X-OMG Operator's Manual
Document EX1303

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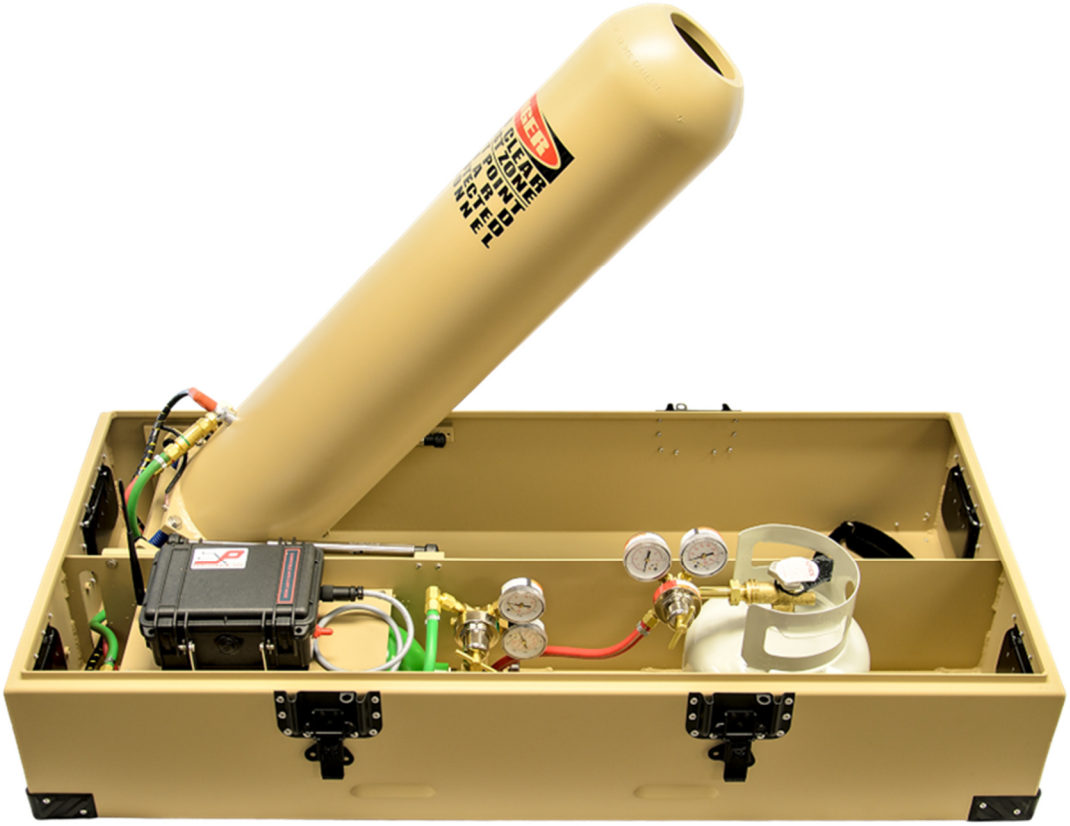

COMPANY PROPRIETARY

WARNING: Never place objects, especially body parts, over the cannon. When firing, any object in the blast cone is subject to blast effects including very brief moments of intense heat. This flash effect can cause serious flash burns to exposed skin or ignite readily flammable liquids or material; i.e. gasoline, black powder, etc.

Table of Contents

Uncrating the Model X-OMG	Page 6
Assembling the Model X-OMG	Page 6-7
Installation of the Oxygen Cylinder	Page 6
Installation of the Propane Cylinder	Page 6-7
Mounting the Cannon Assembly	Page 8
Safety Instructions to follow prior to Firing	Page 10-11
Operating the Model X-OMG	Page 11-14
Installation of AA Batteries	Page 12
Setting the Unit ID	Page 12
Mode Summaries	Page 13-14
Safety Features and Procedures for Firing	Page 14
Storage Requirements	Page 16
Replacing Cylinders	Page 16
To replace an Oxygen Cylinder	Page 16
To replace a Propane Cylinder	Pages 16-17
Hardware Input	Page 17
Accessory Output	Page 17
Maintenance and Inspection Procedures	Page 18
Before each use	Page 18
Periodic Checkpoints	Page 18
Operation Summary Checklist	Page 19

Table of Figures

Figure 1	Model X-OMG Components	Page 4
Figure 2	Model X-OMG Detail	Page 5
Figure 3	Cannon Detail	Page 8
Figure 4	Control Box	Page 9
Figure 5	Blast Cone	Page 10

WARNING: This symbol indicates that violating this item could cause serious personal injury.

