

erratic when the pump is on. Note the point where you regain control of the model with the pump both on and off. If this range is approximately 80% or better than the range with the pump off (your reference), then you should have no problems. If you get less than 80% range then you may want to move the placement of the Pump away from the receiver or its antenna. If you are using power from the servo connector and are having range issues, try using a separate external battery pack with the original default configuration. Under all circumstances, the system must get the minimum ground range as specified by the manufacturer or don't fly.

7. Put on a Show!

When you are ready to put on your airshow, make sure all your batteries are freshly charged and perform the following steps in order:

1. Turn on your transmitter
2. Turn your smoke pump channel OFF
3. Turn your receiver ON
4. Ground test your system (GOOD HABIT, Smoke or not)
5. Momentarily turn on your Smoke Pump until it is primed. Then quickly shut the pump off. You will either hear the motor bog down or see drops of oil coming from the muffler. BE CAREFUL NOT TO FILL UP YOUR MUFFLER WITH OIL. The SmartSmoker PRO has a smartPrime feature that forces the pump to run at full speed the FIRST time it is activated. The second time you turn it on it will run at the speed set by the end point adjustment of your transmitter.
6. Start engine
7. Put on an airshow.

REMEMBER: Enhance your maneuvers by accenting them with smoke and don't leave it on all the time or it will quickly get boring. Here is your chance to develop your own performance style and truly impress your audience. Slow moving 3D maneuvers look best against dark tree lines or blue sky.

Troubleshooting: Please visit our online support forum at www.TMEnet.com/forums

WARRANTY LIMITED WARRANTY

The SIMPLE SMOKE PUMP is warranted to the original purchaser for 180 days from the date of purchase to be free from defects in material and workmanship. During this period Tejera Microsystems Engineering Inc. will repair or replace, at their discretion, the defective unit. This warranty does not apply to any unit which has been jammed with small foreign objects, abused, improperly installed, improperly used, used for purposes other than those purposes for which the unit was designed, handled roughly, damaged in shipment, nor to any unit which has been altered or repaired by unauthorized personnel. Under no circumstances will the buyer be entitled to incidental or consequential damages. This Limited Warranty gives you specific legal rights, you may also have other rights which vary from state to state.

REGISTER: Register your warranty online at <http://www.tmenet.com/registerrc.htm>

REPAIRS: For out of warranty repairs the standard repair fee per unit is up to 50% of the current list price plus \$5.99 shipping and handling charges. You may prepay by check or MO Send us your email address if you prefer to pay using Paypal.com

ALL RETURNS MUST BE SENT TO: Visit our web site for details: <http://www.tmenet.com/support/contact-us>

tme SmartSmoker PRO™

QUICK START Instructions

NOTE: Although the SmartSmoker PRO Pump is extremely easy to install, we suggest you download and read the full manual www.TMEnet.com/downloads.htm The Secret Smoke Success tips booklet is also a FREE download when you register at <http://www.tmenet.com/registerrc.htm>

Congratulations on your purchase of the SmartSmoker PRO. This new PRO version has adjustable rates and Smart Prime just like the original SmartSmoker, but now also allows you to select the power source of the oil pump circuitry and sports a new status LED. You can choose between powering the pump from a small external separate smoke only battery pack, like previous versions, or you can choose to draw power from the receiver connector when used in GIANT SCALE airplanes with power distribution systems. This makes it specially suited for systems that already have large separate batteries for receivers and servo connections.

IMPORTANT TIPS FOR SUCCESS

PLEASE READ! Omitting the following steps can lead to hours of aggravation.

1. Do not place the pump significantly higher than the tank because priming becomes difficult. It is best to physically mount the pump directly onto the oil tank at oil level.
2. Perform the bench test (as outlined in the instructions) to measure oil rate per minute. Too much oil or too little oil rate can lead to all kinds of problems.
3. Prime the pump BEFORE starting your engine!
4. Erratic operation is usually indicating the need for a check valve or an air leak from the tank line. (see troubleshooting)
5. For LONG LIFE isolate the pump and electronics from vibration. Big engines can shatter motor magnets quickly. Wrap both in foam and away from firewall.
6. DO NOT USE OR MIX GASOLINE PRODUCTS WITH THIS PUMP. MAY DAMAGE PUMP OR CAUSE FIRE
7. Dirt, sand, any small particles can JAM your pump. FILTER YOUR OIL, keep filler hoses clean. NOTE: Dirt related problems are NOT covered under warranty.
8. Perform a range test with your pump running before flying your model and after breaking in your pumps motor brushes.

LED INDICATOR

LED will blink three times on power up and will come on whenever the pump is running at maximum speed. During SmartPrime™ or at maximum EPA / ATV.

Installation

1. Decide on your Battery Configuration

The SmartSmoker PRO comes with a programmable jumper that allows you to select the power source for the pump motor. This jumper is located in the center of the

SmartSmoker PRO controller circuit board. The factory default position is set to use a separate battery packed plugged into the supplied external battery connector. If your model airplane has a power distribution system with extra battery capacity you may want to draw motor power from the servo lead power pins coming from the power systems receiver connector. (Note this pump draws as much as 1 amp of current while running and will deplete your receiver pack faster than you expect. Allow at least 17 mah for every minute of smoke ON time you expect to use.)

