TRANSFORMER™
PIERCING NOZZLE



PA1 - Piercing Nozzle System

The Task Force Tips Transformer PA1 Piercing Nozzle System is designed to deliver water or foam solutions to areas inaccessible to the fire fighter. A series of jets near the point apply a wide reaching pattern at a rated flow of 570 l/min at 7 bar (150 gpm at 100 psi).

The PA1 system includes a unique twist-grip shutoff valve, a 3 port junction block with striking head, 2 extension tubes, and the flow tube with piercing point. The easy to use and rugged, twist-grip shutoff valve, regulates nozzle flow without the need for an additional shutoff valve.

The 3 port junction block and strike head allow the nozzle to be configured to short, medium, long and L shaped combinations, making it easily adaptable to specific fireground situations.

The PA1 system features a hardened steel piercing point, all extension tubes and valve are constructed of hard coated extruded aluminum, and a sturdy nylon carrying bag with compartments for each component is included.



Extension Tubes



Flow Tube with Piercing Point



Twist-Grip Shutoff Valve



Junction Block with Striking Head

Transformer™ PA1 Order Matrix

PA1	Inlet
Includes: 2 - 48 cm (19") Extension Tubes, 1 - 36 cm (14") Flow Tube with Piercing Point, Twist-Grip Shutoff Valve, 3 Port Junction Block with Striking Head, and Nylon Carry Bag	2.5 cm (1.5") NH Female



PA1

*Individual components can be purchased separately. A complete list of accessories are available in **TFT's World Product Specifications catalog**.*

Configuration Examples



PA2 - Piercing Nozzle System

The Task Force Tips Transformer PA2 Piercing Nozzle System is designed to deliver water or foam solutions to areas inaccessible to the fire fighter. A series of jets near the point apply a wide reaching pattern at a rated flow of 570 l/min at 7 bar (150 gpm at 100 psi).

The PA2 system includes a distribution nozzle rated at 570 l/min (150 gpm), that provides a wide fully filled pattern, and an adapter allowing the distributor nozzle to be used on any 2.5 cm (1.5") NH threaded hoseline.

Also included is a unique twist-grip shutoff valve, a 3 port junction block with striking head, pistol grip, 2 extension tubes, and the flow tube with piercing point. The easy to use and rugged, twist-grip shutoff valve, regulates nozzle flow without the need for an additional shutoff valve.

The 3 port junction block and strike head allow the nozzle to be configured to short, medium, long and L shaped combinations, making it easily adaptable to specific fireground situations.



Extension Tubes | Flow Tube with Piercing Point | Twist-Grip Shutoff Valve | Pistol Grip | Junction Block with Striking Head | Distribution Nozzle | Adapter

The PA2 system features a hardened steel piercing point, an aluminum and stainless distribution nozzle, all extension tubes, pistol grip and valve are constructed of hard coated extruded aluminum, and a sturdy nylon carrying bag with compartments for each component is included.

Transformer™ PA2 Order Matrix

PA2	Inlet
Includes: 2 - 48 cm (19") Extension Tubes, 1 - 36 cm (14") Flow Tube with Piercing Point, Twist-Grip Shutoff Valve, Pistol Grip, 3 Port Junction Block with Striking Head, Distribution Nozzle, Adapter, and Nylon Carry Bag	2.5 cm (1.5") NH Female

Individual components can be purchased separately. A complete list of accessories are available in ***TFT's World Product Specifications catalog****.*