CAUTION: This symbol indicates that violating this item could cause minor or medium personal injuries or material losses

Components of the Model X-OMG

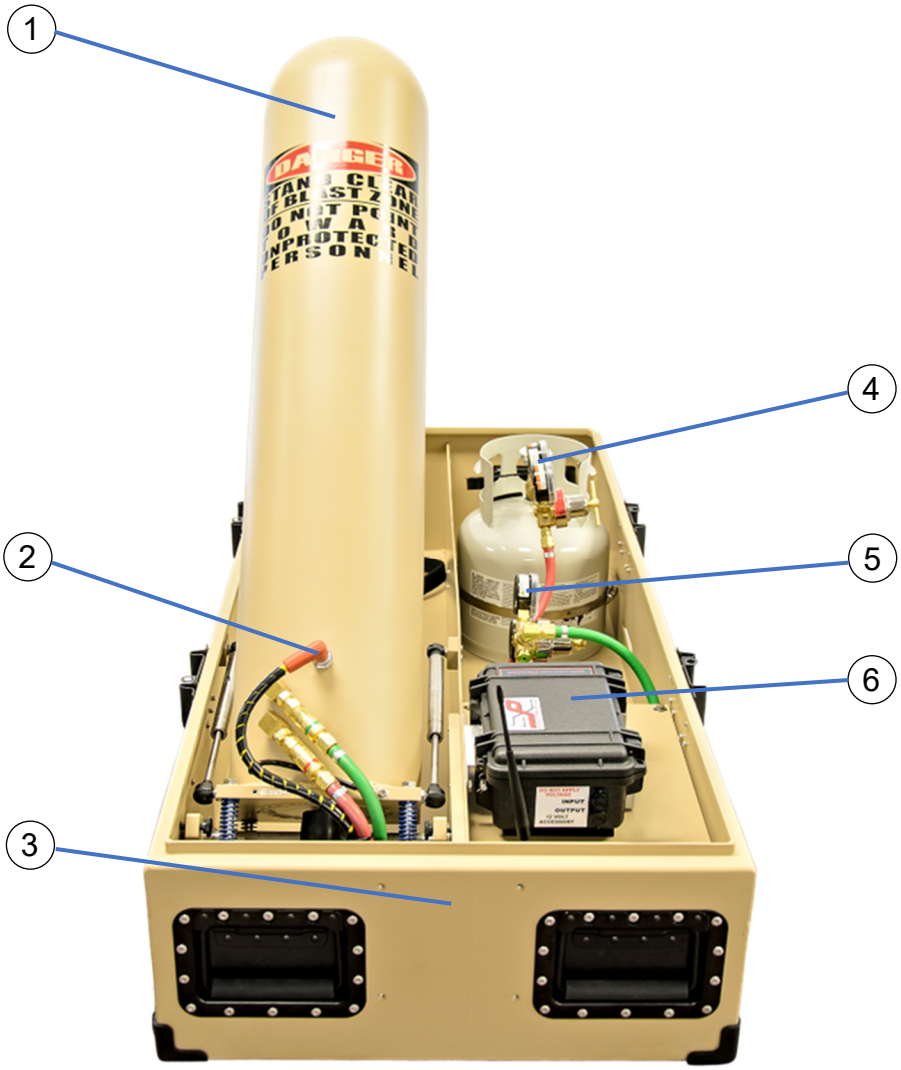

FIGURE 1	
1. Cannon	4. Propane Regulator
2. Spark Plug	5. Oxygen Regulator
3. Base Enclosure	6. Control Box

