



"There is real progress only when the advantages of a new technology become for everyone"

Henry Ford





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HISTORY



Roadrunnerfoot Engineering s.r.l., set in Milan Italy since March 2007, is manufacturer and distributor of innovative walking and running prosthetic feet. The company includes the engineering office and the manufacturing line, offering support before, during and after sale, about prosthetic components, orthotic components and wheelchair.

The prosthesis naturally reproduces the human movement of lower muscles and limbs, offering stability and performance both in walking and running.

Therefore, Roadrunnerfoot Engineering s.r.l. is the first Italian company that designs, manufactures and sells aids for disabled people and components for prostheses. The main innovation given by our company concerns the methodology of the design process: each product is designed considering users' needs: we start from Gait Analysis, with normal and disabled people, to define components characteristics, in order to simulate sound limbs. This design's methodology is unique because it requires high cost technologies, like optoelectronic systems, IR cameras, force platforms and specific software to analyze Gait data. Eng. Bonacini, thanks to his personal experience, designed and patented a superior performance walking prosthetic foot.

We are proud to present our complete catalog.



MISSION

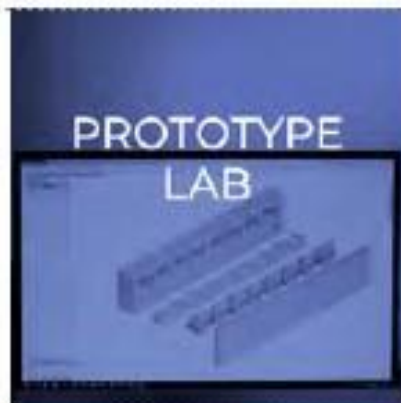
“It was Christmas Evening, 1993: I had a terrible car accident, my car smashed against the guard rail due to the steering block, and my leg did as well. Undesired fate: a leg amputated below the knee, a necrosis obliging doctors to different operations and my time in private life and university career fading away. Notwithstanding this, I felt my life, a new life, was somehow starting to run again. After four days in hospital Niguarda in Milan, my best friend Guido Bussolini and the water ski champion and amputee Battista Galliani came to visit me. Galliani began to jump in front of me, on his healthy leg and in the same way on his artificial limb. An extraordinary vision. I immediately thought that if a 50-year-old man could jump so gracefully on his artificial leg, I could not imagine what I would be able to do at my age, 23 years old. In that moment I realised I wanted to start running. After three months’ convalescence in hospital – it was already end 1994 -, I went to INAIL, the Italian Institute for medical assistance against accidents at work, to get my first prosthesis. I had been longing for my being autonomous in my life again, so the day after receiving my first artificial limb I rode my bike though Milan city all day long, as it was easier for me than walking.

Tony Volpentest at Atlanta Paralympic Games in 1996 was another turning point in my life: phocomelic, missing both legs and arms, he ran 100m in 11.38 seconds. Such a record!! I realised technology could help me running again, as I did before the accident. This idea came to my mind the first time when I saw jumping Galliani, but now I strongly decided I could run to the Paralympics Games! It was end 1996 when I started training and running again as a sportsman, like a sort of a non-sense: no legs, but a strong will to run. I remember coming back to Milan with my first carbon fibre walking foot: I went to the park jogging under a storm after 3 years from my car accident. It was an extraordinary feeling of freedom and peace I had never felt before. I was again keeping my balance in the world. I met the Polisportiva Milanese in June 1997, and some months later Engineer Verni and the orthopedic technician Sermasi realized the first running prosthesis. In April 1998 I begun my athletic career, in the 100 and 200 running and in the long jump. I won many races: from Italian to European Championship (4th in 200 m and long jump, 2003-Assen), to Global championship and Paralympic Games in Athens in 2004 (6th in the long jump). **Paralympic Games changed my life both as athlete and as man: I met people from all over the world able to live their lives, everyone facing with their disabilities in different ways but every time as winners. Among them I remember Tony Volpentest: he was a great athlete and also a great testimonial standing up for disabled people’s rights. It was new time to change my life again: I left my work and starting the PhD by Mechanical department of Politecnico of Milan to develop a running prosthesis foot. That’s why I established Roadrunnerfoot Engineerin s.r.l., in 2007, after the second year of my doctorate in order to allow the diffusion of high technology for all users.”**

