



Manually Operated Extend-A-Gun Model XG12

Telescoping Waterway for Deck Mounted Monitors

INSTRUCTIONS FOR INSTALLATION, SAFE OPERATION, AND MAINTENANCE

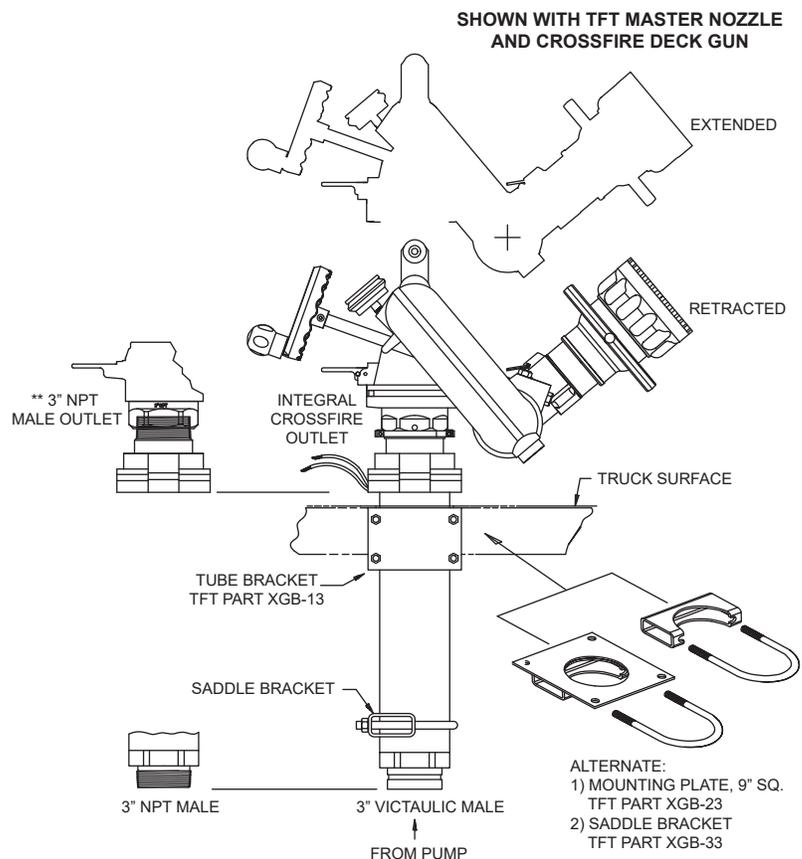
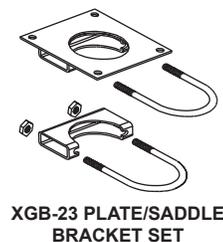
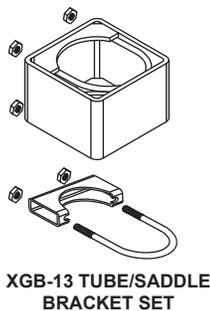
⚠ DANGER

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.

To make the Extend-A-Gun as versatile as possible, three mounting bracket kits are offered. Each kit has a different upper bracket. The lower bracket is the same for all three.



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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

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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



Working from an elevated position increases the risk of falling. Wet or slippery surfaces add to this risk. Serious injury or death could occur. Watch footing when working on top of apparatus.



The stream exiting a nozzle is very 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.



The Extend-A-Gun may be used only in either the fully raised or fully lowered position. The unit may become damaged if the water is turned on in any position other than fully extended or retracted.



Damage may occur if the truck drives under a low hanging object while the Extend-A-Gun RC is extended. Shutting off the water downstream of an Extend-A-Gun in the raised position traps water preventing retraction. Drain water from the piping and retract the Extend-A-Gun RC before moving the apparatus.

Pressurizing a retracted waterway with closed shutoffs or caps on the monitor discharge disables waterway extension. Relieving pressure trapped in the waterway will restore the lift function.

3.0 GENERAL INFORMATION

The Extend-A-Gun is a telescoping waterway designed to maximize firefighter safety while expanding the capabilities of deck mounted Master Stream devices. Its function is to elevate a mounted Master Stream device above other equipment on the apparatus, providing greater clearance and freedom of movement to the device. Operators control elevation both to and from the storage position by manually lifting and lowering the monitor. The Extend-A-Gun features a hard coat anodized aluminum finish and built in sensor for connection to “monitor raised” light. The Extend-A-Gun features a 3” diameter waterway.