PA2



TASK FORCE TIPS®
FIRE FIGHTING EQUIPMENT

TRANSFORMER

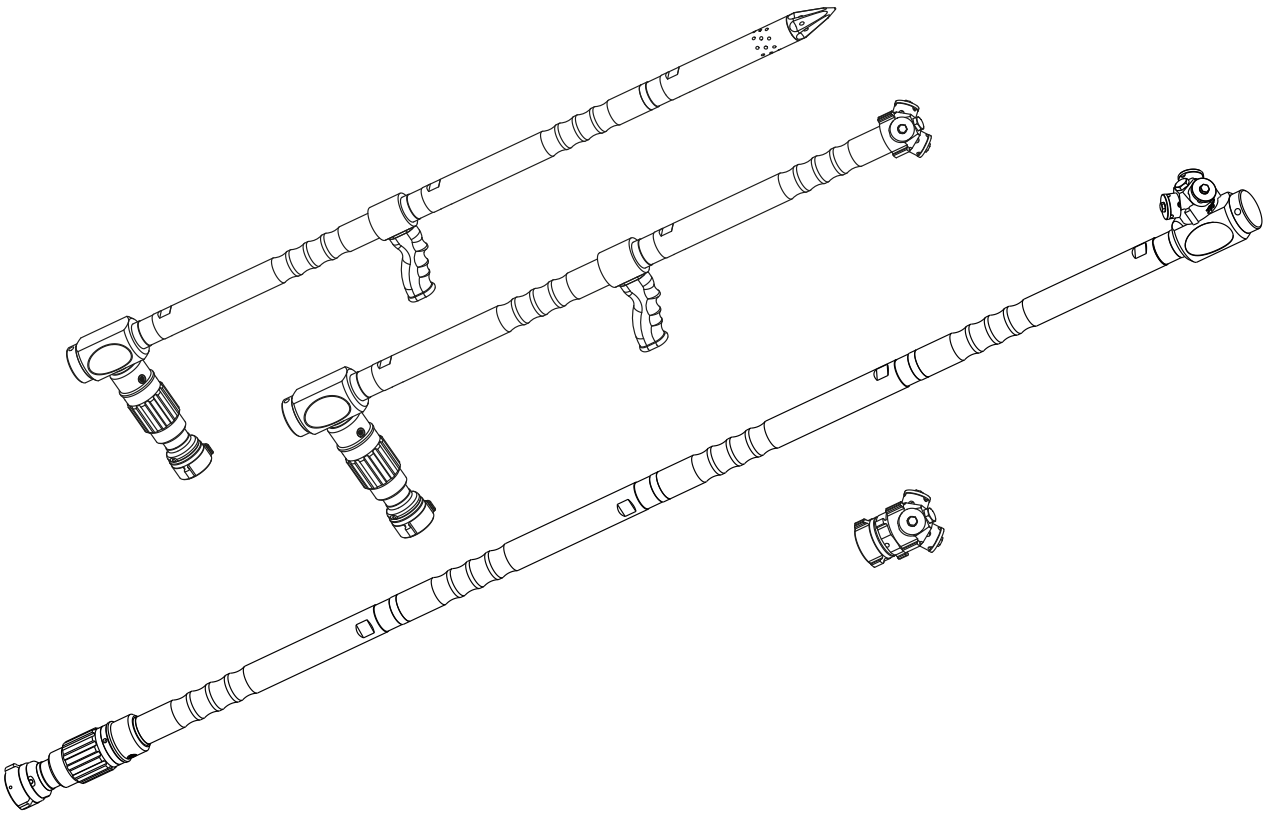
NOZZLE SYSTEM

INSTRUCTIONS 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.**

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.



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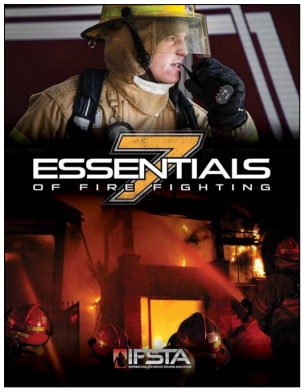
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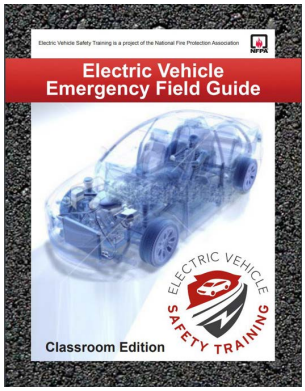
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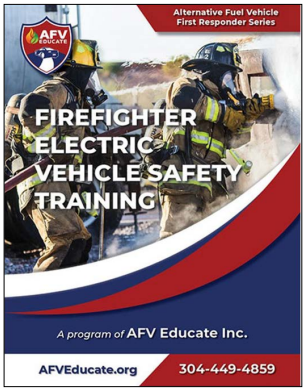


This Safety Manual is not intended as a substitute for proper training in the use of fire fighting equipment as taught from credible sources such as the National Fire Protection Association (NFPA), The International Fire Service Training Association (IFSTA), or sources approved by the Authority Having Jurisdiction (AHJ).

