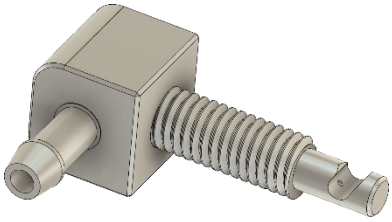
INSTALLATION GUIDE

part# ENG-SMK-NOZ-0001

PERFORMANCE SERIES SMOKE NOZZLES



FITS: STANDARD EXHAUST MUFFLERS WITH A SAE 10-32TPI THREADED HOLE

CONGRATULATIONS ON THE PURCHASE OF THE FINEST PERFORMANCE SMOKE NOZZLES AVAILABLE FOR RC MODEL WORLD. DESIGNED AND MANUFACTURED WITH GREAT PRIDE IN THE USA.

INSTALLATION TIME

INSTALLATION TIME IS ESTIMATED AT APPROXIMATELY **0.5 - 1** HOURS. ACTUAL TIME MAY VARY DEPENDING ON ACCESS TO EXHAUST COMPONENTS.

DIFFICULTY

INSTALLATION DIFFICULTY IS RATED AS MODERATE (2/5).

AIRSPEEDRC WANTS YOU TO FULLY ENJOY YOUR NEW PRODUCT, SO PLEASE **READ** THIS INSTALLATION GUIDE **PRIOR** TO INSTALLATION.