3.1 SPECIFICATIONS

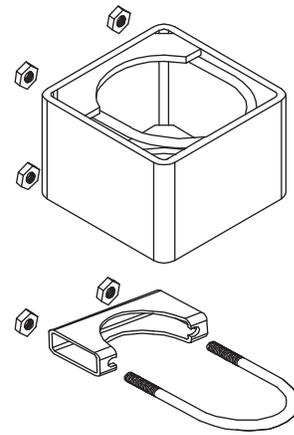
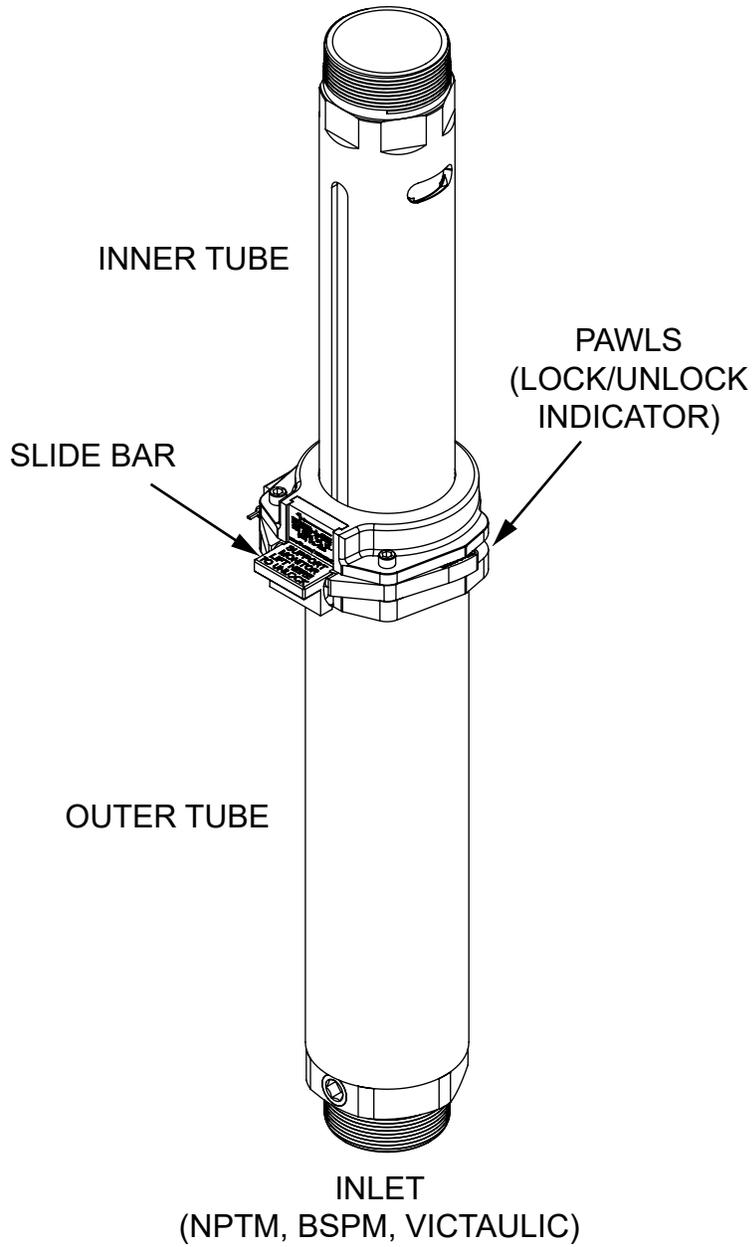
EXTEND-A-GUN XG12	
Waterway Size	3.0" (76mm)
Maximum Flow	1250 gpm (4800 l/min)
Maximum Pressure	200 psi (13.8 bar)
Lifting Capability	100 lbs (46 kg)
Operating Temperature Range	-30°F to +120°F (-34°C to +49°C)

