Installation Manual v1.3:  
Water Boy - Stage 3  
All makes and models

Please read all instructions before installation.

Figure 1 – Water Boy Kit Contents

NOTE: Among other standard tools, you will need a 1/8"-27 NPT (National Pipe Thread) tap and a 21/64" drill bit to perform this installation.

Please read all instructions before starting. If installing this system for a customer, pass this manual along to them. There is a troubleshooting section at the end.

WARNING: The ATS Water Boy is designed for water injection to control Exhaust Gas Temperature (EGT). It is not to be used for water/methanol injection (mixtures of water with windshield washer fluid). Using
water/methanol, or any other mixture of water with combustible fluids, can harm your vehicle’s motor and the Water Boy components. Testing done by ATS Diesel showed that injecting water/methanol causes a dangerous spike in cylinder pressures. You can make more (and safer) power by adding fuel through more aggressive E-Power Tuning and/or ATS Injectors/Fuel Systems than you can by using water/methanol injection. The Water Boy can control the increased EGT that would result from adding fuel.

DO NOT USE WATER/METHANOL WITH THE ATS WATER BOY

How the Water Boy Works

This kit is designed to progressively inject three stages of water. When the system is armed with the power switch, the LED will be green. The first stage activates when the EGT probe senses a temperature above the setting chosen on the electronics box. A smaller "A" nozzle should be used for stage one if you are using more than one size nozzle. When stage one is active, the LED will be yellow. The second stage will activate when the EGT probe senses a temperature above the setting for level two, AND approximately 10 psi of boost or more (or 25 psi if the pink wire is not connected-See section below on Boost Level Setting). The LED will change to Orange when Stage 2 is active (during stage 2, the stage 1 nozzle will also be active). The third stage will activate when the EGT probe senses a temperature above the box setting AND the boost sensor measures approximately 15 psi (or 30-see Boost Level Setting section) of boost or more. During stage 3, all three nozzles will be active and the LED will be Red. When the tank is close to empty, the float switch will cut off supply power to the pump. This will be indicated by a typical flickering of the LED. This will stop pump “air-locking” which will help prevent the premature pump failure.

Boost Level Setting

In the Water Boy wiring harness, you will notice a purple wire. If you connect this wire to a good ground the boost settings will be approximately 10 psi for stage 2 and 15 psi for stage 3. If this wire is not connected the boost setting will be approximately 25 psi for stage 2 and 30 psi for stage 3. The harness is assembled at ATS with the purple wire connected to ground. If the higher boost levels are desired, then cut the purple wire. Choose the boost settings to suit your vehicle’s performance. If the vehicle produces less than 35 psi of boost, then use the lower settings.

Adjusting the Water Boy

The EGT settings at which each stage will activate can be adjusted to dial in the Water Boy response to fit your needs and driving style. There are three small Phillips head screws on the electronics board. Turning the screw counterclockwise will increase the temperature. Adjust the screws so that they will activate progressively (stage one will be the lowest of the three temperatures).
Four nozzles are included with the kit, 1 "A" nozzle (smaller) and 3 "B" nozzles (larger). ATS recommends installing an "A" nozzle for Stage 1 and "B" nozzles for Stages 2 and 3. If more cooling is required from Stage 1, replace the "A" nozzle with a "B" nozzle. If more cooling is required after adding the “B” nozzle and adjusting the 3 stages with the EGT settings, you can get "C" and "D" nozzles from ATS, however these are used on highly modified vehicles and require precise EGT settings. Using 3 "B" nozzles with proper EGT settings will effectively cool most applications.

**NOTE:** Solder and shrink-wrap all electrical connections (especially for all connections made outside of the cab) for the most reliable results.

**NOTE:** When making the push-in connections with the 3/8" and 1/4" plastic line, push the line in firmly and make sure the plastic line is pushed in all of the way (it will go in approximately 1/2" to 3/4" into the fitting).

**NOTE:** Before drilling or installing self tapping screws, check both sides of the work piece to check that no other vehicle systems are damaged during installation.

**Installation:**

1. Please make sure no parts are missing from ATS Stage 3 WaterBoy Kit. A complete corresponding list of parts can be found on page 11. Each bag in Figure 1 represents a different subassembly.

2. Disconnect the (-) negative terminal from the battery(s).

3. Mount the Water Boy electronics box in a convenient location in the engine compartment using the supplied hardware. Try mounting it such that the adjustment screws can be accessed with a screwdriver.

