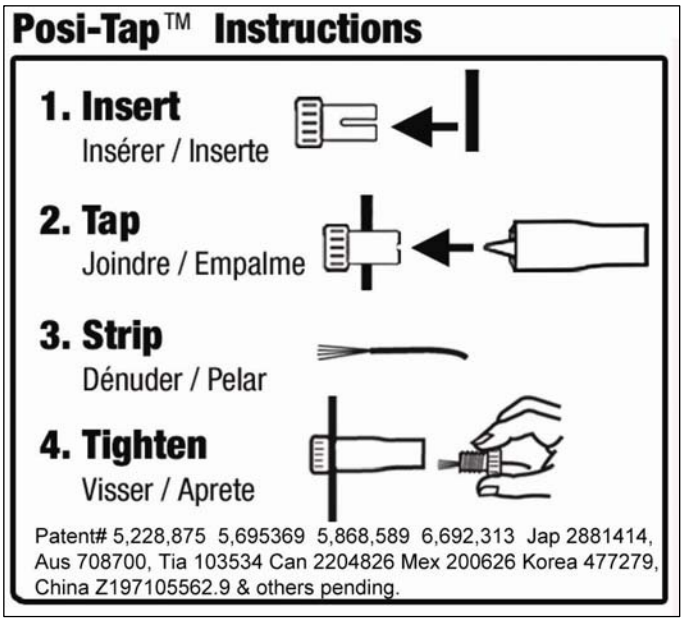
To the right is a picture of the ignition relay harness included in this kit. This relay will supply the 12 volts needed to power the module and all of its components. Mount the relay and fuse inside of the vehicle and run the wire labeled (battery +) out to the engine compartment.

First, mount the relay and fuse holder underneath the dash. You will need to remove the plastic panel from under the steering column. Use the supplied self tap screws to drill through and mount the relay to the metal support. Second, connect the wires as listed on the next page.

Battery +
Connect this wire using one of the supplied ring terminals to the battery power distribution point pictured to the right.

Ground
Connect this wire using one of the supplied ring terminals to a good ground.

Ignition 12V
Connect this wire to an ignition hot 12 volt wire. See the chart below for possible sources for this ignition hot. All wires listed are located underneath the steering column and come from the ignition switch connector wire bundle. Use one of the supplied Posi-Tap wire taps to do this. See the picture to the right for instructions on how to use this type of wire tap.



Ignition 12V wire chart

Engine Model	Model Year	Key-on Wire
Chevy/GMC Duramax Diesel	2001-2006	Brown

Relay Output
Connect this wire to the wire labeled as **Main 12V** on the Cold Shot harness. This is the power output wire from the relay harness and will supply key on 12 volts to the Cold Shot controller.

Cold Shot wire harness:

Mount the control module inside of the passenger area. The picture to the right shows where we mounted the module on our test vehicle. Use some Velcro strips to mount the module here or use two of the supplied self tapping screws to mount it somewhere else. **This module is not waterproof so mount it away from any sources of moisture.**

Included in this kit is the main wire harness for the Cold Shot water/methanol injection system. Plug the 12 pin connector into the Cold Shot control module after you have it mounted. All of the wires are labeled to assist your installation. Route these wires to the engine compartment; Pump 12V, Pump GND, Solenoid 12V, Solenoid GND, 12V LVL SNS OUT, LVL SNS IN, and MAP Signal.

Wire Connections:

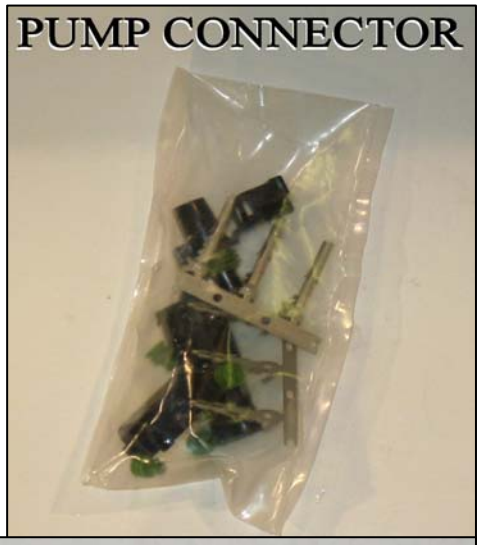
POWER AND GROUND

MAIN 12V- This wire connects to the butt splice on the wire labeled **To Main 12V** on the ignition relay harness.

MAIN GND- This wire connects to a chassis ground source. Underneath the dash there are many good grounding points. You may use one of the already existing mounting bolts for this ground or use one of the supplied self tapping screws to create your own grounding point. Check this ground source with a volt meter to make sure you have a good one.

