

# FlipTip™ NOZZLE

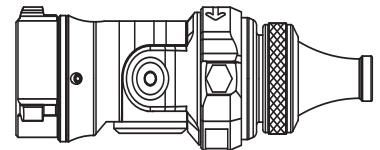
## INSTRUCTION FOR OPERATION AND MAINTENANCE

### ⚠ WARNING

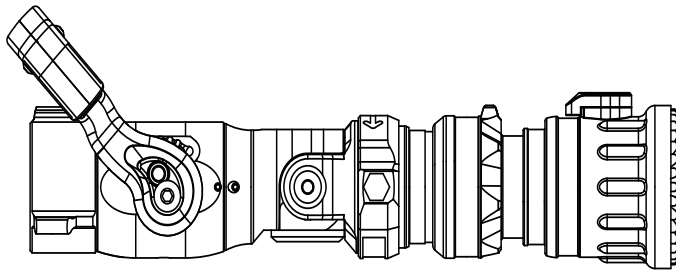
Understand manual before use. Operation of this device without understanding the manual and receiving proper training is a misuse of this equipment. Obtain safety information at [tft.com/serial-number](http://tft.com/serial-number).

This equipment is intended for use by trained and qualified emergency services personnel for firefighting. All personnel using this equipment shall have completed a course of education approved by the Authority Having Jurisdiction (AHJ).

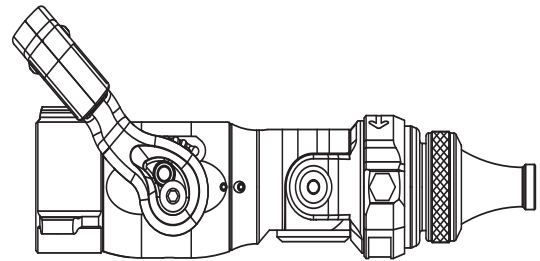
This instruction manual is intended to familiarize firefighters and maintenance personnel with the operation, servicing, and safety procedures associated with this product. This manual should be kept available to all operating and maintenance personnel.



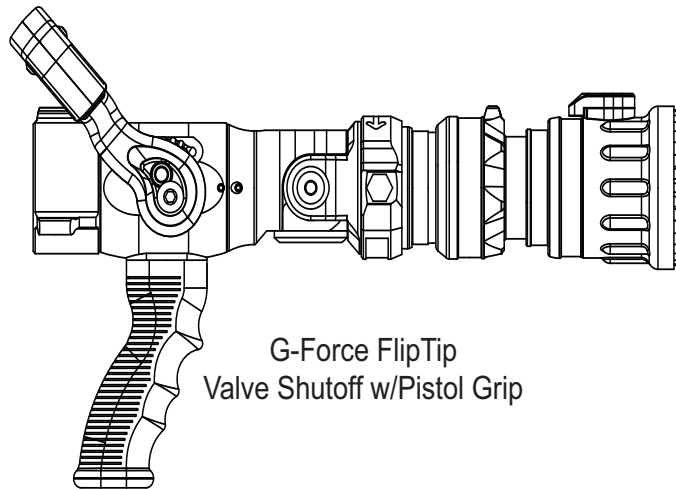
FlipTip Only  
No Shutoff



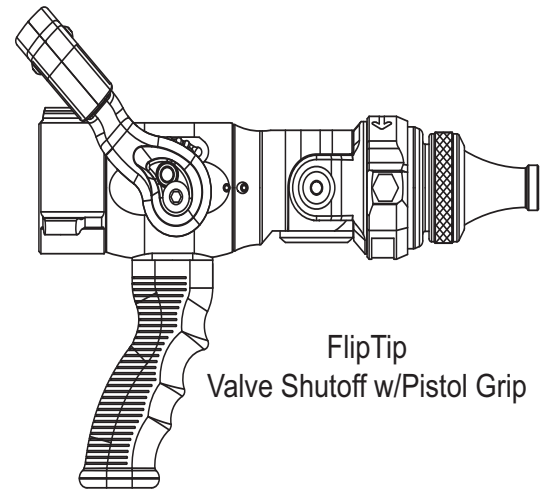
G-Force FlipTip  
Valve Shutoff



FlipTip  
Valve Shutoff



G-Force FlipTip  
Valve Shutoff w/Pistol Grip



FlipTip  
Valve Shutoff w/Pistol Grip

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⚠ DANGER

PERSONAL RESPONSIBILITY CODE

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

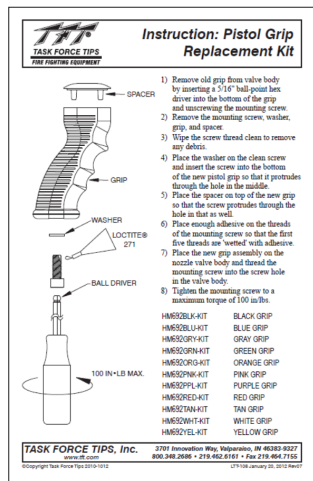
1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called upon to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and /or Emergency Response and in the use, precautions, and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns or other severe injury.