4. Drill a 21/64" hole in the exhaust manifold and tap it to 1/8" x 27 NPT (National Pipe Thread). ATS recommends removing the exhaust manifold to do this. Drilling and threading can cause small metal chips to fall into the manifold. If left inside, the chips can cause serious damage to your turbocharger and exhaust. Make sure manifold is free of chips prior to reinstallation.

5. Install the 1/8" NPT fitting supplied with the pyrometer probe.

6. Install the pyrometer probe into the NPT fitting.

7. Connect the Pyrometer 2-pin male socket to the corresponding electronics box socket and connect the **White** wire ring terminal to a suitable ground.

8. Plug the 8-pin socket of the supplied wiring harness into the electronics box.
9. Find a suitable/visible location to mount the L.E.D. such as the dash or a gauge pillar.

10. Drill a hole just large enough to fit the plastic sleeve through and push the LED through to secure it. A 1/4" drill bit will work best.

11. Find a suitable location for the supplied power switch and install it. The switch requires a 13/16” hole to mount properly.

12. Feed the four-wire group (Red, Black, Yellow, Blue) extending from the Water Boy harness through a rubber grommet in the firewall into the cab.

13. Connect the Red wire of the four-wire group to the center terminal of the switch with a spade connector. The wire should be labeled; “To Middle Terminal Switch”.

14. Connect the remaining three wires of the four-wire group to the L.E.D. color for color.

15. Connect the supplied Black wire to the brass-colored terminal of the switch with the spade connector. Connect the other end of the black wire to a good ground under the dash.

16. Connect the supplied Pink wire to the remaining switch terminal and attach it to a 12V source under the dash that is only energized when the key is turned on. Use a voltmeter to find a suitable wire.

17. At a convenient location under the dash, cut the Pink wire connected to the switch and splice in the supplied in-line fuse holder. Use the supplied 15A fuse.

18. Find suitable locations for both the pump and tank. Depending on the size of the tank and the vehicle make, a spot under the hood might be hard to find. If the tank cannot be mounted in the engine compartment, mount the tank in the bed and the pump on the frame rail. Mount the tank above the pump so that gravity will feed the pump (this will help eliminate "air-locking" of the pump). If the tank will be mounted in the bed, mount it on the same side as the intake manifold (Cummins- Driver’s side, Duramax- Passenger’s side). This will make it easier to route the 3/8” plastic line.
Figure 2 - Tank mounted in front-passenger side corner of bed and pump mounted below on a support (Duramax)

19. Attach the **Black** wire from the pump to a chassis ground.

20. Extending from the Water Boy harness, a red wire labeled, “**TO PUMP-RED 12V**” extends from Relay 1. Connect this **Red** wire to the **Red** wire on the pump.

21. Mount the solenoid and relay assembly as near as practical to the intake manifold using supplied hardware.

22. Connect the **Yellow** wire from Relay 2 labeled “**TO 15A FUSE BATTERY**” to the positive terminal on the battery. Cut the **Yellow** wire and splice in the supplied fuse holder in a convenient location. Use the holder provided and a **15A** fuse.

23. Connect the **Yellow** wire from Relay 1 labeled “**TO 30A FUSE BATTERY**” to the positive terminal on the battery. Cut the **Yellow** wire and splice in the supplied fuse holder in a convenient location. Use the holder provided and the **30A** fuse.

24. Connect the group of **Black** wires to a good ground using the attached ring terminal.

**Note:** If you have a Dodge with an ATS Arc-Flow, it is pre-tapped for the nozzles and boost line fitting. Skip steps 25, 26, 27 but you must follow step 30 regarding the boost line.

25. Remove the Intake manifold from the vehicle. Make sure to block or cover intercooler pipe and engine to prevent debris from entering while the intake system is apart. Debris, small or large, can severely damage the engine.

26. Drill three (3) 21/64" holes in the manifold in positions that are properly spaced. Keep in mind that the nozzles and the supply lines will extend out from the manifold a good distance. **Place the manifold on the engine to "mock-up" the nozzles. Make sure you have clearance before drilling.**
27. Tap the holes to 1/8" x 27 NPT

28. Install the 1/8" NPT push in fittings on the end of the water nozzles. Use thread sealing tape, or equivalent.

29. Install the nozzles, noting the size and position. Use thread sealing tape or equivalent on the nozzle threads.

30. The Water Boy electronics require a boost signal. If your truck already has a boost line that uses a soft 1/8" line that is compatible with the supplied 1/8" barbed connectors, then splice the existing line. Connect the supplied tubing from the “T” to the boost port on the Water Boy electronics.

