



Task Force Tips®
Where new ideas flow...

Smooth Bore Show Down & MidMatic-MidForce Evaluation

Need help? 800-348-2686



What You'll Need:

Item One: Mid-Force 70 to 200 gpm, dual pressure, automatic nozzle

Item Two: In- line pressure gauge 0-200 psi. Always read nozzle inlet pressure with bale full open. The TFT Mid Force will operate at or near 100 psi between flows of 70 and 200 gpm when set in standard pressure mode. (NFPA 1964 allows ± 15 psi inlet variance)

Item Three: Show-Flo. Place behind the pressure gauge. Very accurate between 100 gpm & 200 gpm. $\pm 10\%$ accuracy below 100 or above 200. Prove it with a 1" tip attached to outlet. At 50 psi inlet, the 1" tip should show near 200 gpm (exactly 206 gpm)

Item Four: Pitot tube and gauge. Used for measuring the speed of moving liquids and gas.

Item Five: TFT HV-O (1.5" in- line ball valve) fitted with 15/16" (FDNY style) smooth bore nozzle.

Item Six: Six feet of yellow barrier tape for demonstrating fog pattern security

Evaluation Recipe...

Getting familiar

Connect 150 to 200 feet of 1.75" to a midships pump outlet, not a cross lay or bumper trash line outlet. These discharge options may have plumbing restrictions that can make for erroneous flow and pressure readings during your evaluations. Never attach a nozzle directly to a discharge without at least 100 feet of hose, as friction loss in hose plays the biggest role in setting pump pressure in real world evolutions.

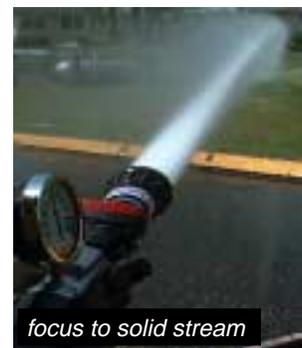
Begin flowing water, adjust pump pressure up and down from 120 psi to 170 psi; watch the flow change while nozzle pressure gauge maintaining at or near 100 psi base pressure. Like an automatic transmission that finds the best gear to power ratio, the TFT finds the best flow to pump pressure ratio.

Pattern adjustments

While flowing water, place your hand on the bumper top - rotate left and right. Notice that the TFT needs only slight movement to make big change in pattern. Unlike competitive nozzles that require several hand motions to change patterns.

Straight stream

Select straight stream; trim to optimum pattern while flowing about 100 to 150 gpm. Notice the point where the stream focuses from a tapered cone to straight stream, this is the point at which the stream becomes solid. Every bit as solid as a stream from a smooth bore nozzle. In fact, the TFT is likely to have a tighter stream; in as much as it is going faster than a stream from a smooth bore it's likely to travel slightly farther and hit somewhat harder.





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Solid Stream Proof

Pitot the center of the stream at its focus point, about two to three feet away from the bumper. If the stream were hollow, you couldn't read pressure in the center. This is absolute proof that this is a solid stream!

Water speed and nozzle reaction force



pressure in the center!

Calculate the square root of pitot pressure and multiply by 8.255, this converts exit pressure to miles per hour (mph). Now you know how fast the stream is traveling as it exits the nozzle. Sort of like fire arms muzzle velocity. The faster it leaves the barrel the stronger the recoil, its the same with water. For a given flow, the faster it leaves the higher the kick back force and the longer the reach... Your TFT will hit harder and reach farther than a smooth bore (at equal flow) simply because its going somewhat faster.

Operating The Slide Valve (flow controller or bale)

By throttling down the bale a TFT will reduce flow while maintaining accurate exit pressure and stream trim. Not so with ordinary nozzles. Only TFT allows nozzle flow control without giving up stream quality. Whats moer, you get flow control at the nozzle, not the pump...

Note: inlet gauge pressure will rise as a result of the valve closure, however, downstream of the valve, TFT's hydraulic pressure control unit maintains constant flowing (exit) pressure with virtually no stream degradation.

Slide valve flow control coupled with automatic pressure control makes the Midi series the most versatile, pump operator friendly nozzles you can buy.



flow control at the nozzle, not the pump



Dual Pressure Option

TFT nozzles with dual pressure option (Mid-Force & Dual Force) allow "on the fly" pressure control. In cases where pump pressure fails or in low pressure hi-rise situations... simply flip the pressure control switch to the low pressure setting and two things happen instantly: flow increases while nozzle reaction force stays close to the same..

Mid-Force set in the low pressure mode will operate at or near 50 psi throughout it's range of flows, sort of like a automatic, 7/8" smooth bore. Dual-Force (50 to 250 gpm) is the hydraulic equal of a one inch tip.

7/8" smooth bore at 50 psi flows about 165 gpm
1" smooth bore at 50 psi flows about 200 gpm.



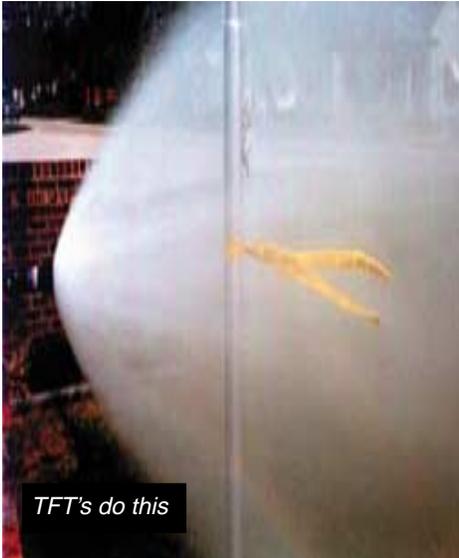
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page 3 - fog pattern



TFT's do this

Fog (spray) Patterns

Mid Matic / Mid-Force fog patterns are denser and reach farther than any nozzle with spinning teeth.

