

# Smoking Airplanes LLC

Smoke System Kits And VCAS™

(Visual Collision Avoidance System)

661-713-9050

## EXTERNAL FILL KIT

**⚠ READ ALL OF THESE INSTRUCTIONS INCLUDING PRODUCT LIABILITY - DISCLAIMERS, LIMITATION OF LIABILITY AND INDEMNIFICATION BEFORE ASSEMBLING OR USING THIS KIT. FAILURE TO FOLLOW ALL INSTRUCTIONS MAY RESULT SERIOUS INJURY OR DEATH!**

**⚠ WARNING: THE WARNINGS, CAUTIONS, AND INSTRUCTIONS DISCUSSED IN THIS INSTRUCTION MANUAL CANNOT COVER ALL POSSIBLE CONDITIONS OR SITUATIONS THAT COULD OCCUR. IT MUST BE UNDERSTOOD BY THE OPERATOR THAT COMMON SENSE AND CAUTION ARE FACTORS WHICH CANNOT BE BUILT INTO THIS PRODUCT, BUT MUST BE SUPPLIED BY THE OPERATOR.**

**⚠ DON'T SKIP ANY PORTION OF THESE INSTRUCTIONS. ALL OF THE INFORMATION ⚠ PROVIDED WILL EASE THE SET UP AND USE OF THIS PRODUCT AND KEEP YOU ALIVE!**

### **⚠ WARNING ⚠**

**THIS EXTERNAL FILL KIT REQUIRES A FACTORY INSTALLED POLYETHYLENE 1 1/2" NFPT "SPIN WELD" FITTING TO BE INSTALLED ONTO YOUR POLYETHYLENE SMOKE OIL TANK. IF YOUR TANK DOES NOT HAVE THIS FITTING INSTALLED, RETURN THE SMOKE OIL TANK TO SMOKING AIRPLANES LLC FOR INSTALLATION. MAKE NO ATTEMPT TO INSTALL THIS EXTERNAL FILL KIT OTHERWISE.**

**USE OF AN ALUMINUM 1 1/2" NFPT FEMALE THREADED FITTING WELDED TO AN ALUMINUM SMOKE OIL TANK IS APPROVED.**

**FOLLOW THESE STEP BY STEP INSTRUCTIONS AND YOUR INSTALLATION WILL GO SMOOTHLY**

**!!! DO NOT CUT OR DRILL HOLES BEFORE READING ALL OF THESE INSTRUCTIONS !!!**

**YOUR SMOKE OIL TANK SHOULD BE POSITIONED WHERE IT IS GOING TO BE INSTALLED INSIDE THE AIRCRAFT WITH THE YELLOW 1 1/2" BARBED HOSE FITTING INSTALLED INTO IT BEFORE INSTALLING THE EXTERNAL FILL FITTING.**

1. THE FILL FITTING INSTALLATION AREA MUST BE A MINIMUM OF 3 7/8" HIGH AND 3 3/8" WIDE.



SURFACE MOUNT



FLUSH MOUNT

2. THE FILL FITTING MUST BE MOUNTED ON A FLAT SURFACE ON THE FUSELAGE TO AVOID DISTORTION TO THE FUSELAGE SKIN. CONSULT YOUR IA/A&P OR BUILDER FOR HOLE DIMPLING IF YOU WANT TO FLUSH MOUNT.
3. THERE MUST BE A DESCENDING ANGLE FROM THE FILL FITTING TO THE OIL TANK FITTING SO SMOKE OIL WILL FLOW INTO THE OIL TANK AND NOT BACK AT YOU AS YOU FILL !
4. CLOCK OR POSITION THE FILL FITTING SO THAT THE HINGED SIDE OF THE CAP LEVER IS FACING TOWARD THE FRONT OF YOUR AIRPLANE (AIR BLOWS THE LEVER CLOSED AS YOU'RE FLYING). IF YOU TIGHTEN THE CAP UNTIL THE LEVER FACES ONE OF THE SCREWS THEN POSITION THE FITTING SO THE CAP LEVER IS HORIZONTAL TO THE FUSELAGE IT WILL GIVE THE INSTALLATION A CLEAN APPEARANCE WHEN COMPLETE. REMEMBER, HINGED SIDE OF THE CAP LEVER TOWARD THE FRONT OF THE AIRPLANE.