To use the dedicated external battery pack the jumper is positioned close to the LED (default). To change this and select motor power from the receiver connector, pull and move the jumper over to bridge the center pin with the pin furthest away from the LED. Once you move the jumper you are now using receiver connector power and you may remove the female battery connector from the SmartSmoker PRO controller since it is no longer needed but be sure NOT to short the exposed pins. You will want to cover them with electrical tape or any other insulator. You may alternately use the removed cable as a servo extender elsewhere.



POWER SOURCE = External Battery (default) POWER SOURCE = Receiver Connector

If you will be using an external battery pack, we suggest a 4 to 5 cell NiCd, NiMH or 2 cell LiPo pack. A 500 mah pack can be expected to give you about a half hour of solid smoke time or about 7 to 10 flights with 3 to 4 minutes of smoke. You DO NOT need a switch in line with the external pump battery. (When you turn off your receiver battery, power is automatically turned off to your separate pump battery.) However you may want to add a Y cord in between the pump and battery to make charging more convenient. There is no cutoff for LiPo, stop smoke when it weakens to prevent damage to cells.

2. Prepare Smoke tank

In most installations the size of your smoke tank is typically enough for only 3 to 4 minutes of MAXIMUM density smoke. To calculate your tank size, first calculate the ounces per minute and multiply by 3 or 4. The answer you get is the approximate tank size for 3 to 4 minutes of smoke. Select the largest tank you can carry. Make sure your tank is a "GAS" compatible pump. i.e. NO SILICONE parts. Rule of thumb for low everybody away smoke oil rate is:

$$\text{oz per minute} = \text{engine displacement (in cubic inches)} \times 2$$

Therefore 1.2 cu inches requires about 2.4 oz per minute and requires an 8 to 10 oz tank.

3. Mount the pump

Mount the pump away from fuel compartments, wrap it in foam or use Velcro to isolate it from engine vibration, keep pump away from the receiver as much as practical to minimize any potential interference. For best results keep the pump physically lower, behind the smoke fluid tank and near the CG of the plane. For this

reason we like to mount the pump and its battery on the tank itself and soft mount the whole assembly with foam and rubber bands or Velcro.

For almost all installations you will need a high volume check valve. WE RECOMMEND USING ONLY A GAS/OIL PROOF FLAPPER STYLE CHECK VALVE like the one included with our SmartSmoker PRO kit. Insert the check valve between pump and muffler. We generally place it right before the muffler in between the yellow gas tubing and the short piece of high temp neoprene.

3. Connect to your receiver

Do not cut or splice extension wires onto existing connectors as this will violate your warranty.

The SmartSmoker PRO Smoke Pump simply connects to a spare channel in your receiver. You should choose a channel that is activated by a switch such as a gear channel, auxiliary or retract channel. Also be sure that the channel you choose allows you to set end point or travel adjustments (Refer to your transmitter instruction manual on how to adjust the stopping point limiting the distance that the servo travels. Sometimes called EPA or ATV)

The pump will begin to gradually turn on starting at approximately the 50% servo point. If the turn on direction is not what you desire, you may use your transmitter's servo reversal function to correct this (if supported). NOTE: If you do not use a channel that incorporates a switch but instead uses a slowly varying input, such as a joystick or pot, the Smart Prime feature will be disabled.

Your Smoke pump is configured with Universal connectors to work with all brands of receivers. If you plug the connectors in backwards it will NOT HARM the Pump or receiver, however the Pump will NOT FUNCTION properly until the error is resolved.

4. Route the tubing

You will need a length of tubing from the tank to pump. Another length will be needed from the pump to the Smoke muffler or preheater. Place the check valve at the end of the clear tubing observing its polarity. Then use a short length (2" to 3") of neoprene to connect the check valve to the hot muffler. 1/8" or 7/64" I.D. Neoprene works best. Don't forget to use plastic or wire ties to secure the tubing.

5. Adjust the flow rate

The SmartSmoker PRO is adjusted via the transmitter end point adjustment. On the bench adjust the oil rate close to what you calculated in step 2 above. Simply dump the oil into a measured cup to get the right number of oz per minute. This is your starting point, further adjustment will be made at the field.

6. Range testing

Before performing the test let the motor brushes break in by letting the pump run for at least one half hour. Loop the output of the pump to the filler input so that you circulate oil during break in and during the rest of this test.

To perform the test, collapse your transmitter's antenna and place the model outdoors on the ground. (2.4 Ghz Transmitters simply follow the manufacturers procedure) With the pump switched off, turn the radio system on and walk away while moving the control surfaces via the joysticks. Note the distance when the surfaces become erratic and completely stop responding to your control. This distance is your reference.

Now walk closer towards the model and begin turning the Simple Smoke Pump Channel on and off. At some distance you may notice the control surfaces will become