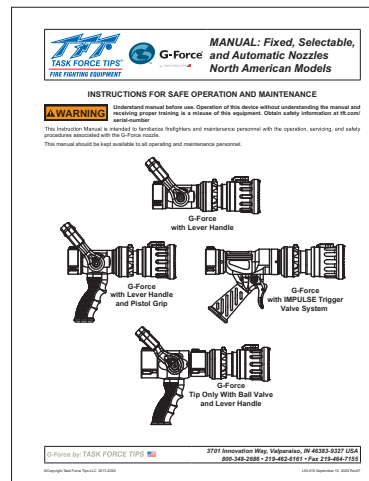
Fire and Emergency Manufacturers and Service Association  
P.O. Box 147, Lynnfield, MA 01940 • www.FEMSA.org

## SUPPORTING MATERIALS

The following documents contain supporting safety and operating information pertaining to the equipment described in this manual.



LTT-108 Installation Instruction for Pistol Grip Replacement Kit



LIG-010 Manual - G-Force Nozzle Series

## 1.0 MEANING OF SAFETY SIGNAL WORDS

A safety related message is identified by a safety alert symbol and a signal word to indicate the level of risk involved with a particular hazard. Per ANSI Z535.6, the definitions of the four signal words are as follows:



**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION** indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.



**NOTICE** is used to address practices not related to physical injury.

## 2.0 SAFETY



An inadequate supply of pressure and/or flow will cause an ineffective stream and can result in injury or death. Choose operating conditions to deliver adequate fire suppression. See flow graphs.



This equipment is intended for use by trained personnel for firefighting. Use of this equipment for other purposes may involve hazards not addressed by this manual. Seek appropriate guidance and training to reduce risk of injury.



Equipment may be damaged if frozen while containing significant amounts of water. Such damage may be difficult to detect visually. Subsequent pressurization can lead to injury or death. Any time the equipment is subject to possible damage due to freezing, it must be tested and approved for use by qualified personnel before being considered safe for use.



Failure to restrain nozzle reaction can cause firefighter injury from loss of footing and/or stream protection. Opening and closing other nozzles, hose line kinks, changes in pump settings, nozzle pattern, or flushing will cause changes in nozzle reaction. Nozzle operator must always be prepared in the event of these changes.



If nozzle gets out of control while flowing, violent whipping motion will occur. Serious injury or death could result. Retreat from the nozzle immediately. Do not attempt to regain control of nozzle while flowing.



Application of water or foam solutions on energized electrical equipment could cause electrocution. Serious injury or death could result. Assume circuits are energized until confirmed to be de-energized. Do not apply water or foam to energized electrical equipment.



The stream exiting a nozzle is powerful and capable of causing injury and property damage. Make sure the nozzle is securely attached and pointing in a safe direction before water is turned on. Do not direct water stream to cause injury or damage to persons or property.



To prevent mechanical damage, do not drop or throw equipment.

### 3.0 GENERAL INFORMATION

The Task Force Tips FlipTip nozzles are designed to provide excellent performance under most fire fighting conditions. Their rugged construction is compatible with the use of fresh water as well as fire fighting foam solutions.

#### 3.1 VARIOUS MODELS AND TERMS

The TFT FlipTip nozzle is available in several configurations. The FlipTip nozzle is available with or without a pistol grip. Various models are shown below.