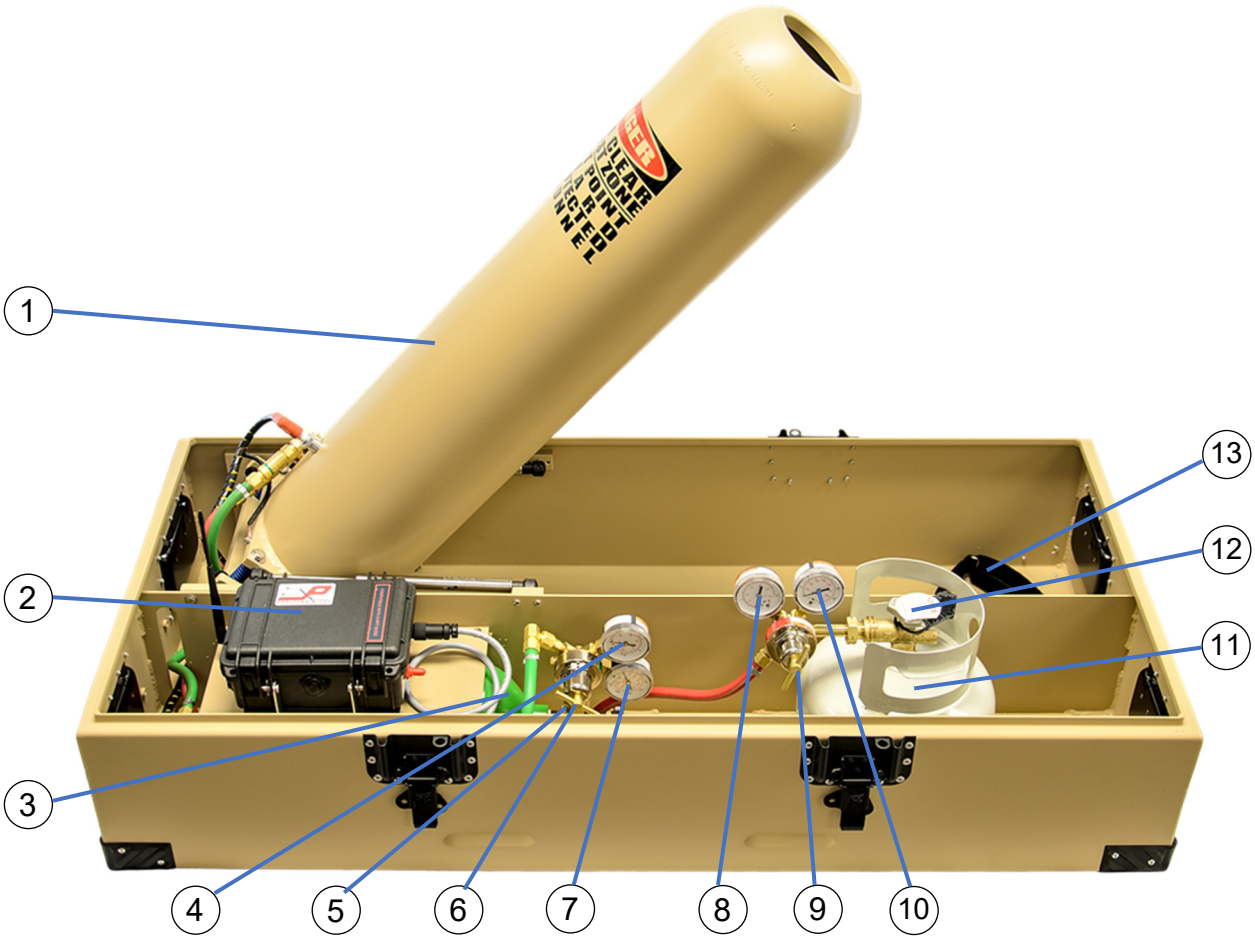

FIGURE 2	
1. Cannon	8. Propane Secondary Gauge
2. Control Box	9. Propane Regulator Adjustment Screw
3. Oxygen Cylinder	10. Propane Primary Gauge
4. Oxygen Secondary Gauge	11. Propane Cylinder
5. Oxygen Cylinder Main Valve	12. Propane Cylinder Main Valve
6. Oxygen Regulator Adjustment Screw	13. Cannon Strap
7. Oxygen Primary Gauge	

CAUTION: Recommended Lift: A Model X-OMG Explosive Blast Simulator ready for use will weigh approximately 155 lbs. and should be carried by two people using the handles attached to the sides of the unit.

When your Model X-OMG Explosive Blast Simulator arrives, the crate will contain the following:

1. Model X-OMG Explosive Blast Simulator
2. Propane Cylinder and Propane Regulator
3. Oxygen Cylinder and Oxygen Regulator
4. Cannon Assembly
5. Operations Manual and Troubleshooting Guide in document holder.

NOTE: The Oxygen and Propane Cylinders are empty and must be filled. If a Material Safety Data Sheet (MSDS) is needed, please visit our website to download a copy.

Assembling the Model X-OMG

Oxygen Cylinder

1. Unclamp the empty Oxygen Cylinder located beneath the Control Box
2. Remove Oxygen Regulator using 1-1/8" wrench. Note: Do not use pliers or any other size tools. Be careful to keep dirt or other foreign debris from entering the open end of the regulator fitting while it is not attached to the Oxygen Cylinder.
3. Exchange the Oxygen Cylinder for a full one or have the supplied tank filled; typically, at a local welding facility. The Oxygen Cylinder is fitted with a CGA 540 fitting. Note: Medical Grade oxygen is not recommended
4. Re-attach the Oxygen Regulator firmly to the Oxygen Cylinder in the proper orientation, (see Figure 2), with an 1-1/8" wrench to 40-60 foot pounds. Ensure the **green** Oxygen Hose is secure to the Oxygen Regulator by using an 11/16" wrench on the 90° fitting Coupler Nut while holding the Regulator Nut with a 9/16" wrench. (see Figure 2).