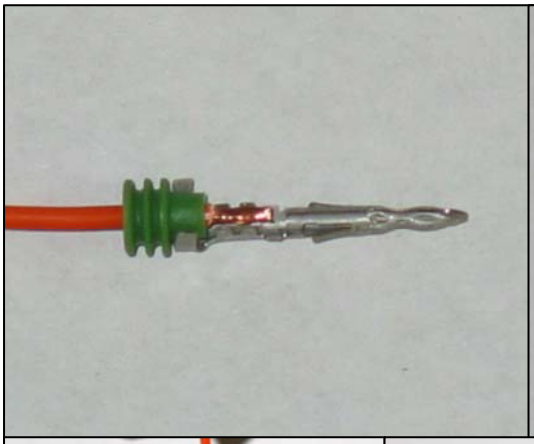
PUMP WIRES

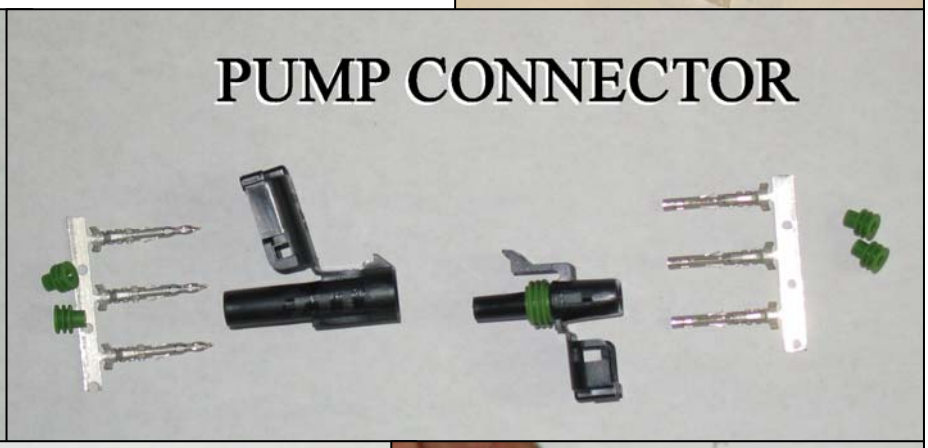
Use the supplied two pin male and female connectors to connect these two wires to the pump. The terminals used for these connectors require the roll crimp style crimpers. See the picture on page 2. These crimpers are available at your local Radio Shack. You do not have to use these connectors to hook up your pump. You can use two of the supplied heat shrinkable butt connectors instead. If you ever want to uninstall this kit from the truck it is easier to unplug the connectors than to cut and re-splice the butt connectors.

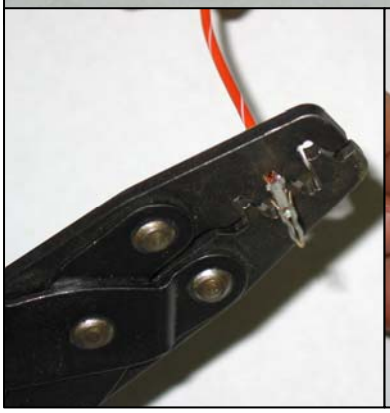


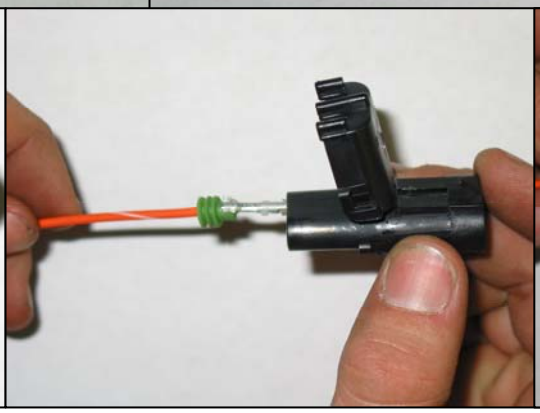
PUMP 12V- This wire connects to the red wire on the pump.

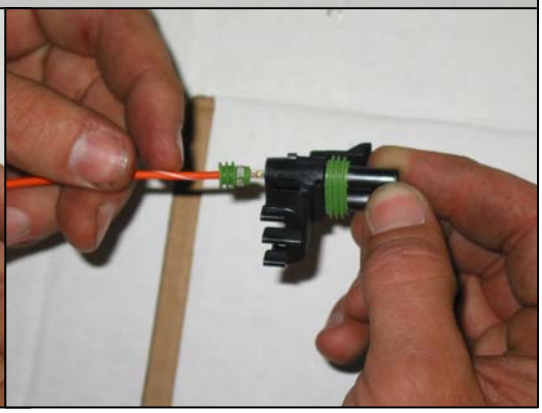
PUMP GND- This wire connects to the black wire on the pump.











SOLENOID WIRES

You will notice the solenoid has three terminals on it. Connect the two following solenoid wires to either of the two vertical terminals on the solenoid using the supplied heat shrinkable female .250 spade terminals. Do not connect anything to the third horizontal terminal.

SOLENOID 12V- This wire connects to the solenoid on either of the terminal posts.

