

High Energy Ignitor System & Lighter Controls

Background

1. High Energy Ignitor Systems (HEI)

Failures have occurred in high energy ignition system power supplies, high voltage wires, and spark tips. The power supply was redesigned in 1978 and since the redesign, performance of the power supplies has been excellent. However, failures were subsequently experienced with the spark tip and probe high voltage wiring on the second generation of HEI systems. In late 1982, the third generation of HEI System was manufactured. This generation employs the redesigned power supply with an improved spark tip and upgraded probe high voltage wiring.

2. Oil Lighter Controls

There have been various problems associated with the Electro-Pneumatic lighter control package. These problems include seal leaks, internal oil leaks, filter cap leaks, and cross threading of threads.

In the first generation LC-200 control system, the most common problems occurred with the Laurence valves. The valve either chatters or leaks, due primarily to foreign material in the valve seat or solenoid (when dirt gets in the solenoid valve).

Another problem with the first and second generation LC-200 system installation is that there is only a single check valve in the oil piping.

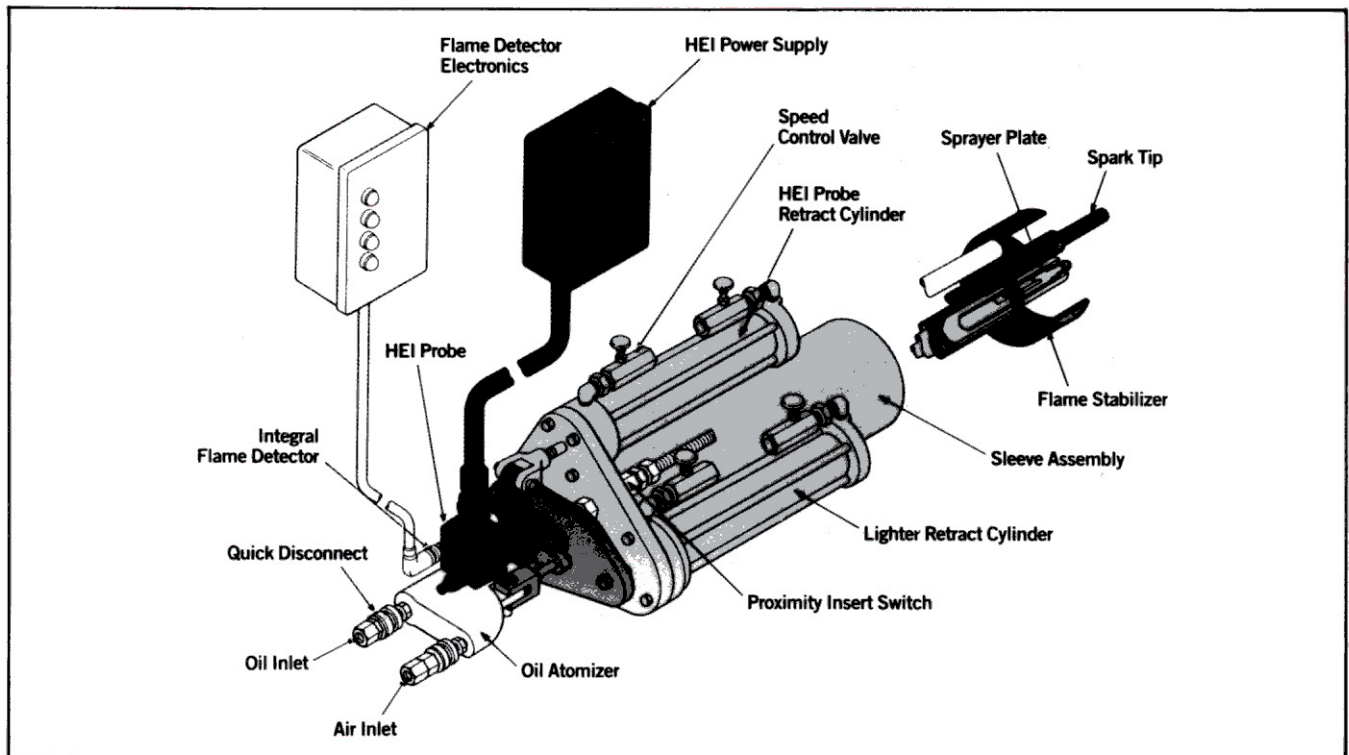


Figure 1 Variable Input Lighter Type CFS/OIL

The chart below lists the most common problems, the causes for the problems and the recommended solutions to overcome the problems.

