



## Spectrum of Projects



## Medical



- Defibrillation / ECG
- Monitoring & holter cables
- Custom connetors and Receptacles
- Heartpumps & Endoscopy

## Military



- Battery cables
- Future soldier systems
- Radar system
- Internal tank communication

## Industrial



- Custom Mining connector
- Custom solutions for connectors and overmolding
- Warehouse cables systems



Defibrillation / ECG



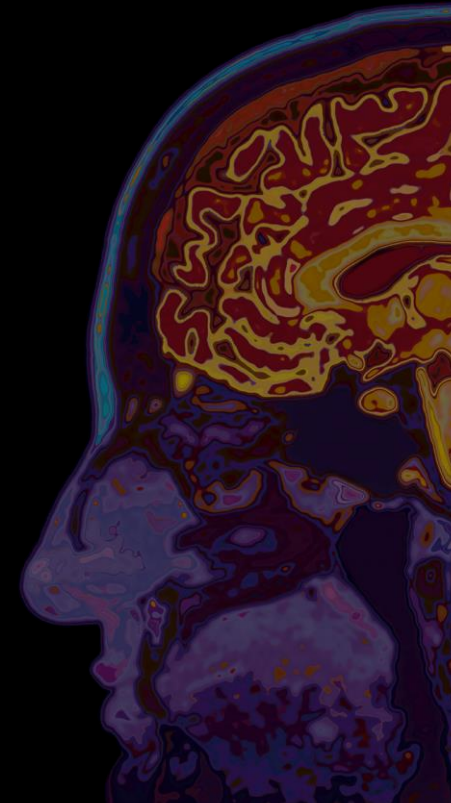
Heartpumps



Endoscopy



Richter Connector System





Physio Control LP15

**The LIFEPAK® 15 Monitor/Defibrillator** is the standard in Emergency Medical Services.

**Requirements:**

- Develop and build a ultra rugged 12 lead ECG cable system with detachable precordial leadwires
- Defibrillation Therapy cable and connector system for extreme environments
- Break-Away Power Cable and mating bulkhead connectors
- Assembly of the Hard Paddle Therapy Cables







## Heartpump cable system

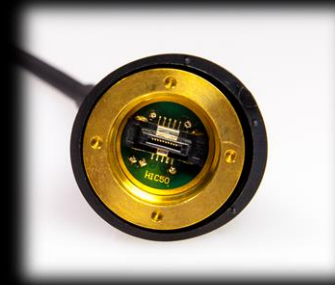
- Connecting cable for a miniature pump placed in heart with impeller drive
- Application; to support the blood flow of the damaged heart Pumping capacity of up to 5 l/min.
- The complete system, pump and cable, are designed as single-use products.
- A special springwire system for the sockets is used in the receptacle – for optimal transmission of power and data
- Optional fiber optic sensor for the measurement of blood pressure and flow rate in the heart, installed in receptacle and cable





### Several Endocopy cables

- The transfer of a sharp and contrasting image is the core requirement of our customers.
- Reusability through sterilization is also a requirement.
- Custom metal design on connector side
- PCB modeld into a connector





## The Richter Connector System

Suitable for various medical applications. Established for years in the medical industry.

### Technical Features:

- Straight or right-angled 8-12 pin connector
- High-quality, gold-plated socket and pin contacts
- Suitable for more than 5000 mating cycles
- Robust connector design
- Custom coding and color combinations are available





