



Power Anytime, Anywhere

# Tesla™ TI2000-440 Generator Set Interface M777 Power Edition User Manual



*Built Smart...Proven Tough*

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# NOTE: All users must read this entire manual prior to operating the TI2000-440 Generator Set Interface.

The TI2000-440 Generator Set Interface is a limited maintenance-free and sealed unit. No repairs are authorized. Warranty will be voided if unit is tampered with in any way, or if unauthorized repairs are made. For technical support please contact:

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Improper use or failure to follow instructions in this user manual can result in unit damage and/or injury or death by electrical shock.

Any attempts to open or examine the inside of the unit via a tool or device (borescope, probe, etc.) can result in unit failure and/or injury by electrical shock. This MPU is maintenance free and should not be opened or disassembled for any reason.

Always protect the unit from short circuit.

Shipping Hazards: None.

All Ground Power Units, Micro Power Units (Aviation Batteries) and including, but not limited to, Battery Chargers/Conditioners, manufactured by Tesla™ Industries, Inc., are able to safely and effectively charge any AGM, Lead Acid battery.

The Tesla™ GPU's and chargers are voltage and current regulated to 0.01% (dual loop). The charging voltage is calibrated, by Tesla™, to 28.6 volts and is pure dc (no power line ripple).

### Maximum Charge Voltage by Battery Type

Type:	Charging Voltage / Cell	Charging Voltage / 12v	Charging Voltage / 24v
SLI/Flooded	2.366v to 2.416v	14.2v to 14.5v	28.4v to 29v
Lead Acid/Flooded	2.366v to 2.416v	14.2v to 14.5v	28.4v to 29v
Sealed Lead Acid	2.366v to 2.416v	14.2v to 14.5v	28.4v to 29v
VRLA	2.366v to 2.416v	14.2v to 14.5v	28.4v to 29v
AGM	2.433v to 2.466v	14.6v to 14.8v	29.2v to 29.6v
GEL	2.350v to 2.400v	14.1v to 14.4v	28.2v to 28.8v

\*The only types of batteries we do NOT recommend using in conjunction with our units are:

- Lithium ion
- Nickel-cadmium




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# Section 1 – Safety Review

## 1.1 - Safety Notices

Safety notices appear throughout this manual to alert the user to important information regarding proper installation, operation, maintenance and storage of the unit. These notices, as illustrated below, contain a key word that indicates the level of hazard and a triangular icon that indicates the specific type of hazard.

 <b>WARNING</b>	Indicates a condition, operating procedure or practice, which if not adhered to could result in serious injury or death.
 <b>CAUTION</b>	Indicates a condition or operating procedure, which if not strictly adhered to could result in damage or destruction of equipment.
 <b>NOTE</b>	Indicates a condition, operating procedure or practice, which is essential to highlight.

## 1.2 - Symbols

The following symbols will appear within the warning triangles to alert the user to the specific type of danger or hazard.

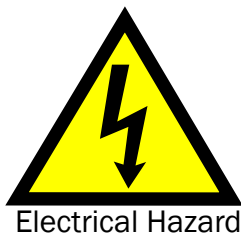



Figure 1.2.1 – Different types of hazard and caution symbols

## 1.3 – Hazards

 <b>WARNING</b>	<b>Shock Hazard Potential</b>
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Severe injury or death from electrical shock may occur, if either user or the unit is wet, while the line cord in unit is connected to a power source. If the unit has come into contact with water, disconnect from the power source.

 <b>CAUTION</b>	<b>The use of unapproved or modified ac line cable or input plug may damage the unit. Do not use any type of ac voltage converter.</b>
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# Section 2 – Product Overview

## 2.1 – Features and Overview



- 1. 60 Hz 3-Phase AC Input Receptacle** – Use for 60 Hz 3-Phase 208-240 Vac Input Power
- 2. Circuit Breakers** - Enables/Disables the ac output receptacles
- 3. AC Output Receptacles** - Provides 208-240V 15A when power is present and circuit breakers on
- 4. LED Indicator Lights** - Light will turn on when circuit breaker is on and power is supplied

## 2.2 – Introduction

This manual contains the complete operating instructions, safeguards and procedures for the TI2000-440 Generator Set Interface. This unit is man-portable, maintenance free, and can be operated from any three phase power source.



