



High Pressure Fuel Air Separator  
with Positive Fuel Air Separation System

## INSTALLATION MANUAL

For Champ Fuel Line Kit  
Part No. FLK-CHP



PLEASE READ  
THESE INSTRUCTIONS  
THOROUGHLY  
BEFORE BEGINNING  
INSTALLATION



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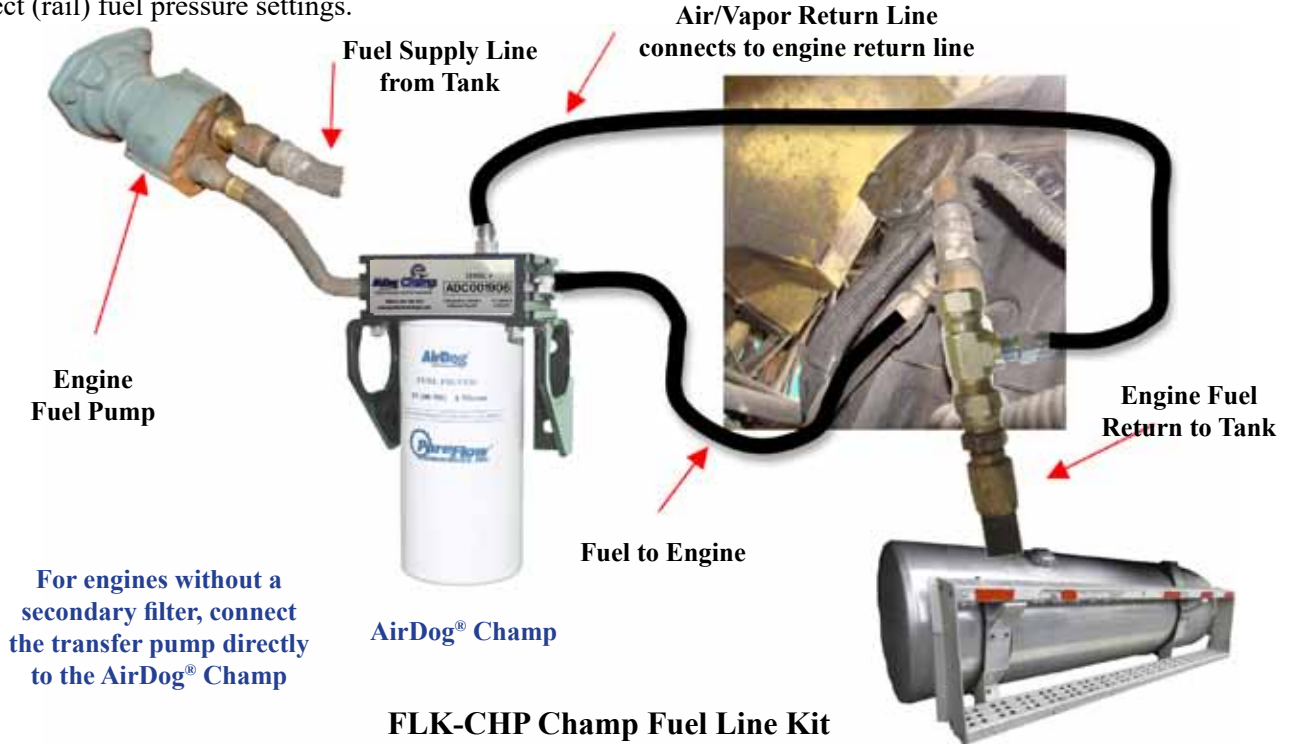
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**INSTALLATION OVERVIEW**

The AirDog® Champ with ADVANCED FUEL AIR SEPARATION is a premium fuel air separator adaptable to most diesel engine applications.

The AirDog® Champ is installed between the engine transfer pump or secondary fuel filter and the engine fuel rail, to remove virtually all entrained air and vapor from the fuel flow to the engine. Additionally, the engine rail pressure must be set correctly to completely fill the injector barrel. Please consult your engine specifications for correct (rail) fuel pressure settings.



**FLK-CHP Champ Fuel Line Kit**

This kit contains the components most commonly needed when installing the AirDog® Champ™ frame-mount air separation system, using #8 fittings and supply lines. This kit includes 8 ft of ½” Eaton Weather-head general purpose high-pressure fuel line, to be cut into two pieces: one piece for the fuel supply running from the transfer pump, or secondary filter head/housing, if so equipped, and into the Champ; the second piece for the supply running out of the Champ™ to the head or fuel rail. Also included in the kit is 7 ft of 3/8” low-pressure hose, and (2) #6 push-lock hose barb x JIC swivel fittings, for the air and vapor return line.

1	#8 Fuel Line (8 ft Section)	4C-1-08-08-8FT	
1	3/8” Low Pressure Hose (7ft Section)	4C-1-02-05-010-7FT	
2	#6F JICX x 3/8 Push-lock Hose Barb	4A-1-09-06-06-B	
1	#6M JIC x #6F JICX 90° Swivel Nut Elbow	4A-2-04-06-06-S	
2	13/32 ID Hose F JICX x 1/2 Tube Hose End 90° Elbow	4A-2-13-08-08-S	
2	13/32 ID Hose F JICX x 1/2 Tube Hose End Fitting	4A-1-13-08-08-S	
1	#8M JIC x #8F JICX 90° Swivel Nut Elbow	4A-2-04-08-08-S	
15	12” Zip Tie	5H-2-1-12	

Fuel Supply Line Assembly

- 1) Mount the Champ™ to the frame, per the instructions included with the Champ™ system.
- 2) Install the JIC fittings into the Champ™ “FUEL IN” and “FUEL OUT” ports, per the instructions.
- 3) Measure and cut the length of the #8 high-pressure fuel line required to connect the transfer pump or secondary fuel filter “OUT” port to the “FUEL IN” port on the Champ™.
- 4) Determine if you require a straight, or 90° elbow, swivel fitting at each end of this fuel supply line.
- 5) Install the outside collar of the swivel fitting onto one end of the cut #8 high-pressure fuel line.



Use a small amount of oil on the outside of the hose to simplify this installation. Note that the outside collar is reverse (left-hand) threaded; use a 15/16” wrench and be sure to install the collar until bottomed out completely, turning counter-clockwise then back out 1/4 turn.



- 6) Secure the outside collar with 1/2” fuel line in a bench vise.



- 7) Install the male threaded swivel end into the female outside collar with 1/2” fuel line. Use a small amount of oil on the end of the male piece. Using a 5/8” wrench, thread the pieces completely together, so that the male threaded end fully seats into the hose and collar, leaving 1/32 clearance between the swivel nut and the socket.




- 8) REPEAT Steps 4-7 above for the opposite end of this line.

- 9) Measure and cut the length of the #8 high-pressure fuel line required to connect the “FUEL OUT” port on the Champ™ to the fuel inlet on the ENGINE.
- 10) REPEAT Steps 4-8 above for each end of this line.




AIR AND VAPOR RETURN LINE ASSEMBLY

- 1) Install the #6 return fitting in the Champ™ “AIR RETURN” port, per the instructions, included with your Champ™ system.
- 2) Measure and cut the required length of 3/8” return line to connect the Champ™ air and vapor return to the fuel return, per the instructions included with your Champ™ system.
- 3) Route and connect the new air and vapor return line from the Champ™ to the fuel return, per the instructions included with your Champ™ system.



**Assembly Instruction for Hose Barb**

1. Cut hose line to length.
2. Apply oil to fitting.
3. Push fitting into line until seated.



Properly tighten all fuel line connections and fuel fittings. Secure all the fuel lines with included zip ties to prevent chafing.



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