IF YOU HAVE ANY QUESTIONS OR NEED ASSISTANCE, PLEASE CONTACT TECH SUPPORT AT INFO@AIRSPEEDRC.COM

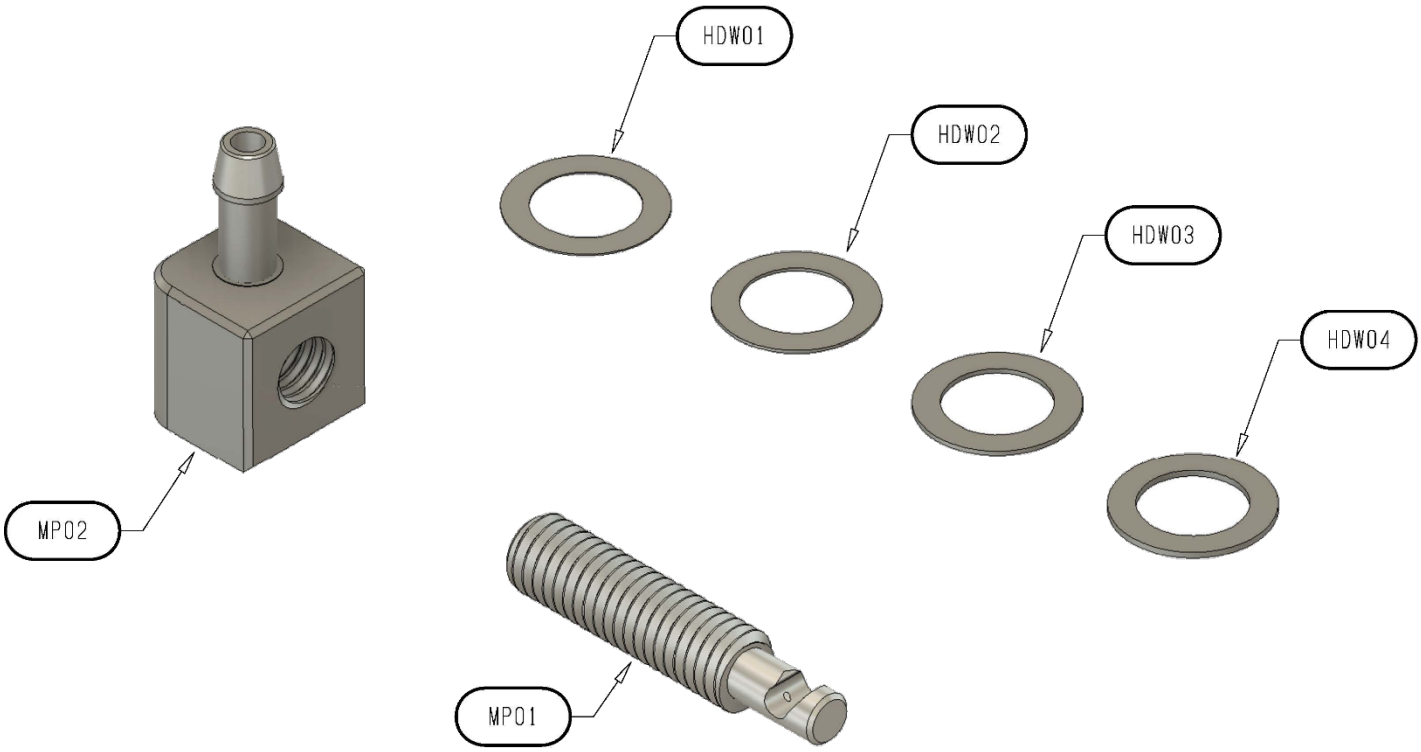
TOOLS / SUPPLIES REQUIRED

- 3/8" OPEN END WRENCH
- LOCTITE THREADLOCKER H-272 OR EQUIVALENT
- DRILL BIT, #21 OR 5/32" DIAMETER (NOT NEEDED IF MUFFLER COMES THREADED)
- TAP, SAE 10-32, TAPER, PLUG OR BOTTOM STYLE (OPTIONAL)

SAFETY PRECAUTIONS

FOLLOW ALL MANUFACTURE RECOMMENDATIONS FOR WORKING WITH RC ENGINES AND SMOKE FLUIDS. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY AND/OR DEATH. ALWAYS ENSURE SAFE WORKING PRACTICES.	DO NOT SERVICE THE EXHAUST SYSTEM WHILE IT IS STILL HOT. ALLOW THE EXHAUST TO FULLY COOL TO AVOID BEING BURNED.
ALWAYS WEAR EYE PROTECTION WHEN WORKING WITH CUTTING TOOLS AND FLUIDS.	WEAR PROTECTIVE GLOVES TO AVOID INJURY.

THANK YOU FOR YOUR CONFIDENCE IN CHOOSING AIRSPEEDRC



NOTE

PLEASE CONFIRM **ALL** COMPONENTS ARE PRESENT PRIOR TO INSTALLATION. IF ANYTHING IS MISSING OR DAMAGED, PLEASE CONTACT YOUR SALES CENTER.

MAIN BAG PACKAGE 1 OF 1		
ITEM	**DESCRIPTION**	**QTY**
MP01	SMOKE NOZZLE, SAE 10-32 THREAD	1
MP02	NOZZLE FEEDER	1
HDW01	STAINLESS PRECISION SHIM, 0.004” THICK	1
HDW02	STAINLESS PRECISION SHIM, 0.008” THICK	1
HDW03	STAINLESS PRECISION SHIM, 0.012” THICK	1
HDW04	STAINLESS PRECISION SHIM, 0.016” THICK	1

DETERMINE CORRECT NOZZLE DEPTH

- Following instructions in the owner's manual for your engine, Remove existing muffler from the engine.
- Remove any screws or nozzles that may be present in the smoke port of your engine. Verify the thread pitch is SAE 10-32 threads per inch. Failure to check the thread pitch may result in damaging your smoke nozzle and will void any warranty claims.

NOTE: If no smoke ports are present such as a header pipe or Jet exhaust, you can drill a hole with a #21 (5/32") Drill and Tap the Hole with a SAE 10-32 Tap. Optimal position should be perpendicular to exhaust port.

