



WORKING FIRETM

The 150 @ 75 psi Fixed Flow Nozzle with Pressure Relief

A Hybrid Nozzle Design



STREAM
FOG

150 GPM @ 150 PSI
With Pressure Switch

WF

WORKING FIRE



WORKING FIRE

The **150 @ 75 psi Fixed Flow Nozzle with Pressure Relief**

This **Hybrid Nozzle Design** from TFT Delivers

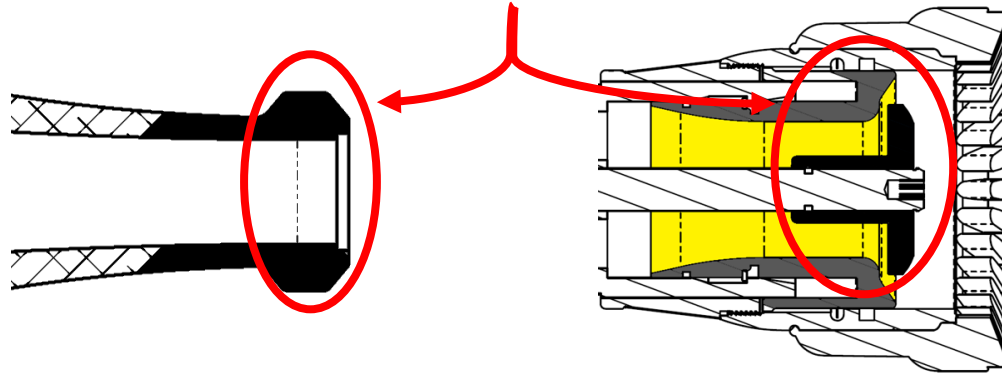


- 1. 150 GPM @ 75 PSI for Initial Attack**
- 2. Limits Reaction Force at Higher GPM** unlike Standard Fixed Flow Nozzles
- 3. Reduced Nozzle Pressure at flows below 150 GPM** unlike Standard Automatic Nozzles

A Review of Fixed Flow Nozzles

(TFT Metro, Akron Assault, Elkhart Chief XD)

A Fixed Flow nozzle is a nozzle that has a fixed orifice size
That orifice does not get larger or smaller



**The optimal performance of a fixed flow nozzle is at
The Rated Flow at the Rated Pressure**

Examples: 160 @ 50 PSI, 150 GPM @ 75 PSI, 200 GPM @ 100 PSI

A Review of Fixed Flow Nozzles

(TFT Metro, Akron Assault, Elkhart Chief XD)

If you **do not** operate at The Rated Flow and the Rated Pressure
You **do not** get optimal performance

Operate it **Lower than the Rated Flow and Rated Pressure**



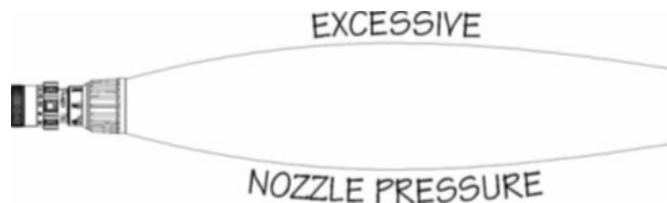
- Nozzle Pressure Drops
- Nozzle Reaction Drops
- Reduced stream reach
- Visually looks like a weak stream

A Review of Fixed Flow Nozzles

(TFT Metro, Akron Assault, Elkhart Chief XD)

If you **do not** operate at The Rated Flow and the Rated Pressure
You **do not** get optimal performance