Daniele Bonacini



HIGH TECHNOLOGY: NEW APPROACH



QUALITY CERTIFICATION



www.imq.it

CERTIFICATO N. CERTIFICATE N. 1970.2019

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

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UNITA' OPERATIVE / OPERATIVE UNITS

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E' CONFORME ALLA NORMA / IS IN COMPLIANCE WITH THE STANDARD

ISO 9001:2015

PER LE SEGUENTI ATTIVITA' / FOR THE FOLLOWING ACTIVITIES

Progettazione, produzione ed immissione in commercio di componenti per protesi ortopediche esterne

Design, manufacturing and placing on the market of components for external orthopaedic prosthesis

Ulteriori informazioni riguardanti l'applicabilità dei requisiti ISO 9001:2015 possono essere ottenute consultando l'organizzazione
Further clarifications regarding the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization

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The validity of the certificate is subordinated to annual audit and a reassessment of the entire management system with a three year cycle



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CISQ è la Federazione Italiana di Organismi di
Certificazione dei sistemi di gestione aziendale.
CISQ is the Italian Federation of management
system Certification Bodies.



www.roadrunnerfoot.com

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CISQ is the Italian Federation of management
system Certification Bodies.



www.roadrunnerfoot.com

TESTING AND PATENTS



Roadrunnerfoot is the only one company in all the world that test your products externally, by Politecnico of Milan. After testing Politecnico give one official report about test of products and we send all the document to the health ministry in order to have the CE conformity and the certification.



Since 2016 Roadrunnerfoot start the collaboration whit Berlin Cert:
ROADWALKING II HP and **ROADFLEXION HP**
are tested and validated from Berlin Cert second ISO 10328: 2016

Patents by Roadrunnerfoot company

- **SPRINTER'S KING RUNNING FOOT**
- **ROADWALKING II HP FOOT**
- **ROADFLEXION HP FOOT**
- **JOKER FOOT**
- **MONOCOQUE WHEELCHAIR**



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

KINEMATICS OF SPRINTING: COMPARISON BETWEEN NORMAL AND AMPUTEES ATHLETES

Umberto Cugini, Massimiliano Bertetti, Daniele Bonacini, Matteo Zanetti

XXIV ISBS Symposium 2006, Salzburg – Austria July 16, 2006

The paper introduces the initial activities of a project related to the kinetic analysis of amputees athletes running by means of dedicated orthopaedic prostheses. In this first session it has been analysed the kinematics of four athletes sample, three normal (the first a high-level pro, the second a junior and the third an amateur) and one unilateral below-knee paralympic amputee. Research objective is to analyse the kinematics of the amputee athlete and the differences in respect of normal athletes. It has to be considered that each normal athlete has its own way of running which depends on his anthropometrical parameters and on its motion strategy: an ideal biomechanics of running, which is a reference to optimise the perfor-

mance of athlete, doesn't exist. First of all it has been described the running biomechanical phases of normal athletes and the structural components of a sprinting prosthesis; then the system to analyse human movement and finally the adopted protocol for acquisition. The kinematical parameters and the motion strategy adopted by amputee are different in comparison to normal athletes: it has been analysed the anthropometrical parameters, the time-space parameters and pelvis, hip, knee and ankle angles. The collected data will be applied to the design process of running prosthesis in the socket manufacturing and in the alignment of prosthetic components to optimise the performance of the athlete.



