



Insignia Fact Sheet

Overview

Insignia is a system that combines advanced computer aided design (CAD), laser scanning, three-dimensional imagery, and motion-tracking technology to design prosthetic and orthotic devices. An alternative to traditional casting methods, Insignia employs a three-dimensional motion-tracking laser scanner and proprietary CAD software to provide a faster, cleaner, and less invasive casting experience.

Suitable for a variety of prosthetic and orthotic applications, Insignia was developed exclusively for Hanger and is only available to Hanger practitioners and their patients.

Regional rollouts of Insignia to Hanger's 600 patient care centers began July 2003. The Company expects to deploy 300 Insignia systems nationwide by Q4 2004.

The Development of Insignia: Exclusive Technology, Proprietary Software

Hanger teamed with two developers to create Insignia: Polhemus and ARANZ (Applied Research Associates NZ Ltd). Polhemus developed Insignia's processing unit and installed unique enhancements. ARANZ developed Insignia's laser scanner and motion-tracking device.

About Polhemus:

Polhemus, located in Colchester, Vermont, is a global leader in providing three-dimensional position tracking systems. Polhemus supplies a complete range of these high quality three-dimensional motion tracking and digitizing systems for various industries including medical, military training and simulation, computer-aided design and virtual reality. For more information on Polhemus, please visit www.polhemus.com.

About ARANZ:

ARANZ is a research, design and development provider with particular expertise in 3D surface digitizing and 3D surface fitting. ARANZ has been awarded a number of research contracts by the NZ Foundation for Research, Science and Technology to develop new technology for 3D imaging. ARANZ has been certified by Verification NZ to ISO9001 to supply research, design, and development of software, electronic, and hardware products for the industrial, scientific, and biomedical sectors. For more information on ARANZ, please visit www.aranz.com.



Benefits of Insignia

Comfort-The less invasive nature of the Insignia System results in markedly improved patient comfort. Patients no longer have to endure the mess and bother associated with plaster casting.

Portability-The components of Insignia fit into a compact, portable case so patients can be scanned at home, in a hospital, or in a nursing home/rehabilitation facility.

Speed-Using a lightweight, hand-held laser scanner, Hanger practitioners can almost instantly capture the full three dimensional image of the body part to be fitted.

Accuracy-Unlike any other scanner on the market today, Insignia's scanner employs an embedded motion-tracking device to allow for patient movement when being scanned. The device determines the position and

orientation of the scanner's wand relative to the body part being scanned, casts a fan of laser light over the patient's body part, records a cross-sectional profile of the object, and enables the computer to accurately reconstruct the full three-dimensional surface. The scans are accurate to within one millimeter, and the three-dimensional feature gives detailed surface information often lost with a cast or mechanical digitizers.

Permanent Patient Record-Insignia's proprietary CAD software creates a permanent patient record that allows for rapid refitting and adjustments, the justification of medical necessity for a new device, and the sharing of patient information with the referring physician, allied health professional, managed care organization, and/or insurance company. Justification of a new device is typically submitted as subjective and abstract reasoning; Insignia's permanent patient record finally offers documental, material evidence.

National Network-Patients' digital information is housed in a data warehouse in Hanger's Central Design Center (CDC). When the patient moves or travels, this information can be retrieved by any of Hanger's 600 Patient Care Centers.



Insignia Product Sheet

Developed exclusively for use by Hanger practitioners, Insignia is currently being used by Hanger practitioners to design the following devices:

- Post-op, preparatory, temporary, and permanent prostheses for foot, below-knee and above-knee amputations;
- Functional and passive prostheses for hand, below-elbow, and above-elbow amputations;
- Ankle foot orthoses (AFOs), spinal jackets, and cranial helmets.

A unique feature for spinal jacket patients

A unique symmetry feature of the Insignia software eliminates the pain and possible trauma often associated with manipulating post-surgical spinal patients. Using Insignia, patients can be fit for a spinal jacket while lying in bed, without having to roll from front to back. The Hanger practitioner scans one hemisphere of the body and the symmetry functionality built into the Insignia software creates the image of the opposite side to form a complete image. The practitioner has full control over the creation of the symmetrical panel before it is sent electronically to the Central Design Center (CDC) for design of the custom spinal jacket.



Friendly cranial casting for children

By eliminating the use of plaster casts, the fitting of devices on children, who can be afraid of the casting and cast removal procedures, is less stressful for both the patient and parents. For example, the cranial casting procedure, used in the creation of cranial helmets, has long been an irritating experience for infants and parents. The Insignia scan is non-invasive and the infant can be scanned while sitting in a parent's lap or being held in their arms.





Insignia Process

Compared to the traditional fitting method, which utilizes plaster casting, the Insignia system provides a fast, non-invasive alternative.

The following is a brief overview of what a patient can expect when being fit with a device using the Insignia system.