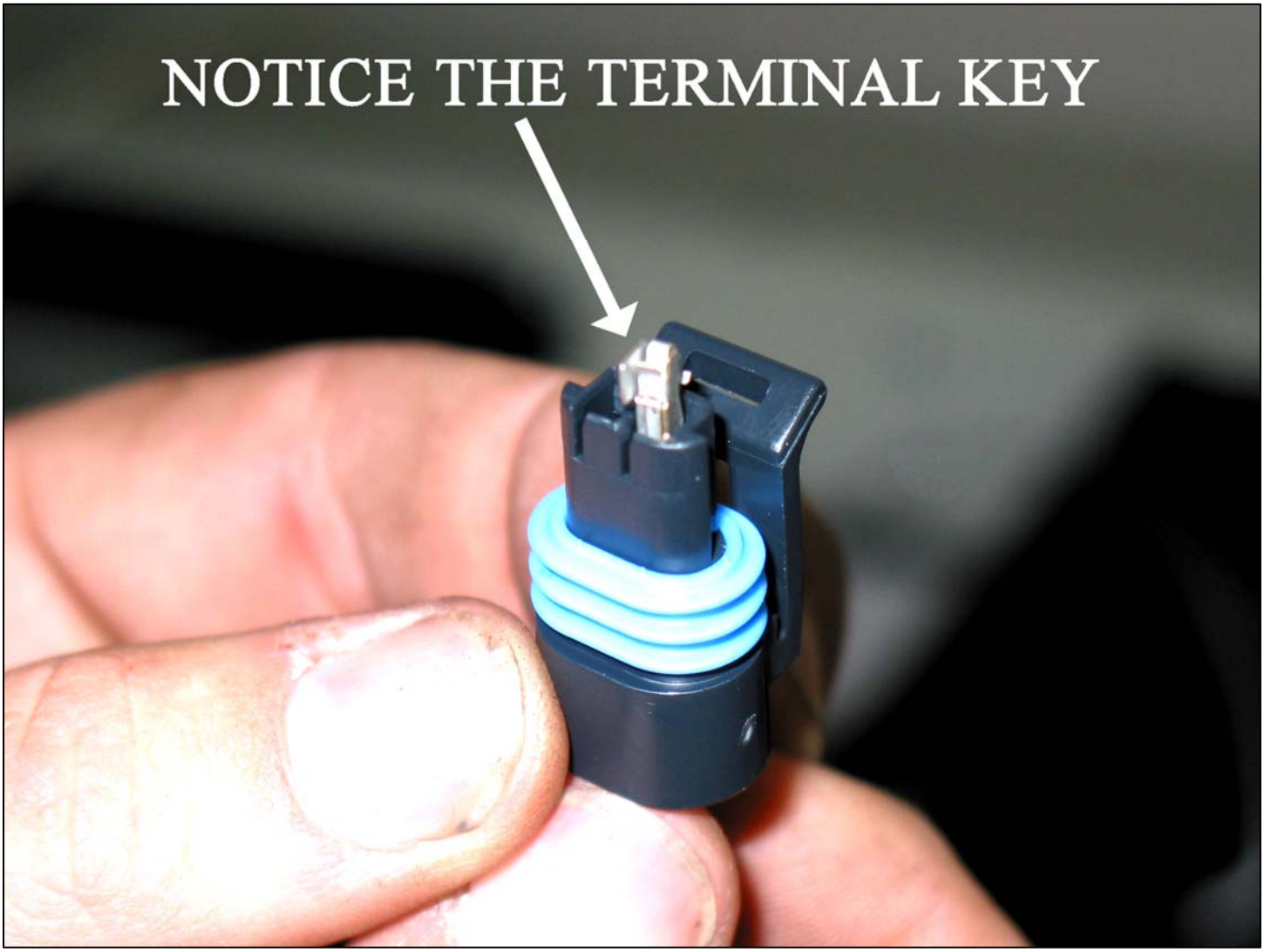
SOLENOID GND- This wire connects to the solenoid on either of the terminal posts.

LEVEL SENSOR WIRES

The level sensor provided with this kit is already installed into the two quart tank. Also provided is the connector and terminals used to with this level sensor. Again, you will need the roll crimp style crimpers to crimp these terminals. **Push the wires through the connector first, then strip and crimp the terminals to the wires.** The terminals have keys on them that you will have to line up in order to pull the terminals into place in the connector. See the picture below for move explanation.

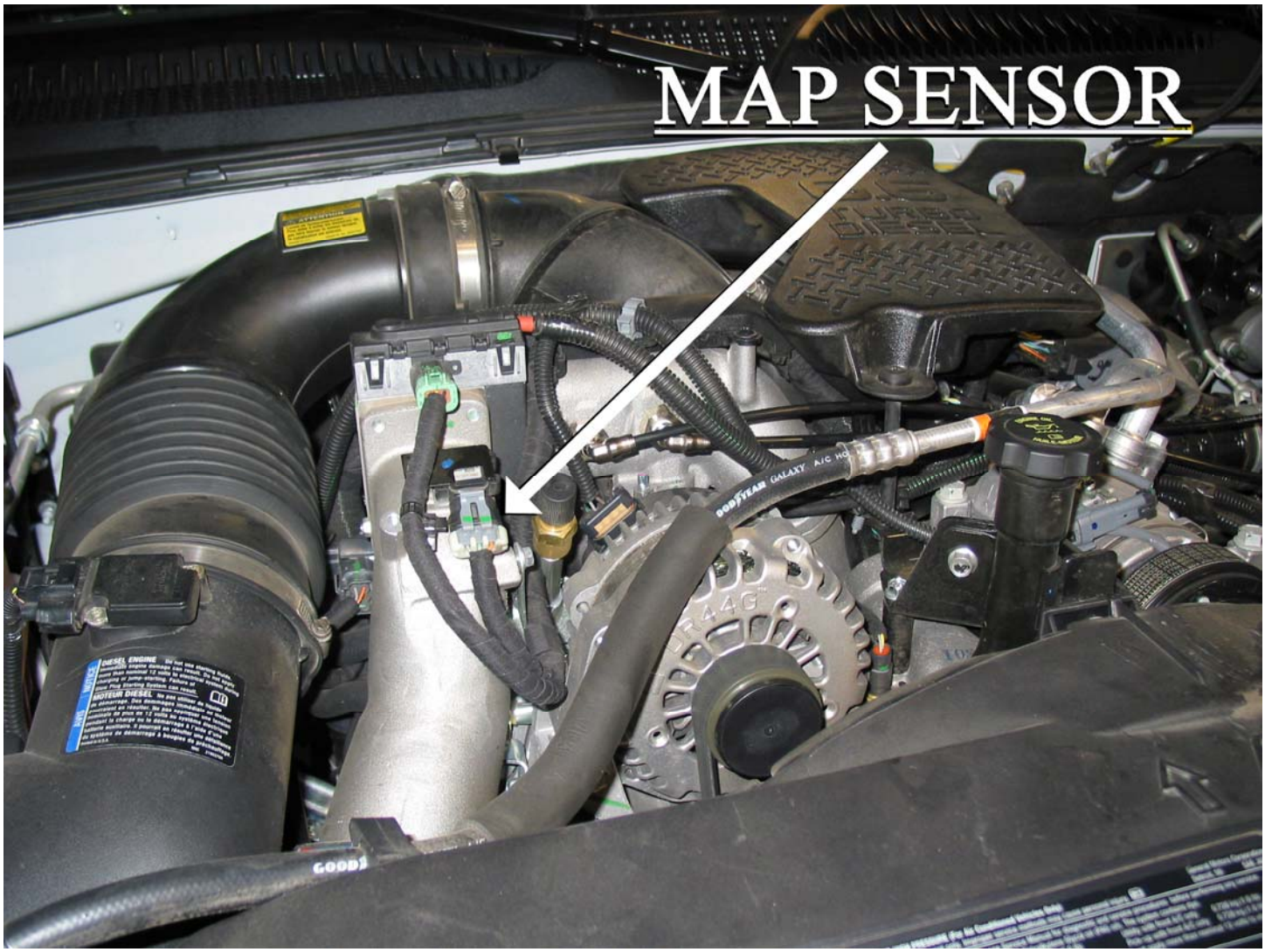
12V LVL SNS OUT- This wire connects to either terminal on the level sensor.

