

TOLERANCE NOTES

FABRICATED TOLERANCES

≥ 2 ft (610 mm) ± 0.250 in (6.4 mm)
< 2ft (610 mm) ± 0.125 in (3.2 mm)

MACHINED TOLERANCES

± 0.050 DECIMAL DIM (1 PLACE)
± 0.010 DECIMAL DIM (2 PLACES)
± 0.005 DECIMAL DIM (3 PLACES)

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BD-5 HIGH ENERGY IGNITION SYSTEM Installation and Operation Manual



PN C7778000

**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 SERIOUS INJURY, DEATH, OR DAMAGE TO EQUIPMENT.

RELATED DOCUMENT – MUST COMPLY WITH SCHEDULE DOCUMENT(S):

CERT-C7778000, CDM-10000147, 148, 205

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Contents

- 1.0 Important Safety Information..... 3**
- 2.0 System Specifications 5**
 - 2.1 Description of Equipment..... 5
 - 2.2 General Arrangement 5
 - 2.3 Description of Equipment Protective System..... 6
 - 2.4 Equipment Conditions of Use 6
 - 2.5 System Electrical and Physical Specifications..... 7
 - 2.6 Electrical Area Classification and Safety Markings of SureSpark™ BD-5 7
- 3.0 Installation Instructions 7**
 - 3.1 Harness Installation 7
 - 3.2 Base Rod Installation (optional)..... 8
 - 3.3 Ignitor Tip Installation..... 9
 - 3.4 Power Cable Installation 9
- 4.0 Standard Components and Accessories 10**
 - 4.1 Standard System Components..... 10
- 5.0 Warranty Instructions..... 10**
- 6.0 Technical Support..... 10**

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PAGE 2 OF 10

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1.0 Important Safety Information



Read All Instructions Before Using the Equipment



The instructions in this manual 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 national, state, local, and company safety regulations.

Safety Symbols used in this manual comply with ISO 3864.

THESE SYMBOLS INDICATE 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 severe injury.



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



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

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PAGE 3 OF 10

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! DANGER



HAZARDOUS VOLTAGE

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

Disconnect power before servicing the equipment.

When energized, do not join or separate any connection to the equipment.

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

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

The equipment must be installed and serviced by qualified personnel per local and national codes, standards, and ordinances.

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

CES SYMBOLES SONT UTILISÉS POUR VOUS AVERTIR DES RISQUES DE BLESSURES POTENTIELS.

RESPECTEZ TOUS LES MESSAGES DE SÉCURITÉ QUI SUIVENT CES SYMBOLES POUR ÉVITER LES BLESSURES POTENTIELLES OU LA MORT.



Indique un danger avec un niveau élevé de risque qui, s'il n'est pas évité, entraînera la mort ou des blessures graves.



Indique un danger avec un niveau de risque moyen qui, s'il n'est pas évité, pourrait entraîner la mort ou des blessures graves.



Indique un danger avec un niveau de risque bas qui, s'il n'est pas évité, entraînera des blessures mineures ou modérées.

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PAGE 4 OF 10

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TENSION DANGEREUSE

L'appareil contient un système d'allumage à haute énergie qui contient une **TENSION DANGEREUSE ET POTENTIELLEMENT MORTELLE**. Pour éviter les risques de blessures graves par électrocution, suivez toujours les précautions de sécurité indiquées ci-dessous:

Coupez l'alimentation avant l'entretien du matériel.

Ne pas connecter ou séparer toute connexion à l'équipement lorsque l'appareil est sous tension.

Ne pas appliquer de tension à l'appareil sans un allumeur connecté ou le port d'allumage correctement fermé.

Gardez l'extrémité de l'allumeur loin de tout personnel et de matériels inflammables.

L'équipement doit être installé et entretenu par du personnel qualifié, conformément aux codes locaux et nationaux applicables, aux normes et règlements en vigueur.

L'appareil n'est pas réparable sur site. Ne tentez pas de démonter ou de réparer l'équipement.