Operate it **Higher than the Rated Flow and Rated Pressure**

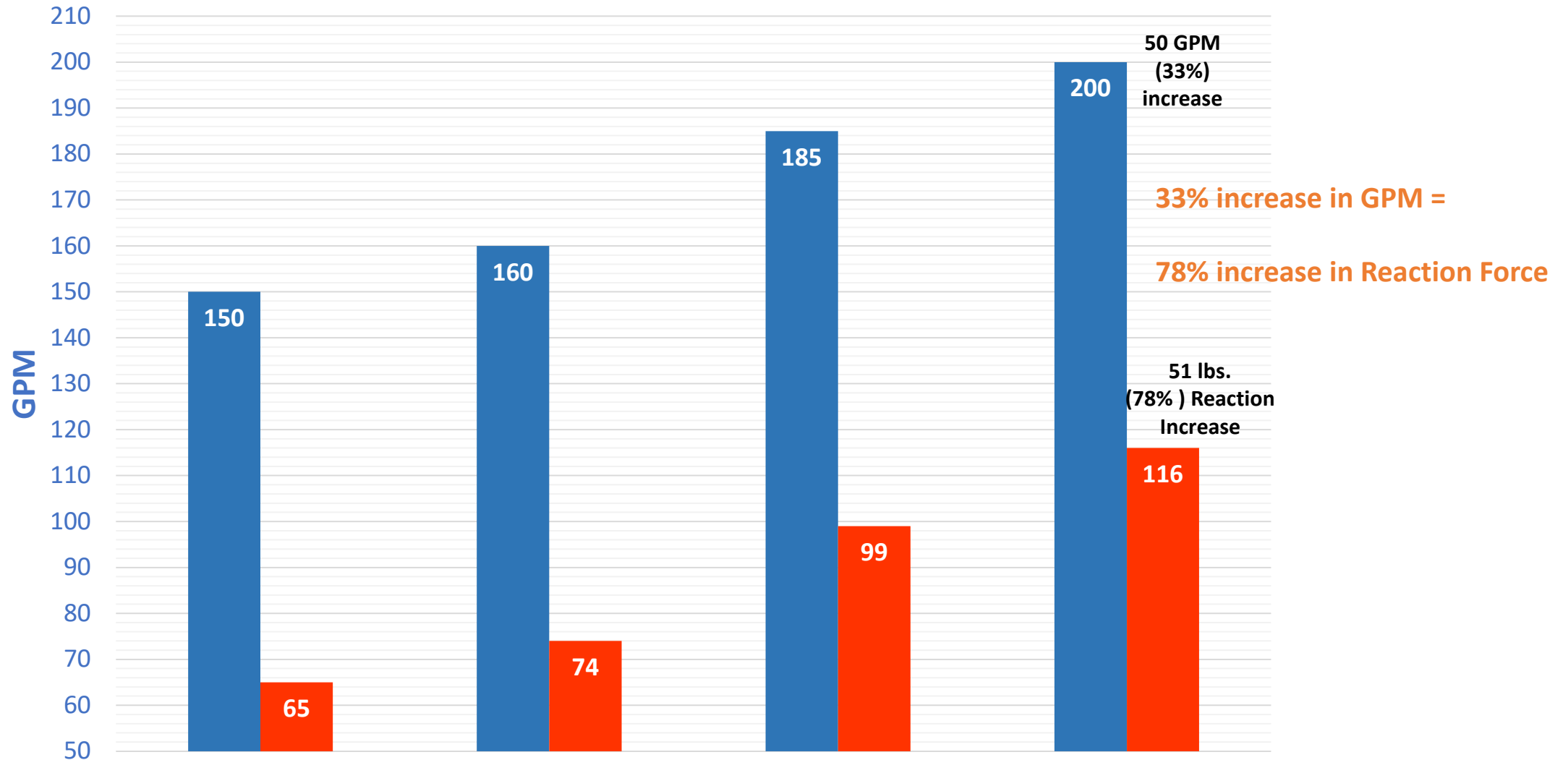


- Increase in Nozzle Pressure and Reaction Force when GPM Increases above the flow rating of the nozzle
- Stream starts to bloom
- Nozzle Reaction is directly proportional to Nozzle Pressure Increase, Not GPM Increase