Figure 2.2.1 – Handle to Reel

## 2.3 – General Specifications

Input: 208-240 volts 3Ø ac 15 amps

Output: 3Ø 208 Y 120

### Size:

- 150.50"W x 16.22"H x 7.89"D
- 393.7mm x 421.0mm x 200.4mm

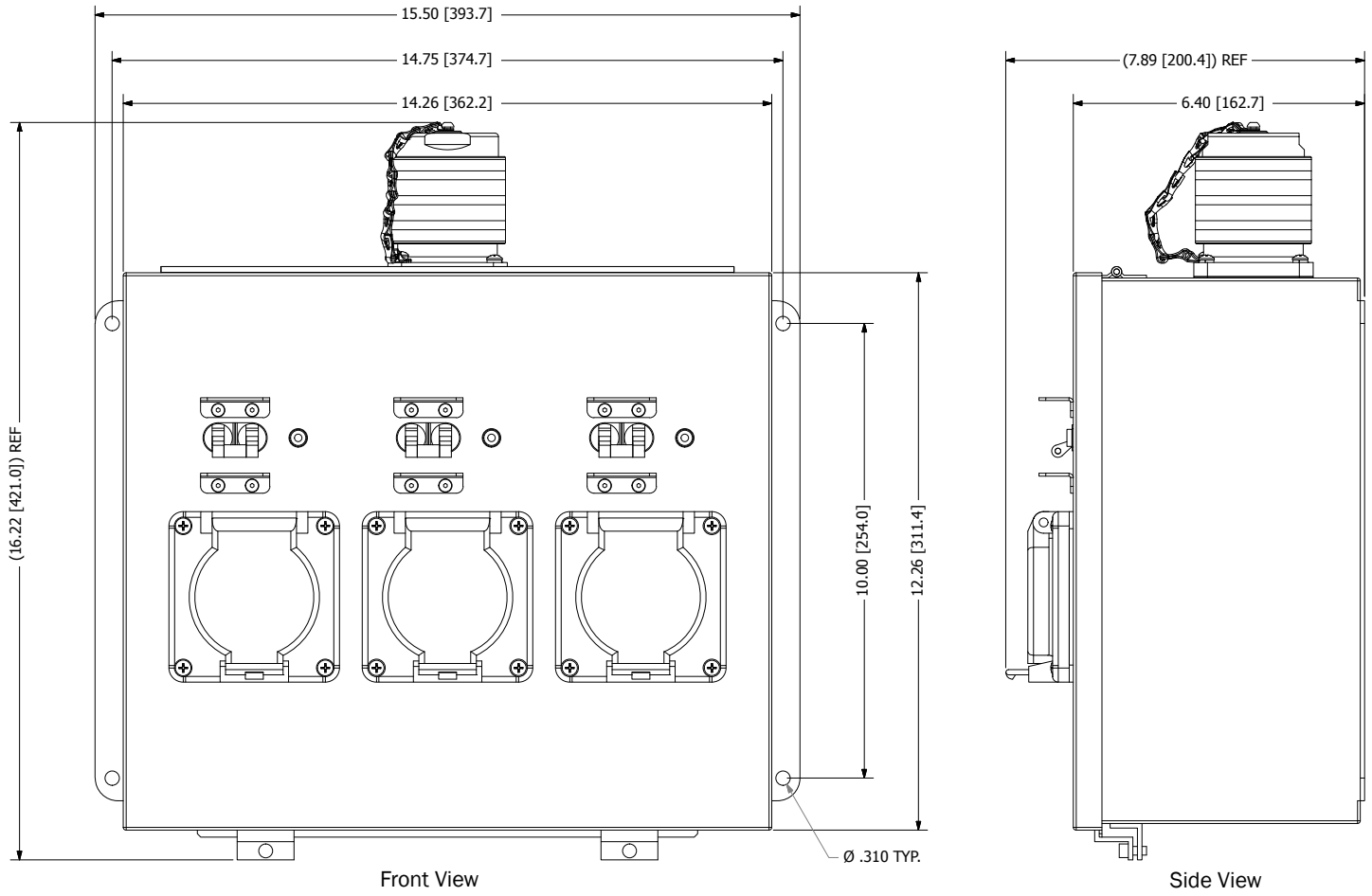
### Weight

- 35 lbs (15.9 kg)

### Warranty:

- 2 years (3 years optional)

## 2.4 – Physical Dimensions



\* All dimensions are in inches [millimeters]



# Section 3 – Operation Procedures

## 3.1 – Normal Function Test Procedures

This section involves “normal function” test procedures, and includes steps necessary to ensure that the unit operates within specified parameters prior to use. A digital multimeter (an example is shown in Figure 3.1.1) capable of measuring dc and ac voltage and resistance will be required to perform some of the tests. These functional test procedures should become routine.

