

# Direct HIGH ENERGY Ignition of Heavy Fuel Oil

## Chentronics

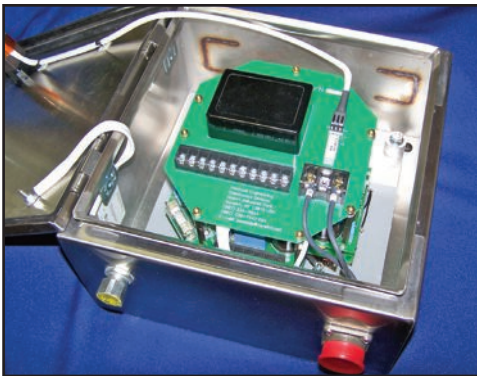
### *Eliminates the need for ignition fuels:*

Our Rapid Fire Ignition System is an ideal solution when gas is not available. Or, in the case of marine application where gas is not permissible, High Energy ignition is an ideal replacement for the carbon rod. Direct ignition of the main fuel lowers costs and reduces complexity.

The high-energy spark clears fouling and is capable of **igniting bunker grade fuel oil**. It even fires under water. This system provides reliable light off of heavy oil in the following conditions:

#### **Direct spark ignition**

- Eliminates the need for fuel controls & valves.
- Eliminates the need for separate fuel storage.
- Increases reliability since fewer parts are used that last longer.



#### **COLD START:**

- Saturated atomizing steam
- Ambient combustion air, about 15° C
- Draft loss up to 3" water gauge (the ignition point is in swirled zones, where air velocity is approx. 30 M/sec)



#### **WARM START:**

- Superheated atomizing steam, about 240° C (higher temperatures enhance ignition)
- Pre-heated combustion air, about 120 ° C (higher temperatures enhance ignition)
- Draft loss up to maximum (higher air temperature, increases draft loss capability)

## Advanced Ignition Technology

Standard HE systems are capable of providing light off of heavy oil in optimum conditions. Critical factors include fuel temperature, quality of fuel atomization and a low loss discharge path. Our high-energy ignition system has additional enhancements, which our research has shown to provide significant improvements to light off capability. The exciter is solid-state. The elimination of tubes increases the flexibility to provide various output characteristics while increasing life. The exciter provides over 300 watts output, which is not practical for the old gas tube technology.

### Features & Benefits

The most common problems with burner operation are associated with starting. We have used decades of experience to develop features that minimize the chance that the spark is ever an issue. Consider the following features and the benefits:

- **INCREASED SAFETY** - The flexible harness connecting the exciter to the rod is covered with PVC insulation AND the discharge path is isolated from frame. This approach minimizes current flow through the input ground reference. *Arcing to frame is virtually eliminated.* In addition, the output of each section is female: this *minimizes the chance of personnel getting shocked*, should the exciter be operated open circuit.
- **MODULAR ASSEMBLY** - Each section is easily replaced: the harness has large military type twist connectors that can be removed with a gloved hand, and the igniter tip threads are coated with a high temperature graphite compound at the factory. The exciter enclosure has a hinged cover. The internal sub-assembly is mounted as a single block that is easily removed.
- **NO YELLOW METALS** - H<sub>2</sub>S is commonly called “Sour Gas”. It is often a byproduct of many industrial processes. H<sub>2</sub>S gas accelerates erosion of yellow metals: in particular copper, bronze and brass. This High Energy Ignition system does not use yellow metals; the *exposed metal of the rod and igniter are high-grade stainless steel and inconel.*
- **ADVANCED ELECTRONICS** - The exciter accepts a wide input voltage range: 85-265 VRMS (50-60 Hz), it *accepts input power from almost anywhere in the world.*