ANY 150 @ 75 FIXED FLOW Nozzle

GPM vs. Reaction Force

■ GPM ■ Nozzle Reaction

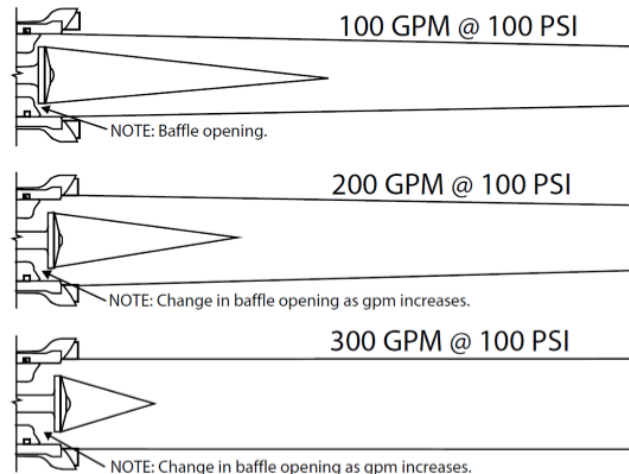
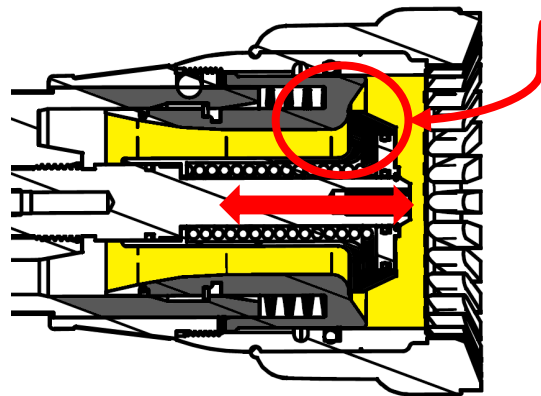


A Review of Automatic Nozzles

(TFT Mid-Matic/Handline/Dual/Mid-Force, Elkhart SM20/SM30, Akron does not offer handheld automatic nozzles)

An Automatic nozzle is a nozzle that has a spring loaded baffle that moves and changes the size of the orifice depending on the GPM you want to achieve

The orifice of the nozzle Automatically gets larger or smaller depending on intentional or unintentional increases in GPM



@ 100, 75, or 55 PSI
(TFT models)

@ 100 or 75 PSI
(Elkhart models)

A Review of Automatic Nozzles

(TFT Mid-Matic/Handline/Dual/Mid-Force, Elkhart SM20/SM30, Akron does not offer handheld automatic nozzles)

The Automatic Nozzle gives optimal performance throughout the Rated Flow Range at the Rated Pressure

Examples: 70-200 @ 100 PSI, 70-200 @ 75 PSI, or 70-180 @ 55 PSI

- Nozzle Pressure remains constant Automatically
- A low GPM stream has optimal performance, reaches far, hits hard.
- A high GPM stream has optimal performance, reaches far, hits hard

A Review of Automatic Nozzles

(TFT Mid-Matic/Handline/Dual/Mid-Force, Elkhart SM20/SM30, Akron does not offer handheld automatic nozzles)

The Automatic Nozzle gives optimal performance throughout the Rated Flow Range at the Rated Pressure

Examples: 70-200 @ 100 PSI, 70-200 @ 75 PSI, or 70-180 @ 55 PSI

- Because the Rated Nozzle Pressure stays constant throughout the Rated Flow Range, *Reaction Force Increase is limited when GPM Increases*
- Nozzle Reaction is directly proportional to GPM increase, Not Nozzle Pressure increase



What does Fixed Flow with Pressure Relief mean?

A **150 @ 75 psi Fixed Flow Nozzle with Pressure Relief**

This **Hybrid Nozzle Design** from TFT

It's a **Fixed GPM nozzle** that per NFPA 1964:2018, will deliver its rated 150 GPM (no less) at its rated base nozzle pressure of 75 PSI +/- 2% (+/- 1.5 PSI).

GPM Increase on the fire ground: Intentional vs. Unintentional

Intentional GPM increase: When you need more GPM, you increase the pump pressure to get more GPM.

Unintentional GPM increase: Incorrect PDP, or a gated wye scenario

Unlike a standard Fixed Flow nozzle that has a reaction force increase proportional to nozzle pressure when GPM increases, we have added the pressure relief feature of an Automatic nozzle.