Examples of recent publications:







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

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

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

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

2.0 SAFETY

DANGER **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.**

WARNING **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.**

WARNING **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.**

WARNING **Failure to restrain nozzle reaction can cause 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.**

WARNING **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.**

WARNING **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.**

WARNING **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.**

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

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3.0 GENERAL INFORMATION

The Task Force Tips Transformer Nozzle System allows delivery of water or foam solutions to locations inaccessible to firefighters using standard nozzles. Transformer Nozzles consist primarily of hard coated extruded aluminum and features a hardened stainless steel point. A series of jets in and near the tip apply a wide reaching spherical flow. A swivel coupling with 1.5" NH (38mm) female hose thread is standard (National Hose Threads per NFPA 1960). Nominal rated flow is 150 gpm at 100 psi (570 L/min at 7 bar). Low Flow models have a nominal rated flow of 54 gpm @ 100 (204 l/min @ 7 bar).

3.1 VARIOUS CONFIGURATIONS AND TERMS

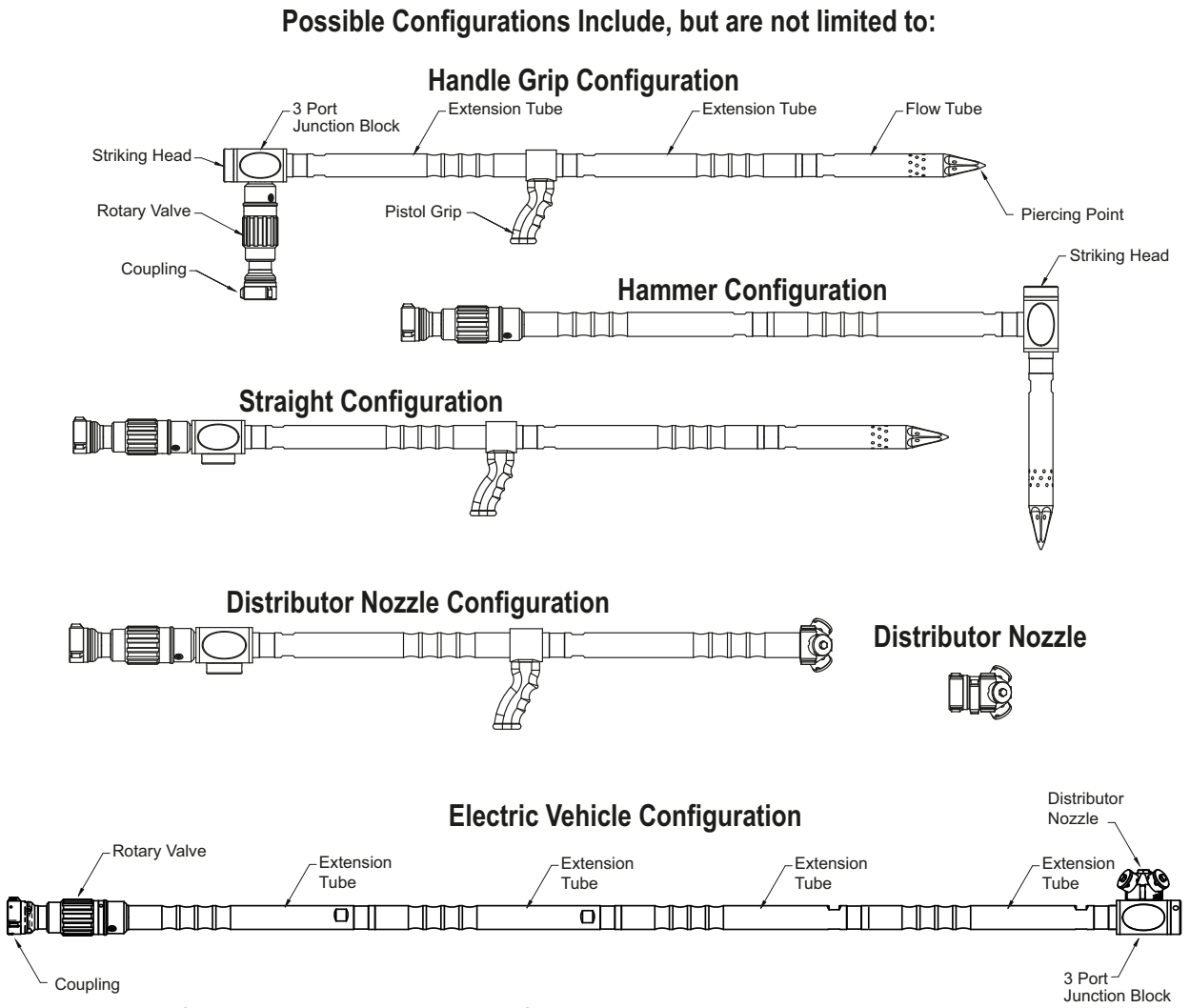


Figure 3.1

3.2 SPECIFICATIONS

Maximum nozzle inlet pressure with valve shut off	300 psi	21 bar
Operating temperature of fluid	33 to 150°F	1 to 50°C
Storage temperature range	-40 to 150°F	-40 to 65°C
Materials used	Aluminum 6000 series hard anodized MIL 8625 class 3 type 2, stainless steel 300 series, nylon 6-6, nitrile rubber	