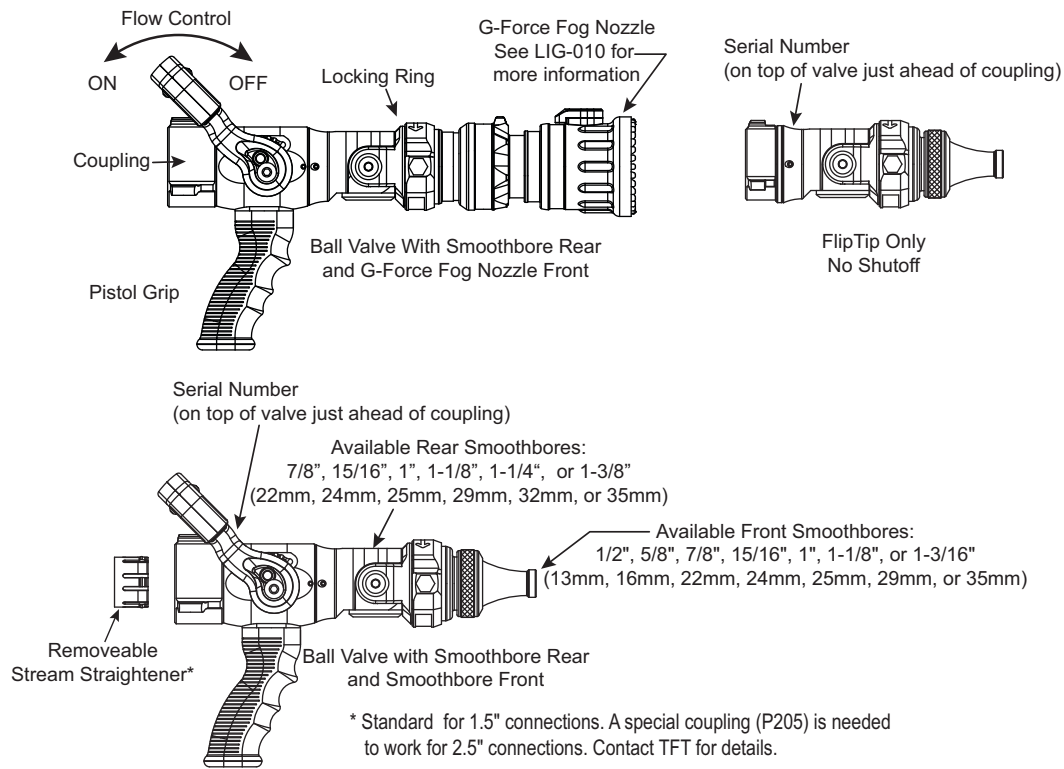


Figure 3.1

### 3.2 SPECIFICATIONS

Maximum operating pressure (with valve shut off)*	300 psi	20 bar
Operating temperature range of fluid	33 to 120° F	1 to 50° C
Storage temperature range	-40 to 150° F	-40 to 65° C
Materials used	Aluminum 6000 series hard anodized MIL8625 class 3 type 2, stainless steel 300 series, nylon 6-6, nitrile rubber	
*Consult factory for higher pressure applications		

### 3.3 USE WITH SALT WATER

Use with salt water is permissible provided the equipment is thoroughly cleaned with fresh water after each use. The service life of the equipment may be shortened due to the effects of corrosion, and is not covered under warranty.

### 3.4 NOZZLE COUPLINGS

NH (National Hose Threads) threads are standard on all nozzles. Other threads such as NPSH (National Pipe Straight Hose) may be specified at time of order.

- CAUTION** Mismatched or damaged waterway connections may cause equipment to leak or uncouple under pressure. Failure could result in injury. Equipment must be mated to matched connections.
- CAUTION** Dissimilar metals coupled together can cause galvanic corrosion that can result in the inability to uncouple the connection, or complete loss of engagement over time. Failure could cause injury. Per NFPA 1962, if dissimilar metals are left coupled together, an anti-corrosive lubricant should be applied to the connection and the coupling should be disconnected and inspected at least quarterly.

### 3.5 FLOW CHARACTERISTICS

The FlipTip nozzle has fixed orifice sizes. Relationship of flow and nozzle pressure at each orifice size is shown below. If the nozzle is connected behind a different nozzle, use the flow charts for the outlet nozzle.

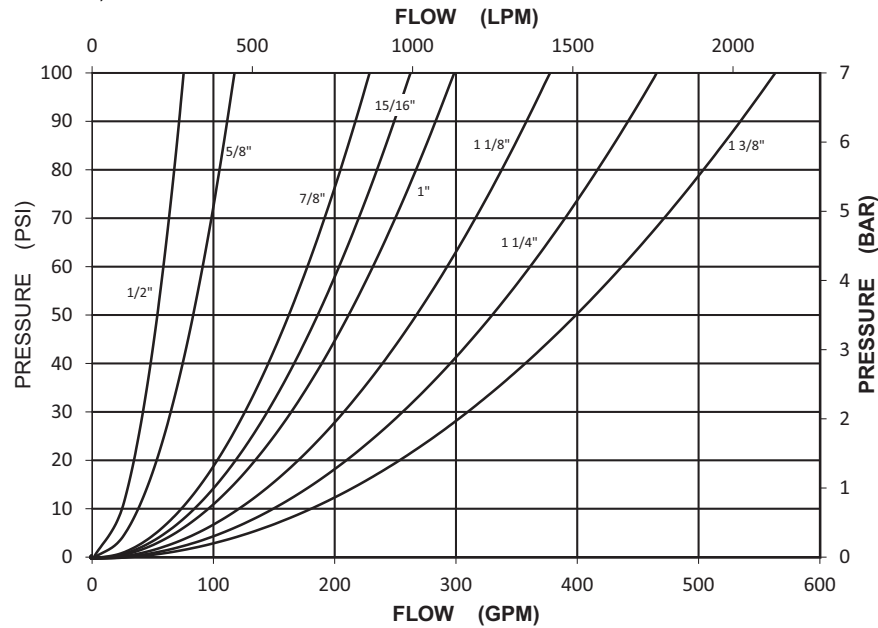


Figure 3.0

Flows at specific pressures for each orifice size are as follows:

1/2" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	47	16
50	53	20
60	58	24
70	62	27
80	66	31

5/8" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	73	25
50	82	31
60	90	37
70	97	43
80	104	49

7/8" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	144	48
50	161	60
60	176	72
70	190	84
80	203	86

15/16" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	165	55
50	185	69
60	202	83
70	218	97
80	234	110

1" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	188	63
50	210	79
60	230	90
70	249	110
80	266	126

1-1/8" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	238	79
50	266	99
60	291	119
70	315	139
80	366	159

1-1/4" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	294	98
50	328	123
60	360	147
70	388	172
80	415	196

1-3/8" TIP		
PRESSURE	FLOW	REACTION
PSI	GPM	LBS
40	355	119
50	397	148
60	435	178
70	470	208
80	502	237

## 4.0 FlipTip CONTROLS

### 4.1 REMOVABLE STREAM STRAIGHTENER

Stream quality is generally improved with use of an integral stream straightener at the FlipTip inlet. The FlipTip may be used without the straightener if so desired.

The removable stream straightener is a standard option for 1.5" connections.

TFT's 2.5" connections utilize an optimized waterway in place of the stream straightener. If so desired, the straightener can still be used with a special 2.5" coupling (P205). Contact TFT for details.

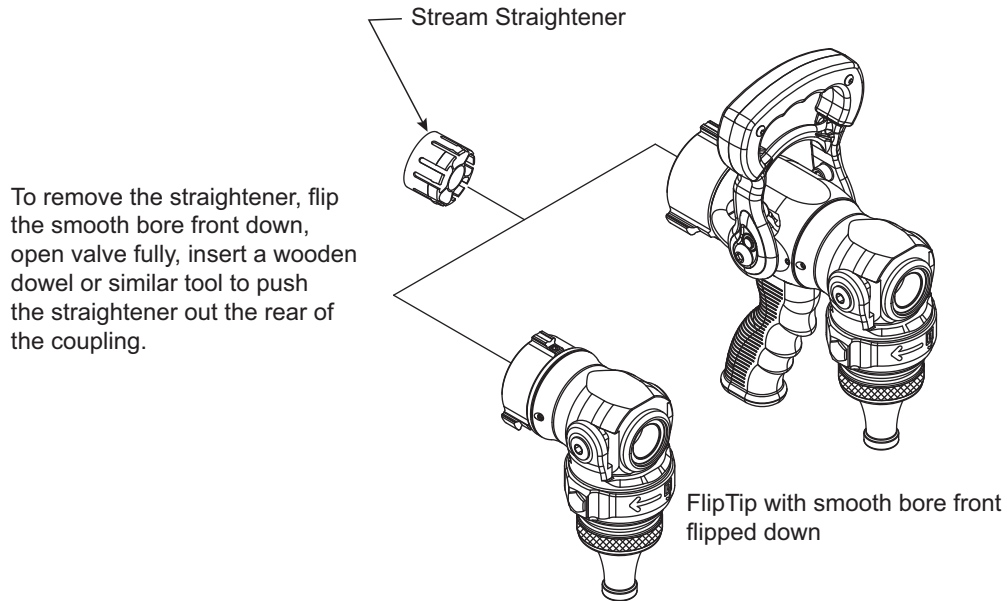


Figure 4.1

### 4.2 FlipTip LOCK

The front nozzle is locked in both the up and down positions. To change positions, follow the steps below.