Table 3.1

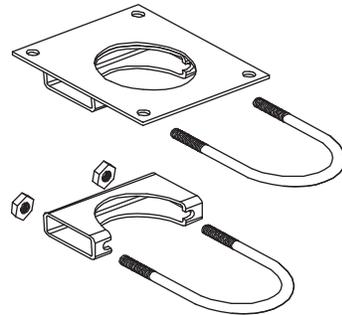
3.2 USE WITH SALT WATER

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

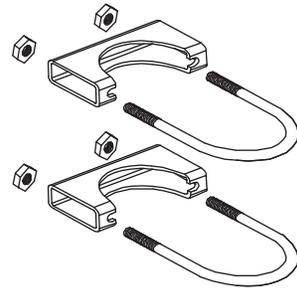
3.3 VARIOUS MODELS AND TERMS



TUBE/SADDLE BRACKET



PLATE/SADDLE BRACKET



SADDLE/SADDLE BRACKET

Figure 3.3

3.4 XG12 SERIES DIMENSIONS

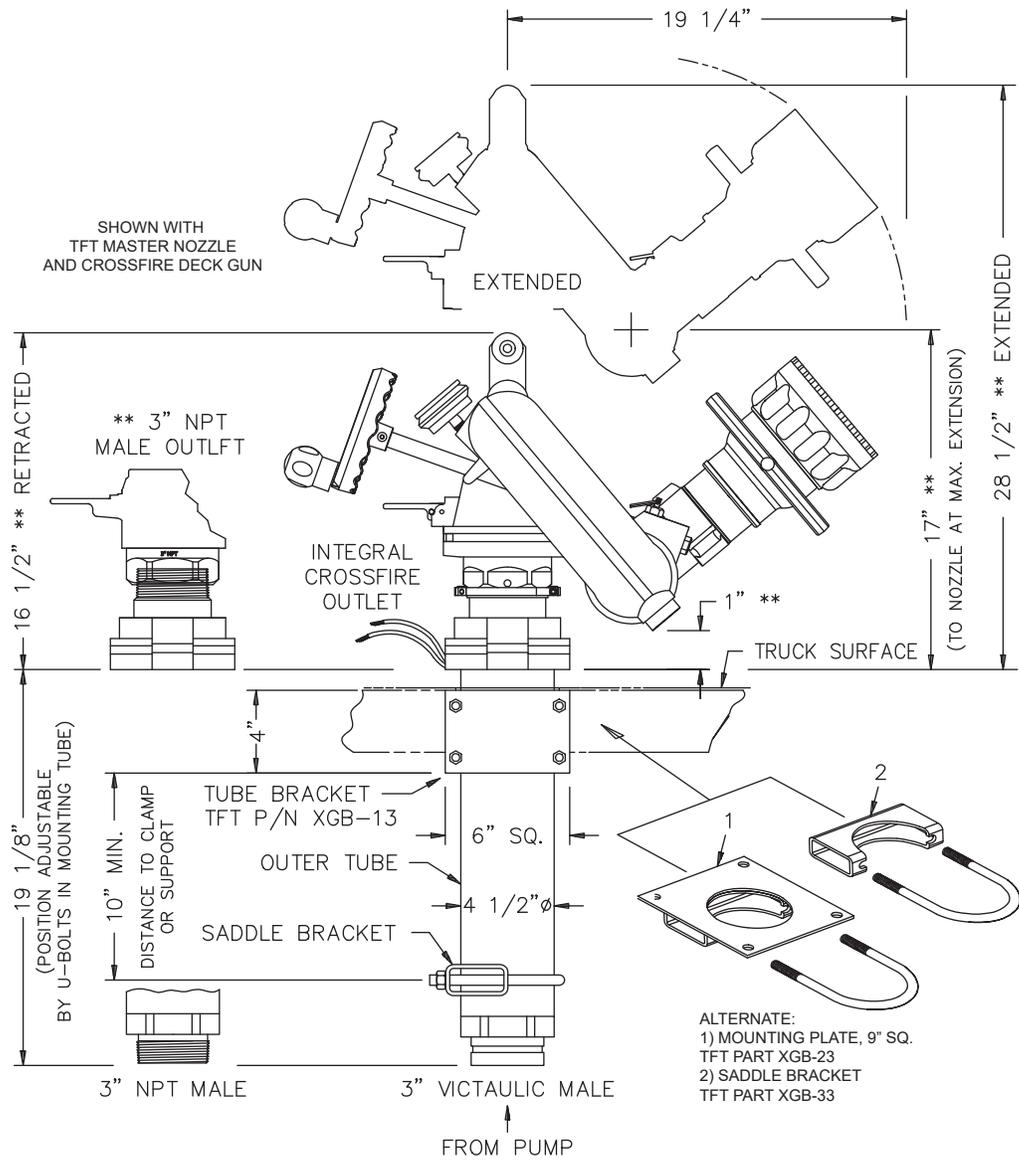
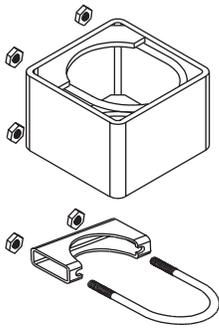


Figure 3.4

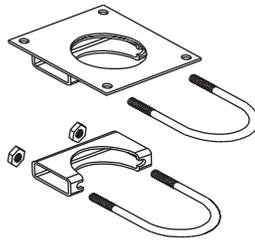
4.0 BRACKET SETS

For safe dependable service, the Extend-A-Gun MUST be securely mounted. To make the Extend-A-Gun as versatile as possible, three mounting bracket kits are offered. Each kit has a different upper bracket. The lower bracket is the same in all three.



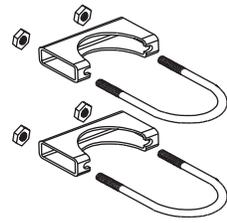
TUBE/SADDLE BRACKET SET
XGB-13 (3" Extend-A-Gun)

Figure 4.0A



PLATE/SADDLE BRACKET SET
XGB-23 (3" Extend-A-Gun)

Figure 4.0B



SADDLE/SADDLE BRACKET SET
XGB-33 (3" Extend-A-Gun)

Figure 4.0C

Task Force Tips strongly recommends that Extend-A-Gun be installed using the bracket sets sold by Task Force Tips that are designed for this purpose. The Task Force Tips bracket sets are designed to fit the Extend-A-Gun outer tube very closely to prevent distortion of the outer tube and to give it adequate support.