1. Set your digital multimeter to measure ac voltage.
2. Connect the input cable to unit before it is connected to the power. Push in the cable in the unit’s ac input receptacle. Twist to lock until tight.
3. Make sure that the output circuit breakers are set to the OFF position.
4. Connect the input cable to a 3Ø 240V outlet.
5. Turn on the circuit breaker to the outlet you will be testing. The blue LED should light up.
6. Insert the Negative Probe (Black) and Positive Probe (Red) of the Digital Multimeter to the live slots in outlet (see Figure 3.1.2)



Figure 3.1.1 – Digital Multimeter

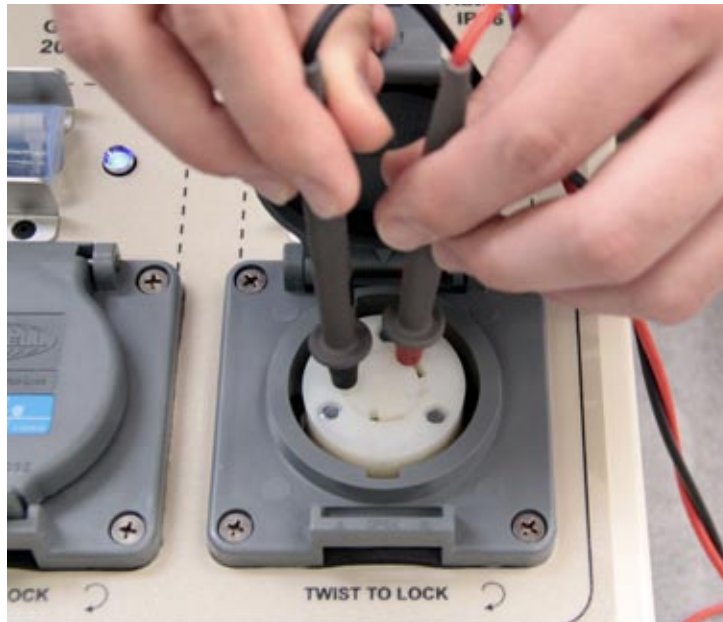


Figure 3.1.2 - Probes connected to the live feeds in the outlet. The bottom slot is the ground.