- Temporary install a small bit of Teflon tape on the nozzle end (Optional) to keep it from leaking, screw on the feeder until its hand tight.
- Screw the nozzle into the muffler until you feel it is angled towards the exhaust inlet port of the muffler body as shown in pic. Don't worry about the feeder nipple position at this time.
- To confirm the nozzle is in the optimal position, Hookup the feeder to the smoke pump tubing and although you can use smoke fluid, we prefer to use water (for safety purposes) in the smoke tank until the initial depth fitting is determined. Power on the smoke pump and ensure most if not all of the fluid is aimed directly at the exhaust port. Adjust the depth of the nozzle as needed to find the optimal spray position. See Figure 1.
- Carefully remove the smoke tubing from the feeder.
- From inside the muffler exhaust inlet, Use your finger to keep the nozzle from rotating, Carefully unscrew the feeder to leave only the nozzle inserted as shown in figure 2.
- Using a depth micrometer, caliper or ruler, check the stick-out length (outside of the muffler) of the nozzle end. It should be approx. **0.188" - 0.210" (4.8 - 5.3mm)**
- If it is more than 0.210"", use an Exacto Saw (or equivalent) to remove the extra length and cut to approx. 0.200" stick-out. Try and sawcut in the valley of the threads to avoid creating a burr. See Figure 3.

PRO TIP: Insert some rolled up tissue into the hole prior to cutting, this will keep and debris from going too far in and clogging the micro hole in the nozzle

- Chase the inlet hole with a #11 Exact Blade to debur the hole. Use compressed air to clean out any debris. Shine a flashlight into the exhaust port of the muffler and you should be able to see light looking into inlet end of the nozzle to ensure no debris is blocking the spray hole.

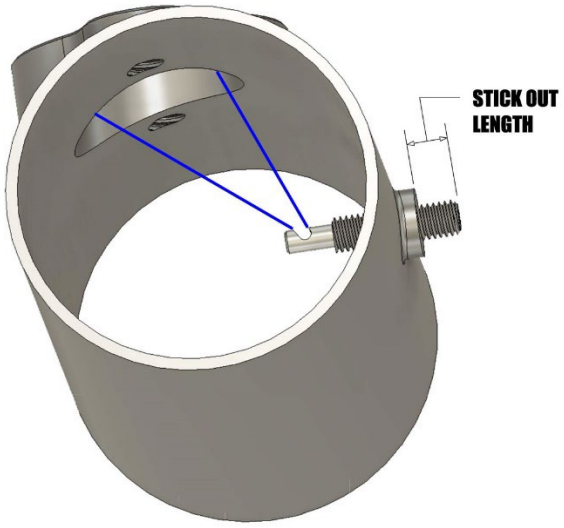


FIGURE 1. NOZZLE POINTING AT THE EXHAUST PORT AND AT THE PROPER DEPTH
(MUFFLER BODY CUT AWAY FOR CLARITY)

FIGURE 2. NOZZLE INSTALLED ON A STINGER PRO 125CC
(STICKOUT IS LONG (>.200") AND WILL NEED TO BE CUT)

FIGURE 3. EXACTO SAW CUTTING THE NOZZLE TO LENGTH

- Once satisfied with the cut, take a final measurement from end of nozzle to muffler. Record this depth on a piece of paper.
- Remove Nozzle and lightly sand or file a small chamfer on the thread where you cut it. This will ensure it threads into the feeder smoothly, not damaging the threads. Test fit the feeder to confirm it threads on easily. Remove feeder and set aside.
- Apply High Temp/Strength Loctite H-242 or Equivalent to threads of muffler and at the location where the nozzle was set at optimum depth. Approx. 3/16" – ¼" from the end. See Figure 5.
- Screw Nozzle back into the exhaust and ensure nozzle is aimed at the exhaust port.