4.1 SELECTION OF STRUCTURAL SUPPORT ON FIRE TRUCKS

When the Extend-A-Gun is in the extended position, the nozzle reaction force can exceed 3000 lbs. These loads are transferred directly to the mounting brackets and the structural members to which they are attached. It is crucial that the structural members selected can withstand these forces.

4.2 BRACKET INSTALLATION

4.2.1 TUBE BRACKET INSTALLATION (EXTEND-A-GUN RC3 ONLY)

This kit contains a six inch square steel tube with two U-bolts to be used as the upper bracket, and a saddle bracket similar to a heavy duty muffler clamp for the lower bracket. Both brackets must be used. This kit is designed for factory installation on new equipment. The tube bracket is welded onto the truck tubular framework as shown on the Tube Bracket Welding Diagram. (see section 4.3.1.1) The lower bracket, as shown in the Saddle Bracket Welding Diagram (see section 4.3.2.1), is welded to an additional support and clamped as low as possible on the bottom of the Extend-A-Gun tube. Make sure the welds are capable of withstanding the forces shown on the SIDE LOADS AT MOUNTING POINTS worksheet. (see section 5.0) The Extend-A-Gun may be installed in the brackets after the truck is painted. Use thread locker supplied in the kit on U-bolt threads. Torque the nuts on the U-bolts used in the tube (upper) to 15-17 lbf-ft. Torque the nuts on the U-bolts used in the saddle (lower) to 36-40 lbf-ft.

4.2.1.1 TUBE BRACKET WELDING

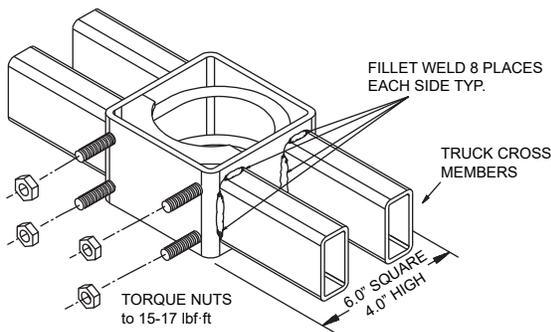


Figure 4.2.1.1A

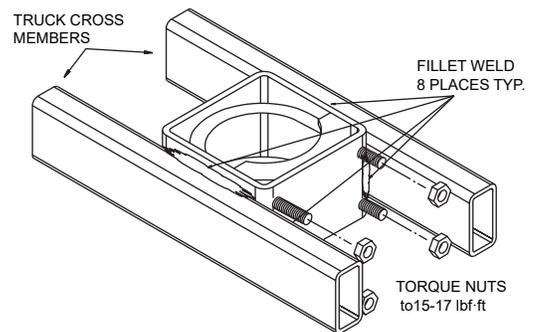


Figure 4.2.1.1B

4.2.2 SADDLE BRACKET INSTALLATION

This kit contains two steel saddle brackets and U-bolts, and is designed for factory installation on new equipment. Both brackets must be used. To minimize stress, the brackets should be as far apart as possible when clamped to the Extend-A-Gun tube. The welds must be able to withstand the forces shown on the SIDE LOADS AT MOUNTING POINTS worksheet. (see section 5.0) The Extend-A-Gun may be installed in the brackets after the truck is painted. Use Loctite supplied in the kit on U-bolt threads. Torque the nuts used on the U-bolts to 36-40 lbf-ft.

4.2.2.1 SADDLE BRACKET WELDING

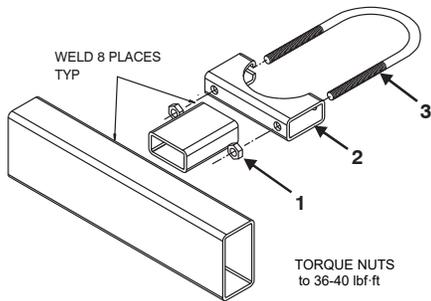


Figure 4.2.2.1A

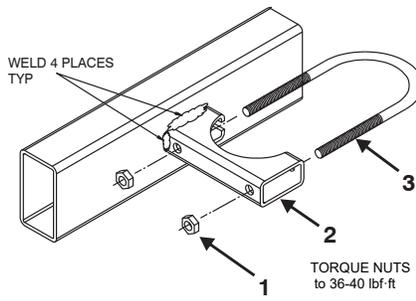


Figure 4.2.2.1B

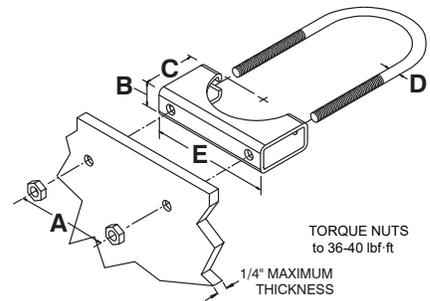


Figure 4.2.2.1C

4.2.3 PLATE BRACKET INSTALLATION

This kit may be used in either new or retro-fit installations. The top plate with its bracket may be bolted above or below an existing deck.