Propane Cylinder

1. Unclamp the empty Propane Cylinder located beside the Control Box
2. Remove Propane Regulator using 1-1/8" wrench. Note: Do not use pliers or any other size tools. Be careful to keep dirt or other foreign debris from entering the open end of the regulator fitting while it is not attached to the Propane Cylinder.
3. Have the Propane Cylinder filled; typically at a local full-service U-Haul facility. The Propane Cylinder is fitted with a standard CGA 510 fitting.
4. Re-attach the Propane Regulator firmly to the Propane Cylinder in the proper orientation, (see Figure 5), with a 1-1/8" wrench to 40-60 foot pounds.

(Note: All Propane fittings are left-handed threads).

5. Ensure the **red** Propane Hose is secure to the Propane Regulator by using an 11/16” wrench on the Hose Coupler Nut while holding the Regulator Nut with a 9/16” wrench (see Figure 2).

WARNING: Do not use Oxygen or Propane Cylinders that have passed their certification date.

WARNING: Do not use Oxygen or disposable Propane Cylinders that show evidence of physical damage or corrosion; i.e. pitting, dents or rust.

NOTE: Larger refillable propane cylinders may be used. If needed, an extension hose may be added to the Propane Regulator to allow attachment to a larger propane cylinder.

X-OMG Cannon Detail

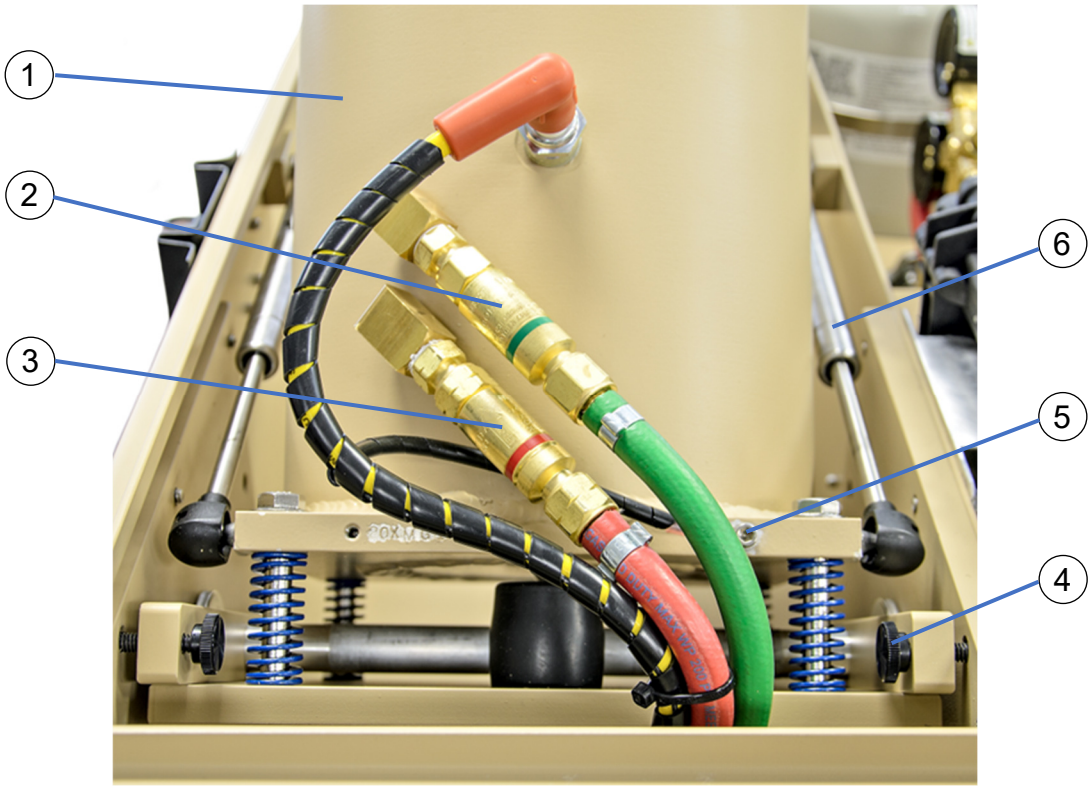

FIGURE 3	
1. Cannon	4. Cannon Bolt (4 per)
2. Oxygen Flashback Arrestor	5. Spark Plug Ground Screw
3. Propane Flashback Arrestor	6. Lift Assist Spring (2 per)

Mounting the Cannon Assembly

1. Release the Cannon Assembly from the Enclosure by loosening the Velcro Cannon Strap.
2. To mount the Cannon Assembly at an angle, raise the Cannon Assembly to approximately a 45 degree angle and secure the Cannon Assembly with **all four** Cannon Bolts as shown in Figure 3.
3. To mount the Cannon Assembly vertically, raise the Cannon Assembly until it is vertical and secure the Cannon Assembly with **all four** Cannon Bolts similar to that shown in Figure 3.