Product I - High Energy Ignitor Systems (HEI)

A. Power supply fails.

Cause	Solution
First generation power supplies proved to be inadequate for severe usage.	Replaced with present power supplies.

B. Spark tip and probe high voltage wiring burn up.

Cause	Solution
1. Initial lighter sparking rates and duration of each spark proved to be beyond the capability of survival for this equipment .	Upgrade probes and tips to the latest design. Install shunts on the transformer to reduce the spark rate on second generation power supplies. Modify the lighter logic to reduce the spark duration during the purge cycle.
2. Exposure to high temperature due to inadequate cooling air.	Adjust cooling air to assure adequate cooling.

Upon reassembly, thoroughly clean the button connectors on the spark rod and tip with a non-residue solution for good contact. Chemtronics, Inc., C-420 Electro wash is recommended.

Product II. - Oil Lighter Controls

A. Seal leaks, internal oil leaks, and filter cap leaks on Electro-pneumatic lighter packages.

Cause	Solution
The threads were subject to cross threading.	Extensive reconditioning and overhaul may be required. Earlier designs may make replacement more practical and economical.

B. Laurence valve chatters or leaks.

Cause	Solution
Dirt is in the solenoid valve or valve seat.	1. Clean dirt from the solenoid valve and valve seat. 2. Replace the solenoid valve with a ball valve.

C. Lighter oil guns have oil in gun after purge is complete.

Cause	Solution
1. Purge time insufficient.	Increase time to approximately 3 minutes to properly purge.
2. Shutoff valve not closing tightly.	Correct cause of why oil valve does not close tightly.
3. Purge medium pressure insufficient.	Increase purge medium pressure to 100 psig.
4. A single check valve is installed too far upstream in oil piping.	Install a second check valve immediately upstream of the purge air connection on each lighter.
5. Oil piping arrangement is above the lighter.	Lower the piping to a location below the lighter elevation.
6. Plugged sprayer plates.	Clean sprayer plates.

Support

For assistance and answers for lighter control problems, please contact your local Babcock & Wilcox Field Service Engineering Office.