If your truck does not have a soft 1/8" boost line then remove, drill and tap the manifold using the 21/64" drill bit and 1/8" NPT tap. Make sure there is clearance for the fitting before drilling. Connect the supplied tubing from the fitting to the electronics board. The Arc-Flow intake manifold is pre-tapped for the boost line fitting. Simply remove the plug and install the fitting and skip step 31.
31. **Clean out all shavings and debris from the intake manifold.** Reinstall the manifold on to the engine (do not forget to remove the items, rags or tape, that were used to block off the intercooler pipe and engine to keep debris out).

32. Using the supplied 1/4" plastic line, connect the solenoids to the nozzles (make sure the stage one solenoid connects to a smaller nozzle if you are using multiple sizes). The solenoids are labeled “1”, “2” and “3”.

**NOTE:** Do not route water lines near exhaust components or other sources of extreme heat under the vehicle. Intense heat can reduce the burst pressure of the lines which can lead to system failure.

33. Run 3/8" line from the solenoid block to the pump.

34. Run a short piece of 3/8" line from the pump to the water filter supplied with the kit. Make sure the flow arrow on filter points towards pump. Mount the filter in a visible area so it is easy to check and clean in the future.

35. Run 3/8" line from the filter to the tank.

36. With the tank in place and 3/8" lines installed, route the **Red** harness wires labeled “To Tank” along the 3/8" lines. Do this until they reach the leads extending from the bottom of the switch in the bottom of the tank.

**Note:** If updating kit that is previously installed it will be necessary to slightly modify the old wiring harness. Do the following ONLY if updating a kit. Harness colors may vary depending which version of the WaterBoy kit is installed. Make sure WaterBoy system switch is OFF before modifying harness. It will be necessary to cut the wire leading from the middle terminal on the power switch to the relay. This is typically a **RED** wire. It is best to cut this wire near the relay inside the loom that houses the L.E.D. wiring (see Figure 5). Extend both ends of the cut power wire to the tank using the supplied connectors and heat shrink. Connect the extended wires to the float switch leads using the supplied connectors and heat shrink. Refer to the wiring diagram for further help.
Figure 5 - Cutoff Switch Wire Splice

37. Trim excess wire and enough loom to cover the switch wires.

38. Use supplied butt connectors, solder and heat shrink to wire in switch.

39. Fill the tank, check for leaks.

40. Reconnect the battery(s).

41. Test-drive the vehicle with the system armed. The LED will be green when armed, yellow during stage 1, orange during stage 2, and red during stage 3.

42. In a safe place, drive the vehicle such that EGT’s are produced to activate all three Water Boy stages. Check for leaks, and adjust the EGT settings on the electronics box to tune performance.
* When the purple wire is grounded, Stage 2 boost = 10 psi Stage 3 boost = 15 psi
When the purple wire is NOT grounded, Stage 2 boost = 25 psi Stage 3 boost = 30 psi
Troubleshooting the Water Boy

The LED will not change from green and no stages are activating despite the EGT reaching the setting for stage 1

The electronics box is not receiving the EGT signal. Make sure the pyrometer wires are securely attached to the electronics board and that they are in the proper ports. If the problem persists, double-check the wire connections that go to the electronics board.

The LED goes through all stages, but it is not injecting water

Make sure the tank is mounted above the pump to help eliminate air-locking of the system. Check to make sure the pump is properly grounded and that the wiring is correct. Check the fuse that is inline with the relay’s yellow wire. Check the filter housing to see if it is clogged. If so, remove element, rinse until clean and replace.

The system goes to stage 1, but will not go to stage 2 or 3

Stages 2 and 3 are boost dependent. The electronics box must see approximately 10 psi and the set EGT level to activate stage 2, and approximately 15 psi and the set EGT level to activate stage 3. If your vehicle is meeting both boost and EGT requirements and still not activating, check to make sure both ends of the boost line are securely attached and that the line is not kinked.

The LED won’t come on when the power is turned on

Check the black wire coming from the LED, is it properly grounded? Check the fuse that is in line with the electronic box’s red wire. Check the fluid level in the tank as this can be an indication it is empty.
The LED and pump turn on and off

Check the fluid level in the tank. This can be an indication the tank is out of fluid. Check all electrical connections to ensure good contacts.

The LED never changes from green, otherwise the system performs as expected.

Check the LED connections. A replacement LED may be required.