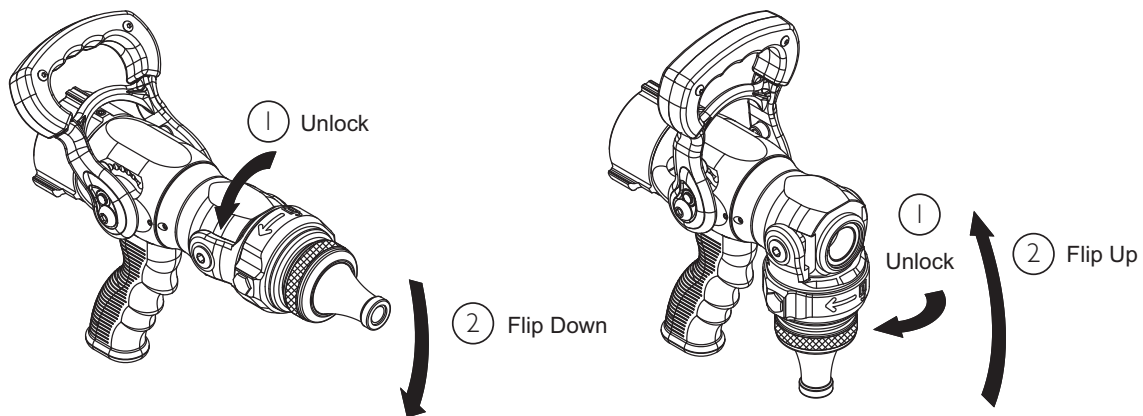


Figure 4.2

#### NOTICE

The FlipTip pivoting joint is not sealed between the fully up and fully down positions. Shut off water flow before changing the front nozzle position to avoid spraying in unintended directions.

#### NOTICE

When the front nozzle is in the down position, the sealing surfaces are exposed. Avoid actions which can damage the sealing surfaces to prevent possible leakage and repairs.

### 4.3 REAR SMOOTH BORE INSERTS

The rear smooth bore inserts may be removed by removing the retaining ring and pulling the insert out the front of the nozzle.

