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## Work Instruction: Using The Arctic Fox T-1000 Coolant Dam Pressure Tester In Servicing Cummins ISX After-Treatment-Injector (ATI)

### Caution:

**Before beginning any service it is recommended that you allow the engine to cool as there is potential for injury from hot coolant and contact with hot exhaust components. Please familiarize yourself with these instructions while you're waiting.**

1. Using industry accepted lock-out-tag out procedures and guide lines; secure vehicle and protect your own self by wearing safety glasses.
2. In addition to the T-1000 Coolant Dam, and the correct adapter you must have the coolant line plugs that are part of Arctic Fox kit PN **KT-T1000-CUMMINS-ISX-ATI**. You will need 2 of the \*PN 4918690\* for some ISX engines or 1 \*PN 4918690\* and 1 \*PN 3089567\* for the other ISX engines. *\*also available from Cummins\**
3. **If you do not have these plugs, then DO NOT attempt to use the T-1000 Coolant Dam to service the ATI.**
4. Remove the pressure cap from the coolant expansion/reservoir tank. Thread the correct Coolant Dam adapter on tight enough to produce a seal between the adapter's seal and lip of the expansion/reservoir tank. *Hand-tighten only.*
5. Connect the 36" extension hose PN A-6622 to the adapter, **but not yet to Coolant Dam.**
6. Stretch, the discharge hose PN A-536, remove kinks, to a receptacle such as a clean 5 gallon pail with a lid. Provide two- 1" holes in the cover, one for the discharge hose and one for venting.
7. Before connecting the air supply to the **Coolant Dam**; make sure that the valve on the right (red) is closed and the valve on the left (blue) is fully open. ***Your compressor must be capable of producing an inexhaustible constant flow of 120 psi at the tool through a minimum of a 3/8" ID hose.***
8. Next, to connect the extension hose to the **Coolant Dam** and hang it with the provided PN A-483 hanger high and fully extending the A-6622 extension above adapter. **Warning: the hanger may scratch the paint so hang the tool so as not to cause cosmetic damage.**
9. Open the valve on the right (red) to the full open position and you should observe approximately 10" of vacuum or more. If you can't pull a vacuum in excess of 5" you must first find the leak. Proceed to step 13, checking for leaks.
10. With the system now in full vacuum, loosen the top coolant line to the ATI at both ends. Remove and plug the line at the ATI, PN 4918690 or remove line/fitting and install PN 3089567 plug in the block.
11. Remove the bottom coolant line from the ATI and plug it with PN 4918690.
12. Shut off the air supply to the **Coolant Dam** by closing the valve on the right (red), leaving the valve on the left (blue) open, and remove the adapter from the expansion/reservoir tank. Consult your Cummins training material for the ATI service. After servicing the ATI, you must reinstall the adapter and put the system back into a vacuum before removing plugs and reinstalling coolant hoses in reverse order (bottom one first).



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### 13. Checking for leaks (using the *Coolant Dam* as a coolant system pressure checker):

**Caution: know your system cap relief pressure, never exceed system cap pressure and wear approved PPD before proceeding.**

14. Verify that you have the correct adapter and install it so that the seal has made contact with the lip, and tighten  $\frac{1}{4}$  to  $\frac{1}{2}$  turn beyond that. *Note: a small amount of coolant applied to the seal before installation will improve its function and you will gain the desired seal by hand tightening only.*
15. With the valve on the right (red) closed and the valve on the left (blue) open you now connect your air supply and then connect the ***Coolant Dam*** to the adapter.
16. Close the valve on the left (blue) and verify the ***Coolant Dam*** connections are secure.
17. Note: that the valve on the left (blue) will quickly allow any pressure to escape when not fully closed and being sealed. *Opening this valve evacuates the pressure.*
18. Gradually open the valve on the right to 5 psi, of observed pressure on the gauge and then close valve on the right (red). **Caution: Never exceed relief cap pressure.** System should hold at 5 psi if there are no leaks present. If system will not hold 5 psi of observed pressure, then gradually open the valve on the right (red) again to 5 psi, leave it open at 5 psi, and go find the leak.
19. If you suspect the adapter seal is leaking, or the locking radiator cap on top of the ***Coolant Dam*** is leaking, or any tool connection is leaking, then a soapy water spray will confirm or deny your suspicion very quickly. If you cannot find an external leak and repair it so that the system will hold pressure, then you cannot use the T-1000 ***Coolant Dam*** to service the ATI. Consult with your Cummins engine dealer for repairs.

### **Caution:**

**When using this tool as a systems pressure testing device you must always have your PPD in place and before removing any connection you must evacuate the system by opening the valve on the left (blue) and closing the valve on the right (red).**

*Using the Coolant Dam in servicing the ATI is a labor and shop time saving tool. The coolant will not have to be drained, refilled, drained, and refilled as is happening now when the Coolant Dam is not used. We at Arctic Fox LLC still recommend that after you complete the servicing of the ATI, that you follow the Cummins ISX engine procedures for purging air from the coolant system before putting the engine under load.*

For complete operating instructions, radiator adapter list, and part schematics for the T-1000 ***Coolant Dam***, please reference instruction sheet B-459 which is included in T-1000 kit.