LVL SNS IN- This wire connects to either terminal on the level sensor.



MAP SENSOR WIRE

The Cold Shot injects water methanol according to MAP sensor signal. On the Duramax the MAP sensor signal wire is a Lt. Green and is located as the center pin of the three pin connector. Use one of the supplied Posi-Tap connectors to tap onto this the MAP SIGNAL wire from the Cold Shot harness. If you are running a plug in power module, make sure you tap onto the signal wire from the MAP sensor; not the power module.



Notice: When programming the Cold Shot module for your MAP sensor, use the 4 BAR setting.

DISPLAY A AND B CONNECTORS

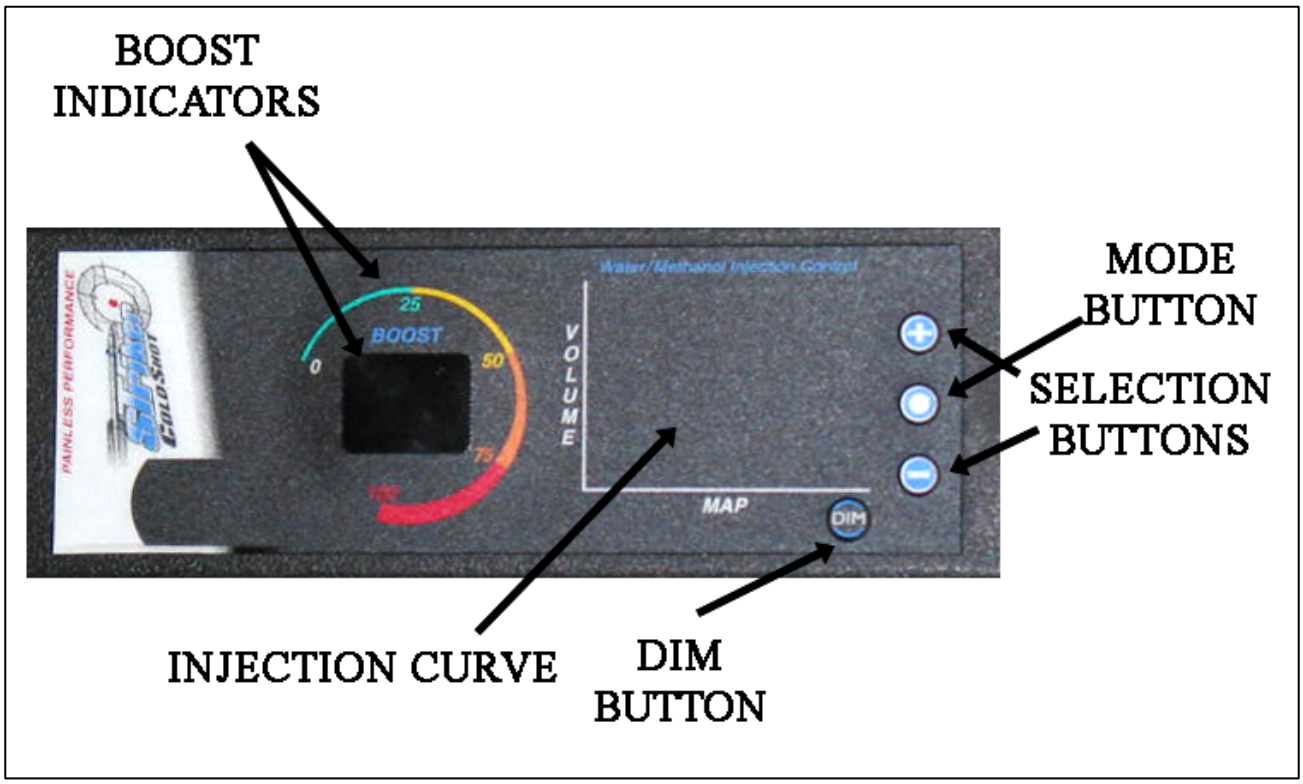
Figure out where and how you want to mount the Cold Shot display. Plug the display A and B connectors together.