Mid-Matic and Mid-Force nozzles feature fully saturated fog patterns. You can actually feel and see the center spray. Flame can not violate this pattern.

Demonstrate

Adjust the bale (flow controler) to a moderate flow rate; point to the fact that TFT has a dense far reaching fog pattern. Water actually sprays from the center as well as from the perimeter. Reach in and feel it. Stand aside and see it. This feature is intended to manage flame, smoke and hot fire gas in such a way as to push them away from the hose crew. User safety and security is assured with TFT.



feel the center spray

Discussion

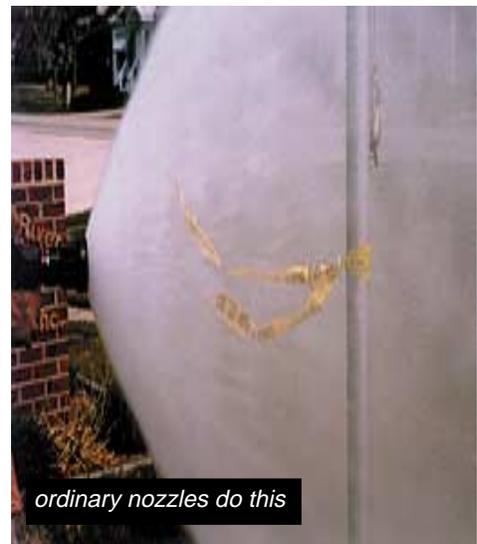
What causes flame and smoke to be drawn to a nozzle? A high velocity, hollow cone of water has lower air pressure in it's center which drafts fuel gas toward the nozzle.

Amplify this point by attaching a piece of barrier tape to a utility pole and approach the pole as if it were a pressure fed fire (propane, fuel oil, etc.) with a spinning teeth nozzle. At about four feet the ordinary fog nozzle draws the barrier tape toward the hose crew. Anyone who has visited a pressure fed x-mas tree training prop can attest to this fact. TFT nozzle design eliminates this problem.

Demonstration (Midi at 100 gpm)

Back to the barrier tape. A TFT automatic will push the tape in the opposite direction. The same happens with fire gas but much more pronounced.

Why do TFT fog streams reach farther? Because all the forward velocity is used to project the stream, unlike spinning teeth nozzles where projection power is traded for power to spin the water turbine.



ordinary nozzles do this



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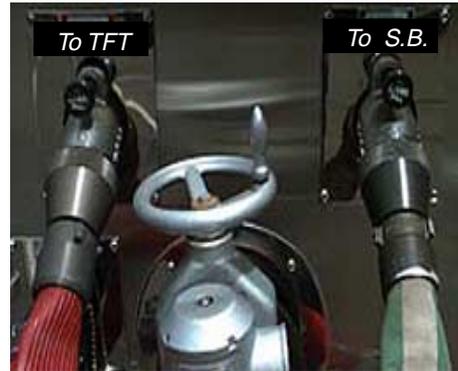
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Setup - 150' - 200' 1.75" hose

Connect two lines of equal distance to midships discharge outlets, not cross lays or bumper trash line outlet. These discharge options may have plumbing restrictions that can make for erroneous flow and pressure readings during your evaluations. Never attach a nozzle directly to a discharge without at least 100 feet of hose as friction loss in hose plays the biggest role in setting pump pressure in real world evolutions.

With the Show-Flo attached to the TFT and the pressure gauge at the base of the smoothie, adjust pump discharge pressure with both nozzles wide open until the TFT is reading slightly less than 200 gpm and the smoothie is flowing at 50 psi. Both nozzles will be flowing about 180 -190 gpm.



mounted on deck guns at equal elevation

Make sure you have the smoothie well backed up! You will need all the anchor you can get on this line. Keep as much hose as you can straight behind both hose crews. Do not stand up. This evolution requires that both teams kneel. It's a safety and control thing...



180 gpm

Adjust the TFT's stream pattern in such a way that it is focused and parallel. Meaning, trim the stream so it looks as tight as you can get it at least twenty feet ahead of you. If you can do this test at a pond or river you will see the "foot print" each stream leaves. Notice that at the same departure angle the TFT will out reach the smoothie, however slightly.

Gasket Grabber & flush feature

Another unique feature of the TFT... whatever gets through the inlet debris screen will flush through TFT's generous flush opening which can be created without shutting down the nozzle by passing its widest fog setting.

Care & maintenance

If bumper or flow control valve (bale) seem to stick or drag, simply lubricate the moving parts with CLP, "Brake Free" cleaner lubricant. See maintenance instruction sheet that accompanies each new TFT nozzle.

Warranty and 24 hour customer service

TFT warrants all products to be free of materials and workmanship defects for a period of five years. If normal cleaning and lubrication fails to keep the operational elements of this product in proper working order, contact our customer service department at 800-348-2686. TFT nozzles are repairable in the field. Contact our service department for a repair parts list and maintenance literature.

Color code bale grips (Mid- Matic / Mid-Force series only)

Seven NFPA discharge colors are available. When filling out the postage paid, self addressed warranty card indicate color desired and one complementary set will be sent.