7. The Multimeter should read between 208 and 240 V.
8. Continue to test the other two outlets, using steps 5 thru 7.

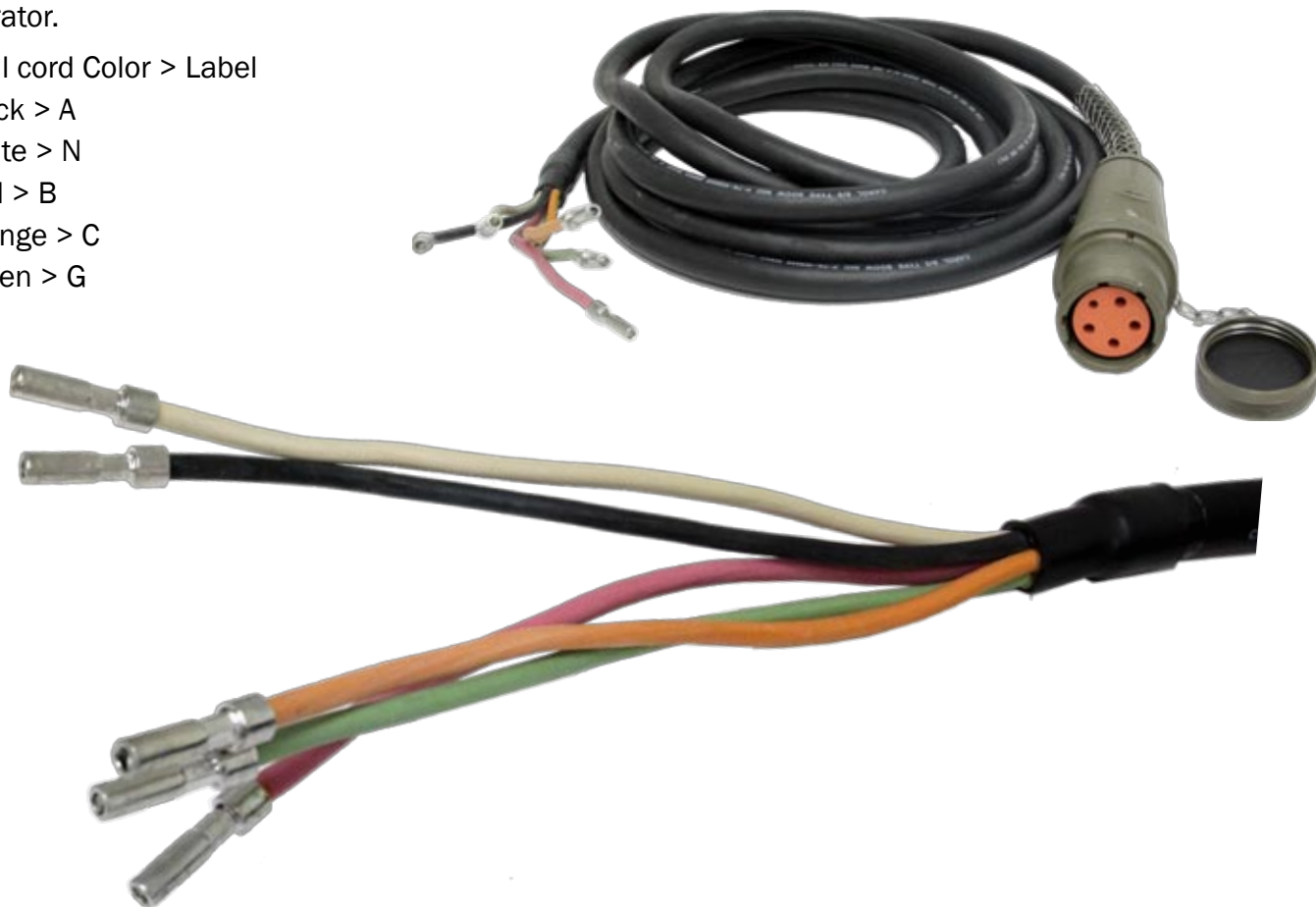


### 3.2 - Connecting Pig Tail Gen Cable to the 5/10 K Generator

The pig tail end of the TI2007-088 M777 Pigtail Cable is clearly labeled so you can connect it to a Generator.

Pig tail cord Color > Label

- Black > A
- White > N
- Red > B
- Orange > C
- Green > G



### 3.3 - Connecting Pig Tail Gen Cable to Gen Set Interface

Connect the TI2007-088 M777 Pigtail Cable to the Generator. Push the cable in the unit's ac input receptacle. Twist clockwise to lock until tight. (See Figure 3.3)



Figure 3.3

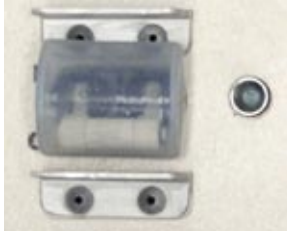


Figure 3.4.1



Figure 3.4.2

**CAUTION**

Before connecting the TI3000 GPU-24 to the Generator Set Interface make sure the Voltage Selector Switch on the TI3000 GPU-24 is set for 230V. If not, it may damage the unit.

### 3.4 – Connecting to TI3000 GPU-24 (with Extension Cable)

1. Make sure that the output circuit breakers are set to the OFF position. (See Figure 3.4.1)
2. **IMPORTANT:** Before connecting the TI3000 GPU-24 to the Generator Set Interface make sure the Voltage Selector Switch on the TI3000 GPU-24 is set for 230V. If not, it may damage the unit. (See Figure 3.4.2)
3. (Extension Cable) If you are not using the Extension Cable skip to the next step (STEP 4) for connecting TI3000 GPU-24 directly to TI2000-440 Generator Set Interface. If cable is still on Reel, pull cord out and place male end near the Gen Set Interface. Making sure you have plenty of room, unreel out the entire line cord. Put Cable Reel aside. Pull enough cord, placing the female end near the TI3000 GPU-24. Connect the cord to the TI3000 GPU-24 first.
4. Connect the TI3000 GPU-24 ac line cord or connected extension cable to the Interface Box. Twist clockwise to lock. (see 3.5 if using extension cable).
5. Flip the Circuit Breaker to the ON position. The associated blue LED light will light up. The TI3000 unit should turn on in about 3 seconds. You will hear the fans turn on and the bar graph will light up.
6. The TI3000 GPU-24 is ready to use. Refer to the TI3000 owner's manual for more info on the Ground Power Unit.



Figure 3.4.3 Male end



Figure 3.4.4 Extension Cable



Figure 3.4.5 Female End



Figure 3.4.6 TI3000 GPU-24 plugged into TI2000-440 with circuit breaker turned on.

### 3.5 – Disconnecting the TI3000 GPU-24

1. Flip the Circuit Breaker on the Generator Set Interface to the OFF position. The blue LED light should turn off.
2. Locate the ac cord attached to the Interface box. Twist the ac connector counter clockwise and pull to disconnect the line cord.

### 3.6 – Unit Care

Keep unit clean and guard from moisture when not in use. Protect the unit from damage. Always inspect unit prior to use.

## Section 4 – Set Up Configurations

This section shows the variety of configurations the Tesla™ Power Kit can be deployed.