PANEL L.E.D. WIRES

You have the option of unplugging the display from the main control unit after you have programmed it. If you are doing this, we suggest you connect the included L.E.D. to the L.E.D wires on the harness and then mount the L.E.D. where you can see it. This serves as an injection indicator. The light will illuminate when you are injecting into you engine. Note: You will not have a low water indication if you unplug the display module from the control module. This L.E.D. shows injection event only. Connect the wires black to black and red to red.

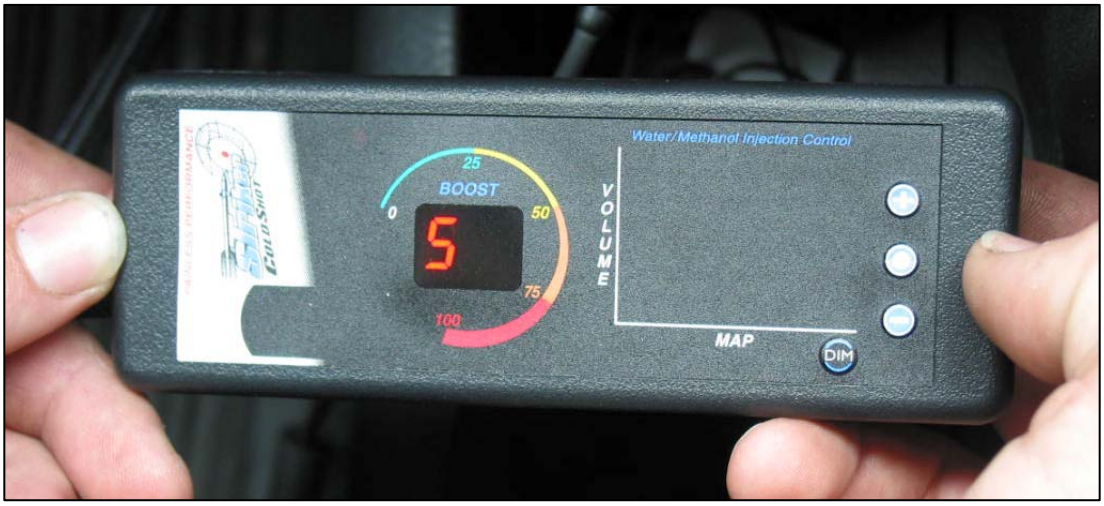
Module Operation:

The Striker Cold Shot water methanol system is a progressive controller. There are several steps to the initial programming of this module. Read through these steps before going to the next section.



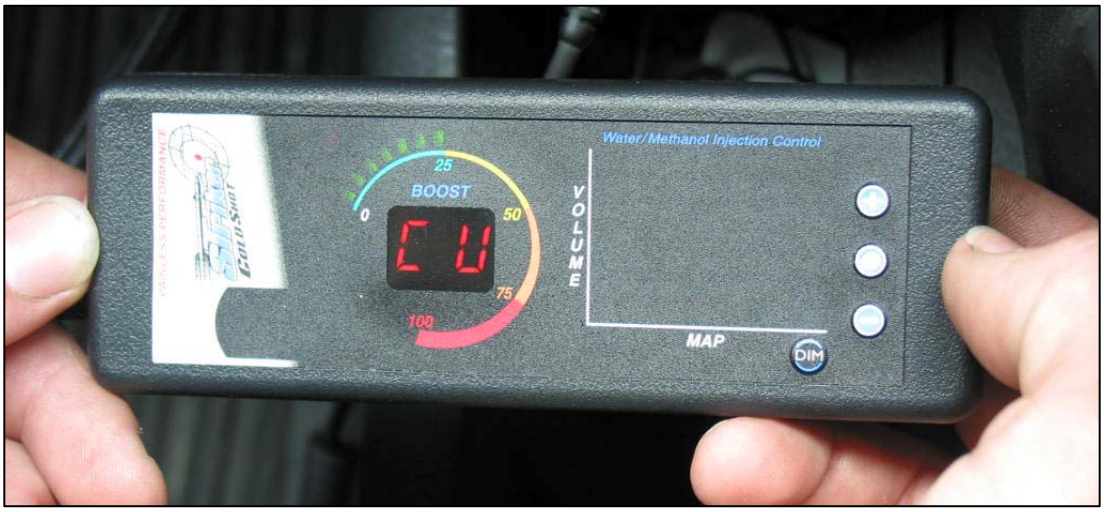
Modes of Operation:

START BOOST PRESSURE: Press the mode button once and the display will flash an (S) on the left side 7-segment LED. Use the (+) or (-) buttons to select the boost you wish the Cold Shot system to start injecting. A good **starting** point for this setting is half of your total boost pressure.