The **Pressure Relief Feature of the Automatic nozzle ONLY above 150 GPM**

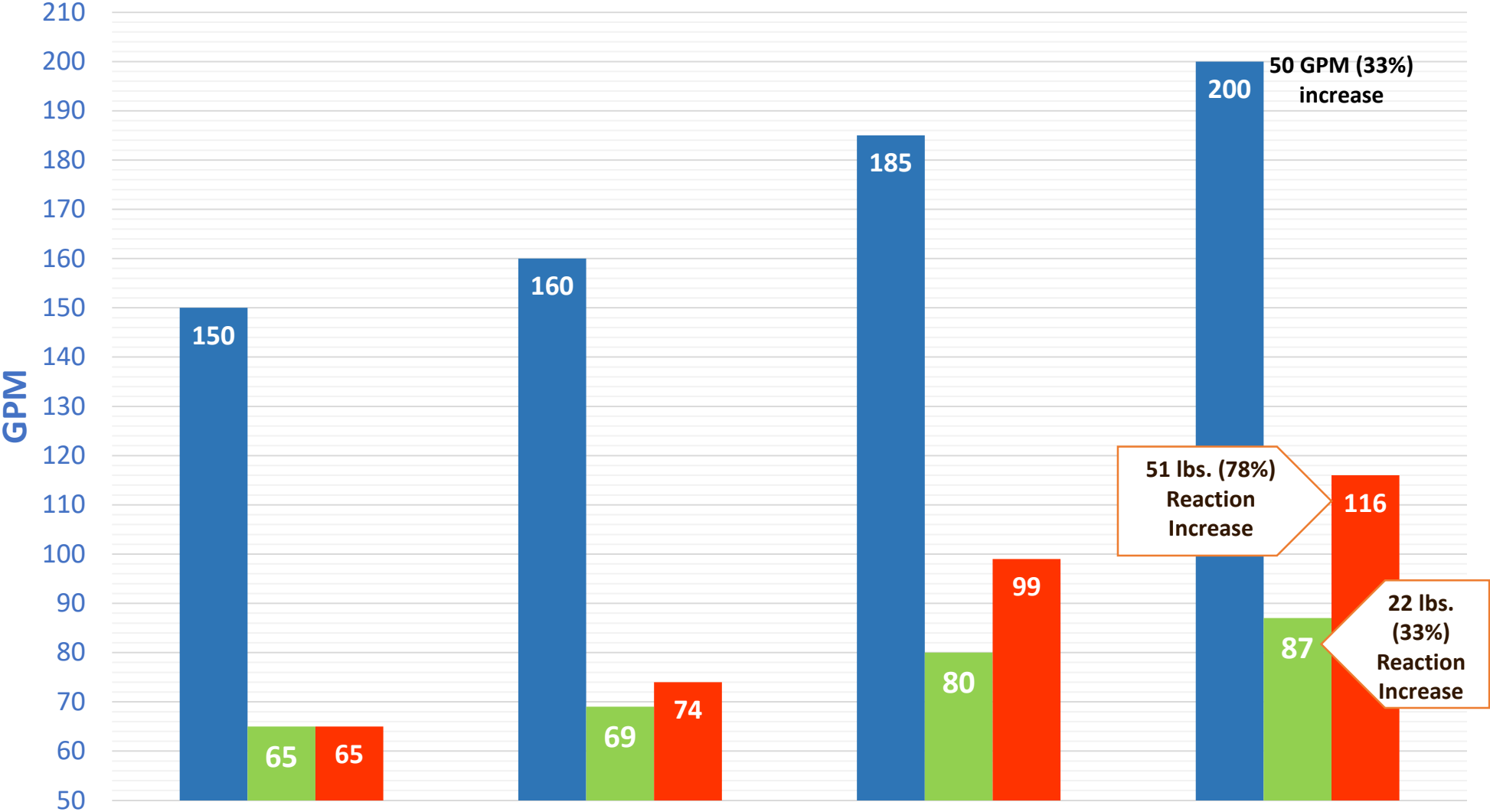
Limits Reaction Force when GPM increases above the rated 150 GPM. When you want to send more water to the seat of the fire and still have a manageable attack line



150 @ 75 Fixed GPM Nozzle vs. 150 @ 75 WORKING FIRE Nozzle

GPM vs. Reaction Force

■ GPM ■ Working Fire Reaction ■ Standard Fixed Nozzle Reaction



WF WORKING FIRE™

GPM	REACTION FORCE
150	65 lbs.
185	80 lbs.
200	87 lbs.