Military / Industrial Special Solutions

**BERND  
RICHTER**

connections for life



Rheinmetall, Gladius



Thales, GO12



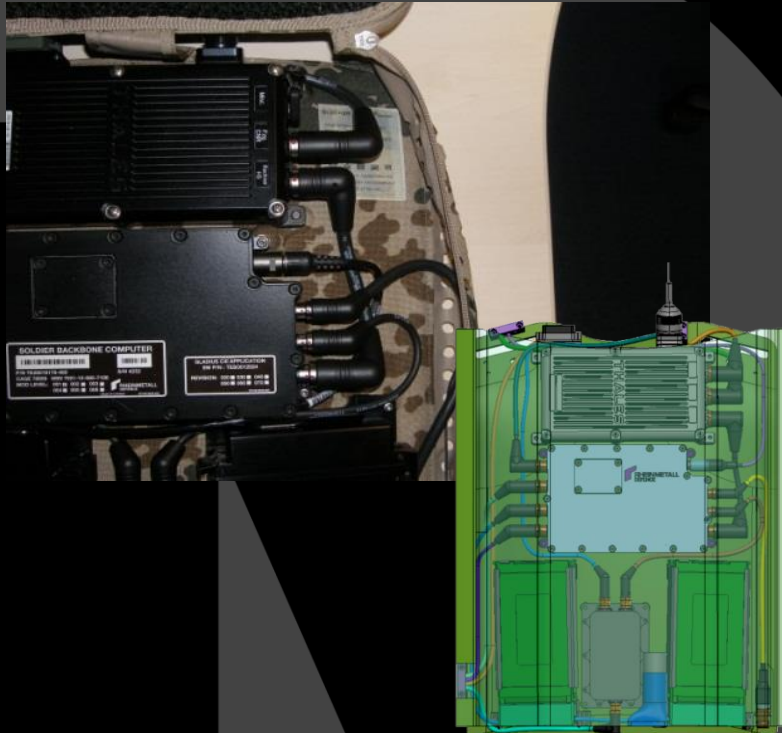
Special Solutions



## Future Soldier System

- The “Gladius” modular soldier of the future communication system.
- Lightweight state of the art Radio, and battery power systems.
- Ensures efficient and comfortable communications in the field.

Since 2007 these systems have been used in the field by the German Bundeswehr.



## The electronic back

The "octopus" principle is applied for the electronic back.

Core Computer, Radio, GPS system and battery system are connected via 18 different cable constructions.

- All controls and optical instruments are located on the front of the body
- Special cable materials are used to meet the extreme mechanical and electrical requirements
- EMC compliance is critical throughout the external cable systems
- An external laboratory confirmed that our cables meet the EMC-requirements



Examples of Gladius custom military connectors...





## Headset Future Soldier System 1

The development of the Headset System was a cooperative effort between Sennheiser and Richter.

The challenge was to ensure the intelligibility of speech while eliminating noise. The blast of a firearm is nearly completely filtered to protect hearing.

### Technical Features:

- Extremely thin (2.3 mm) 6-lead, double-shielded cable
- Destructive pull out force of the cable from plug and yoke is greater than 400 N (90 pound-force)
- More than 25,000 flex life cycles (in accordance to AAMI)
- Watertight rating of IP68





## Portable Radar System GO12

The portable radar system allows the observation of large areas.

GO12 is for both - civilian and military applications. The Ground observer secures airports, industrial and military areas. (barracks, ammunition dumps, border security)

- This system demands both tight water ingress ratings, as well as challenging shielding requirements
- Injection molding of large military connectors necessitated the development and implementation of highly customized manufacturing and sealing processes





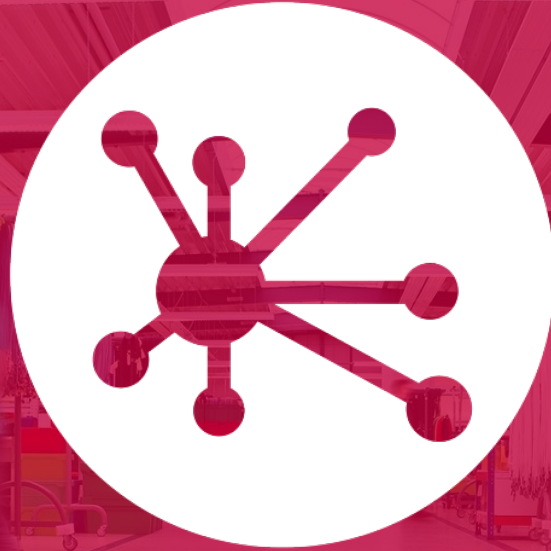
## Electronically controlled Coal Mining System

Patented connector system for extreme environments, worldwide.

Our connector meets the challenging requirements of coal mining

- Ingress protection to IP68
- Certified explosion protection
- Resistance to thermal and chemical stress
- Easy handling with gloves
- Various O-Rings are specified to securely lock and seal





Manufacturing / Processes



# Manufacturing | Overview

**BERND  
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connections for life



Cable Assembly



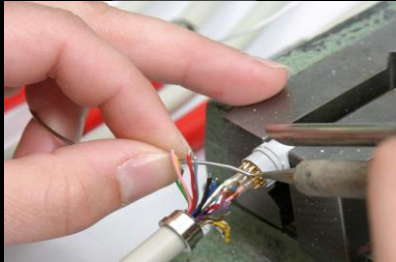
Injection Molding



Toolshop



Crimp Processes



Soldering, Spotwelding



Potting Technology



Sample Build



ESD Manufacturing





## Cable and Connector Manufacturing



**Cable assembly by  
Specialists on more  
than 43,000 square  
feet**

- Approx. 130 employees in the cable assembly department
- More than 20 skilled workers in injection molding
- Currently 7 workstations for electrical cable testing
- More than 25 additional employees for printing, potting, shipping...
- ESD compliant workstations



## Injection Molding, Quality and Quantity

- Experienced injection molding department produces high quality technical plastic products
- 14 modern semi-automatic molding machines and 4 fully automatic horizontal molding machines meet our customer's quality and volume requirements
- The new 2-component injection molding technology offers processing of 2 different materials and / or colors in one work process