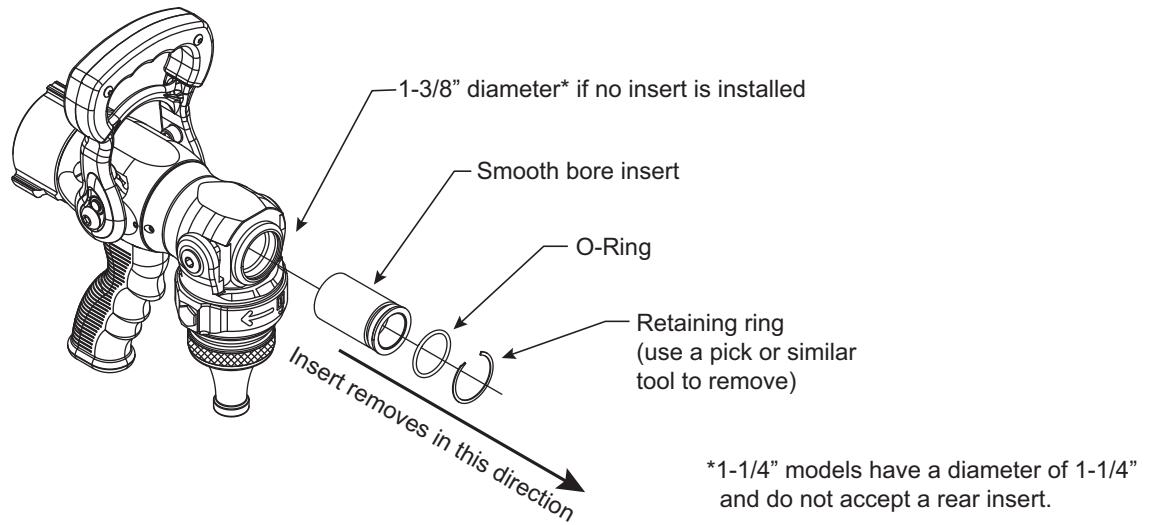


Figure 4.3

### 4.4 FRONT SMOOTH BORE NOZZLE

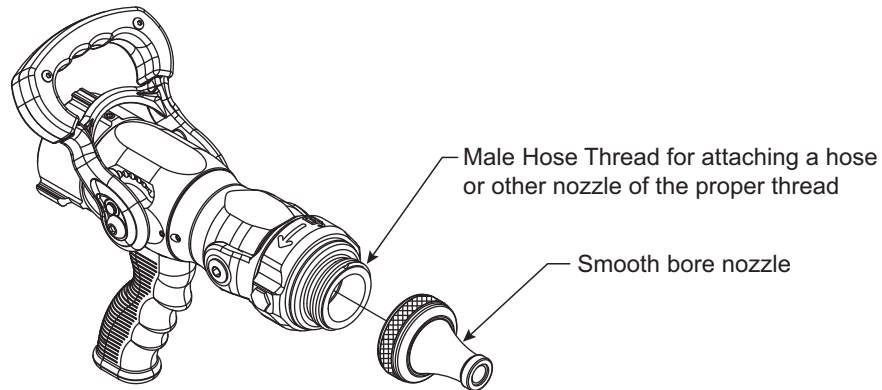


Figure 4.4

### 4.5 FRONT G-FORCE FOG NOZZLE

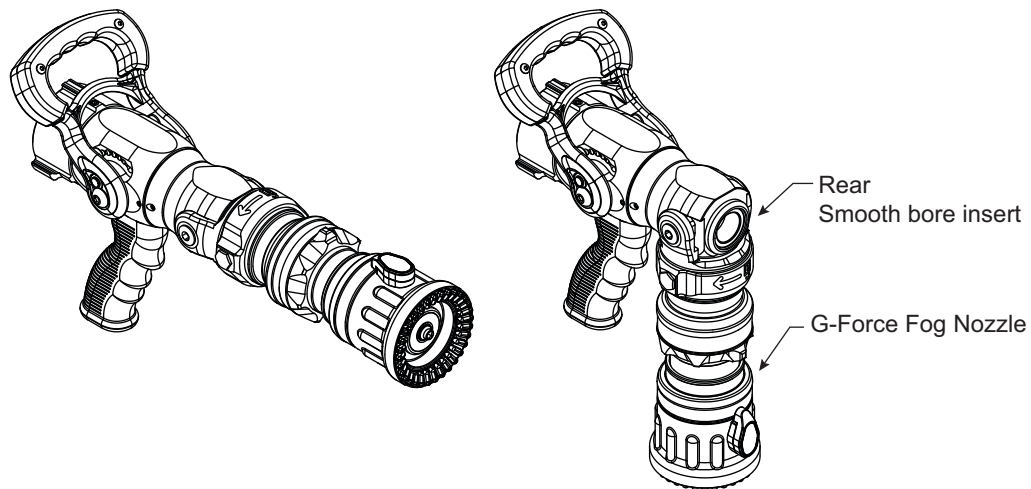


Figure 4.5



The lock for the front nozzle is not intended to withstand nozzle reaction force. To reduce the risk of injury from unintended unlocking due to nozzle reaction, do not use the front nozzle in the down position as a handle to restrain nozzle reaction.

## 5.0 G-FORCE NOZZLE CONTROLS

### 5.1 PATTERN CONTROL

TFT nozzles have full pattern control from straight stream to wide fog. Turning the stream shaper clockwise (as seen from the operating position behind the nozzle) moves the shaper to the straight stream position. Turning the shaper counterclockwise will result in an increasingly wider pattern.

Since the stream trim point varies with flow, the stream should be “trimmed” after changing the flow to obtain the straightest and farthest reaching stream. To properly trim the stream, first open the pattern to narrow fog. Then close the stream to parallel to give maximum reach. Turning the shaper further forward will cause stream crossover and reduce the effective reach of the nozzle.

**WARNING** The nozzle reaction is greatest when the shaper is in the straight stream position. Sudden changes in pattern can cause changes in reaction, leading to loss of footing or an out of control nozzle. The nozzle operator must be prepared for a change in reaction as the pattern is changed.

**CAUTION** Dents or nicks in the nozzle tip can seriously affect the stream reach or pattern, which may increase the risk of injury due to exposure. Care must be taken to avoid dents or nicks in the nozzle tip.

**NOTICE** Turning the shaper further forward will cause stream crossover and reduce the reach of the nozzle.

#### 5.1.1 SHAPER TACTILE INDICATOR

The G-Force has a tactile indicator on the stream shaper. The tactile indicator allows the stream shaper position (and fog angle) to be determined by feel rather than by sight. The fog angle can be adjusted so that the desired fog angle is achieved when the tactile indicator is on top of the nozzle. The G-Force has an optional detent to aid in returning to a known fog angle.

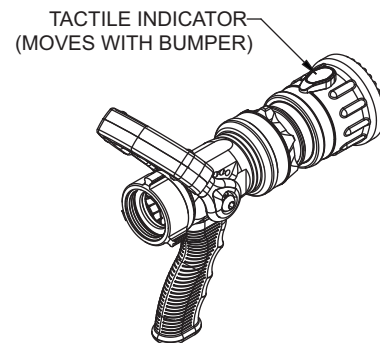


Figure 5.1.1

**NOTICE** The fog angle will change as flow and pressure change (becoming wider with increased flow).

#### 5.1.2 FOG ANGLE ADJUSTMENT

Typically, the G-Force is factory set with the tactile indicator in the top position for straight stream. The fog angle can be adjusted while keeping the tactile indicator on top by following the steps in [\(see Figure 5.2.3\)](#). If the fog angle is changed/adjusted, a new shaper label is needed.