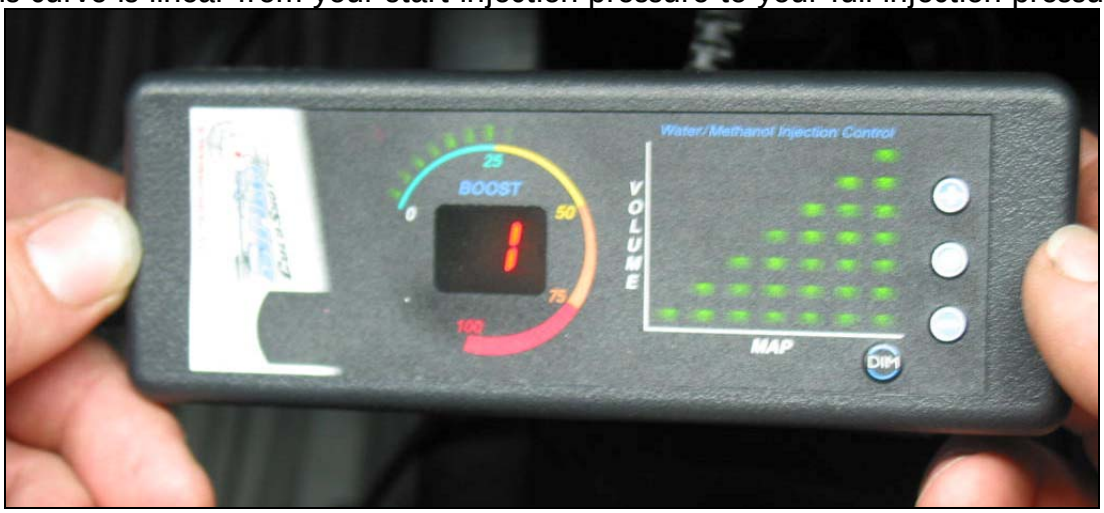
FULL BOOST PRESSURE: Press the mode button again the module will display an (F) on the left side 7-segment LED. Use the (+) or (-) buttons to select the boost you wish the Cold Shot to reach full injection at. A good starting point for this setting is your maximum boost pressure. You can always go back and change this setting.

INJECTION CURVE: Press the mode button again the module will display an (CU). This is the injection curve selection mode. There are four preset injection curves to choose from. The curves are based on turbo boost vs. injection volume. Use the (+) or (-) buttons to select the curve of your choice.



CURVE #1:

This curve is linear from your start injection pressure to your full injection pressure.

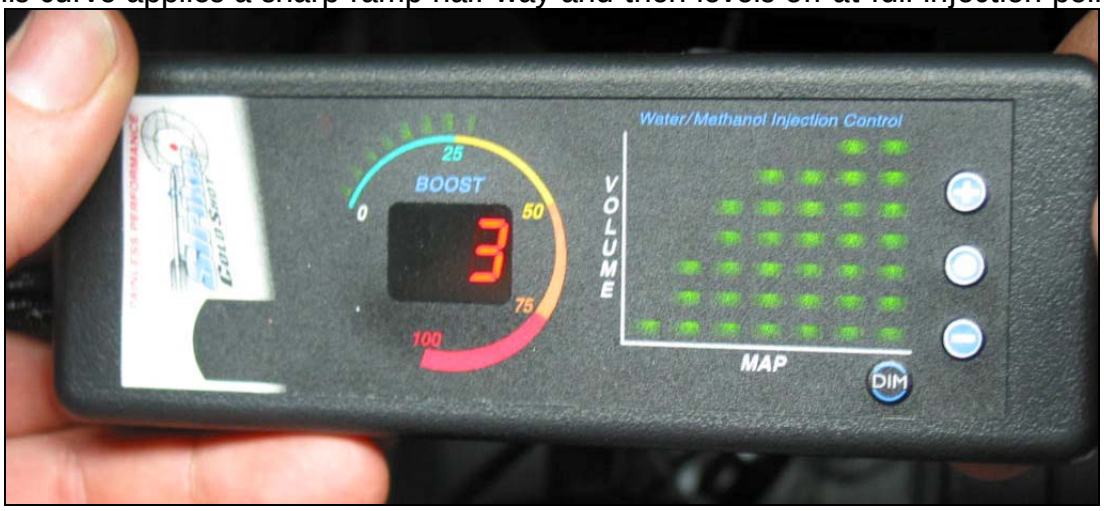


CURVE #2:

This curve starts the injection slow and then applies a sharp ramp towards the full injection point.

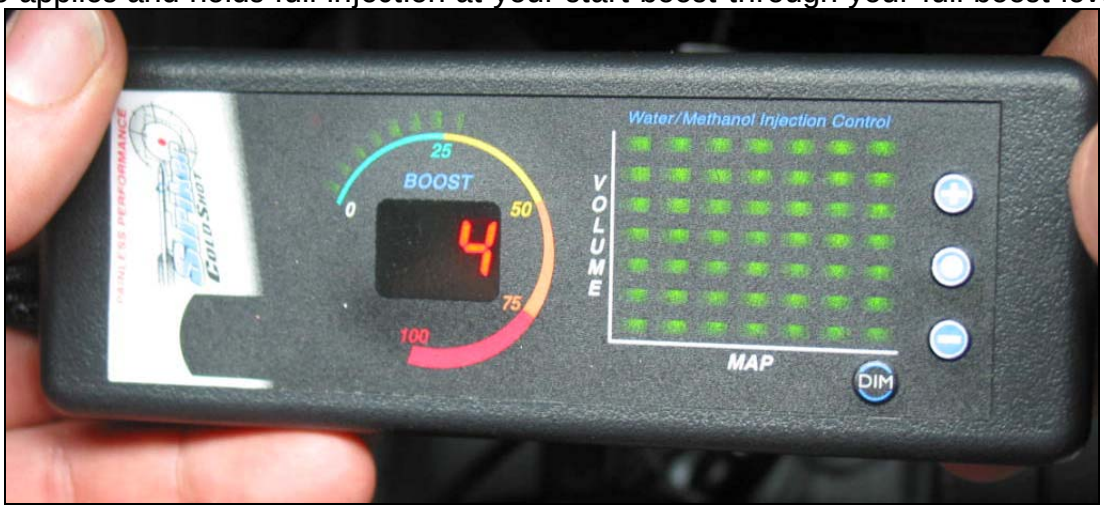
CURVE #3:

This curve applies a sharp ramp half way and then levels off at full injection point.