5. POSITION THE FILL FITTING SO THERE IS THE LEAST BEND IN THE HOSE AS POSSIBLE FROM THE FILL FITTING TO THE YELLOW 1 ½" BARBED OIL TANK FITTING (NEVER EXCEED 90 DEGREES).
6. HEAT THE HOSE IN BOILING WATER TO ACHIEVE FLEXIBILITY FOR INSTALLATION OR USE AN ELECTRIC HEAT GUN (DON'T BURN THE HOSE).
7. **IMPORTANT!** WHEN INSTALLING THE HOSE ON TO THE FITTINGS, ALWAYS TURN IT IN A COUNTER CLOCKWISE MOTION (TO THE LEFT). TURNING IT TO THE RIGHT WILL BIND THE HOSE. APPLYING OIL TO THE BARB ON THE YELLOW FITTINGS, FILLER NECK AND THE HOSE WILL EASE INSTALLATION.
8. INSTALL THE HOSE ONTO THE BLACK EXTERNAL FILL FITTING NECK (DON'T CLAMP IT YET).
9. USE THE ALUMINUM SIX HOLE BACK PLATE AS A TEMPLATE TO CUT AND DRILL THE HOLES. THE LARGE FILL FITTING HOLE IS 2 3/16" (WE USE A 2 1/8" HOLE SAW THEN OPEN THE HOLE FROM THERE IF NECESSARY) AND THE SCREW HOLES ARE #3 OR 13/64".
10. WITH THE HOLES CUT / DRILLED INTO THE FUSELAGE, INSERT THE FILL FITTING WITH HOSE ATTACHED INTO THE FUSELAGE HOLE FROM THE OUTSIDE UNTIL THE FITTING IS FLUSH WITH THE FUSELAGE (UNLESS YOU FLUSH MOUNTED, THEN DO THIS STEP FROM INSIDE THE AIRCRAFT).
11. FROM THE INSIDE OF THE AIRCRAFT, DETERMINE THE LENGTH OF HOSE NEEDED, MARK IT WITH A MARKER THEN REMOVE THE EXTERNAL FILL FITTING FROM THE FUSELAGE WITH THE HOSE STILL ATTACHED AND CUT THE HOSE TO LENGTH AT THE MARK. USE WIRE CUTTING PLIERS TO CUT THE COIL THEN A RAZOR KNIFE TO CUT THE HOSE IN-BETWEEN THE COIL.
12. RE-INSERT THE EXTERNAL FILL FITTING WITH HOSE INTO THE FUSELAGE HOLE (WAIT TO INSTALL THE SCREWS).
13. FROM INSIDE THE AIRCRAFT, SLIDE THE ALUMINUM SIX HOLE BACK PLATE AND THE TWO SPECIAL LINED WORM DRIVE HOSE CLAMPS OVER THE HOSE THEN INSTALL THE HOSE ONTO THE YELLOW 1 ½" OIL TANK FITTING (TURN IT COUNTER CLOCKWISE). **IMPORTANT!** ALLOW THE EXTERNAL FILL FITTING TO TURN IN THE HOLE AND MAKE SURE THAT THE NATURAL BEND OF THE HOSE IS ALIGNED WITH THE OIL TANK FITTING AND THE EXTERNAL FILL FITTING AS YOU INSTALL THE HOSE ONTO THE OIL TANK FITTING. ONCE THE NATURAL BEND IS ESTABLISHED, HOLD IT IN PLACE AND ROTATE THE EXTERNAL FILL FITTING UNTIL IT LINES UP CORRECTLY ON THE OUTSIDE OF THE FUSELAGE.
14. TIGHTEN HOSE CLAMPS ON THE OIL TANK FITTING AND THE EXTERNAL FILL FITTING.
15. INSERT THE SIX STAINLESS STEEL FLAT HEAD SCREWS INTO THE EXTERNAL FILL FITTING FROM THE OUTSIDE AND HAVE AN ASSISTANT READY TO HOLD THEM IN PLACE WITH A #2 PHILIPS SCREWDRIVER. APPLY A LIGHT SMEAR OF SILICONE SEALER AROUND THE EXTERNAL FILL FITTING.
16. THE VENT FITTING/HOSE FROM YOUR SMOKE SYSTEM OIL TANK MUST BE LOOPED OR MOUNTED ABOVE THE EXTERNAL FILL FITTING OR SMOKE OIL WILL DRIP FROM THE VENT FITTING UNTIL THE FLUID LEVEL IS AT OR BELOW THE VENT HIGHEST POINT OF THE VENT HOSE. USE THE VINYL COATED LOOP CLAMP, 90 DEGREE BARB FITTING WITH CLAMPS AND VENT HOSE EXTENSION AS PICTURED. NOTE: THE 90 DEGREE BARB FITTING CENTERED IN THE VINYL LOOP CLAMP WILL KEEP THE HOSE FROM KINKING. TIGHTEN SCREWS AND CLAMP HOSE IN PLACE. A CABLE TIE CAN BE USED TO HOLD THE 90 DEGREE FITTING IN PLACE ON THE LOOP CLAMP.



SET UP LIKE THIS




POSITION LIKE THIS

**INSTALLING THE VINYL LETTER TRANSFER (SMOKE OIL ONLY).**  
**YOU ONLY GET ONE CHANCE TO DO THIS RIGHT!!!!**

1. **CLEAN! CLEAN! CLEAN!** REMOVE ANY OIL, WAX ETC. FROM THE FUSELAGE ABOVE THE EXTERNAL FILL FITTING.
2. PEEL THE BACKING OFF OF THE LETTER TRANSFER (THE LETTERS WILL STAY ON THE TOP SEE-THROUGH PIECE OF PAPER).
3. HOLD THE LETTER TRANSFER ABOVE THE EXTERNAL FILL FITTING SO THE ARCH OF THE TRANSFER RESTS ON THE TOP OF THE FILL FITTING.
4. WITH YOUR THUMB OR FINGER PRESS THE LETTERS FIRMLY ONTO THE FUSELAGE.
5. SLOWLY.....PEEL THE TRANSFER PAPER OFF OF THE LETTERS THEN PRESS THE LETTERS AGAIN WITH YOUR FINGER OR THUMB.