X-OMG Control Box

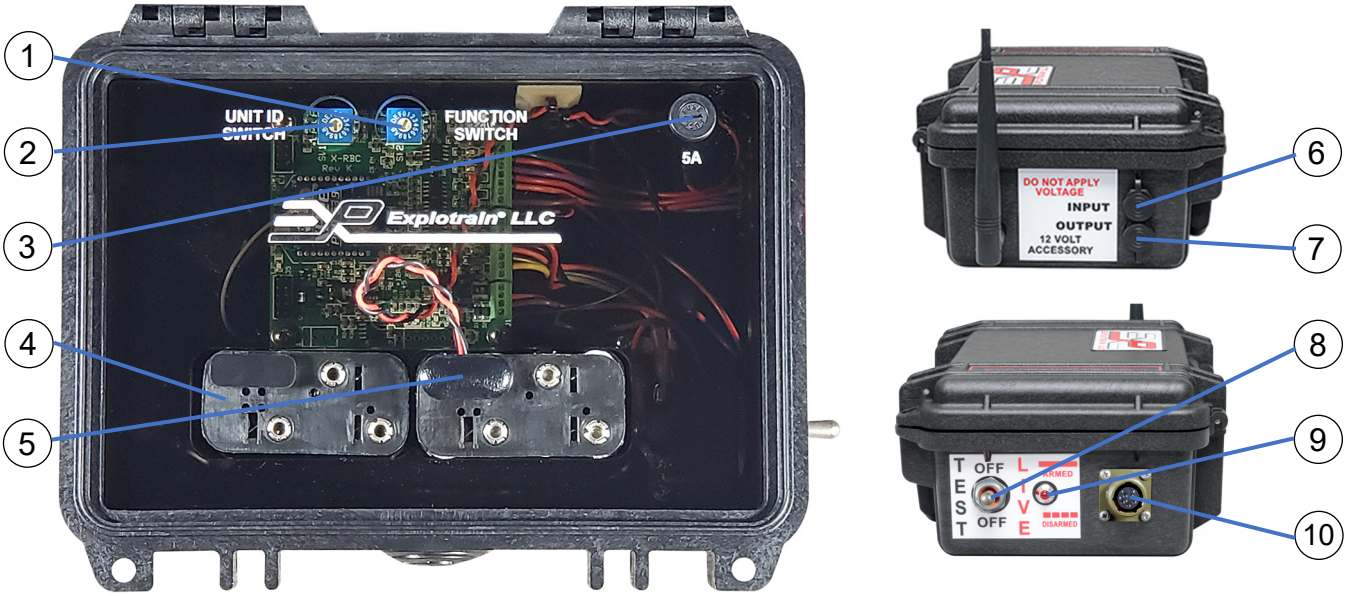

FIGURE 4

1. Function Switch	6. Input Plug
2. X-0 Unit ID Switch	7. Output Plug
3. 5 Amp Fuse	8. Mode Switch
4. Battery Pack	9. Armed LED
5. Battery Connector	10. Cannon Cable Plug

DO NOT POINT CANNON TOWARDS UNPROTECTED PERSONNEL

Your Model X-OMG is now ready for use. Follow safety instructions below.

Safety Instructions to follow prior to Firing the X-OMG

WARNING: Never place objects, especially body parts, in front of the Cannon. When firing, any object in the blast cone is subject to blast effects including very brief moments of intense heat. This flash effect can cause serious flash burns to exposed skin or ignite readily flammable liquids or material; i.e.: gasoline, black

