HOLTZMAN ENGINEERING, INC. HOLTZMAN ENGINEERING, INC.

TEMPA FLOW INSTALLATION AND USE (01/04/14)

UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING OR CALLING FOR TECHNICAL ASSISTANCE.

KEEP THESE INSTRUCTIONS**;** give to the sled's new owner when selling.

Safety Considerations Gasoline is flammable and explosive. Do not smoke or allow open flames or sparks near areas where gasoline is used. If you get gasoline in your eyes or swallow gasoline, get immediate medical help. If you spill gasoline on your skin or clothing, wash immediately with soap and water and change clothing. Never run the engine in an enclosed area. Exhaust fumes can result in loss of consciousness and death in a short time. When drilling , wear safety glasses. Do not drill where sparks can reach gasoline.**To avoid injury, always check free throttle operation before starting engine. THIS PRODUCT IS NOT FOR AIRCRAFT USE.**

WARNING: Installation/use of this product requires mechanical and carburetor tuning skills and may result in engine damage from decreased fuel flow. We are unable to verify every application and installation of this product; **verify proper fuel flow using EGT, piston, and/or plug readings.** This is your responsibility. Extra caution is required when using in applications having temperature rise extremes (multiple pipes).

Operation This carburetor compensator decreases fuel flow by applying a regulated vacuum to the float bowls. **This product will not work with '01 and '02 Ski Doo twins with Mikuni TM flatslide carbs** (call us for these applications)**.**

1. Determine Existing Carb Venting Carbs have one or more float bowl vent (overflow) fittings. If tubing connects these fittings to the air box, this is **inside air box venting,** for example, Ski-Doo Rev and some XP, Yamaha Viper, and most Polaris. For this product, all other venting is **outside air box venting. (Caution:** Some earlier Arctic Cat's have enrichment circuit air tubes run to the air box; these are **not** vent tubes and are therefore outside air box vented).

2. Choose a Base Temperature which for snowmobiles is **NORMALLY** -20F (-29C), but -40F (-40C) or 0F (-18C) can be chosen depending on your minimum operating temperature. The adjusting screw **TARGET** position is **AT** the dot if you choose -20F(-29C), 1/8 turn **clockwise** from the dot if 0F(-18C), and 1/8 turn **counterclockwise** if -40F(-40C). **INITIALLY, SET THE SCREW 1/8 TURN CLOCKWISE FROM THE TARGET POSITION.**

3. Choose a Base Altitude which is your minimum operating altitude.

4. Jet Carbs (main jets **AND NEEDLES**) for your **base** temperature and **base** altitude including any modifications. TM flatslide pilot circuits may need richened slightly. Multiple (non-insulated) pipes cause temperature extremes which may require richer jetting than the pipe manufacturer's recommendations when used with this product.

5. Install Vacuum Source (one) per attached sheet. **Always before starting engine verify free throttle movement.**

6. Install the Compensator preferably **high** in the air box by inserting the outlet (screw) end through a 9/16" hole and secure with 1.75" of 1/2" i.d. tubing and clamp. **If you do not have an air box** (open carbs or filters), place the compensator in the upper back of the engine compartment away from engine and exhaust heat.

7. The Air Inlet connects to the 1/2" barb on the compensator's end **opposite** the screw. The 1/2" i.d. inlet tube should not be crimped or restricted and no foreign material allowed**;** this will cause the engine to run lean. The included 90 degree fitting may be used for bends. An optional inlet filter is available for extreme cases of snow or belt dust.

7a. Outside Air Box Venting (see 1.) DO NOT LOCATE THE AIR INLET INSIDE THE AIR BOX IF YOU HAVE OUTSIDE AIR BOX VENTING; this will lean your baseline jetting causing engine damage. Use 1/2" i.d. inlet tubing to locate the air inlet **outside** and behind the box (see photo) and not exposed to excessive heat. If you have room, use the ½" tee; if not use the bulkhead fitting with minimum 3/8" clearance at its opening.

7b. Air Box Venting ONLY (see 1.) Locate the air inlet in the **same air box compartment as the original factory vent fittings** and not in a high air flow area. If your vents are under a shelf, the air inlet must also be under the shelf. If you have no shelves, anywhere in the box will work. Use 1/2" i.d. inlet tubing as necessary to locate the air inlet in the proper compartment. See photo. It is **not** necessary to cap the factory air box barbs.

8. Outlet Install the reducer fitting into the 1/2" i.d. tubing on the outlet end of the compensator spaced at least 3/8" from the screw head; remove to adjust the screw. Connect the reducer fitting to the vacuum source you installed in **5.** using **12-18"** of 1/4" i.d. tubing.

9. Connect All Carb Vent Fittings to the compensator's side barb using 5/32" i.d. tubing. If you have two vent fittings per carb, install a short piece of tubing to a tee above each carb and then complete the connections. The system must be leak-free. For extreme riding an optional drain system is available. **Tubes should be routed uphill** so they will **completely** drain to carbs. Some carbs have an overflow standpipe drain (some TMX) in the float bowl; if present it must be sealed. If the carb vent fittings are too small for 5/32" tubing, use 1/8" tubing.