Table 3.2

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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 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 1930, 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.**

4.0 NOZZLE CONTROLS

4.1 FLOW CONTROL

NOTICE **Control valves must be opened slowly to eliminate unnecessary strain on the hose and couplings, and reduce pressure surges.**

NOTICE **Nozzles attached to an in-service hose shall be stored in the off position.**

4.2 VALVE OPERATION

Each Transformer Nozzle System comes equipped with a unique rotary shutoff valve. The rotary shutoff valve allows the user to operate the Transformer Nozzle System Package without an additional shutoff valve.

From the OFF position, a quarter turn to the left fully opens the waterway. To stop water flow from the ON position, turn the rotary shutoff valve a quarter turn to the right.

⚠WARNING **Operating the rotary valve in an intermediate position between ON and OFF may cause the valve position to change unexpectedly, resulting in injury due to an out of control nozzle. To reduce the risk of injury from unexpected valve movement:**

- **Always be prepared for changes in pressure or flow.**
- **Always operate the rotary valve in the fully open or fully closed position.**

⚠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.**

****IMPORTANT****

5.0 USING THE TRANSFORMER

The Transformer design puts an emphasis on versatility, light weight, and small package. The use of aluminum tubing and threaded joints allows for a unique lightweight product. The tool that can deliver high water flow rates into tight spaces with a wide range of stream types. **While the Transformer can penetrate thin sheet metal such as would be found on a mobile home, or drywall and siding found on a typical home, it is NOT intended to be a primary forcible entry tool. For plywood or other heavy materials, a hole should be created with the pick of a fire axe, then enlarged with the axe until the Transformer can enter with minimal effort.**

NOTICE **If during an emergency situation where it becomes necessary to drive the Transformer through heavy plywood, steel sheeting or roofing materials without creating a pilot hole, it should be EXPECTED that some damage will occur. The resulting damage is not covered under warranty.**

NOTICE **Use of the Transformer Nozzle System as a lever or a wedge may cause the unit to bend or fracture. Such damage is considered abuse. The resulting damage is not covered under warranty.**

NOTICE **Repeated training with the Transformer where it is hammered through difficult materials WILL result in damage to the device and is not a part of the product warranty.**

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5.1 ASSEMBLY

Due to the modular construction of the Transformer Nozzle System, the user may configure the nozzle in many different arrangements to suit the situation. A few examples are shown in Figure 3.1. Components are assembled by threading together until hand-tight. Additional components are available to further customize the Transformer Nozzle System.

⚠WARNING **Do not attempt to assemble, disassemble, or configure the Transformer Nozzle System with a pressurized fire hose attached. Safely depressurize and remove the fire hose prior to any assembly or disassembly of the Transformer Nozzle System.**

⚠WARNING **Misaligned, loose, or damaged threads may cause the threaded joints to uncouple under pressure resulting in injury. Nozzle joints must be properly connected. Ensure the threaded joints between components are completely installed and hand tightened. Do not use a wrench to assemble.**

5.1.1 STRIKING HEAD

The Transformer Nozzle System uses a removable striking head. The striking head is installed in one of the three threaded holes on the junction block.

To relocate the striking head:

1. Remove the striking head from the port in which it is currently located.
2. Hand tighten the striking head assembly into the chosen port.
3. Turn the striking cap, by hand, beyond the initial contact with the junction block to load the striking cap spring.