### 4.1 Picture Key



5K / 10K Generator



M777 Howitzer



TI3000 GPU-24-UNV: Ground Power Unit



TI2000-440: Generator Set Interface



TI2007-088:  
M777 Pigtail Cable Assembly



TI25000-089:  
328 Ft. (100m) AC Extension Cord



TI2007-079:  
DC to Dual NATO Receptacle, Y-Cable

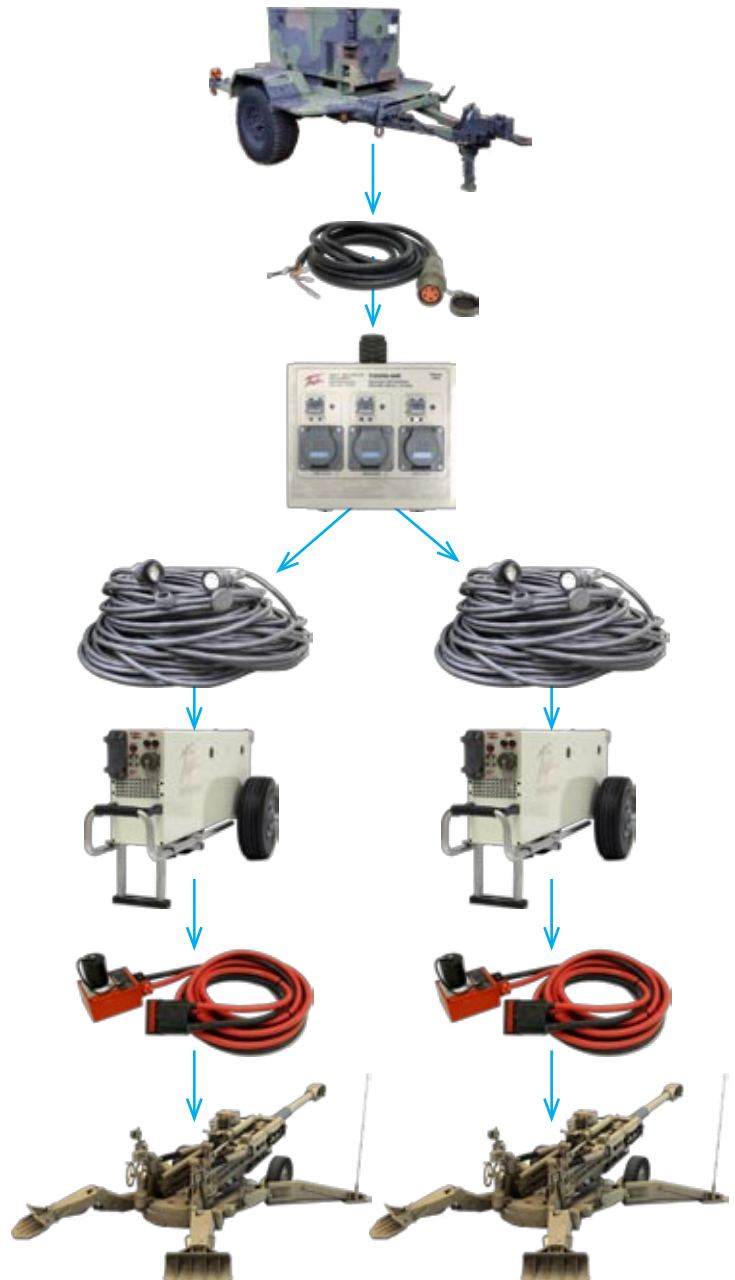


TI2007-012:  
DC to NATO Receptacle Cable Assembly

4.2 Setup  