**NOTE:**

**INSPECT THE HOSE REGULARLY AND REPLACE IMMEDIATELY IF ANY ADVERSE CONDITION IS NOTED SUCH AS HARDENING, CRACKING OR DETERIORATION OF ANY KIND. THE SERVICE LIFE OF THE HOSE WILL VARY WITH SMOKE OIL TYPE USED.**

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**THIS PRODUCT IS FOR USE IN EXPERIMENTAL CATEGORY AIRCRAFT ONLY!**  
**(or Certified Aircraft with FAA FORM 337 Approval)**

**Disclaimers, Limitation of Liability and Indemnification**

**REPRODUCTION OF THIS SMOKE SYSTEM EXTERNAL FILL KIT OR ITS COMPONENTS, INCLUDING THIS MANUAL IS FORBIDDEN BY TRADE MARK AND COPY RIGHT LAWS**

IT IS THE RESPONSIBILITY OF THE BUYER/OWNER/OPERATOR OF THIS *SMOKING AIRPLANES LLC* SMOKE SYSTEM KIT ACCESSORY TO ENSURE THAT IT IS PROPERLY INSTALLED PER THESE INSTRUCTIONS. THIS SYSTEM HAS BEEN TESTED TO PERFORM AS ADVERTISED WHEN INSTALLED AND OPERATED PER THE FOLLOWING INSTRUCTIONS.

**SMOKING AIRPLANES LLC IS NOT LIABLE IN ANY MANNER IF THE BUYER/OWNER/OPERATOR OR USER OF THIS KIT:**

1. FAILS TO FOLLOW THE INSTALLATION INSTRUCTIONS AS THEY ARE WRITTEN.
2. ALTERS THIS KIT IN ANY MANNER, SHAPE OR FORM.
3. CAUSES PERSONAL INJURY INCLUDING DEATH TO HIMSELF/HERSELF OR TO OTHERS OR DAMAGES HIS/HER PROPERTY INCLUDING BUT NOT LIMITED TO THE AIRCRAFT IN WHICH THIS KIT IS INSTALLED OR DAMAGES THE PROPERTY OF OTHERS DUE TO THE IMPROPER INSTALLATION OF THIS KIT.
4. FAILS TO HAVE THE INSTALLATION OF THIS KIT SIGNED OFF IN THE AIRCRAFT MAINTENANCE RECORDS BY A LICENSED AIRFRAME AND POWERPLANT (A & P) MECHANIC OR BY THE BUILDER OF THE AIRCRAFT IF THE BUILDER HOLDS A REPAIRMAN'S CERTIFICATE ISSUED BY THE FEDERAL AVIATION ADMINISTRATION AND IS INSTALLING THIS KIT INTO HIS/HER AIRCRAFT FOR HIS/HER PERSONAL USE.
5. IN NO EVENT, SHALL *SMOKING AIRPLANES LLC* BE LIABLE FOR ANY DAMAGES WHATSOEVER INCLUDING, WITHOUT LIMITATION, INCIDENTAL AND CONSEQUENTIAL DAMAGES FROM THE MISUSE OR INABILITY TO USE THIS EXTERNAL FILL KIT, OR FROM MISTAKES, OMISSIONS, INTERPRETATION OR DELETION OF ANY PORTION OF THE INSTALLATION AND INSTRUCTIONS FOR THIS KIT.
6. IF, NOT WITHSTANDING THE ABOVE, *SMOKING AIRPLANES LLC* IS FOUND LIABLE FOR ANY LOSS OR DAMAGE RELATED TO THE USE OF THE *SMOKING AIRPLANES LLC* EXTERNAL FILL KIT, THE AGGREGATE LIABILITY FOR *SMOKING AIRPLANES LLC* TO YOU FOR ALL CLAIMS SHALL BE LIMITED TO A REFUND OF THE PURCHASE PRICE OF THE KIT.

**Indemnification**

BY INSTALLING THIS *SMOKING AIRPLANES LLC* EXTERNAL FILL KIT INTO YOUR AIRCRAFT YOU AGREE TO INDEMNIFY, DEFEND, AND HOLD HARMLESS *SMOKING AIRPLANES LLC* FROM AND AGAINST ANY AND ALL LIABILITY, CLAIMS, COSTS AND EXPENSES, INCLUDING LEGAL FEES AND EXPENSES, ARISING FROM OR RELATED TO YOUR PURCHASE AND SUBSEQUENT USE OF THE *SMOKING AIRPLANES LLC* EXTERNAL FILL KIT.

THIS EXTERNAL FILL KIT IS NOT TO BE INSTALLED OR USED IN VEHICLES REGISTERED FOR HIGHWAY USE.

**WARNING:** This product contains parts that are known to the State of California to cause cancer and birth defects or other reproductive harm.