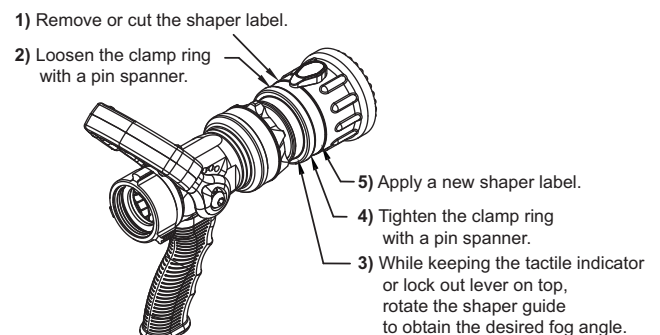


Figure 5.1.2

### 5.2 FLUSH CONTROL

Small debris passes through the debris screen (if so equipped) and may get caught inside the nozzle. This trapped material will cause poor stream quality, shortened reach, and reduced flow. To remove small debris, the nozzle may be flushed as follows:

- While still flowing water, rotate the shaper counterclockwise (as viewed from behind the nozzle) to the flush position. This will open the nozzle allowing debris to pass through. Increased resistance will be felt on the SHAPER as the nozzle goes into flush.
- During flush the nozzle reaction will decrease as the pattern becomes wider and the pressure drops. The nozzle operator must be prepared for an increase of nozzle reaction when returning the nozzle from the flush position to retain control of the nozzle.
- Rotate the shaper out of flush to continue normal operations.

**WARNING** Large amounts or pieces of debris may be unflushable and can reduce the flow of the nozzle resulting in an ineffective flow. In the event of a blockage, it may be necessary to retreat to a safe area, uncouple the nozzle and remove debris.



## 6.0 COLOR CODED HANDLE COVER AND PISTOL GRIPS

Nozzles with lever type valve handles are supplied with black valve handle covers and pistol grips. The handle covers and pistol grips are available from TFT in various colors for those departments wishing to color code the nozzle to the discharge controls. A colored handle cover set will be sent upon receipt of the warranty card by TFT.

Handle covers are replaceable by removing the four screws that hold the handle covers in place. Use a 3/32" hex key when replacing screws. Pistol grip is replaceable by following TFT instruction sheet LTT-108.

For standardization NFPA 1901 recommends the following color code scheme:

Preconnect #1 or Jump Line	Orange	Other Colors Available:
Preconnect #2	Red	- Gray
Preconnect #3	Yellow	- Pink
Preconnect #4	White	- Purple
Preconnect #5	Blue	- Tan
Preconnect #6	Black	
Preconnect #7	Green	
Foam Lines	Red w/ White Border (Red/White)	

## 7.0 WARRANTY

Task Force Tips LLC, 3701 Innovation Way, Valparaiso, Indiana 46383-9327 USA ("TFT") warrants to the original purchaser of its products ("equipment"), and to anyone to whom it is transferred, that the equipment shall be free from defects in material and workmanship during the five (5) year period from the date of purchase. TFT's obligation under this warranty is specifically limited to replacing or repairing the equipment (or its parts) which are shown by TFT's examination to be in a defective condition attributable to TFT. To qualify for this limited warranty, the claimant must return the equipment to TFT, at 3701 Innovation Way, Valparaiso, Indiana 46383-9327 USA, within a reasonable time after discovery of the defect. TFT will examine the equipment. If TFT determines that there is a defect attributable to it, TFT will correct the problem within a reasonable time. If the equipment is covered by this limited warranty, TFT will assume the expenses of repair.

If any defect attributable to TFT under this limited warranty cannot be reasonably cured by repair or replacement, TFT may elect to refund the purchase price of the equipment, less reasonable depreciation, in complete discharge of its obligations under this limited warranty. If TFT makes this election, claimant shall return the equipment to TFT free and clear of any liens and encumbrances.

This is a limited warranty. The original purchaser of the equipment, any person to whom it is transferred, and any person who is an intended or unintended beneficiary of the equipment, shall not be entitled to recover from TFT any consequential or incidental damages for injury to person and/or property resulting from any defective equipment manufactured or assembled by TFT.

It is agreed and understood that the price stated for the equipment is in part consideration for limiting TFT's liability. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

TFT shall have no obligation under this limited warranty if the equipment is, or has been, misused or neglected (including failure to provide reasonable maintenance) or if there have been accidents to the equipment or if it has been repaired or altered by someone else.

**THIS IS A LIMITED EXPRESS WARRANTY ONLY. TFT EXPRESSLY DISCLAIMS WITH RESPECT TO THE EQUIPMENT ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. THERE IS NO WARRANTY OF ANY NATURE MADE BY TFT BEYOND THAT STATED IN THIS DOCUMENT.**

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## 8.0 MAINTENANCE

TFT products are designed and manufactured to be damage resistant and require minimal maintenance. However, as the primary firefighting tool upon which your life depends, it should be treated accordingly. To help prevent mechanical damage, do not drop or throw equipment.