The lower saddle bracket is installed as shown in the Saddle Bracket Welding Diagram. (see section 4.3.2.1) Both brackets must be used. To minimize stress, the brackets should be as far apart as possible when clamped to the Extend-A-Gun tube.

Refer to the SIDE LOADS AT MOUNTING POINTS worksheet (see section 5.0) to ensure the mounting points can withstand these forces. Use Loctite® supplied in the kit on U-bolt threads. Torque the nuts used on the U-bolts to 36-40 lbf-ft.

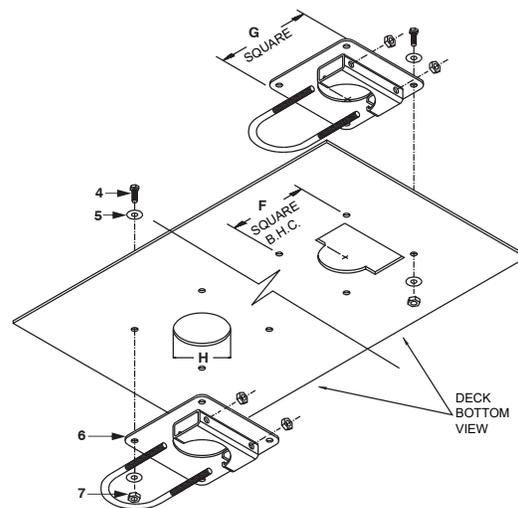


Figure 4.2.3

Part Identification	US Standard Units	Metric Units
TORQUE U-BOLTS	30-40 lbf-ft	(49-54 N·m)
A = Center Distance	5.0"	(127mm)
B = Height	1.5"	(38mm)
C = Width	3.0"	(76mm)
D = U-Bolt Size	1/2-13 UNC	
E = Length	6.0"	(152mm)
F = Square Pattern on Plate	7.5"	(191mm)
G = Plate Length and Width	9.0" x 9.0"	(288mm x 288mm)
H = Hole Diameter	4-5/8"	(117mm)
1 = Hex Nut (2 rqd)	VT50-13NT	
2 = Saddle Bracket	XG486	
3 = U-Bolt	XG476	
4 = Deck Bolt	1/2-13 Hex Bolt	
5 = Washer	1/2" I.D.	
6 = Plate Bracket	XG485	
7 = Deck Nut	1/2-13 Hex Nut	

Table 4.2.3

5.0 MANUAL EXTEND-A-GUN SIDE LOADS AT MOUNTING POINTS WORKSHEET

An interactive version of this worksheet is available at tft.com/Library/Instructions for Installation, Safe Operation and Maintenance.

⚠️ WARNING

Reaction forces generated by master stream flows are capable of causing injury and property damage if not properly supported. The Extend-A-Gun must be securely mounted to rigid truck structural members.

Before installing the Extend-A-Gun, qualified persons MUST determine the forces that will be exerted and select suitable structural members and bracket mounting locations.

- Nozzle reaction force which can be as high as 900 lbf (400 kg) for 3" models and 1500 lbf (680 kg) for 4" models.
- The forces acting on the mounting brackets when the Extend-A-Gun is in the extended position are higher than the forces in a normal deck gun installation. Use SIDE LOADS AT MOUNTING POINTS worksheets for calculations
- Install the upper and lower brackets as far apart as possible to minimize the amount of stress on the brackets.

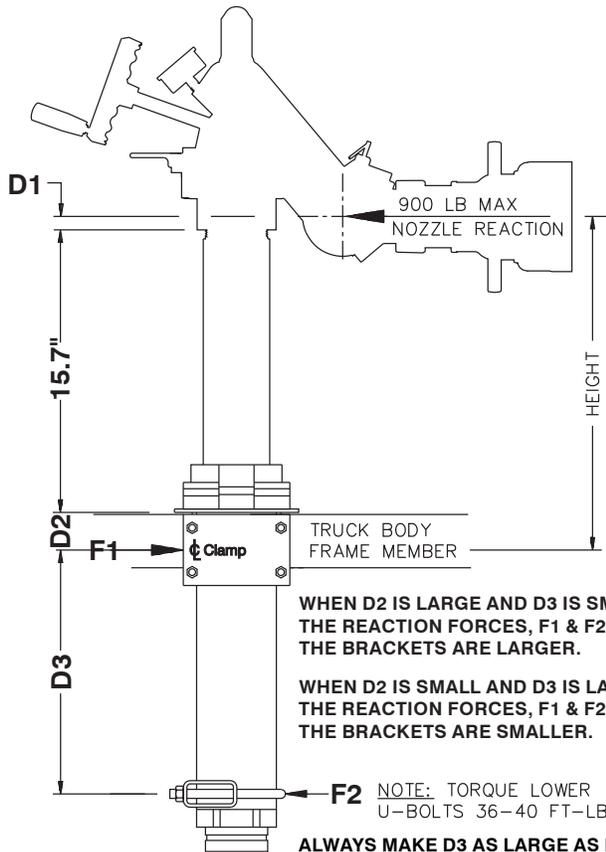
Qualified individuals should install mounting brackets, Extend-A-Guns and monitors.