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

INNOVATIVE IMPLEMENTATION IN SOCKET DESIGN: DIGITAL MODELS TO CUSTOMIZE THE

PRODUCT U. Cugini , M. Bertetti, D. Bonacini, G. Colombo, C. Corradini, G. Magrassi

Proceedings ArtAbilitation 2006: ©ArtAbilitation/SoundScapes

ISBN 87-7606-015-2 September 20, 2006 technologies. We demonstrate this assertion by The paper presents an innovative approach comparing digital model of the limb with the based on digital data and computer tools to positive plaster cast acquired by an orthopaedic optimize lower limb socket prosthesis design. technician during the traditional manual The kernel of the approach is a stump's detailed manufacturing process. The comparison evidences geometric model, with external surface and some differences concentrated on critical zones, inner bones. To obtain this model, we integrated whose deformations strictly depend on technician's RE laser scanning and two medical imaging manipulation. The analyses of the causes of the technologies, Computer Tomography (CT) and mentioned differences can furnish guidelines for Magnetic Resonance Imaging (MRI). The model physics-based simulations able to reproduce effects obtained can not be directly used to build the obtained by the technician. socket by using Rapid Manufacturing

REVERSE ENGINEERING AND RAPID PROTOTYPING TECHNIQUES TO INNOVATE

PROSTHESIS SOCKET DESIGN Colombo, Bertetti, Bonacini; Magrassi SPIE-IS&T 27/1/2006

The paper presents an innovative approach totally stump acquisition: non contact laser technique based on digital data to optimize lower limb for external geometry, CT and MRI imaging socket prosthesis design. This approach is based technologies for the internal structure, the first on a stump's detailed geometric model and one dedicated to bones geometrical model, the provides a substitute to plaster cast obtained last for soft tissues and muscles. We discuss through the traditional manual methodology with problems related to 3D geometric a physical model, realized with Rapid reconstruction: the patient and stump posi- Prototyping technologies; this physical model will tioning for the different acquisitions, markers' be used for the socket lamination. The paper definition on the stump to identify landmarks, discusses a methodology to reconstruct a 3D alignment's strategies for the different digital geometric model of the stump able to describe models, in order to define a protocol procedure with high accuracy and detail the complete with a requested accuracy for socket's structure subdivided into bones, soft tissues, realization. Some case-studies illustrate the muscular masses and dermis. Some different methodology and the results obtained. technologies are used for



SOCKET DESIGN AND MANUFACTURE AND PROSTHESIS VALIDATION THROUGH GAIT ANALYSIS

Bonacini, Frigo, Magarassi, Mangiante, Pavan Biomechanics of Lower limb, disease and Rehabilitation

September 3, 2007

The lower limb prosthesis is made of three principal components: the liner, the socket and the foot. The liner, the interface between socket and stump, has to protect the stump from injuries and loads that the stump suffers during walking. It is made of soft and elastic material and the level of stump comfort depends on this. The socket is the custom made prosthetic component, obtained through the plaster cast on the stump. Socket is the most important prosthesis component: it has the function to contain the residual limb of the amputee, and to permit the unloading of weight during gait and to assure both stump comfort and prosthesis functionality; in fact a socket incorrect design may generate heavy pressures on stump and so cause skin abrasion, which produce patient's suffering conditions till the impossibility of socket wearing. The foot's material is carbon fiber, produced through technologies from aeronautic and military industry.

The foot represents the active prosthetic component: it stores and releases the energy and it reduces the stump traumas. During the prosthesis assembly, after socket production, the next important phase is the alignment of the components: the prosthesis must replicate as much as possible patient healthy leg, both considering the natural varus or leg valgus, and the possible foot intra o extra-rotation. It happens that after the laser static alignment prosthesis does not fit at the best, so the orthopaedic technician control the component regulation during the dynamic alignment, observing patient gait and following his indications.

Another important step is the prosthetic foot choice to assemble with the prosthesis: nowadays every important industry in the prosthesis component field has a peculiar foot to offer. Feet are different accordingly with user target, considering weight, shoes number and the dynamic level of patient.