### 8.1 FIELD LUBRICATION

All Task Force Tips nozzles are factory lubricated with high quality silicone grease. This lubricant has excellent wash out resistance, providing long term performance in firefighting nozzles. If your agency has unusually hard or sandy water, the moving parts of the nozzle may be affected. Foam agents and water additives contain soaps and chemicals that may break down the factory lubrication.

The moving parts of the nozzle should be checked on a regular basis for smooth and free operation, and for signs of damage. **IF THE NOZZLE IS OPERATING CORRECTLY, THEN NO ADDITIONAL LUBRICANT IS NEEDED.** Any nozzle that is not operating correctly should be immediately removed from service. The nozzle can be returned to the factory at any time for a complete checkup and re-lubrication with silicone grease.

The field use of Break Free CLP (spray or liquid) lubricant will help to temporarily restore the smooth and free operation of the nozzle. These lubricants do not have the washout resistance and long-term performance of the silicone grease. Once Break Free CLP is applied, re-application will be needed on a regular basis until the nozzle can be returned to the factory for a complete checkup and re-lubrication with silicone grease.

**CAUTION** Aerosol lubricants contain solvents that can swell O-Rings if applied in excess. The swelling can inhibit smooth operation of the moving parts. When used in moderation, as directed, the solvents quickly evaporate without adversely swelling the O-Rings.

### 8.2 SERVICE TESTING

In accordance with NFPA 1962, equipment must be tested a minimum of annually. Units failing any part of this test must be removed from service, repaired and retested upon completion of the repair.

### 8.3 REPAIR

Factory service is available with repair time seldom exceeding one day in our facility. Factory serviced equipment is repaired by experienced technicians, wet tested to original specifications, and promptly returned. Any returns should include a note as to the nature of the problem and whom to reach in case of questions.

Repair parts and service procedures are available for those wishing to perform their own repairs. Task Force Tips assumes no liability for damage to equipment or injury to personnel that is a result of user service. Contact the factory or visit the web site at [tft.com](http://tft.com) for parts lists, exploded views, test procedures and troubleshooting guides.

Performance tests shall be conducted on the equipment after a repair, or anytime a problem is reported to verify operation in accordance with TFT test procedures. Consult factory for the procedure that corresponds to the model and serial number of the equipment. Any equipment which fails the related test criteria should be removed from service immediately. Troubleshooting guides are available with each test procedure or equipment can be returned to the factory for service and testing.

**CAUTION** Any alterations to the product or its markings could diminish safety and constitutes a misuse of this product.

**NOTICE** All replacement parts must be obtained from the manufacturer to assure proper operation of the device.

## 9.0 EXPLODED VIEWS AND PARTS LISTS

Exploded views and parts lists are available at [tft.com/serial-number](http://tft.com/serial-number).

## 10.0 OPERATION AND INSPECTION CHECKLIST

**BEFORE EACH USE**, the nozzle must be inspected to this checklist:

1. There is no obvious damage such as missing, broken or loose parts, damaged labels etc.
2. Waterway is clear of obstructions
3. Coupling is tight and leak free
4. Valve operates freely through full range and regulates flow
5. "OFF" position shuts off fully and flow is stopped
6. Nozzle flow is adequate as indicated by pump pressure and nozzle reaction
7. Shaper turns freely and adjusts pattern through full range
8. Nozzle smoothly moves into full flush and out of flush with normal flow and pressure restored
9. Shaper detent (if so equipped) operates smoothly and positively.

**BEFORE BEING PLACED BACK IN SERVICE**, nozzles must be inspected to this checklist:

1. *All controls and adjustments are operational*
2. *Shut off valve (if so equipped) closes off the flow completely*
3. *There are no broken or missing parts*
4. *There is no damage to the nozzle that could impair safe operation (e.g. dents, cracks, corrosion or other defects)*
5. *The thread gasket is in good condition*
6. *The waterway is clear of obstructions*
7. *Nozzle is clean and markings are legible*
8. *Coupling is retightened properly*
9. *Shaper is set to desired pattern*
10. *Shutoff handle is stored in the OFF position*

NFPA 1962: Standard for the care, use, inspection, service testing, and replacement of fire hose, couplings, nozzles and fire hose appliances. Quincy, MA: National Fire Protection Agency



**Equipment failing any part of the checklist is unsafe for use and must have the problem corrected before use or being placed back into service. Operating equipment that has failed the checklist is a misuse of this equipment.**