



BUILDING BETTER FIREFIGHTERS

# THE 5 MINUTE ENGINE CLINIC™

BY BRYAN T SMITH

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## NOZZLE BASICS THE SMOOTH BORE NOZZLE

How much do you know about the nozzles carried on your engine? Does your department use one type of nozzle? Or do you have options? Last week we discussed fog nozzles. This week I want to see just how much you know about smooth bore. Many departments carry stack tip smooth bore nozzles on master streams and large caliber 2 ½ hand lines but they are a very efficient and effective nozzle on 1 ¾ hose lines as well. They have seen a resurgence in popularity in the past few years due to its reduced nozzle reaction and increased fire flow needed for the modern fire ground. They have only one moving part making them easy to operate. They are very affordable and have very few instances of failure or breaking.



*The nozzle pictured above is a 1 ¾ smooth bore. The tips most commonly carried on 1 ¾ nozzles are:*

*15/16's capable of flowing 180 GPM @ 50lbs. Nozzle psi*

*7/8's capable of flowing 160 GPM @ 50lbs. Nozzle psi*



*The nozzle pictured above is a 2 ½ smooth bore with stacked tips.*

- 1"- 210 GPM
- 1 1/8"- 286 GPM
- 1 1/4"- 326 GPM @ 50lbs. Nozzle psi

### HOW DOES IT WORK?

Do you know the difference between a snub nose tip, a cone tip and a stream straightener?



Do you know how the different shape tips affect your stream ?



What type of tip is on your smooth bore nozzle?



Do you know all the tip sizes carried and their flows? If you cant answer these questions get out to the engine and find out.

### SMOOTH BORE STREAM CAPABILITIES

A smooth bore nozzle produces a solid bore of water. The water flows unimpeded from the hose through the bail and out the tip. Since the stream does not make contact or deflect off of any part inside the nozzle it moves at a high velocity. This allows the water to reach and penetrate deeper before it starts to break apart and loose its mass. It produces a large coarse water droplet but only after being deflected off of a solid object.

Due to the increased mass and velocity of the stream it has excellent thermal penetration and can reach the ceiling, walls and floor rapidly cooling all the radiant heat sources as well as the primary fuel source simultaneously! When making an advance under heavy fire conditions its penetration and reach allows you to knock down the fire ahead of your advance instead of having to get right on top of it.

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