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

3D DIGITAL MODELS RECONSTRUCTION: RESIDUAL LIMB ANALYSIS TO IMPROVE PROSTHESIS DESIGN; Daniele BONACINI , Costantino CORRADINI, Grazia MAGRASSI, Body Modelling and Crime investigation 2007

The paper introduces some important aspects of an innovative methodology which authors are developing, based on digital data and computer tools to optimize lower limb socket prosthesis design. Socket customization is essential in order to obtain the best adaptability for the patient's body, guaranteeing a high functional degree, comfort, durability and prevention of medical complication. Until now, lower limb prostheses have been designed and manufactured with handicraft methods, depending on the skills of the orthopaedic technician. Our research aims at introducing the use of computer aided methodologies and tools

where they are not commonly and intensively used. The methodology consists of the reconstruction of stump digital model, the simulations on the digital model for obtaining the stump deformed shape, the design of the socket over stump deformed shape and socket manufacturing. Finally, the last step consists of the evaluation of the socket comfort perceived by the amputee and the analysis of the functionality of the prosthetic components by means of the gait analysis. The methodology has been tested on four patients with a trans-tibial amputation as an experiment.



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

THE MECHANICAL CHARACTERISTICS OF LOWER LIMB PROSTHETIC FEET ANALYSED THROUGH GAIT ANALYSIS; Bonacini, Frigo, Mangiante, Pavan ;

GNB2008 July 3, 2008

Lower limb prosthesis have achieved a high level of functionality thanks to the availability of new materials, such as titanium and carbon fiber textile, which are currently included in a modern modular prosthesis. This technological evolution permits the amputee to achieve a rather independent life, and even perform a sport practice, when the stump has no suffering conditions [1,2,3]. The socket is the most important prosthesis component: it has the function to contain the residual limb of the amputee, to support the body weight during gait, and must assure both stump comfort and prosthesis functionality. Another important component is the prosthetic foot. Most of the traditional prosthesis assemble SACH (Solid Ankle Cushioned Heel) feet, because of their easy

construction and relatively good acceptance for walking. However, with the introduction of dynamic energy storing feet, realized by carbon fibres, the range of feet choice has greatly increased and their performance dramatically improved. A proper adaptation requires to consider body weight, general health conditions (and specifically the stump and lower limb joints), and the mobility attitude of patient. In the present work the main kinematic and kinetic parameters of walking in transtibial amputated subjects were analysed. In particular the mechanical characteristics of the prosthetic feet was analysed to the purpose of defining criteria for proper sizing and adaptation.



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

DESIGN OF A NEW PROSTHETIC FOOT WHICH COMPLIES WITH ISO 10328 AND ALLOWS

HIGH PERFORMANCE; Bonacini, Colombo, Mangiante, Vergani

ETDCM9- 9th Seminar on Experimental Techniques and Design in Composite Materials;

September 30, 2009

Dynamic elastic response prosthetic feet, made of carbon fiber are available on the market since '70. In the last years improvements in materials and manufacture technologies allow to increase product's performances. The carbon fiber allows to store energy during the first stance phase and return it during the push-off phase. Prosthetic feet must be, therefore, highly dynamic to allow a good roll-over and support the amputee in walking but at the same time they must be resistant to comply with the high standards of ISO 10328. This standard consists of 3 kinds of tests:- static tests: 1 static proof test at 1610 N both on heel and forefoot, and 1 ultimate strength test at 2415 N on heel and forefoot;

one cyclic test at 1330N for $2 \cdot 10^6$ cycles;

one static test in torsion at 50Nm.

These loading conditions are higher 3 times than

those during normal walking while the loading condition in the cyclic test is closer to the real condition. To analyze the performance of a prosthetic is useful the hysteresis curve obtained from deformation and load data. The area between loading and unloading curves represents the energy loss which does not aid the final push. Load-time and deformation-time graphs identify the mechanical strength characteristics of a prosthetic foot. The Roadwalking foot has a completely new design, 4 laminate to support the user and store and return energy during the whole stance phase, and give an effective propulsive push-off. The elasticity of this new foot does not make it weaker: FEM analysis, in fact, was useful to find out a stratification which provides both stiffness and elasticity. The Roadwalking foot complies with ISO standard and it's CE marked.