**33% Increase in Flow
Equals a 33% Increase
in Reaction Force**

Standard Fixed Flow

GPM	REACTION FORCE
150	65 lbs.
185	99 lbs.
200	116 lbs.

**33% Increase in Flow
Equals a 78% Increase
in Reaction Force**



Why 150 GPM?

- Its a common standard for the fire service that is derived from NFPA 1710:

“..... application rate of 300 gpm from two handlines....for a two-story single- family dwelling.... safely maintained by a minimum of two members”

Excerpt from NFPA 1710, 2020 edition

5.2.4 Deployment.

5.2.4.1 Single-Family Dwelling Initial Full Alarm Assignment Capability.

5.2.4.1.1* The initial full alarm assignment to a structure fire in a typical 2000 ft² (186 m²), two-story single-family dwelling without basement and with no exposures shall provide for the following:

- (1) Establishment of incident command outside of the hazard area for the overall coordination and direction of the initial full alarm assignment with a minimum of one member dedicated to this task (1)
- (2) Establishment of an uninterrupted water supply of a minimum of 400 gpm (1520 L/min) for 30 minutes with supply line(s) maintained by an operator (1)
- (3) Establishment of an effective water flow application rate of 300 gpm (1140 L/min) from two handlines, each of which has a minimum flow rate of 100 gpm (380 L/min) with each handline operated by a minimum of two members to effectively and safely maintain the line (4)
- (4) Provision of one support member for each attack and backup line deployed to provide hydrant hookup and to assist in laying of hose lines, utility control, and forcible entry (2)



Why 75 psi?

- TFT is continuing, yet again, to listen to the North American Firefighting market. Trends prove that 75 psi nozzle pressure is the leading choice for North American Fire Departments
- A middle ground for manageable nozzle reaction and aids in hose kink resistance



To whom do I demonstrate this nozzle too?

1. Any department that hates their current old-school 100psi Automatic nozzles
2. Any department that is conducting nozzle evaluations or considering nozzle replacement
3. Any department considering a TFT Metro, Akron Assault or an Elkhart Chief XD
4. Current TFT/Elkhart Automatic users or general TFT/Akron/Elkhart users wanting or considering the switch to fixed GPM nozzles
5. Any department that wants to switch to low pressure operations and hose kink is a concern
6. Any department that is interested in delivering High GPM while limiting reaction force and making advancement easier for the crew
7. Use and deployment of a gated wye appliance



What fire department challenges does it solve?

- Use and deployment of Gated Wye Applications, when one line is shut and the other remains open
- “I want to achieve high GPM with lower reaction force”
- “We are experiencing a lot of hose kinks after we switched to 50 psi nozzles”
- “I can’t afford to switch my entire department to kink resistant hose”
- “I need to at least hit the NFPA 1710 minimum of 150 gpm”
- “I would like to flow more than the NFPA 1710 150 gpm minimum”
- “I noticed when I over pump my fixed GPM nozzle to get more water, the reaction force sky rockets”
- “I don’t like certain nozzles like Automatics because the stream still looks good at really low flows”
- “These 100 psi nozzles just have way too much reaction force for our team”



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More Benefits of the Working Fire Nozzle