2.0 System Specifications

2.1 Description of Equipment

The Chentronics® SureSpark™ BD-5 is a High Energy Ignition System for use with Biodiesel fuels directly while operating in a wide range of environmental conditions.

2.2 General Arrangement

The SureSpark™ BD-5 system model number has a high voltage output connector (ARP 670 TYPE 2F), and the input connector is a DC conxall connector. The output and input connectors are supplied separately.

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PAGE 5 OF 10

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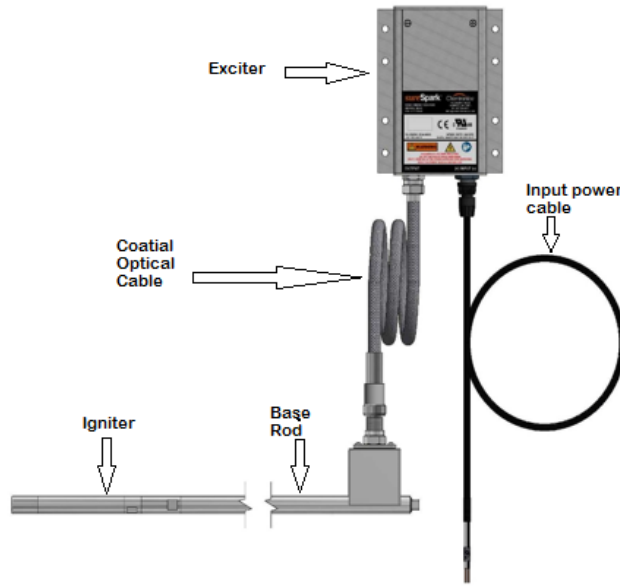


Figure 1: System general arrangement.

2.3 Description of Equipment Protective System

The internal electronics assembly is silicone encapsulated inside an aluminum enclosure.

The assembly must be installed in a Non-Hazardous Area.

2.4 Equipment Conditions of Use

The SureSpark™ BD-5 system equipment is subject to the following conditions of use and limitations:

1. The equipment shall not be subjected to a source of heating or cooling (process temperature) greater than +85°C or less than -25°C.
2. A switch, fuse, or circuit breaker to separate the device from the mains must be included in the installation. The switch or circuit-breaker must be suitably located and easily reached. It is recommended that it be located near the exciter enclosure.
3. The equipment's power connections shall not be joined or separated when the equipment is in use (powered).
4. The equipment's igniter connections shall not be joined or separated when the equipment is in use (powered).
5. The equipment shall not be operated without an igniter attached.
6. The igniter, extension rod, or base rod must be secured to the grounded building frame or chassis using a metal fixture.

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PAGE 6 OF 10

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2.5 System Electrical and Physical Specifications

Application: Direct spark ignition
Input Power: 10-30VDC, 1.5A MAX
Exciter Type: High Energy Ignition
Exciter Duty Cycle: 30 sec ON / 1 min OFF

**CAUTION: The exciter will run continuously for as long as it is powered.*

Exciter Spark Command: Apply power to the unit to begin sparking
Exciter Power: 2J per spark at 5 sparks per second
Operating Temperature Limits: -25°C to 85°C
Storage Temperature Limits: -25°C to 85°C
Enclosure: Aluminum, encapsulated internal assembly
Electronics Assembly Weight: Approximately 3lb
Dimensions: Approximately 3.07 x 6.00 x 4.80 inches.

2.6 Electrical Area Classification and Safety Markings of SureSpark™ BD-5

The SureSpark™ BD-5 has been assessed and complies with the following Safe Area standards:



3.0 Installation Instructions

3.1 Harness Installation

The SureSpark™ BD-5 system has an easy installation procedure. Thread the male end of the harness into the output connector (ARP 670 TYPE 2F) on the exciter and tighten it to 150in-lb.

