

Controlled Impact Rescue Tool (CIRT) Rapid-response concrete-breaching technology



Saving lives with maximum
concrete-breaching power in
a portable tool

Key Benefits

- Reach trapped victims faster
- Self-contained, safe, portable
- Rapidly deployable to any disaster site
- Requires minimal training
- Up to four times faster than conventional breaching methods

Design concept

Imagine a search and rescue team arriving on the scene of a collapsed heavy concrete structure with survivors trapped between pieces of the rubble. Extracting the victims alive is usually a complicated, slow and dangerous process for both rescuers and victims, especially if breaching or breaking through concrete is necessary.

CIRT is a self-contained, safe and portable unit designed to aid fire departments, local and federal rescue agencies and the military services. The tool sends shock waves to pulverize cement, enabling rescuers to breach faster than with existing techniques such as drilling, chipping or sawing.

Designed for versatility

CIRT originated as a response to a requirement from the Department of Homeland Security Science and Technology Directorate, to create a portable technology that could rapidly deploy with urban rescue teams to breach 5.5-inch reinforced concrete.

The resulting product, which has since undergone extensive testing and design evolutions, is a two-man portable tool, actuated by standard powder cartridges, and is capable of breaching a targeted reinforced concrete wall up to four times faster than with traditional methods.

Maximum impact

The energy applied by one CIRT impact is equivalent to 20 times that of a sledgehammer, without the vibration effects typically generated by hydraulic breakers.

Ease of use

Minimal training is required to operate CIRT, ensuring personnel can focus skills and efforts on rescue techniques, rather than operating the tool. CIRT can breach surfaces in any orientation.

Safety features

CIRT is designed to ensure safety of both the operator and victim. An interlock safety mechanism prevents the device from being fired inadvertently. Additionally, the force generated by CIRT is concentrated in a localized area on the concrete barrier, which minimizes potential destabilization of the surrounding structure.

Wide applicability

CIRT can be rapidly deployed for success in responding to any disaster event in the homeland or abroad, and has been successfully tested against reinforced concrete up to one foot thick.

CIRT Design Specifications:

- Two-man portable unit
- Weight: 105 pounds (47.62 kg)
- Dimensions: 38.3" x 18" x 11.6" (.97m x .46m x .29m)
- Uses standard, blank ammunition cartridges
- Single-shot operation
- Basic eye and ear protection required

Basic Operating Procedures:

- Deploy CIRT to rescue site
- Load unit with single, blank cartridge
- Place CIRT against breaching surface
- Fire CIRT
- Impacts on breaching surface cause spalling on the reverse side
- Repeat firing procedure until visible damage for desired breaching hole
- If desired, breaching surface hole can then be enlarged/cleaned using traditional hand tools, with minimal effort
- Cut rebar via existing methods, as needed

Concrete Thickness	Impacts Required	Breaching Time
5.5" (.14m)	15-20	4-5 minutes
7.25" (.18m)	25-30	6-8 minutes

For further information contact:

Intelligence and Information Systems
P.O. Box 660023
Dallas, Texas
75266-0023 USA
iiscommunications@raytheon.com

www.raytheon.com
Keyword: CIRT

Customer Success Is Our Mission is a registered trademark of Raytheon Company.