- The Extend-A-Gun must be securely mounted to rigid truck support members.
- Do not use flanges or pipe made from plastic for monitor mounting.
- Inferior welding or poor plate installation could result in serious injury or equipment damage.
- Torque all fasteners to specified values.

I certify that I have accurately and completely worked through the Extend-A-Gun XG12 Side Load Worksheet prior to Extend-A-Gun installation.

NAME: _____

DATE: _____



- 1) Determine the distance, D1, in inches, from the center of the monitor elevation joint to the bottom of the threads in the monitor inlet.

D1 FOR MOST COMMON INSTALLATIONS

Task Force Tips CROSSFIRE	D1 = 1"
Elkhart Stinger Mod. 8297-98 w/companion flange	D1 = 6"
Akron Apollo Mod. 3422 w/companion flange	D1 = 5"
Akron Apollo Mod. 3422 threaded on	D1 = 4"

D1 = inches

- 2) Locate the value of D1 in the charts on the following page. Find the desired HEIGHT (from the center of the upper bracket to the center of the stream) in the HEIGHT column.
- 3) Locate D2 (the distance from the bottom of the latch casting to the center of the upper mounting bracket) for the chosen HEIGHT in inches.

D2 = inches

- 4) Determine the distance, D3 in inches (from the center of the upper mounting bracket to the center of the lower mounting bracket) for the proposed installation. D3 MUST be between D3 min and D3 max.

D3 = inches

5) Calculate forces on brackets: $D1$ + $D2$ + $D3$ + 15.7 = L inches

6) Multiply L by 900: L X 900 = M inches · pounds

7) Divide M by D3: M / $D3$ = F1 pounds

8) Subtract 900 from F1: $F1$ - 900 = F2 pounds

NOTE: F1 MUST be less than 3100 lbf. F2 MUST be less than 2200 lbf.
The proposed installation MUST be capable of withstanding forces of this magnitude.

5.1 EXTEND-A-GUN LOAD CHARTS

This load chart is for the 12" manual Extend-A-Gun (model XG12) only.

Crossfire

D1	D2	HEIGHT	D3 min	D3 max
1	1	18	7	14
	2	19	8	13
	3	20	8	12
	4	21	8	11
	5	22	9	10
	6	23	9	9

D1	D2	HEIGHT	D3 min	D3 max
2	1	19	8	14
	2	20	8	13
	3	21	8	12
	4	22	9	11
	5	23	9	10

D1	D2	HEIGHT	D3 min	D3 max
3	1	20	8	14
	2	21	8	13
	3	22	9	12
	4	23	9	11
	5	24	10	10

Apollo Intergral Threads

D1	D2	HEIGHT	D3 min	D3 max
4	1	21	8	14
	2	22	9	13
	3	23	9	12
	4	24	10	11
	5	25	10	10

Apollo Flange

D1	D2	HEIGHT	D3 min	D3 max
5	1	22	9	14
	2	23	9	13
	3	24	10	12
	4	25	10	11

Stinger

D1	D2	HEIGHT	D3 min	D3 max
6	1	23	9	14
	2	24	10	13
	3	25	10	12
	4	26	11	11

D1	D2	HEIGHT	D3 min	D3 max
7	1	24	10	14
	2	25	10	13
	3	26	11	12
	4	27	11	11

D1	D2	HEIGHT	D3 min	D3 max
8	1	25	10	14
	2	26	11	13
	3	27	11	12
	4	28	11	11

D1	D2	HEIGHT	D3 min	D3 max
9	1	26	11	14
	2	27	11	13
	3	28	11	12

D1	D2	HEIGHT	D3 min	D3 max
10	1	27	11	14
	2	28	11	13
	3	29	12	12

5.2 INDICATOR LIGHT

The Extend-A-Gun has a built in switch to control an indicator light on the truck dash board showing that the Extend-A-Gun is in the extended position. This is to help prevent damage that would occur if the deck gun hits a low overhanging object. Do not move the truck with the Extend-A-Gun in the extended position.