To prepare the patient for the fitting, the practitioner first attaches a small receiver to the patient. This receiver works with a motion-tracking device embedded in the Insignia scanner. The device determines the position and orientation of the scanner's wand relative to the patient and allows for patient movement while being scanned.



Depending on the part of the body being scanned and the pigment of the patient's skin, the practitioner may ask the patient to wear a stocking over the part of the body being scanned. This is done to enhance the resolution of the scan.



The practitioner scans the part of the body being fit for a device using the Insignia system's wand. By smoothly sweeping the handheld laser-scanning wand over the part of the body being scanned, in a manner similar to spray painting, the Insignia system instantly acquires a three-dimensional image of the patient's body part. The entire patient fitting process is completed within minutes.



After taking the scan, the practitioner either downloads the image into Hanger's proprietary Insignia software and makes appropriate modifications onsite, or the practitioner sends the raw image to Hanger's Central Design Center where individuals with extensive experience in computer aided design and a background in prosthetics and orthotics make modifications according to the practitioner's specifications.



Once the appropriate modifications are made, the data from the scan is digitally sent to either Hanger's central fabrication network or a local fabrication facility where a final mold is carved and the prosthetic or orthotic device is constructed.



What are the components of Insignia?

Insignia is comprised of five key elements:

1. Laser imaging and data acquisition technology:

The lightweight, hand-held laser scanner works by casting a fan of laser light over the person's limb, head, or body, while the camera on the wand views the laser to record a cross-sectional profile of the object. The system instantly acquires an accurate three-dimensional image of the surface by gathering measurements during the scanning process.

2. Central Design Center: Located in Tempe, Arizona, Hanger's Central Design Center (CDC) staffs an expert team of CAD/CAM personnel with decades of combined experience. The CDC team currently designs and manufactures Hanger's national product line, including devices such as the Hanger custom TLSO, Custom Scoliosis Orthoses, etc. All Insignia systems are

electronically connected to the CDC. After a practitioner scans a patient, the three-dimensional image is electronically sent to the CDC within minutes, where it is evaluated and modified in Hanger's proprietary CAD software. After modification, the image is electronically transferred back to the practitioner for inspection and final approval. Practitioners may also modify their own images and consult with CDC staff designers. The CDC will automatically route the finished design to one of Hanger's fabrication centers. The entire process can take just minutes from the time the patient's digital image is created and transmitted.

3. Proprietary CAD Software: Insignia utilizes proprietary CAD software, created by the Hanger Technology Task Force for exclusive use by Hanger practitioners. An intuitive and user-friendly program, the software provides a seamless computer-aided design package that reflects the Hanger business model.

4. Central Fabrication Network: Provided as an option to practitioners who wish to outsource fabrication of sockets and appliances, the Central Fabrication Network stands ready to produce Hanger's O&P designs, direct from the practitioner's computer or the CDC, within 24 hours. The CDC automatically routes the three-dimensional design to a fabrication center to insure uniform quality. Hanger's network of fabrication centers helps increase practice efficiency and decrease manufacturing cost.

5. Training and Education: At the Hanger Research Center in Oklahoma City, the Hanger Clinical Services Department offers intensive training on the proper use and application of Insignia. Practitioners are provided with clinical protocols for all business types serviced by Insignia and are introduced to the accompanying proprietary CAD software. Each practitioner performs many scans under various conditions created at the center to simulate typical patient care environments.

After core competency is established, practitioners are given the opportunity to scan volunteer patients, carve check sockets, and dynamically fit the socket to their patient. Every practitioner's scan, CAD modification, and check socket fit is evaluated and critiqued by the group. The practitioner student leaves this class fully prepared to utilize the tools of Insignia in any environment.



Insignia Patients

Patients who would normally undergo plaster casting to be fitted with a device will benefit from the time savings, convenience, and improved comfort that comes with Insignia. To date, Insignia has been used to fit patients of all ages, including children, for a variety of orthotic and prosthetic devices.

The following are testimonials from patients regarding their Insignia experience:



• ***Insignia is a big improvement over plaster casting. There is less mess and it's so fast and easy. Insignia is a wonderful method for making a prosthesis. (Gayle Dekker)***



• ***The scanning process is quick, clean, and there is no pain. My socket had a perfectly close and intimate fit. (Richard Coufal)***



• ***My socket had a better fit than what I had before, especially around the knee. (Ken Hammer)***



Frequently Asked Questions

Q. *Is the laser dangerous?*

A. No. The laser scanner emits a low intensity fan of laser light that is harmless to the human body.

Q. *Why do we use this method? What is the benefit for the patient?*

A. Insignia improves the quality of the patients' treatment experience. Compared to traditional casting methods, Insignia is faster, cleaner, and less invasive. Patients no longer have to endure the mess and bother associated with plaster casting.

Q. *How does the scanner work?*

A. The hand-held laser scanner works by casting a fan of laser light over the person's limb, head, or body while the camera on the wand views the laser to record a cross-sectional profile of the object.

Q. *How accurate is the scan?*

A. The scans are accurate to within one millimeter, and the three-dimensional feature gives detailed surface information often lost with a cast or mechanical digitizer.

Q. *Is there any additional cost for using the scanner?*

A. No. There are no additional costs for the patient associated with Insignia.

Q. *What do you do with the computer file to produce the finished product?*

A. After a practitioner scans a patient, the three-dimensional image is stored electronically and then modified by Hanger practitioners using Hanger's proprietary software. After modifications are made, the image is electronically fed to fabrication equipment that produces the mold used to create the socket or appliance.

Q. *What makes this system different from other CAD systems? Why is Insignia better than other systems?*

A. Unlike any other scanner on the market today, the Insignia scanner employs an embedded motion-tracking device to allow for patient movement. The device determines the position and orientation of the scanner's wand and enables the computer to accurately reconstruct the full three-dimensional surface of the object within Hanger's proprietary CAD/CAM software.



Glossary of Terms

AE: An above the elbow amputation.

AK: An above the knee amputation.

Alignment: Position of prosthetic socket or an orthotic device in relation to the foot and knee.

Amputation: Loss or absence of all or part of a limb. Limbs surgically removed due to a disease or trauma generally diabetic/vascular, cancer, bone infection, or accidents.

Anatomical: An expression that relates to the structure of the body.

Architectural Barrier: Stairs, ramps, curbs or anything, which obstructs your walking or wheelchair mobility.

Atrophy: Deterioration of a muscle, tissue, or limb.

BE: A below the elbow amputation.

Bilateral amputee: A person missing either both arms or both legs; a double amputee.

BK: A below the knee amputation.

CAD: Computer Aided Design.

Congenital amputee: Individual born missing a limb(s).

Disarticulation: An amputation at the point of a joint: commonly the hip, shoulder, knee, ankle, elbow or wrist.

Extremity or Limb: Relating to an arm or leg.

Gait training: Learning how to walk with a prosthesis or prostheses.

Interface/liner: The medium between the residual limb and prosthetic socket to provide additional, comfort and protection of the residual limb.

Lower extremity: Having to do with the lower part of the body. In reference to leg or knee amputations.

Myo-electric: Type of upper extremity prosthesis using bio-feedback to control the function.

Orthosis: A device that is used to protect, support, or improve function of parts of the body that move.

Orthotics: The use of custom fitted or custom made braces to correct or stabilize malformed or weakened body parts and assists in increasing the functional level of the patient.

Orthotist: A skilled professional who fabricates orthotic devices that are prescribed by a physician.

Prostheses: More than one prosthesis.

Prosthesis: An artificial part of the body. In the case of amputees, usually an arm or a leg.

Prosthetics: The replacement of arms, legs etc. with artificial limbs.

Prosthetist: A person involved in the science and art of prosthetics; one who designs and fits artificial limbs.

Residual limb: The portion of the limb remaining after an amputation.

Socket: Part of the prosthesis that encapsulates the residual limb.

Suspension system(s): The method used to hold the prosthesis on to the body.



Corporate Fact Sheet

Overview

Headquartered in Bethesda, Maryland, Hanger Prosthetics & Orthotics, a division of Hanger Orthopedic Group, Inc (NYSE:HGR), owns and operates some 600 orthotic and prosthetic (O&P) patient care centers nationwide. Staffed by nearly 900 certified practitioners, Hanger Prosthetics & Orthotics provides patients with convenient, consistent, high quality care.

Core Business

In the orthotics business, Hanger designs, fabricates, fits, and maintains standard and custom-made braces that provide external support to patients suffering from musculoskeletal disorders and injuries from sports or other activities. In the prosthetics business, Hanger designs, fabricates, fits, and maintains custom-made artificial limbs

for patients who are without limbs as a result of traumatic injuries, vascular diseases, diabetes, cancer, or congenital disorders.

The Company fits many proprietary technologies such as its patented Hanger ComfortFlex™ Socket, which combines science, technology, and anatomy to provide an intimate interface between the patient's body and the prosthetic device. Hanger's specialized patient care programs include International Upper Extremity & Lower Extremity Prosthetics, National Orthotics, Immediate Post-Operative Prosthetics (IPOP), and Diabetic Foot Management.

Headquarters: Hanger Orthopedic Group, Inc.
Two Bethesda Metro Center, 12th Floor
Bethesda, MD 20814
301.986.0701

Web Site: www.hanger.com

E-mail: info@hanger.com

Toll free # 1-877-4-HANGER

Key Personnel: Ivan R. Sabel, Chairman and Chief Executive Officer
Tom Kirk, President and Chief Operating Officer
Richmond Taylor, President, Hanger Prosthetics & Orthotics
John Spaeth, CP, Director, Insignia CAD-CAM Program



Press Contact: Jennifer Bittner, Hanger Prosthetics & Orthotics,
301.280.4869, jbittner@hanger.com