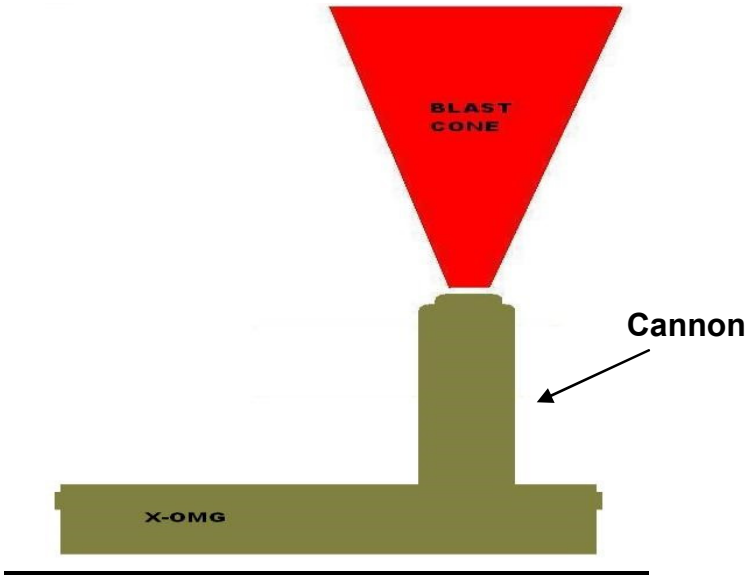

FIGURE 5

CAUTION: Make sure Model X-OMG is located on a firm level surface prior to blast.

CAUTION: For additional visual effects you may place various powders on top of the Cannon; note do not use flammable materials such as coffee creamer or flour. Recommended powders are: Fuller's earth, Bentonite Clay, talcum powder or chalk. Place powders in a frangible container such as a small paper bag.

CAUTION: Do not place hard objects such as gravel, rocks, etc. in blast cone as they will create a fragmentation hazard during firing.

CAUTION: Hearing and eye protection are strongly recommended for the operator or any person within 35 feet of the unit or exposed to repeated blasts.

CAUTION: While weatherproof, the Model X-OMG cannot be submerged.

WARNING: Never place objects, especially body parts, in front of the Cannon. When firing, any object in the blast cone is subject to blast effects including very brief moments of intense heat. This flash effect can cause serious flash burns to exposed skin or ignite readily flammable liquids or material; i.e.: gasoline, black powder, etc.

DO NOT POINT CANNON TOWARDS UNPROTECTED PERSONNEL

Installation of AA Batteries

1. The Model X-OMG uses eight AA Batteries for its DC power supply.
2. Place the Batteries in the Pack and insert into Control Box as shown.
3. Ensure the Mode Switch (#8, Figure 4) is in the OFF position and connect the Battery Connector to the Battery Pack as shown.
4. The second Battery Pack is available to use as a spare power supply.
5. To change to the second Battery Pack, ensure the Mode Switch is in the OFF position and simply attach the Battery Connector to the second Battery Pack.

Setting the Unit ID

1. Open the Control Box and locate the UNIT ID rotary switch.
2. Rotate the switch until the arrow points to the desired Unit ID (0 through 9). Note: the Unit ID of the X-MIT must be appropriately set (see **X-MIT Operation**, below).
3. Unit IDs A through F may only be used with the X-MIT or X-ACT software enabled Transmitters, not the X-LRT.

Setting the Function Switch

1. Open the Control Box and locate the FUNCTION rotary switch.
2. Rotate the switch until the arrow points to the desired Gas Fill Time position. Fill times are listed in the Control Box with Function Switch settings of B to E for the X-OMG – 1.6sec (minimum time for dependable blast) to 4.0sec (maximum amount of usable gas fill). **D is DEFAULT as shipped from the factory.**

Note: Gas Fill Time Setting 0 opens valves for 1.0 sec but no spark is fired. Use this position to clear lines upon set up or before storing if desired.

Note: Gas Fill Time for the propane valve will be automatically extended slightly in colder temperatures to compensate for lower delivery pressures.

Perform Maintenance / Inspection prior to each use of Model X-OMG

Operating the X-OMG

The Model X-OMG is designed to operate in two modes: **TEST** and **LIVE**. If your unit has been custom programmed, please see the attachment for a description of operating the Model X-OMG with your customized programs.

The operational mode of the X-OMG is determined by the Mode Switch and actual firing of the X-OMG is controlled by the X-MIT or X-LRT Transmitter or Hardwired Trigger Cable provided.

TEST Mode

TEST Mode is an easy and safe way to determine that your Model X-OMG is functioning properly in the scenario in which it will be used. **TEST** Mode is only used to provide an audible signal from the Buzzer whenever the Model X-OMG receives a Fire Signal from the X-LRT or X-MIT transmitter or Hardwired Trigger Cable. No gas or spark is used, and the entire firing system is disabled in this mode.

1. Flip the Mode Switch from **OFF** to **TEST**. The buzzer will beep once and the Armed LED will start flashing.
2. Briefly press the appropriate X-0 Unit ID Button on the X-MIT Transmitter. The Armed LED on the side of the Control Box changes from flashing to solid once the X-OMG is Armed.
3. Press and hold the appropriate X-0 UNIT button of the Transmitter to produce a brief audible signal from the Buzzer. The three beeps indicate the three functions of the Firing Cycle: Gas Fill, Spark, and Accessory Output.
4. When finished, simply flip the Mode Switch to the middle position: **OFF**.

