

# Motivator<sup>3</sup><sup>TM</sup>

## HANDHELD HIGH ENERGY IGNITION



Part Number:  
07171717



Figure 1 – Motivator3<sup>TM</sup> (Battery not sold through Chentronics®)

**KEEP THIS MANUAL IN A SAFE PLACE  
FOR FUTURE REFERENCE**

**READ THIS MANUAL BEFORE USING THIS PRODUCT. FAILURE TO FOLLOW THE INSTRUCTIONS AND SAFETY PRECAUTIONS IN THIS MANUAL CAN RESULT IN DAMAGE TO EQUIPMENT, SERIOUS INJURY, OR DEATH.**

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	<b>ISO 9001 CERTIFIED</b>		
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		<small>REV.</small> D	

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## 1.0 Important Safety Information



### Read All Instructions before Using Equipment



The instructions provided in this manual have been prepared to serve as a general guide. It is intended for use by qualified personnel with knowledge of equipment of this type. It is not intended to cover all possible variations in equipment or to provide for specific operating problems which may arise.

You are responsible for adhering to all warnings or cautions provided in this manual.

In addition to any general safety measures provided in this manual, you must comply with all current national, state, local, and company safety regulations at all times.

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**Safety Symbols used in this manual comply with ISO 3864.**

**THESE SYMBOLS ARE USED TO ALERT YOU TO POTENTIAL PERSONAL INJURY HAZARDS.**

**OBEY ALL SAFETY MESSAGES THAT FOLLOW THESE SYMBOLS TO AVOID POSSIBLE INJURY OR DEATH.**



Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



Indicates a hazard with a low level of risk which, if not avoided, will result in minor or moderate injury.

**DANGER**

**HAZARDOUS VOLTAGE**

The equipment contains a High Energy Ignition System which has **DANGEROUS AND POTENTIALLY LETHAL VOLTAGE**. To avoid the risk of serious injury from electric shock, always follow the safety precautions listed below:

Do not join or separate any connection to the equipment when the equipment is energized.

Do not apply power to the equipment without an igniter attached or the igniter port appropriately capped.

Keep the igniter firing end away from all personnel and flammable material.

The equipment must be operated by qualified personnel in accordance with applicable local and national codes, standards, and ordinances.

The equipment is not field-repairable. Do not attempt to disassemble or repair the equipment.

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## 2.0 Definitions

**Spark** – An electric current arc.

**High Energy Ignition** – Electric spark ignition system utilizing high energy sparks for direct ignition of hydrocarbon fuels such as gas, diesel, or #6 oil. (Note: the Motivator3™ is intended for igniting gas only)

**High Energy Exciter** – An electronic device that stores electric charge and releases it cyclically in abrupt bursts to an igniter to create high power sparks.

## 3.0 Chentronics® High Energy Ignition Systems

Chentronics® High Energy Ignition (HEI) systems directly ignite burner fuels by providing short time duration (impulse), high current electrical arcs commonly referred to as *sparks*. These sparks are generated by abruptly releasing electrical energy (charge) stored in large capacitors. The energy is released through an igniter driver circuit called a *pulse forming network* to specialized high energy igniters. The result is a high power spark with an increased ability to ignite fuels.

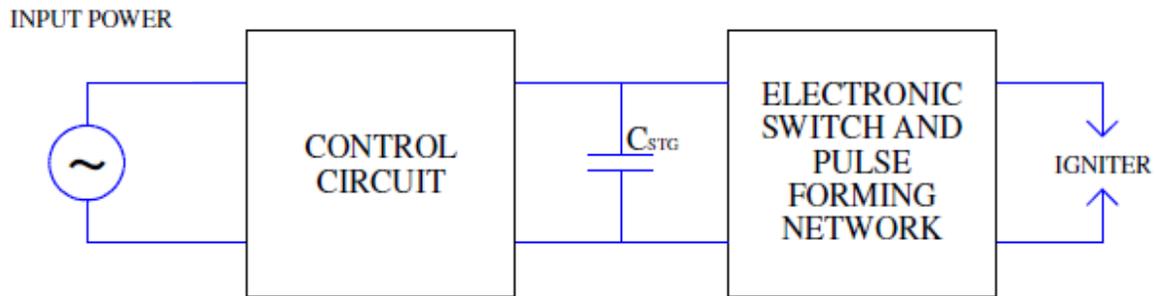


Figure 2: High Energy Exciter basic schematic.

Chentronics® High Energy Ignition Systems are designed to operate in conditions of extreme temperature, moisture, and contamination, creating high power sparks that dependably provide direct spark ignition to a wide range of fuels in a wide range of adverse conditions.

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## 4.0 System Specifications

### 4.1 Description of Equipment

The Chentronics® Motivator3™ is a portable, battery-powered High Energy Ignition System.

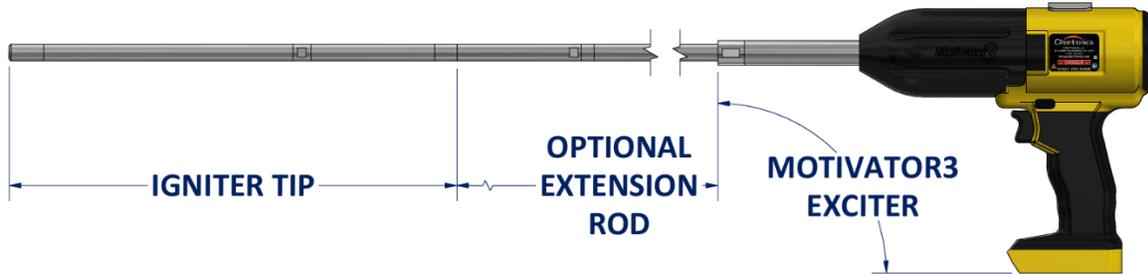


Figure 3: System General Arrangement

### 4.2 Electrical Area Classification and Safety Markings

The Motivator3™ system has no approved certifications for use in classified areas.