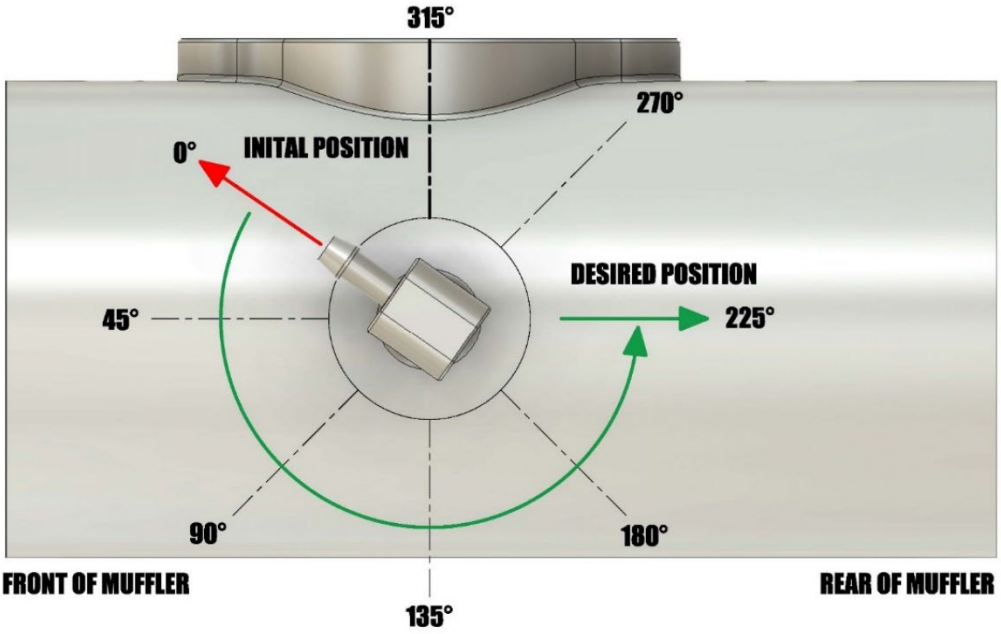
IMPORTANT: Clean off any Loctite from the exposed threads outside of the muffler with Isopropyl, Acetone or equivalent. Allow the Loctite to CURE FULLY before continuing.

FIGURE 4. STICKOUT TRIMMED TO APPROX. 0.200" REINSTALLED AND LOCTITE APPLIED

FIGURE 5. HIGH TEMP/STRENGTH LOCTITE H-272 (AVAILABLE ON AMAZON AND ONLINE STORES)

SETTING FEEDER ANGLE

iMPORTANT: Loctite must be fully **CURED** and set **PRIOR** to setting feeder angle. If nozzle rotates when installing and tightening feeder, nozzle should be removed, cleaned with acetone and Loctite reapplied and allowed to Fully cure. Failure to observe this step may result in less then optimal smoke fluid atomization and excess fluid being drained onto the aircraft.



SIDE VIEW

LOOKING AT NOZZLE FEEDER

SHIM TABLE	
ANGLE	**SHIM(S)**
45°	0.004”
90°	0.008”
135°	0.012”
180°	0.016”
225°	0.004” + 0.016”
270°	0.008” + 0.016”
315°	0.012” + 0.016”

- Install the nozzle feeder and GENTLY TIGHTEN with a 3/8” open end wrench. Observe the initial position and determine from the chart how far away you would like to rotate the nozzle feeder inlet in the COUNTER CLOCKWISE direction.
- Your Smoke Nozzle includes precision shims of varying thickness to allow the user to set the desired angle of the feeder, typically rearward facing towards the tail, but any angle can be set. To your liking. There are (4) shim thickness’ included. 0.004”, 0.008”, 0.012” and 0.016”. For every 45° of rotation, a 0.004” shim thickness must be used. So example if you want to rotate 225° counter clockwise, from the Shim Table 0.020” total is needed, so any combination of 0.004 and 0.016 OR 0.008 and 0.012 can be used.
- Remove the feeder and from the chart determine the best combination of shims to use. Install the shim(s) and apply Loctite to the threads of the nozzle, be sure to not get any Loctite into the inlet of the nozzle or feeder. Hand tighten snugly but not too much force or you may damage the threads.

CONTACT

That's it, you are finished, we hope our smoke nozzles provide you and you spectators with blue skies filled with awesome smoke at your next flying event! Thank you for purchasing this AirSpeedRC product. If you have any questions regarding this product or installation please do not hesitate to contact us via phone (856) 772.9500 or email info@airspeedr.com.