LIVE Mode

LIVE Mode is used to provide a loud report when the Model X-OMG receives a Fire Signal. This report can be Extremely Loud and may cause hearing loss if protective equipment is not used.

WARNING: Personnel should stand back at least 35 feet when firing and stay clear of the Blast Cone.

1. Make sure the Cannon Assembly is securely attached or deployed.
2. Flip the Mode Switch from **OFF** to **LIVE**. The buzzer will beep once and the Armed LED will start flashing.
3. Open the Main Valve on the Oxygen Cylinder slowly by turning counterclockwise until FULLY open.
4. The Primary Pressure Gauge will indicate the amount of pressure in the cylinder. A full cylinder is 2015 PSI.
5. Open the Main Valve on the Propane Cylinder slowly by turning counterclockwise until FULLY open.
6. Turn the handle on the Regulator Adjustment Screw of both the Oxygen and Propane Regulators clockwise until the proper operating pressures are reached on the Secondary Pressure Gauges.

CAUTION: Operating pressures of 70 PSI for oxygen and 30 PSI for propane are the maximum recommended pressures for achieving the maximum sound level. 30 PSI for oxygen and 15 PSI for propane are the minimum pressures to reliably simulate an explosive blast.

Safety Features and Procedures for Firing

ARMING

To operate and fire the Model X-OMG in **LIVE** Mode, the unit must be Armed. The Model X-OMG will not fire when Disarmed.

1. Flip the Mode Switch from **OFF** to **LIVE**. The buzzer will beep once and the Armed LED will start flashing.
2. Briefly press the appropriate X-0 Unit ID Button of the X-MIT Transmitter. The Armed LED on the side of the Control Box changes from flashing to solid once the X-OMG is Armed.
3. The Model X-OMG may be Armed or Disarmed remotely at any time in **LIVE** Mode by briefly pressing the appropriate X-0 Unit ID Button of the X-MIT Transmitter.

FIRING

The Model X-OMG can be Fired only when Armed.

1. Once armed, the Model X-OMG can be Fired by pressing and holding the appropriate X-0 Unit ID Button of the X-MIT Transmitter for at least one second to initiate a Firing sequence (see **X-MIT Operation**, below).
2. A brief (2.5 second) flow of gas into the Cannon is immediately followed by an extremely loud (100-130+dB; 162dB Peak) report, as the gas mixture is ignited by the Spark Plug.
3. The Model X-OMG can be Fired again by repeating the above Firing Sequence.

If a continuous Fire Signal is received, the unit will still only allow a single fuel gas fill to prevent over filling before ignition.

LIVE Mode Summary

1. Open Main Valve on Oxygen Cylinder
2. Set Secondary Pressures on Regulators (70psi Oxygen; 30psi Propane max)
3. Flip Mode Switch to **LIVE**
4. Arm the Model X-OMG with a brief button press
5. Fire the Model X-OMG with a one second button press
6. Unit can be fired again immediately
7. Disarm the Model X-OMG with a brief button press

CAUTION: The only time you should hear gas flow is at the beginning of each Firing Sequence. If you should hear gas flowing at any other time, immediately turn the unit to OFF, close main valves, and check all hose and regulator fittings.

Turn Off Instructions

Disarm the Model X-OMG by briefly pressing the appropriate X-0 Unit ID Button of the X-MIT Transmitter. This action toggles the unit between Armed and Disarmed status. Once the Armed Indicator LED changes from solid to flashing, the unit is Disarmed and will not fire.

Once the unit is Disarmed, flip the Mode Switch on the Control Box to the middle position: **OFF**. Also, switch-off the X-MIT.

Storage Requirements

When storing the Model X-OMG, the fuel lines should be depressurized.

1. Once the unit is Disarmed, close the Main Valves on the Oxygen and Propane Cylinders.
2. Arm and Fire the unit to release the residual fuel gasses in the lines.
3. The secondary gauge (left-hand gauge) on both regulators should read Zero.
4. Turn the unit Off (see above).

WARNING: While the quantities of fuel gasses released may or may not be sufficient for the unit to actually Fire, this bleeding operation should be treated as an actual Firing sequence for safety reasons.