### 4.3 System Electrical and Physical Specifications

Application:	Direct Spark Ignition of Gas Fuels
Input Power:	18-20VDC Battery Pack
Exciter Type:	High Energy Ignition
Exciter Duty Cycle:	30 sec ON / 60 sec OFF
Exciter Spark Command:	Trigger
Exciter Spark Visual:	Blue LED
Exciter Power:	1.5J per spark at 6 sparks per second, nominal
Operating Temperature Limits:	-25°C to +40°C
Storage Temperature Limits:	-25°C to +65°C (Battery has separate temperature limits)
Humidity:	0 to 100% condensing
Enclosure:	No ingress protection
Electronics Assembly Weight:	Approximately 2.4lb without accessories Typically 5-10lbs depending on battery, extension rod, and igniter.
Dimensions:	Approximately 12 x 8 x 3 inches without accessories

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## 5.0 Instructions

### 5.1 Three-Position Toggle Safety Switch

Unused Setting	Locked Setting	Operation Setting
Exciter does not operate	Trigger is locked to off	Trigger operates exciter



### 5.2 Assembly

Confirm safety lock is in the centered position and the trigger cannot be depressed. If using an extension rod, install it into the Motivator3™ hand tight. Install Igniter Tip into Extension Rod or Motivator3™ hand tight. Confirm the battery is fully charged via the indicator light on the charging station or the indicator light on the battery itself. Install Battery.

### 5.3 System Function Test





**CAUTION**

**STARTLING NOISE**



Igniters can make a loud “snapping” or “popping” noise when fired. Anticipate this noise and warn others to expect it before operating the equipment. Alert others in the area before operating equipment.

Shift the safety lock to the right and fully depress the trigger. Sparks will flash at the igniter tip, the indicator light on top of the exciter will flash off with each spark, and a small light will illuminate from beneath the nose of the exciter.

The Motivator3™ will continue sparking as long as the trigger is depressed. To stop sparking, release the trigger. Note that the duty cycle of this equipment is 30 seconds on, 60 seconds off. Operating at a rate higher than the duty cycle could damage the exciter and void the warranty.

Do not operate the Motivator3™ without an igniter tip. Without an igniter tip, the exciter must absorb the energy pulse, which can damage the exciter and void the warranty.

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## 6.0 System Operational Inputs and Outputs

### 6.1 Applying Power to Equipment

To power the Motivator3™, install a compatible battery into the battery slot.

### 6.2 Commanding Exciter to Spark

Pressing the trigger button will command the exciter to spark the igniter. The Blue Spark LED on top of the exciter will turn on when the exciter is attempting to fire and will briefly flash off each time a spark output current is detected.





Igniters can make a loud “snapping” or “popping” noise when fired. Anticipate this noise and warn others to expect it before operating the equipment. Alert others in the area before operating equipment.

### 6.3 Spark Detection Feedback

The Motivator3™ system provides spark detection feedback by flashing a blue light on top of the exciter. Table 1 provides interpretation of light behavior.

Light Response	Meaning
Consistent Flashing Blue	Sparks are being generated. Exciter is functioning normally.
Erratic Flashing Blue	Sparks are being generated. Igniter tip is nearing end of life. Replace soon.
Solid Blue	No sparks are being generated. Lock Trigger, Disconnect Battery, See section 6.4.
Does not turn on	Exciter is not functioning. Lock Trigger, Disconnect Battery, Contact Chentronics®.

### 6.4 Solid Blue LED Status

If the LED turns on solid blue when attempting to spark, verify extension rod and igniter are installed correctly according to Section 5.0 Instructions.

If installed correctly, verify the exciter is functioning correctly with a new igniter. When an igniter has reached the end of service life, the LED indicator will respond solid blue.

If the LED continues to respond solid blue when the trigger is depressed with a new igniter, lock the trigger, disconnect the battery, and contact Chentronics®.

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## 7.0 Standard Components and Accessories

The following is a sample of standard parts available for use with the Motivator3™ system. For additional information and technical drawings, please contact Chentronics® at TEL: +1.607.334.5531 or [info@chentronics.com](mailto:info@chentronics.com)

### 7.1 Standard System Components

Recommended Igniter – 12000500

Recommended Extension Rod – 12000450

### 7.2 Standard Accessories

Battery: **\*Due to shipping regulations Chentronics® is unable to ship batteries**

6.0 Ah (US typical) – 20V Max Premum XR 6.0AH Lithium ion

Suggested Vendor: DEWALT (PN: DCB206)

5.0 Ah CE – 18-20V 5.0AH Lithium ion

Suggested Vendor: DEWALT (PN: DCB184P2-XJ)

Battery Charger:

Plug type A (US typical) – 07071723

Plug type C (EU typical) – 07071727

Test Igniter – 12000550-A1-12

Custom Fitted Carrying Case – 07071719

## 8.0 Warranty Instructions

For warranty-related inquiries, please contact Chentronics® at TEL: +1.607.334.5531 or [info@chentronics.com](mailto:info@chentronics.com)

## 9.0 Technical Support

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