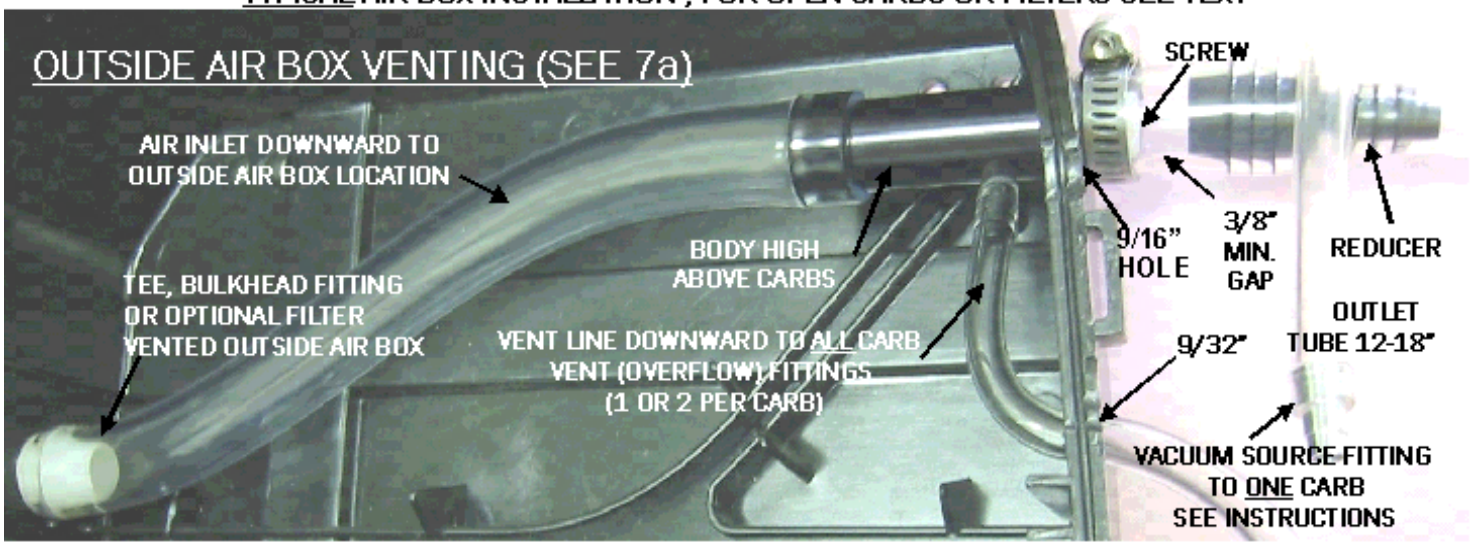
10. Testing for Proper Fuel Flow: With the screw **1/8 turn clockwise from the target position** (see **2.**) and **at the base altitude,** run the engine at **several throttle positions** and temperatures and check for fuel flow. This should be a little rich; **if so**, turn screw 1/8 turn counterclockwise to the **target** position. If still rich, the screw can be rotated another 1/8 turn counterclockwise. At the **base** altitide the screw should be within +/- 1/8 turn of your **target** position. Adjust carb jetting as necessary to obtain this setting. **NEVER ROTATE THE SCREW MORE THAN 1/4 TURN CLOCKWISE FROM THE DOT** or screw damage may result.

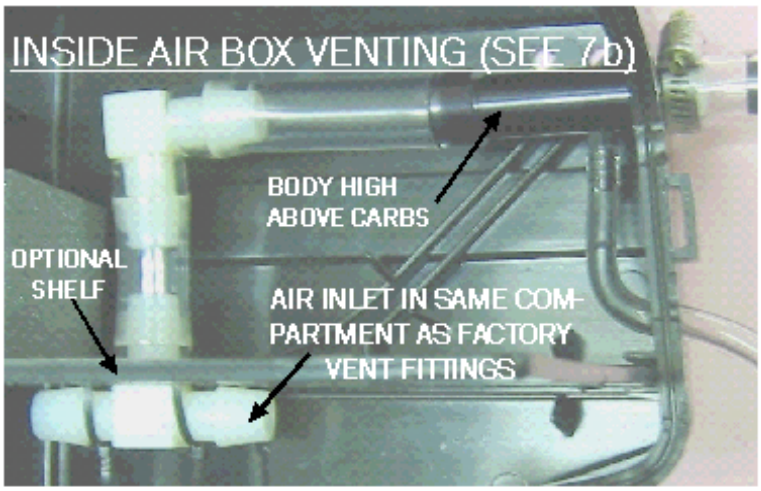
11. The Altitude Adjustment is approximately 1/8 turn **counterclockwise** on the screw for every 2000 foot (600 meter) increase in elevation above the **base** altitude**,** effective up to a 6000 foot **change** depending on the temperature. **Don't forget to turn the screw back when descending.** If desired, you can remove all but one of the 1/4" hose barbs on the reducer fitting and drill to .203" (13/64) to give an 8000 foot range.

12. Warm Drive-Away After stopping for a break or moving from warm storage, it may be necessary, especially with non-insulated pipes, to delay extended high load engine operation (vary throttle position occasionally) for a couple of minutes to allow the ***TEMPA FLOW*** to stabilize.

13. Screw Position Verification When at the proper turn and at about **70F (21C),** with the open end of the screwdriver slot at the dot, the **spacing between** the under side of the screw head and the body should be .007-.009" (like checking a spark plug gap).

TYPICAL AIR BOX INSTALLATION , FOR OPEN CARBS OR FILTERS SEE TEXT





LIMITED WARRANTY The installation of this device requires mechanical and carburetor tuning skill. Because of the custom nature and the limitless application variables this product is subject to, this product is sold with a limited warranty only. Holtzman Engineering, Inc. makes no warranty of any kind except we will replace this product if found to be defective in material or workmanship for one year from date of purchase. Holtzman Engineering, Inc. will not be held liable for any injuries or damages incurred as a result of the installation or use of this product nor the parts this product may affect.

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