Replacing Cylinders

To replace an Oxygen Cylinder:

1. Turn off the Model X-OMG.
2. Depressurize the fuel lines (see **Storage Requirements**, above).
3. Unclamp the Oxygen Cylinder located beneath the Control Box. Using a 1-1/8" wrench, loosen the Oxygen Regulator nut and set regulator aside, being mindful not to introduce dirt or other debris in the exposed end of the regulator. Remove the Oxygen Cylinder. ***Note: it is recommended to remove the Propane Cylinder first to provide more room to slide the Oxygen Cylinder to the right for removal.***
4. Install the replacement Oxygen Cylinder.
5. Re-attach the Oxygen Regulator firmly to the Oxygen Cylinder in the proper orientation, (see Figure 2), with an 1-1/8" wrench to 40-60 foot pounds. Ensure the **green** Oxygen Hose is secure to the Oxygen Regulator by using an 11/16" wrench on the 90° fitting Coupler Nut while holding the Regulator Nut with a 9/16" wrench. (see Figure 2).
6. Inspect the gas hose fittings-to-regulator attachments for leaks by checking for bubbles when sprayed with soapy water.

To replace a Propane Cylinder:

1. Turn off the Model X-OMG.
2. Depressurize the fuel lines (see **Storage Requirements**, above).
3. Using a 1-1/8" wrench, loosen the Propane Regulator nut and set regulator aside, being mindful not to introduce dirt or other debris in the exposed end of the regulator. ***NOTE: all Propane fittings are left-handed threads.***
4. Unclamp and remove the Propane Cylinder.
5. Install the replacement Propane Cylinder.

6. Re-attach the Propane Regulator firmly to the Propane Cylinder in the proper orientation, (see Figure 2), with an 1-1/8" wrench to 40-60 foot pounds. Ensure the **red** Propane Hose is secure to the Propane Regulator by using an 11/16" wrench on Hose Coupler Nut while holding the Regulator Nut with a 9/16" wrench. (see Figure 2).
7. Inspect the gas hose fittings-to-regulator attachments for leaks by checking for bubbles when sprayed with soapy water.

CAUTION: The Propane Regulator Adapter is connected to the Propane Regulator with left-handed threads and are tightened with two opposing 1-1/8" wrenches.

Hardwire Input

Your Model X-OMG has an Input Port on the Control Box to allow for hardwired operation with the use of a Hardwired Trigger Cable (Optional).

1. Momentarily grounding Conductor **2** of the hardwired input (connect Black Conductor **2** to the Green/Yellow Ground Conductor) will toggle the X-OMG between Armed and Disarmed status.
2. Momentarily grounding Conductor **1** to the Green/Yellow Ground Conductor will send a Fire signal to the X-OMG.
3. Hardwire inputs and X-MIT inputs can be used at the same time (i.e. a pressure plate switch connected to the Hardwired Trigger Cable and an X-MIT can both be used to Fire the X-OMG).

Accessory Output

Your X-OMG is equipped with an Accessory Output. It provides a 12 volt DC output as well as a discrete grounded output that can be used to operate a wide range of standard or custom made accessories.

Maintenance and Inspection Procedures

Before Each Use:

- Ensure Batteries are fully charged.
- Ensure Control Box latch is fully secured.
- Inspect Regulators and Gauges for cracks or obstruction of indicator pointers. If cracks or obstructions are visible see troubleshooting guide.
- Make sure no water or particles remain in the Cannon. If so, the Drain Plug at the base of the Cannon can be removed to allow water to drain out.
- Make sure Oxygen Cylinder has sufficient charge by checking primary pressure gauge.
- A fully charged Cylinder (2015 psi) should provide approximately 75 shots.
- The Propane Cylinder should provide over 100 shots; Primary Pressure Gauge is not an accurate indicator of remaining liquid propane.

Periodic Checkpoints:

- Inspect the welds at the base of the Cannon for visible cracks or other indications of fatigue. If any anomalies are visible, see troubleshooting guide.
- Inspect the Spark Plug body for cracks or other indications of fatigue. Make sure the Spark Plug is tightly seated – if not, use a 13/16” wrench and tighten to 40 ft-lbs.
- Ensure Spark Plug ignition wire is fully seated and firmly attached to Spark Plug.
- Ensure the Oxygen and Disposable Propane Cylinders are firmly secured before use.

Operation Summary Checklist

- ☐ **Power**: ensure batteries are new or fully charged
- ☐ **Communication:** ensure transmitter has fresh batteries and ensure simulator and transmitter are on same Channel and Unit ID
- ☐ **Gas pressures**: oxygen @ 70 psi; propane @ 30 psi
- ☐ **Hose connections**: ensure gas hoses are properly connected between regulators and simulator
- ☐ **Cable connections**: ensure cannon cable is securely connected to Control Box
- ☐ **Spark plug**: ensure spark plug is tight and spark plug cable is securely connected

Explotrain® LLC

Thank you for purchasing your Model X-OMG Explosive Blast Simulator.

We at Explotrain, LLC truly appreciate your business.

If you have any questions or comments on this, or any of our products, please let us know.

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