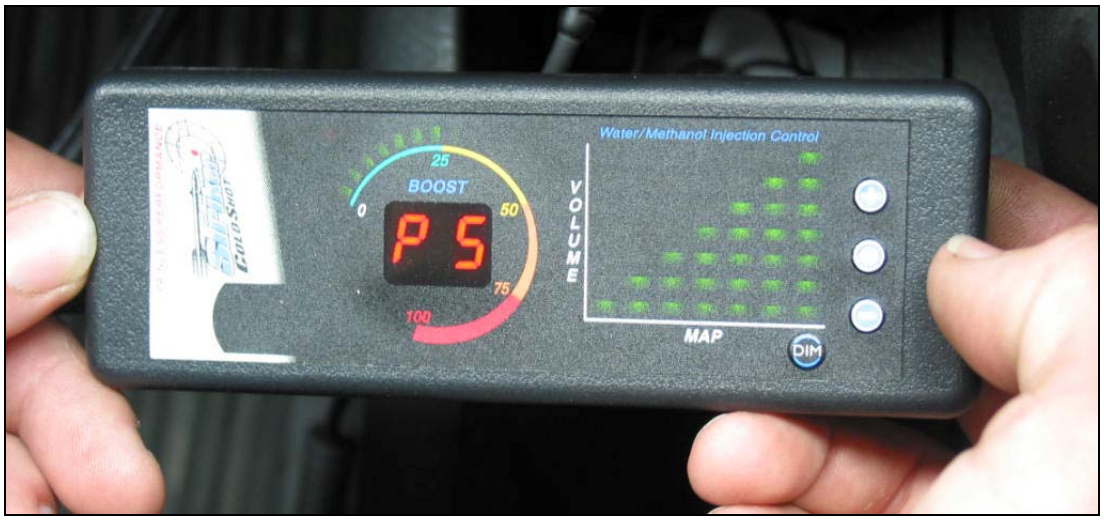


CURVE #4:

This curve applies and holds full injection at your start boost through your full boost level setting.



MAP SENSOR SELECTION: Press the mode button again and (PS) will show in the LED display. This mode allows you to select which BAR MAP sensor you are using. Use the (+) or (-) buttons to select the correct MAP sensor.



Press the mode button again and the module will cycle out of the setup mode and into injection mode. All settings can be changed at any time. If you need to change any setting, make sure you cycle back to the injection mode after the change is made. The injection mode will display your boost in the red LED display and your current injection event in the bar graph.

1- 0-5v Analog
2- 7.3 Ford (99-03 Powerstroke. 2.5 BAR)
3- 6.6 Duramax (2001-2001 4 BAR)
4- 5.9 Dodge Common Rail Cummins (2003-2007 4 BAR)
5- 6.0 Ford (2003-2007 3 BAR)
6- Aux GM Sensor (# 12223681 3 BAR)

Nozzle Sizing

We have provided you three different sizes of nozzles. The nozzles are rated at different gallons per hour. The more gallons per hour rating, the more water/methanol you will inject into your diesel engine.

MW-C Use this nozzle for a stock truck used mostly for easy driving.

MW-D Use this nozzle for a truck with a power adder on it or a truck towing midsized loads.

MW-E Use this nozzle for a truck with multiple power adders on it or for one used to tow heavy loads.

NOZZLE	GALLONS PER HOUR
MW-C	6.4
MW-D	10.0
MW-E	14.5

Water/Methanol Mix

It is up to you to decide what to inject your vehicle with. Here are some general guidelines.

1. The water/methanol mix can contain from 100% water up to 50% methanol. Don't use more than a 50% mix of methanol. Use distilled water for the water content of the water/methanol mix.

2. The best place to get water/methanol is from Painless Performance. Call our sales department at 888-350-6588 to order. Our WMD is premixed to 50% water and 50% Methanol (99.9% pure).

   65030- WMD 5 gallon jug 50/50 water/methanol distillate
   65031- WMD 4 one gallon jugs 50/50 water/methanol distillate

3. You can purchase denatured alcohol from your local hardware store. Denatured alcohol will work but the benefits won't be as noticeable.

4. Windshield washer fluid will work as an injection fluid. Many of these windshield washer fluids are around 20-40 percent methanol, with the rest of its makeup being water and soap. It is not recommended to use the brands that include soap in their contents.

5. Always keep the water/methanol mix in a sealed container. Methanol evaporates very quickly.

6. Mix and store the water and methanol in a clean container rated for methanol use.

Combustion Quench

If while driving the vehicle you experience the engine bucking, do the any of the following to remedy the problem. Combustion quench is caused by either too much fluid being injected or not enough air flow.

1. Start the injection at a higher boost level.
2. Change the injection curve to a less aggressive curve.
3. Use a smaller injection nozzle.