One Generator > One GPU > One M777

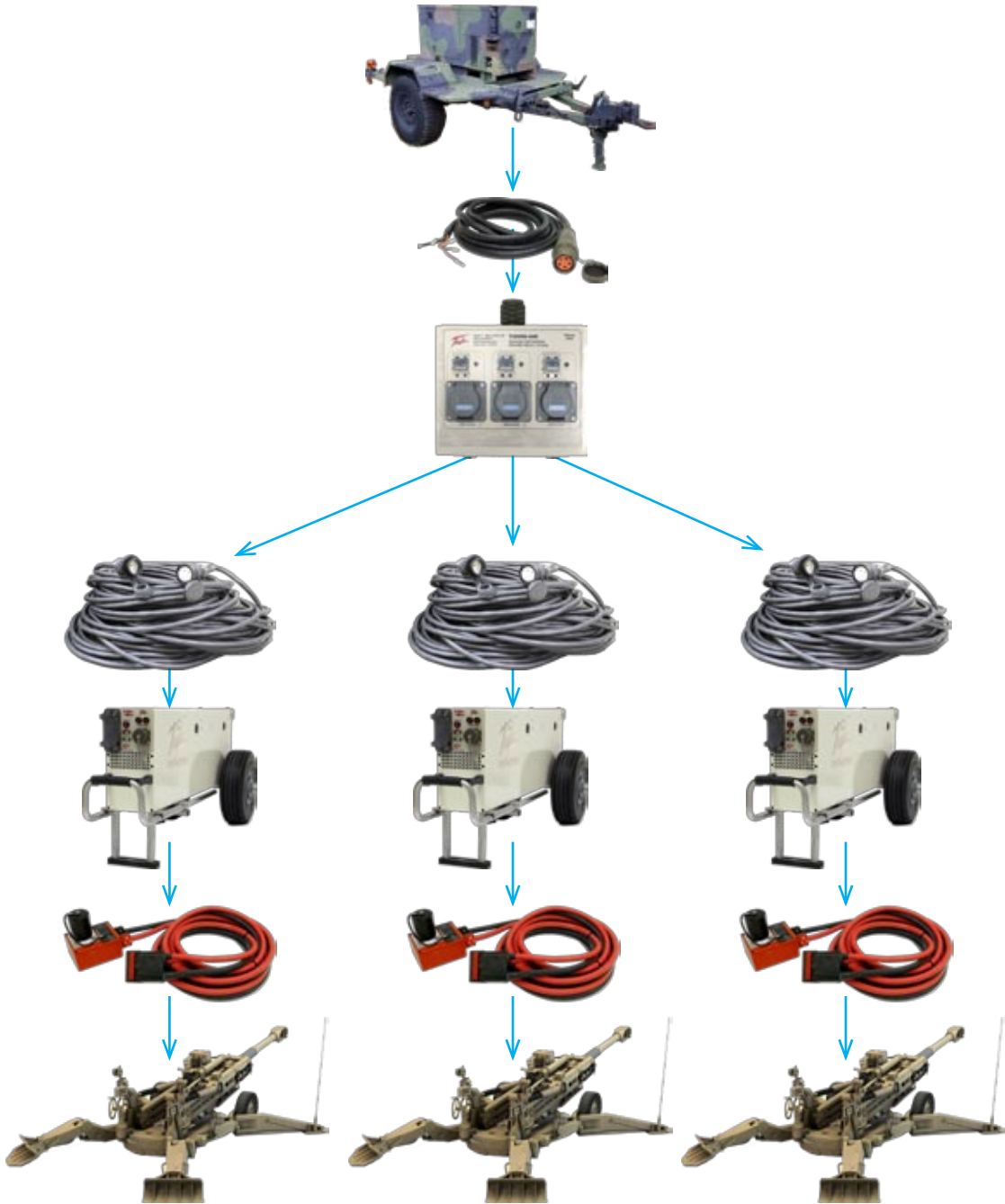


4.3 Setup  
One Generator > Two GPU's > Two M777's





4.4 Setup  
One Generator > Three GPU's > Three M777's

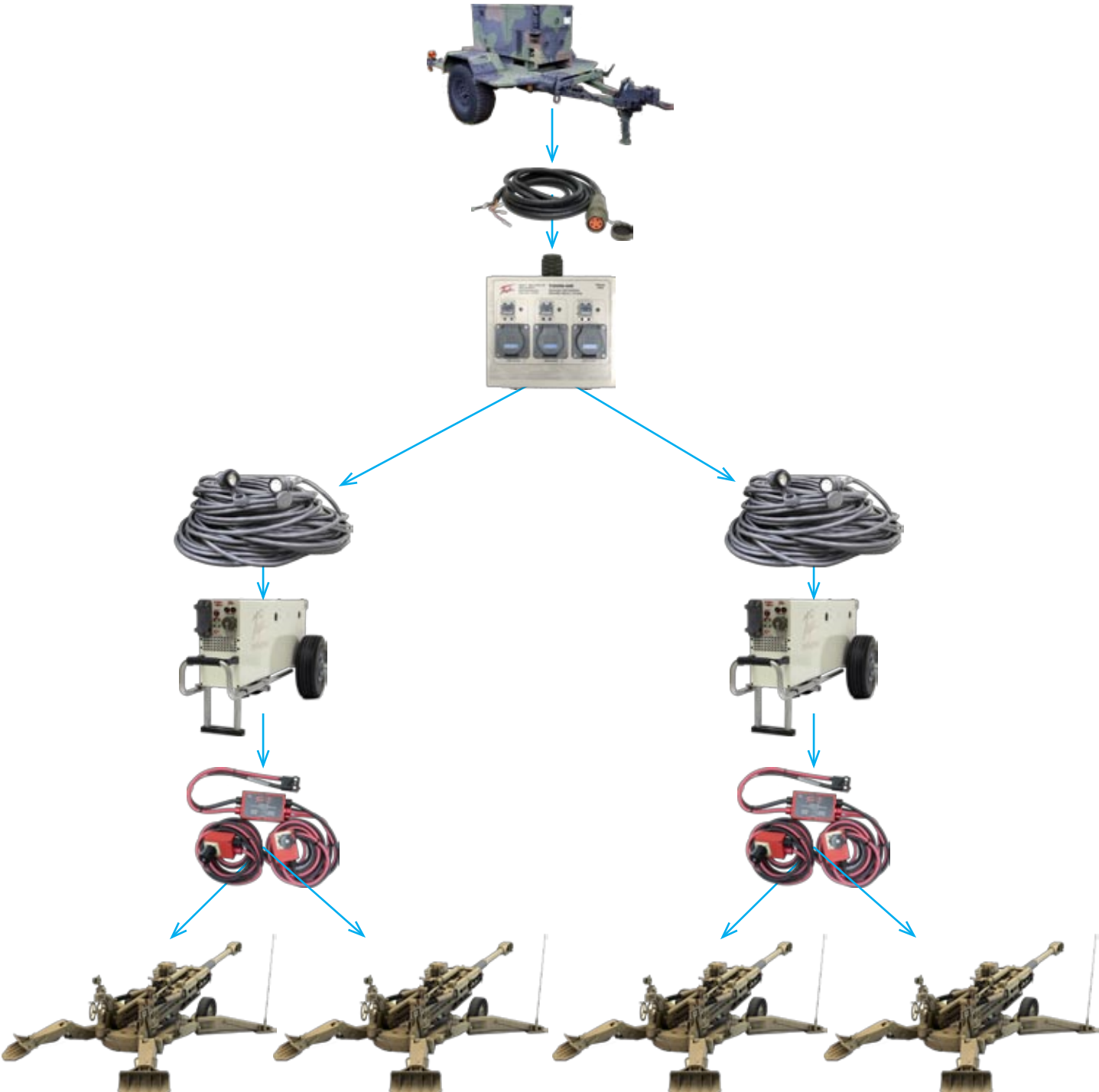


4.5 Setup  
One Generator > One GPU > Two M777's  
NOTE: Monitor the Gen Set's circuit breakers

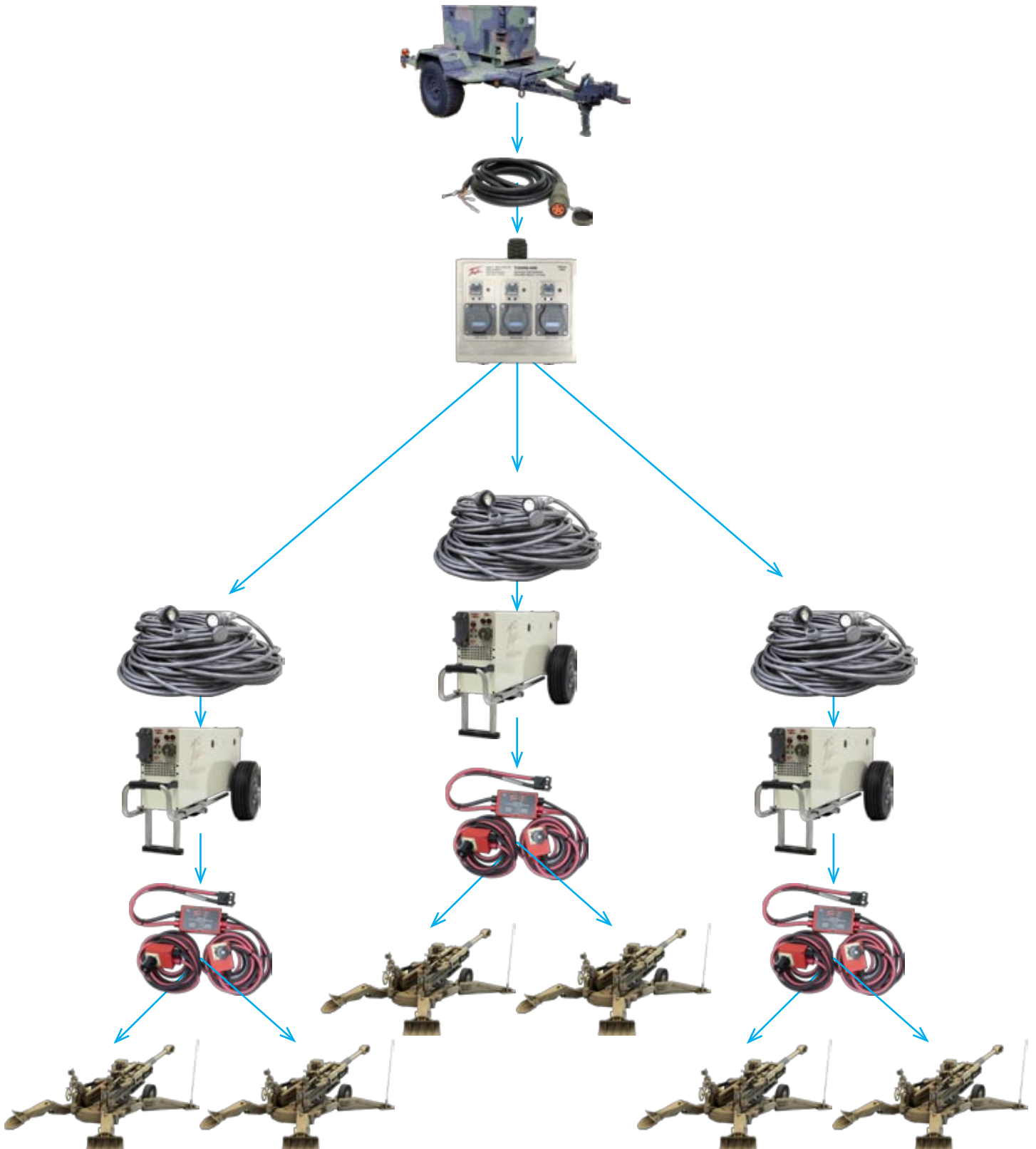




4.6 Setup  
One Generator > Two GPU's > Four M777's  
NOTE: Monitor the Gen Set's circuit breakers



4.7 Setup  
One 10K Generator > Three GPU's > Six M777's  
NOTE: This is the max configuration for Tesla™ Power Kit



#### 4.8 Setup

No Generator > One GPU > One M777

NOTE: If Power Generation is not available, the Tesla™ GPU can be used on its own. The GPU should provide an additional 5-8 hours of power over the normal on board battery life.