⚠WARNING **Striking the Transformer Nozzle System with a sledge or axe creates risk of injury from missed blows. To reduce risk of injury:**

- **Always wear protective fire gear, eye protection, and gloves as directed by the AHJ.**
- **Avoid holding the Transformer Nozzle System in areas likely to be struck by a missed blow.**
- **Avoid standing in the path of a swinging tool head.**
- **Avoid striking the Transformer Nozzle System when fatigued beyond one's ability to safely control a swing.**
- **Exercise sound judgement when operating on sloped, elevated, or slippery surfaces.**

NOTICE **The Transformer Nozzle System is designed only to hit on the striking head. Striking in any other location is considered abuse and resulting damage is not covered under warranty.**

5.1.2 PIERCING POINT

⚠WARNING **The piercing point has sharp edges that can cause injury by impalement. Use care when handling and striking the Transformer Nozzle.**

- **Do not use the Transformer as a pry bar under any circumstance.**
- **Avoid laying the tool down or storing in a position that presents an impalement or fall hazard.**

5.1.3 DISTRIBUTOR NOZZLE

The Task Force Tips Distributor Nozzle distributes water droplets over a large area. The spinners create an interference pattern of water droplets for a dense water pattern. The distributor nozzle attaches to the Transformer Nozzle System and provides additional flexibility to the operator. The distributor nozzle can also couple to fire hose via an available adapter with a 1.5" NH (37 mm) female full time swivel inlet (National Hose Threads per NFPA 1960). The distributor nozzle provides a nominal water flow of 150 GPM at 100 PSI (560 l/min at 7 bar).

NOTICE **Using the distributor nozzle to penetrate obstacles is considered abuse and resulting damage is not covered under warranty. Always create access points with appropriate tools.**

6.0 USE WITH FOAM

The nozzle may be used with foam solutions. Refer to fire service training by the Authority Having Jurisdiction (AHJ) for the proper use of foam.

⚠WARNING **For Class B fires, lack of foam or interruption in the foam stream can cause a break in the foam blanket and greatly increase the risk of injury or death. Follow procedures established by the AHJ for the specific fuel and conditions.**

⚠WARNING **Improper use of foam or using the wrong type of foam can result in illness, injury, or damage to the environment. Follow foam manufacturer's instructions and fire service training as directed by the AHJ.**

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7.0 WARRANTY

Go to tft.com for all warranty information.

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. 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 1930, 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. Factory serviced equipment is repaired by experienced technicians, wet tested to original specifications, and promptly returned. Call TFT service department at 1-800-348-2686 to troubleshoot and, if needed, directions for return. A return for service form can also be obtained at tft.com/Support/Returning-an-Item-for-Service.

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 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.

⚠WARNING **It is the responsibility of service technicians to ensure the use of appropriate protective clothing and equipment. The chosen protective clothing and equipment must provide protection from potential hazards users may encounter while servicing equipment. Requirements for protective clothing and equipment are determined by the Authority Having Jurisdiction (AHJ).**

⚠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 performance and operation of the device.**

9.0 EXPLODED VIEWS AND PARTS LISTS

Exploded views and parts lists are available at tft.com/serial-number.

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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, etc.
2. Waterway and nozzle jets are clear of obstructions
3. Nozzle flow is adequate as indicated by pump pressure and nozzle reaction
4. Threaded joints between components are hand-tight and leak free
5. Coupling is tight and leak free
6. Valve operates freely through full range and regulates flow
7. “OFF” position shuts off fully and flow is stopped

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

1. All controls and adjustments are operational
2. Shut off valve 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 tightened properly
9. Shutoff handle is stored in the OFF position

⚠WARNING **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.**

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Thunderfog
Selectable Flow Nozzle
360-470-570-750-950 LPM



Quadarfog
Selectable Flow Nozzle
110-230-360-470 LPM

complies with pr EN 15767-1 Standards

Portable Water Monitors

CE



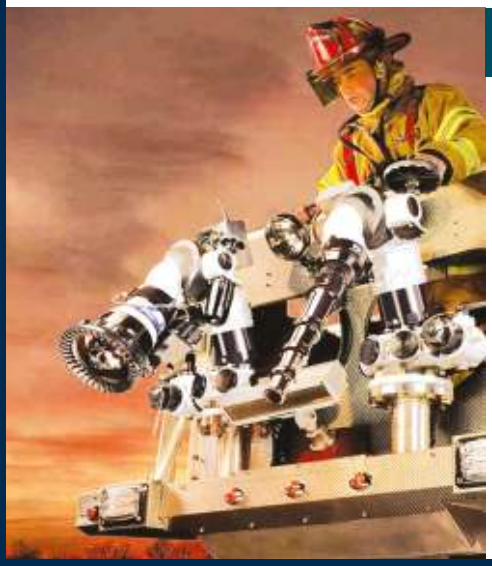
Blitzfire
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Manual / Remote operated Water - Foam Monitors

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Atex version available



Hurricane Monitor
Manual & Remote Control
4500 LPM

CE
Atex version available



Monsoon Monitor
Manual & Remote Control
8000 LPM

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