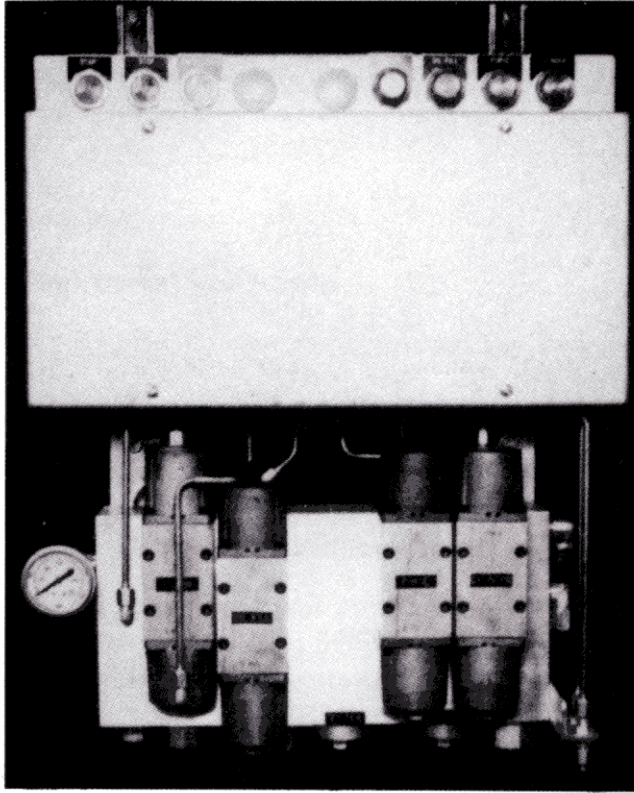


Figure 2 *Electro-pneumatic Lighter Controls*

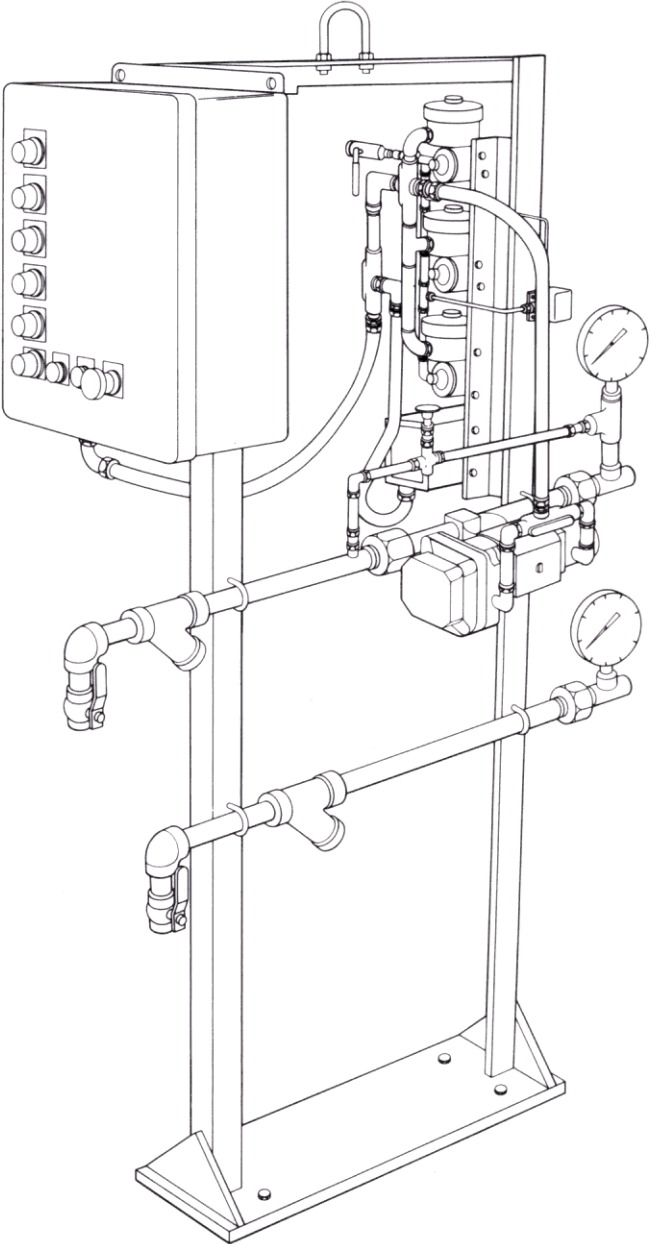


Figure 3 *PLC - Lighter Controls*

For more information, contact your nearest B&W sales office or write: Dept. CIC, Power Generation Group, Babcock & Wilcox, Barberton, Ohio 44203, U.S.A.; or, in Canada, Manager, Marketing and Sales, B&W Canada, Cambridge, Ontario, N1R 5V3.

Akron (Copley), Ohio
Atlanta, Georgia
Boston (Dedham), Massachusetts
Calgary, Alberta, Canada
Cambridge, Ontario, Canada
Charlotte, North Carolina
Cherry Hill, New Jersey
Chicago (Lisle), Illinois

Cincinnati, Ohio
Dallas, Texas
Denver (Lakewood), Colorado
Halifax (Dartmouth), Nova Scotia, Canada
Houston, Texas
Kansas City, Missouri
Minneapolis (Eagan), Minnesota

Montreal, Quebec, Canada
Portland, Oregon
Saint Johns, New Brunswick, Canada
St. Petersburg, Florida
San Francisco (Walnut Creek), California
Vancouver (Richmond), British Columbia,
Canada

**For international sales offices and representatives write:
Manager, Marketing and Sales, Babcock & Wilcox International Division, Cambridge, Ontario, Canada N1R 5V3,
or Barberton, Ohio U.S.A. 44203.**

The information contained herein is provided for advertising and general information purposes only, and is not intended or to be construed as a warranty, an offer, or any representation of contractual or other legal responsibility.