5.2.1 INDICATOR SWITCH WIRING

The Extend-A-Gun latch mechanism contains a magnetic switch. This switch is intended to be used with a MONITOR EXTENDED warning light. The magnetic switch in the Extend-A-Gun is a normally open switch, and the switch is closed when the Extend-A-Gun is in the down position. The enclosed relay **MUST BE USED** to limit the current through the switch.

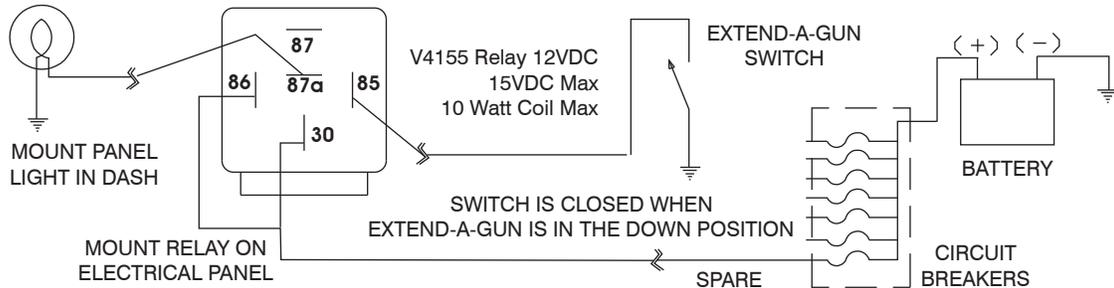
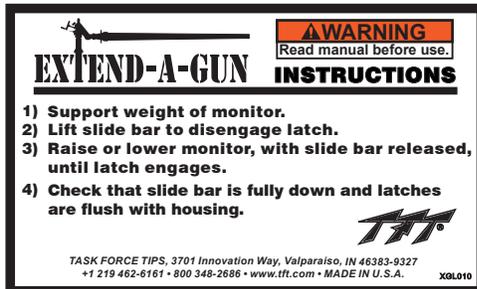


Figure 5.2.1A

1. After the Extend-A-Gun is permanently installed, screw the threaded switch body into the tapped hole in the Extend-A-Gun latch casting. Be careful not to twist or break the wires.
2. Mount the relay on the electrical panel with the terminals accessible.
3. Drill a 1/2" diameter hole in the dash board for the panel light. Leave enough room for a 1-13/16" diameter label around the light or a 2" wide x 1-1/2" high label next to the light. Apply one of the two warning labels and push the panel light through the hole in the dash.
4. Connect the labeled wires on the switch to terminal #85 on the relay and ground respectively.
5. Connect the terminals on the panel light to terminal #87A on the relay and ground respectively.
6. Connect a wire from a "spare" position on the trucks circuit breaker panel to terminals #30 and #86. The circuit from the "spare" position in the fuse block should only be energized when the ignition switch is in the ON position.



Attach the instruction label (XGL010) to a smooth surface where it can be seen by the person operating the Extend-A-Gun and monitor.



Attach the warning label (XGL020) next to the indicator light or warning label (XGL025) around the indicator light on the truck dashboard.

Figure 5.2.1B

6.0 MOUNTING MONITORS

A Task Force Tips Crossfire® monitor may be mounted in one of two ways. We recommend that it be mounted directly on Extend-A-Gun models XG18PL-XL, or XG18VL-XL, which have integral Crossfire bases built in. Alternatively, it can be mounted on Extend-A-Gun models XG18PL-PL, or XG18VL-PL using Task Force Tips part XFF-APL Truck Mount Base, which fits only the Task Force Tips Crossfire.

Monitors with an –RL inlet may be mounted directly to Extend-a-Guns with –RL outlets.

Monitors with a 3" NPTF inlet may be mounted directly to Extend-A-Guns with a –PL outlet.

Monitors with 3" 4-Bolt ANSI flange inlet may be mounted to Extend-A-Guns with a –PL outlet with the addition of an XFF-CPL Companion Flange Kit.

7.0 USE OF DRAIN

The Extend-A-Gun comes with a 3/4" NPT hole in the inlet. This is designed to be used as a drain or plugged if a drain is used elsewhere. A drain must be employed to remove excess water from the system. This prevents freezing and allows the unit to be parked.

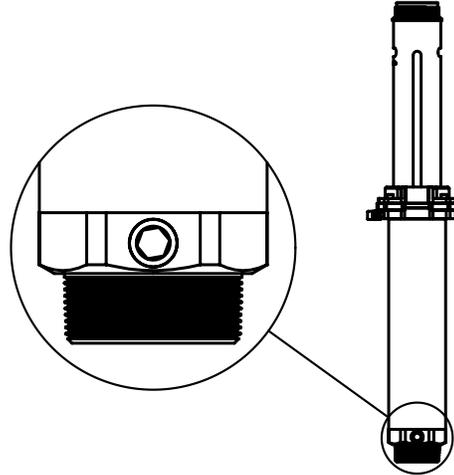


Figure 7.0

⚠ 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.