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PAGE 7 OF 10

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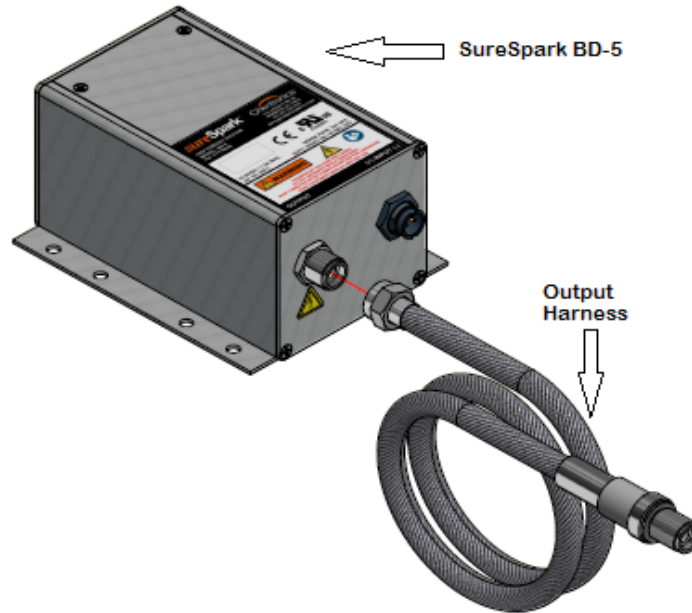
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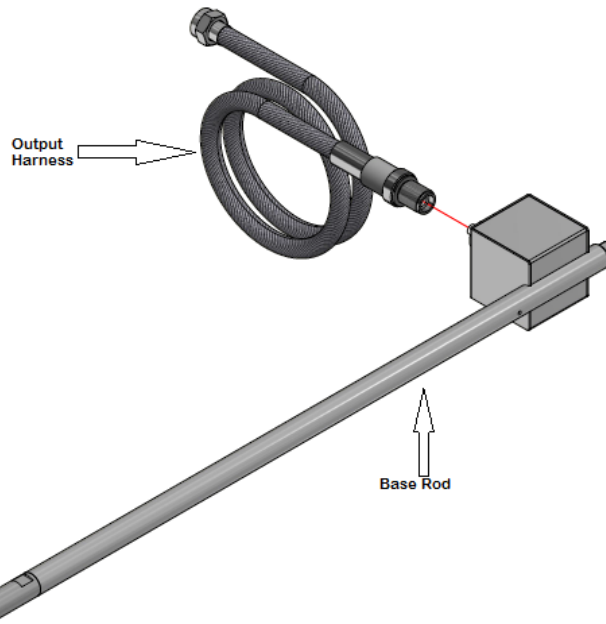
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3.2 Base Rod Installation (optional)

Thread the other end of the harness into the base rod and tighten it to 150in-lb. The base rod will be between the harness and the ignitor, as shown in the next step.



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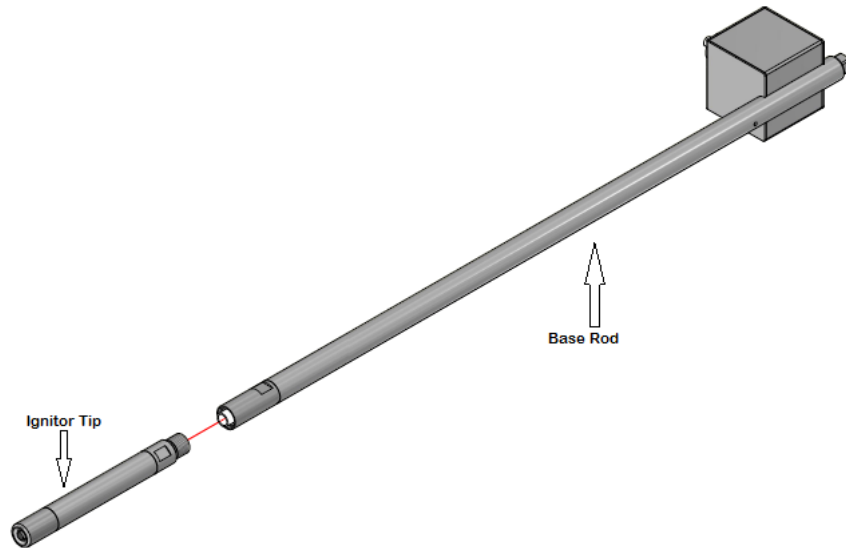
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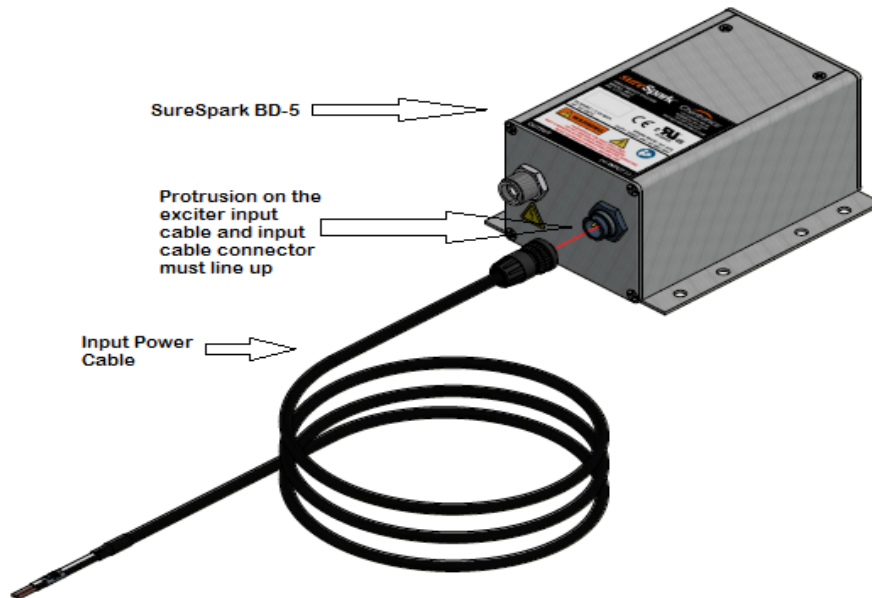
3.3 Ignitor Tip Installation

Thread the base rod into the ignitor and use the flats to wrench tighten.



3.4 Power Cable Installation

The input power connection utilizes a keyed ¼-turn connection. Align the key, press the connector into place, then turn the connector's outer shell ¼-turn to engage.



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PAGE 9 OF 10

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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.

BRUITS SAISSANTS/SURPRENANTS

Les allumeurs peuvent faire un fort bruit de « claquement » ou un bruit «sec» lors de l’allumage. Anticipez ce bruit et avertissez les autres de s’attendre à ce bruit avant de faire fonctionner l’équipement. Alerte tout individu dans la zone avant de faire fonctionner l’équipement.

4.0 Standard Components and Accessories

The following are standard parts available with the SureSpark™ BD-5 system. For additional details and technical drawings, please get in touch with Chentronics®.

4.1 Standard System Components

Harness - E7700000-Z-02M, HARNESS, ARP670 TYPE 2M TO 2F, 2M [6.6'] LONG

Igniter Tip - E90258, IGNITER TIP, 0.625" OD, 5.00" LONG

Input Power Cable - CBD07070130-6.00, MATES TO CONXALL 7832-2PG-300, 6.00' (1.8M) LONG

Base Rod - E3000003-1.00, BASE ROD, 0.625" OD, E-SERIES, 1.00' LONG

5.0 Warranty Instructions

For warranty-related inquiries, please get in touch with Chentronics® at **TEL: +1.607.334.5531** or info@chentronics.com

6.0 Technical Support

For technical support-related inquiries beyond the scope of this Installation and Operation Manual, please get in touch with Chentronics® at **TEL: +1.607.334.5531** or info@chentronics.com

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