After Injection Run Time

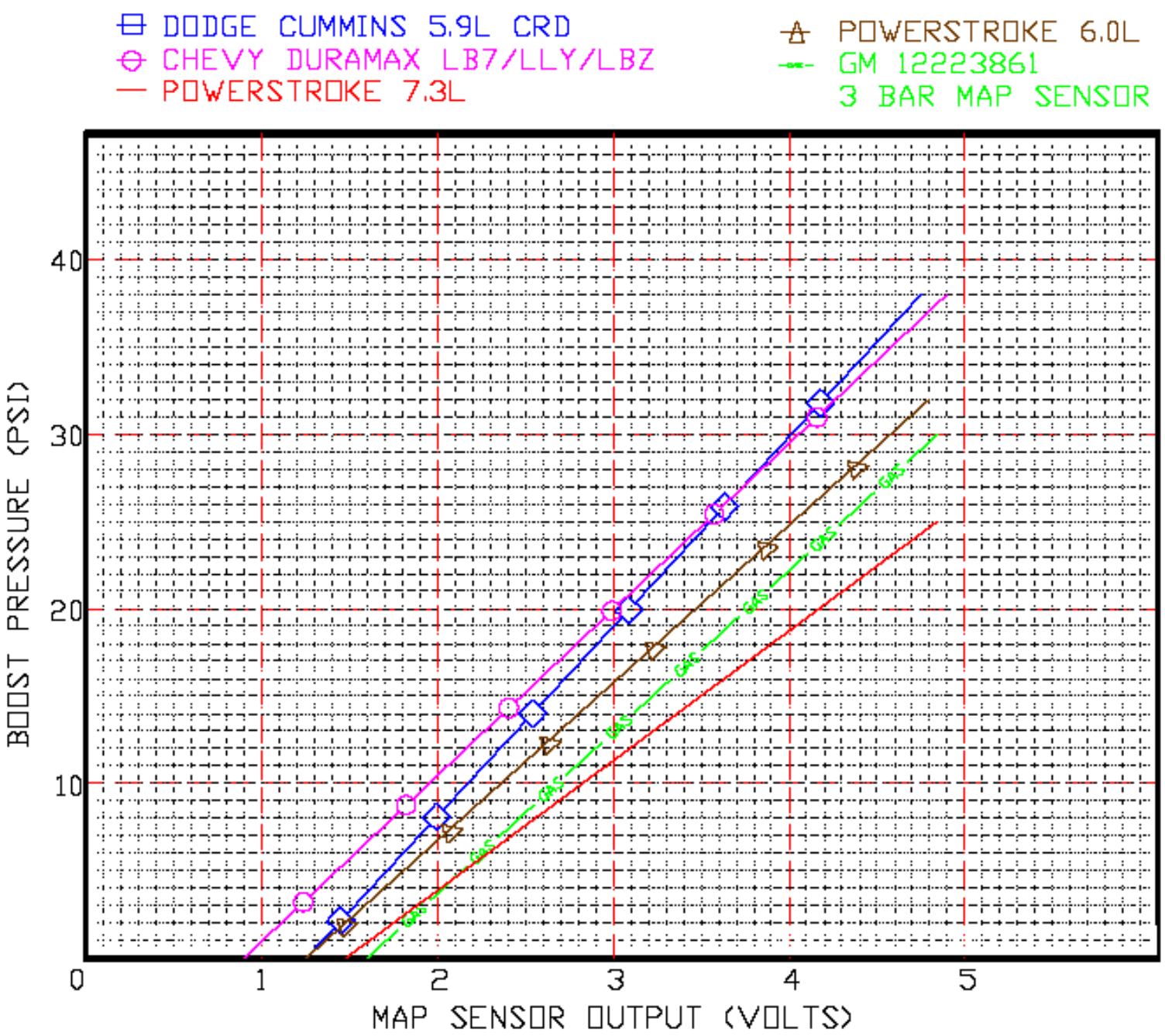
Always allow the engine to run for 4-5 minutes after injecting before you shut it off. This will eliminate any residual water/methanol in the intake. It is recommended to purchase and install a Painless Performance 64320 Striker Turbo Timer. This turbo timer automatically runs the engine for an additional 1-5 minutes after you pull the key from the ignition switch.

Initial Start-up:

Hook the vehicle's batteries back up. Plug the relay and fuse into the relay harness. Fill the tank with your choice of water or water/methanol mixture. After reading through the last section of programming the module, you are ready to test your installation. Turn the key to the vehicle to the on position. The module will power up. Cycle through the different settings and modify them as you see fit.

We advise that you do a test run after the module programming is setup. You don't have to do this, but it is recommended to make sure you are injecting fluid. Simply unhook the plastic line that comes from the pump up to the solenoid, at the solenoid, and push it up under the passenger wiper blade. Disconnect one of the spade terminals from the solenoid. Shut the hood and go drive the vehicle. When your truck reaches the start boost setting according to the boost display, you should see some fluid coming out of the plastic tube. This may take a few times to prime the pump and get all the air out of the lines.

When you see the fluid coming from the plastic line everything is working. Reconnect the plastic line and the spade connector to the solenoid. Double check all fittings for leaks. You are now injected!


DODGE CUMMINS 5.9L CRD
CHEVY DURAMAX LB7/LLY/LBZ
POWERSTROKE 7.3L
POWERSTROKE 6.0L
GM 12223861
3 BAR MAP SENSOR
BOOST PRESSURE (PSI)
0
10
20
30
40
1
2
3
4
5
MAP SENSOR OUTPUT (VOLTS)

Painless Performance Limited Warranty and Return Policy

Chassis harnesses, fuel injection harnesses and Striker ColdShot are covered under a lifetime warranty.

All other products manufactured and/or sold by Painless Performance are warranted to the original purchaser to be free from defects in material and workmanship under normal use. Painless Performance will repair or replace defective products without charge during the first 12 months from the purchase date. No products will be considered for warranty without a copy of the purchase receipt showing the sellers name, address, and date of purchase. You must return the product to the dealer you purchased it from to initiate warranty procedures.

Installation Notes: