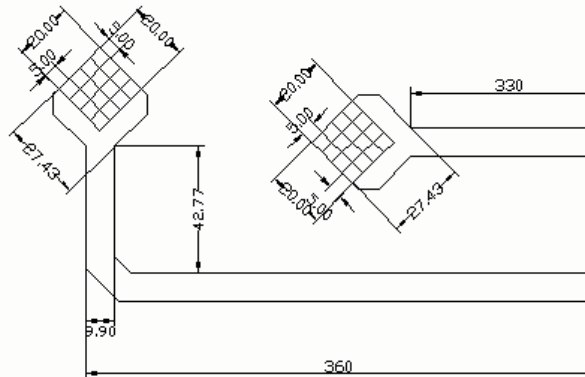


pliance-RLS sensor



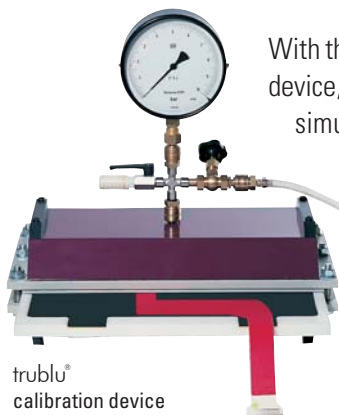
Dimensions of a standard RLS sensor. All dimensions are in mm.

Technical data for RLS sensor

number of sensors	16
total sensor area (mm ²)	20 x 20
size of one sensor element (mm ²)	5 x 5
thickness (without coating) (mm)	< 1
elasticity	~ 4%
pressure range* (kPa)	20 - 600

* Different pressure ranges and sizes are available

trublu[®] calibration device



trublu[®] calibration device

With the aid of the trublu[®] calibration device, all sensors are individually and simultaneously calibrated with homogeneous air pressure. Calibration guarantees accurate and reproducible data collection. Calibration systems are available at various sizes.

pliance-RLS system

Features

- conforms perfectly to anatomical areas
- monitors simultaneously different anatomical areas of the limb
- measures highly accurate calibrated values
- scans 20,000 sensors per second
- allows configuration and localisation of sensor matrix via expert software in 2-d and 3-d mode
- stores data on flash memory
- sends data online via built-in Bluetooth[®] telemetry to any PC or Pocket PC
- can be synchronised with video and EMG



pliance-x



Pocket PC (PDA) display

With the pliance PDA software the RLS system can be used for long-term/long distance mobile applications.

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All systems from novel operate with high quality, calibrated sensors and provide reliable and reproducible long term measurements. pedograph[®], emed[®], pedar[®], pliance[®], trublu[®] and the novel logo(colored foot) are the registered trademarks of novel^{gmbh} © 2004

pliance

prosthesis



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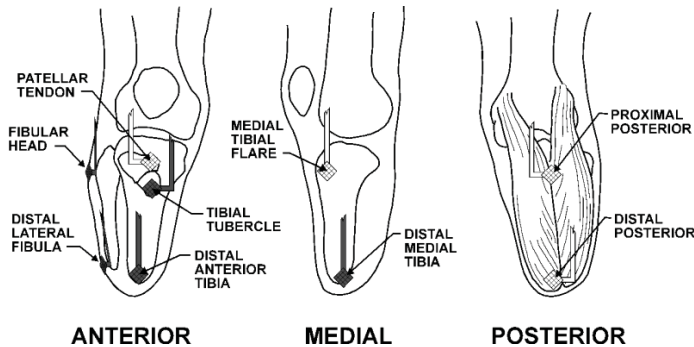
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Introduction

Due to poor socket fit and improper pressure distribution, it is common for amputees to develop residual limb problems such as discomfort, pain, skin irritation, pressure ulceration and associated infection. Up to now the most frequently used method of inspection for these problems is individual inspection and verbal feedback.

Measuring pressure at the interface between an amputees residual limb and prosthetic socket could provide valuable information in the process of prosthetic socket fabrication, modification and optimal fit.



Fixation of the sensors on a residual limb.
Pictures used with permission from Rancho Los Amigos
National Rehabilitation Center/USA

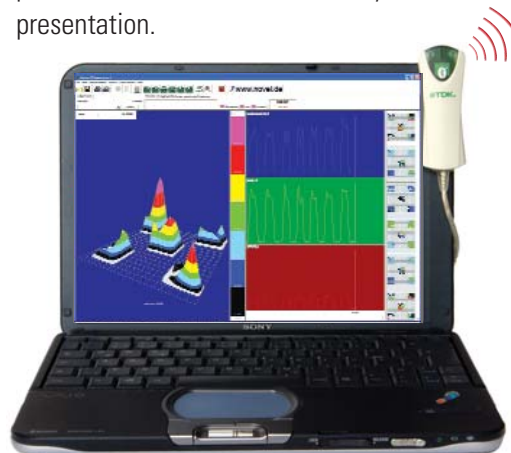
pliance-RLS prosthesis system

The pliance-RLS prosthesis system has been developed for socket evaluation and fit. It provides a quantification of the level of pressure at the residual limb/socket interface during static and dynamic movements.

The pliance-RLS capacitive sensors connect to the pliance-RLS analyser, which accepts a maximum number of 1024 sensor elements. The sensor pads can be placed at selected positions and scanned simultaneously.

The possibility to store data on the flash memory or to send data online by the built-in telemetry allows a great degree of flexibility when measuring pressure while walking. The results are therefore more relevant to "real-life" daily loads of the residual limb.

The pliance-RLS software package operates with Windows 2000 and Windows XP. It is user friendly and contains many useful options for fast pressure data collection, analysis and data presentation.



Data collection, analysis and
presentation software (3D display)

pliance-prosthesis sensor

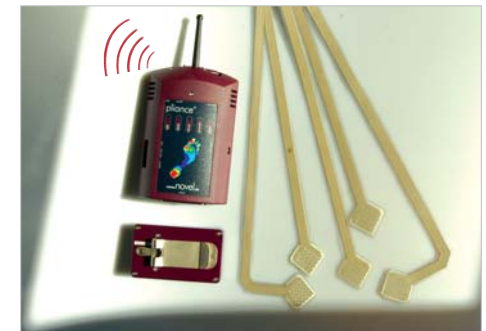
As a result of their design and material selection, the pliance-RLS sensors are flexible and elastic and have the ability to conform very well around highly contoured sites. This is particularly advantageous in prosthetics because of the highly irregular surface and geometry of the residual limb and the shape of the socket.



Sensors mounted on a prosthesis

The pliance-RLS sensors include a dense array of sensors, with a small individual sensor area. This allows recording of interface pressure at a discrete location of the socket.

The length of the sensor pad is appropriate for use on a short or long transtibial socket. The different standard shapes allow testing of different anatomical areas simultaneously. Custom made sensors are also available.



pliance-RLS system