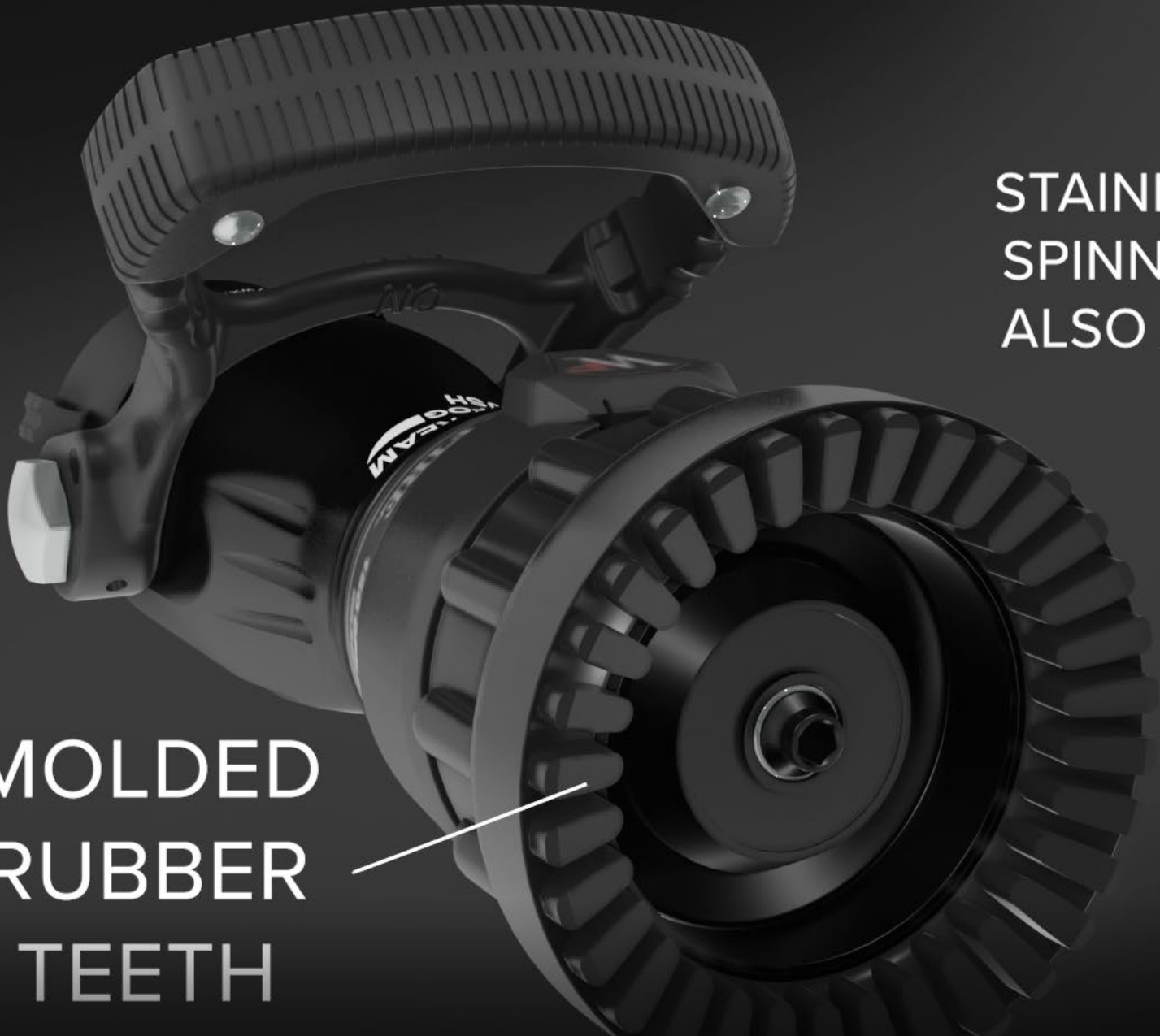
STRAIGHT
STREAM
DETENT



PREVENTS
UNINTENTIONAL
MOVEMENT
INTO FOG

CUSTOM LASER ENGRAVING





MOLDED
RUBBER
TEETH

STAINLESS STEEL
SPINNING TEETH
ALSO AVAILABLE

HOSE FITS THROUGH
HANDLE



STAINLESS STEEL BALL VALVE





WORKING FIRE





WORKING FIRE

Break Apart models

Pair it with any TFT valve model:

1. F140 Series
2. H-VO Series





WORKING FIRE

One piece or Tip-only models available





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- [crs_059: Working Fire Overview](#)
- [crs_060: Working Fire Demonstration Video](#)



theworkingfire.com