8.0 OPERATING INSTRUCTIONS

⚠️ WARNING

The Extend-A-Gun must be lowered in the park position before the truck is driven or moved. Damage or injury may occur if the truck drives under a low hanging object, while the Extend-A-Gun is extended.

⚠️ WARNING

The Extend-A-Gun may be used only in either the fully raised or fully lowered position. The unit may become damaged if the water is turned on in any position other than fully extended or retracted.

Indicators that the Extend-A-Gun is fully raised or lowered are:

- The Slide Bar is down
- The Pawls are flush with the housing
- The word “UNLOCKED” on the top of the Pawls is NOT VISIBLE

⚠️ CAUTION

Lifting the slide bar to lower the deck gun with out supporting the weight of the deck gun can cause the deck gun to fall. This can cause injury. Always support the weight of the deck gun when lifting the slide bar.

NOTICE

Do not lift the slide bar while flowing water. The mechanism will not unlatch, but the mechanism can be damaged.

8.1 EXTEND

1. Make sure the valve to the deck gun is closed.
2. Lift the slide bar on the Extend-A-Gun latch mechanism with one hand and lift the deck gun straight up with your other hand. The slide bar should be released after the deck gun has moved out of the retracted position. Notice the word “UNLOCKED” appear on the top surface of the pawls.
3. When the deck gun is in the extended position it will not be possible to lift it any higher. The pawls will retract, the slide bar will move down flush with the housing and the word “UNLOCKED” is no longer visible.
4. Make certain that the pawls are flush with the sides of the housing and that the word “UNLOCKED” is not visible before operating the valve to the deck gun.

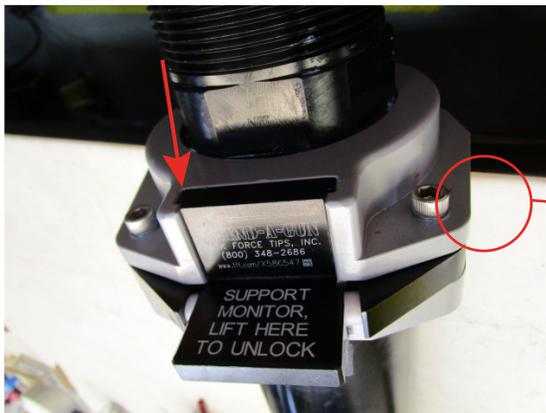


PAWLS
PULLED
AWAY FROM
THE CASTING
“UNLOCKED”
VISIBLE

TO UNLOCK - LIFT SLIDE BAR

8.2 RETRACT

1. Make sure the valve to the deck gun is closed.
2. Lift the deck gun slightly with one hand to take the weight off the latch mechanism and lift the slide bar with your other hand. Notice the word “UNLOCKED” appears on the top surface of the pawls.
3. Lower the deck gun to the retracted position. The slide bar should be released after the deck gun leaves the extended position.
4. Make certain that both pawls are flush with the sides of the housing and that the word “UNLOCKED” is not visible before opening the valve to the deck gun.



PAWLS
FLUSH
WITH
CASTING

TO LOCK - SLIDE BAR DOWN

Figure 8.1

9.0 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.

10.0 MAINTENANCE

The Extend-A-Gun requires little maintenance. The Extend-A-Gun should be kept clean and free of dirt. All controls should be checked for freedom of movement and proper operation before each use. Any inoperable or damaged parts should be repaired or replaced immediately. Consult factory for recommended service procedure.

10.1 LUBRICATION

The Extend-A-Gun is permanently lubricated on the cup seal. If lubricant has been removed during service, apply a thin film of White Lithium Grease on seal surfaces.

10.2 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. Repair charges for non-warranty items are minimal. 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 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.



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.

11.0 EXPLODED VIEW AND PARTS LIST

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

12.0 OPERATION AND INSPECTION CHECKLIST

BEFORE EACH USE, appliances must be inspected to this checklist:

1. There is no obvious damage such as missing, broken or loose parts, damaged labels, etc.
2. All controls move freely and operate properly.
3. The Extend-A-Gun operates freely without binding throughout its range of travel.
4. There are no leaks when the Extend-A-Gun is flowing water.

BEFORE BEING PLACED BACK IN SERVICE, appliances must be inspected to this list:

1. All controls and adjustments are operational.
2. There are no broken or missing parts.
3. There is no damage to the Extend-A-Gun or attached monitor that could impair safe operation (e.g. detents, cracks, corrosion, or other defects).
4. The waterway is clear of obstructions.
5. The Extend-A-Gun is clean and markings are legible.



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.