If the GPU is low on power, a charged GPU can be swapped in its place in less than 20 seconds. Charge the dead GPU with an Army Vehicle.

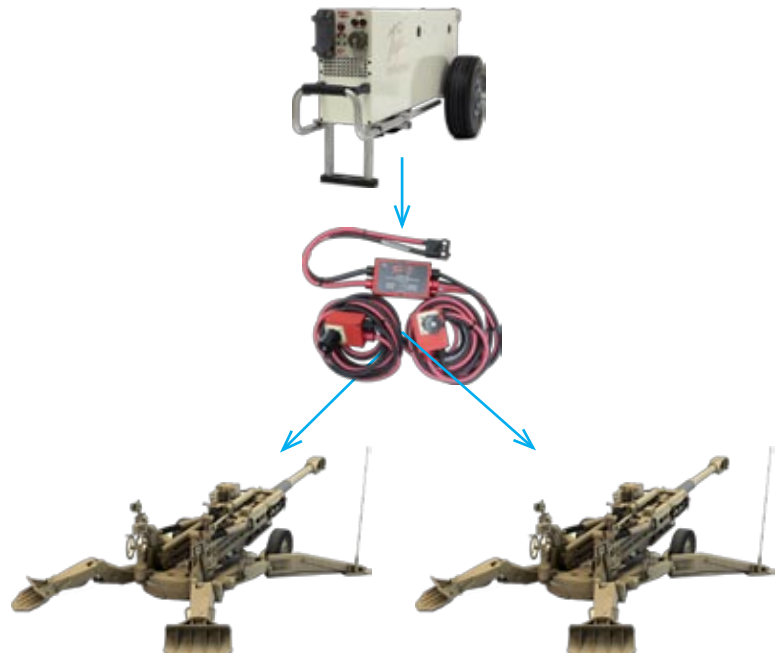


#### 4.9 Setup

No Generator > One GPU > Two M777's

NOTE: If Power Generation is not available, the Tesla™ GPU can be used on its own. The GPU should provide an additional 3-5 hours of power over the normal on board battery life.

If the GPU is low on power, a charged GPU can be swapped in its place in less than 20 seconds. Charge the dead GPU with an Army Vehicle.



## Section 5 - Unit Care and Maintenance

### 5.1- Unit Servicing

This unit is a maintenance-free, sealed unit. No repairs outside of Tesla™ are authorized. Warranty will be voided if unit is tampered with in any way including any damage to the WARRANTY VOID stickers located on the case (see Figure 4.1.1 below). If the unit requires maintenance, please contact Tesla™ Customer Service at (302) 324-8910. A Repair Request Form can be found in the back of this manual.



Figure 4.1.1 - Warranty Void stickers are on the sides of the unit

### 5.2 - Packaging and Shipping

Ensure proper packaging when returning the unit. Transport the unit only in a sturdy shipping crate. It is important to enclose the Repair Request Form. Seal the crate on all sides and return it to Tesla™ at the address listed below. Please contact Tesla™ Customer Service at (302) 324-8910 with any questions or concerns.

TESLA™ INDUSTRIES, INCORPORATED  
101 CENTERPOINT BLVD.  
CENTERPOINT INDUSTRIAL PARK  
NEW CASTLE, DELAWARE 19720  
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Website: [www.teslaind.com](http://www.teslaind.com)  
Email: [Tesla1@teslaind.com](mailto:Tesla1@teslaind.com)

# Repair Request Form

Please complete the information below to ensure prompt and accurate service. Include this form with the unit you are returning. Thank you.

Date of return: \_\_\_\_\_

Company name & \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Billing address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact person: \_\_\_\_\_

Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Email: \_\_\_\_\_

Purchase Order #: \_\_\_\_\_

Model #: \_\_\_\_\_ Serial #: \_\_\_\_\_

Model #: \_\_\_\_\_ Serial #: \_\_\_\_\_

Shipping method to Tesla™: \_\_\_\_\_

Description of shipping package: \_\_\_\_\_

Description of problem: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Return to Tesla™

101 Centerpoint Boulevard, New Castle, DE 19720 Attention: Repair Department



**WE GET THE MILITARY STARTED!**

**Tesla™**

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