

LA 202 Boiler steam leak detection system

Greenbank Energy Solutions Inc. 185 Plumpton Ave, Washington Pa. 15301
 Tel (724) 794-3300 / Fax (724) 794-3400
 Email: greenbankenergy@aol.com Web Page: www.greenbankenergy.com
 A subsidiary of The Greenbank Group, Inc.

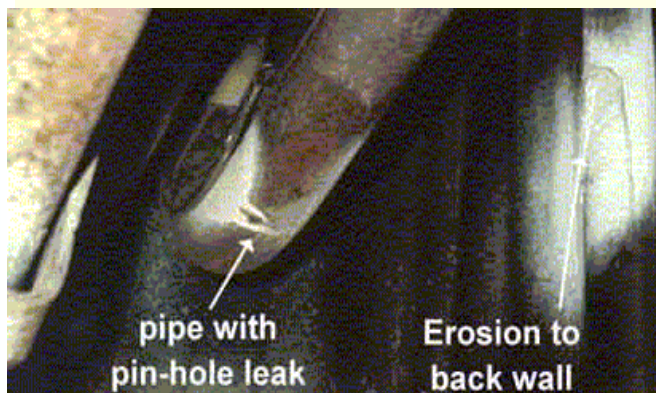
The LA 202 system provides detection of boiler tube leaks when they are not detectable by traditional methods. This allows management time to plan a repair strategy and schedule a controlled outage for tube repairs, at a time which is less expensive to the plant. Operators will benefit from reduced downtime as a direct result of minimizing the degree of damage requiring repair. All of which contribute to greater plant availability, efficiency and reductions in operational costs.

Benefits:

- Increase unit availability
- Increase operating profit
- Increase tube life
- Improve personnel safety
- Reduce outage time
- Reduce repair cost
- Reduce financial penalties
- Reduce insurance cost
- Detect other mechanical damage causing noise
- Allows for planned outages to repair leaks
- Reduces risk of catastrophic failure
- Earlier warning over traditional techniques

Features:

- Airborne: contains a true microphone, which is totally insensitive to vibration
- Structureborne: piezo-electric based sensors can measure sound generated by a leak in the boiler structure by either acoustic frequencies or ultrasonic frequencies.
- Both types of sensors contain a microphone test elements, which simulates a steam leak for total system dynamic testing.
- The system outputs a totally filtered signal that can be directly connected to the plant DCS for an operator interface.
- System works on positive, negative and balance draft boilers.
- Logarithmic signal scale for greater a dynamic range (1000 times change in magnitude) than linear scale measurements.
- Individual sensor calibration
- Modular design easily expanded from one to any number of sensors
- Optional air purge for airborne wave guide cleaning.
- Over 250 installations (since 1974)

