

# CRICKET

## Grapple Mounted Radiation Detection System



Find radioactive sources the other radiation detection systems miss with the world's leading, proven, highest sensitivity radiation detection grapple mounted system

### Find radioactive sources other systems may miss - highest sensitivity

- Get closer to the source
- Smaller volumes of scrap - less density shielding source
- Longer scan time
- Less ambient background impact

### Proven, tested, leading edge technology

- 8 years development and field experience
- Rugged, durable, water resistant
- Independent evaluations and test results available

### User friendly, easy to operate

- Multi-language, simple to use console
- Wireless, network ready and data-logging capabilities
- Manual scan and self-test capabilities - safety

### Easy to install and maintain

- Modular design with four components - shield, detector, battery and wireless communication module, console
- Battery operated up to 72 hours
- Easily transferred to other grapples - add shield

### Excellent customer references

- Most leading scrap recyclers and steel mills use the CRICKET system
- Over 400 systems in successful operation worldwide

### Fit to any grapple, in any application

The CRICKET radiation detection system is designed specifically to meet the needs of the scrap, steel and waste industries. The CRICKET's revolutionary, yet simple design provides an optimum level of detection capability for low intensity radioactive sources, on a continuous basis, in applications where radiation detection systems have never existed before. The level of detection capability will far exceed any conventional radiation detection system, including detection systems that are mounted on the boom of a crane, regardless of the detector size.

### Get closer, scan longer

Mounting the CRICKET in the grapple allows direct exposure to all the material being handled. There are three different opportunities to measure all scrap material during the handling process. Because the CRICKET system scans on a continuous basis, material is scanned on the surface before the grab even picks up the load. Secondly, the grapple load is scanned for up to 10 seconds while in the grapple. Finally, the material is scanned as it falls from the grapple.

These three scanning conditions allow the CRICKET to provide a high degree of detection capability for low level radioactive material. In addition, the CRICKET's robust design provides greater impact-resistance than any manufactured grapple.





## Overview:

The CRICKET consists of four assemblies:

- the protective shield,
- the detection unit,
- the battery pack and the wireless communication module,
- controller.

The following is an outline of the CRICKET detection systems mechanical design and operation.



## Detection unit

- The primary component of the detection system.
- Size of the detection medium is configured to the size of the grapple.
- Mounted inside a specially designed "G" force compensation case that shuts the impact and multi-frequency ringing that is associated with grapple material handling conditions.
- The case is easily removed from the protective shield when the wear plate is taken off. The case resists corrosion from water and hydrocarbon products such as oil and grease.
- Inside the special case are the electronic and large volume detection assemblies, designed to withstand SEVERE repeated impacts and vibration associated with this application.
- The assemblies are mounted in such a way that they are isolated from the direct transfer of energy. The components of each assembly are also specially selected and manufactured to our proprietary specifications with the focus on rugged MIL-SPEC designs.
- The systems electronic components include several sensors that are used to monitor the operating conditions of the grapple such as temperature, motion and impact with the scrap material.
- The unit is powered by 6Vdc from the battery pack via a shielded communication cable. The cable is protected with heavy SS mesh and mounted inside the grapple tube section where maximum protection can be maintained.

## Detector protective shield

- Fits to any type of mechanical, hydraulic, electro-hydraulic grapple.
- Specially designed case construction allows the detection of low energy gamma sources (i.e. Am241).
- The shields high strength and wear resistance design is capable of withstanding severe impacts on a continuous bases commonly associated with scrap metal handling.
- Easy to install and service.
- Equipped with doors for easy-access to the internal detector assembly(s).
- Detector occupies a small volume of the grapple that does not effect the scrap handling operations.

## Battery pack

- The battery pack measures 8" x 5" x 2 1/2" (20cm x 13cm x 6cm) and incorporates a rugged steel box construction.
- The box is welded in a protected area on the tube of the grapple center section.
- A small 1/2" (13mm) hole is drilled in the tube to allow the communication cable access to the battery pack connections.
- Battery pack includes a shock-mounted standard 6Vdc 7.2A/hr dry cell battery and wireless communication system.
- Battery powers the detection units electronic circuits and wireless system.
- Wireless system utilizes a low powered digital nonlicensed frequency that can transmit up to 1000 ft (300m).



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