Have Any Questions?

Thank you for purchasing the Water Boy Stage 3 System. Please check our website at http://www.atsdiesel.com for technical support and other performance products such as the 5-Star™ torque converter, ATS High Performance Valve Body and ATS High Performance Transmission along with our full line of power enhancers. Please call or e-mail our Technical Service Department, 8:00am to 5:30pm Mountain Standard Time, Monday through Friday.

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We strive to make our instructions as clear and complete as possible. To achieve this, our instructions are under constant construction. We encourage you to visit our Technical Support Website (http://www.atsdiesel.com/ATSWebsite/Technical.asp) to check for the most up-to-date manuals and diagrams as well as other information. If you have any suggestions as to how we can improve this installation manual, let us know at mailto:Suggestions@ATSDiesel.com.
Bill of Materials

1. Wiring Harness
   - (1) Solenoid Stack 3923-04-B232
   - (1) Mounting Bracket
   - (6) Solenoid Mounting Screws 90380A191
   - (3) 1/4" Push-in - 1/8" NPT Fitting PC1/4-N1UT
   - (1) 3/8" Push-in - 1/8" NPT Fitting PC3/8-N1U
   - (1) 1/8" NPT Plug 50785K918
   - (2) 8-3/8 Mount Screws 90061
   - (2) 8-3/8 Nylock Nuts 321
   - (4) Self Tap Screw 84931D
   - (1) Self Tap Screw 84930D
   - (1) L.E.D. Bezel 67-1332-ND
   - (1) Wiring Kit 1000-102-011

2. Pump Assembly
   - (1) Pump (pre-adjusted) 8030-813-239
   - (2) 3/8" Push-In to 3/8" NPT Fitting A6MC6-MG
   - (4) Self Tap Screw 85241D
   - (1) Self Tap Screw 84930D
   - (1) 16-14 Ring Connector 35776

3. Reservoir Tank Assembly
   - (1) Tank/Cap 070316AE
   - (1) 3/8" Push-In to 3/8" NPT Fitting A6MC6-MG
   - (6) Washer 88445
   - (6) Self Tap Screw 2539D
   - (1) Float Switch 50195K73

4. (5') 1/4" O.D. Boost Line 1J-203-10
5. (20') 3/8" Polyurethane Tube PW0756100
6. (10') 1/4" Polyurethane Tube PW0754100
7. (1) 3/8" Push-In to 3/8" Push-In Filter 8698T12
8. Pyrometer Probe 015-193-072
9. Electronic Control Box
   - (5) Self Tap Screw 84927D
   - (1) Electronic Control Box

10. Boost Line Fittings
    - (3) Green Hose Clamp HC-4ST G
    - (2) Black Hose Clamp CSC316
    - (2) 1/8" NPT to 3/16" Barbed Fitting 96855
    - (3) 1/8" NPT to 1/8" Barbed Fitting 50523
    - (1) 1/8" Brass "Tee" 5325
11. Dual Fuse Bundle
   - (2) 16-14 Non-Insulated Butt Connector
   - (1) 30A ATM Fuse ATM30
   - (1) 15A ATM Fuse ATM15
   - (2 pieces) 3/16" Heat Shrink Tubing HSR316
   - (1) 12-10 Ring Connector
   - (2) ATM Fuse Holder

12. Switch Bundle
   - (3) 16-14 Non-Insulated Butt Connector
   - (1) Self Tap Screw 84930D
   - (3 pieces) 3/16" Heat Shrink Tubing HSR316
   - (1) ATM Fuse Holder ATMFH12
   - (1) 15A ATM Fuse ATM15
   - (1) Switch
   - (3) Female Blade Connectors 86061
   - (4') 18 AWG Wire Black GPT-18-00
   - (4') 18 AWG Wire Pink GPT-18-11
   - (1) 16-14 Ring Terminal 25262

13. Nozzle Bundle
   - (3) Nozzle “B”
   - (1) Nozzle “A”
   - (3) 1/4" PushLok® to 1/8" NPTF Fitting PCF1/4-N1U

14. Wire Extension Kit
   - (12’) 14 AWG Wire Red GPT-14-02
   - (5) 16-14 Non-Insulated Butt Connector
   - (5 pieces) 3/16” Heat Shrink Tubing HSR316
   - (1 piece) Rosin Core Solder 96332

Not Pictured:

15. Instruction Folder
   - (1) Purple ATS Folder
   - (1) Instruction Manual
   - (2) ATS Stickers