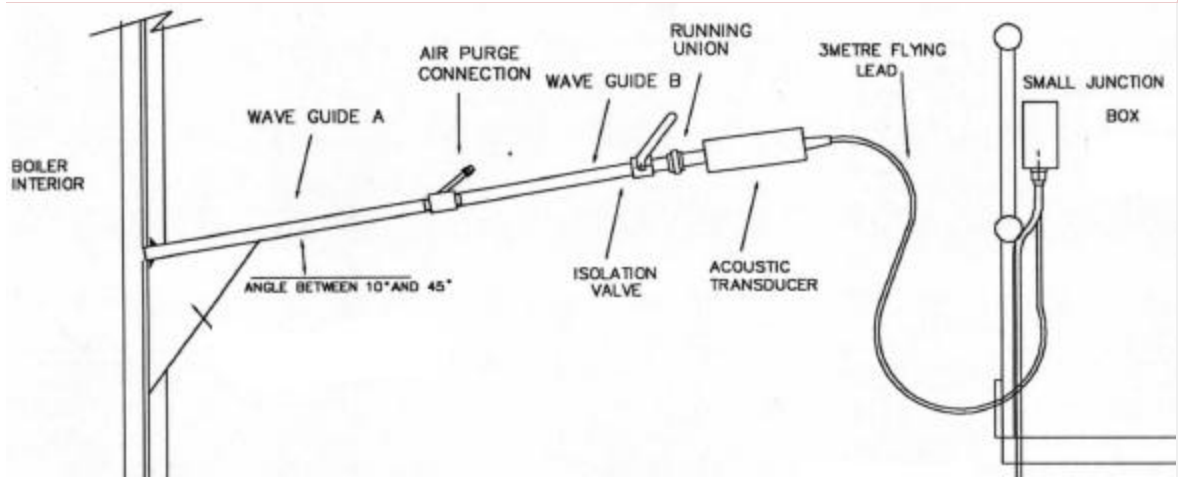
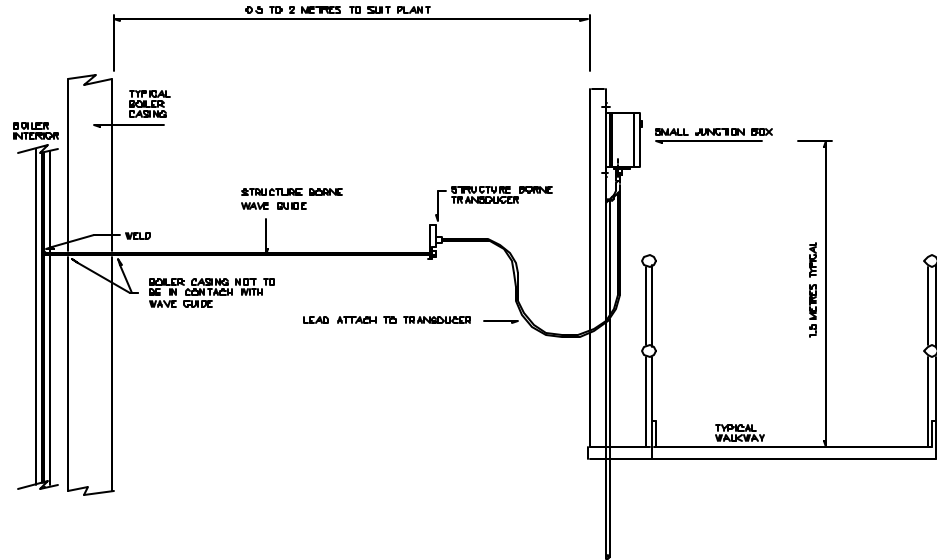


The fundamental principal of our leak detection system is based on the fact that pressurised steam or water passing through an orifice produces sound energy. The name given to this energy is acoustic emission and it has a wide band of frequencies from below 1Hz to above 1MHz.

The acoustic emission of a steam leak propagates throughout the boiler in two ways, first via boiler gases and second via boiler structure. The LA202 system utilizes special airborne and structure borne sensors to monitor these emissions. Sophisticated signal processing is used to filter unwanted frequencies and background noise. The LA202 airborne system sensor has a listening range up to 45 feet (14 m), with a tube leak (hole) of 0.1 inches (2.5 mm) diameter.

LA 202 Boiler steam Leak detection

GREENBANK ENERGY SOLUTIONS INC. EARLY DETECTION OF BOILER TUBE STEAM LEAKS



Airborne sensors signal outputs

54 dB-114 dB 4- 20 mA DC
Remote listening 0-10 mA AC

Alarms set points and leak determination

Low/maintenance < 70 dB
Possible leak > 90 dB
Probable leak > 110 dB

Structure borne sensors signal outputs

Relative sound intensity 4- 20 mA DC
Remote listening 0-10 mA AC

Electrical requirements

110V AC 60Hz
24v DC System power supply included

Temperature range

Boiler side equipment -5 F to 130 F
Control room equipment 32 F to 90 F

Environmental conditions

All boiler side equipment is protected to IP66