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

ITALIAN AIDS FOR AMPUTEE CHILDREN IN HAITI, Pestelli, Bonacini

ISPRM Word Conference- Puerto Rico 2011

ISPRM Symposium on Rehabilitation Disaster Relief at the 6th ISPRM World Conference in Puerto Rico 2011



15 June 2011
San Juan, Puerto Rico

Italian aids for amputee children in Haiti



Germano Pestelli, Rehabilitation Area Director Forli and Vice-President SIMFER

Daniele Bonacini, CEO Roadrunnerfoot Engineering srl

Introduction

12 January 2010 HAITI EARTHQUAKE



22 February 2010, we engaged with these results:
- 240 prosthesis of emergency sent with Fondazione Reva
- start up of an assembly plant locally with Haitian people working
- 12 missions with orthopedic technicians and physiotherapists volunteering

In March 2011 Lions engaged with the aim to give the possibility to walk again to all Haitian amputee children with technological fiber carbon prosthesis. The first shipping ongoing will take prosthesis to World Rehabilitation Fund and ALTIS - A Leg to stand on.

ROADRUNNERFOOT ENGINEERING was established in 2007 by amputee, engineer and paraplympic athlete Daniele Bonacini with the mission to allow all users worldwide to have access to technology. This means:
- patent and produce high technological fiber carbon prosthesis for walking and for running
- corporate social responsibility activities to help people with no economic means
- international cooperation projects in developing countries



Materials & Methods

Prosthetic aids are usually design based on a mix of quantitative and qualitative data, tested internally by the companies and launched on market place at an expensive price.

Our engineering approach:

1. Starting from sport devices: the hardest challenge
2. Using Prepreg Carbon Fiber textile it's light, strenght, elastic (able to store and return elastic energy)
3. Adopting this method to design a prosthetic aid: starting from quantitative data and using high technology, like optoelectronic system, in order to actually improve the state of art.
3. Innovation of product and of process to obtain the high technology aid accessible to all people soon as possible, pursuing the mission "High technology accessible for all users"

All products are tested and patented in Italy and US.

Below: Example FEM analysis



International Cooperation:

The main cause of the 90% of prosthesis users in developing countries is amputation due to landmine explosions. More than 80% out of victims are civilians, 1 out of 3 is a child. Only 5-15% of people of these countries who require assistive devices and technologies have access to them: production is low and often of limited quality, there are very few trained personnel and costs may be prohibitive (source: WHO). Objective of prosthesis is to restore, as close as possible, the functional capacity formerly held by a limb deficient person, in the most as in developing countries. High health technological devices can be accessible for all.

Below: Haiti 100 - Daniele with Haitian children



HIGH TECHNOLOGY
FOR ALL USERS
MINIST. PROTEZIONE REGIONE EMILIA - ROMAGNA
PRODOTTORE: ROADRUNNERFOOT ENGINEERING

Results



Conclusions

We will go ahead with Lions sending prosthesis in Haiti, we are starting to help Terre Des Hommes Syrie, Fondazione Don Gnocchi in Rwanda, IPPD Canada in Uganda.

We patented 3 feet (Walking MP, Roadwalking - the only one with 3 touches on the ground - Sprinter's King). Every year we make a step towards people needs, designing new products, supporting new athletes, helping people with no economic means. Now we are testing a fiber carbon foot through compression moulding aimed to substitute totally the SACH foot in the world and we have to complete the development of active Ankle foot Orthosis. Next year we will produce wheelchairs and developing further our sport line.

Technology accessible to all means: engineering, innovation, cost reduction, social responsibility, communication, networking. All these must be applied to create an effective synergy between users, NGOs, doctors and technicians, companies.



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

TECHNOLOGY AND ETHICS Designing devices for all, Bonacini

ISPRM Word Conference- Puerto Rico 2011

ISPRM Symposium on Rehabilitation Disaster Relief at the 6th ISPRM World Conference in Puerto Rico 2011



Technology and Ethics Designing devices for all

Daniele Bonacini
Milan, Italy

19 June 2011
San Juan, Puerto Rico



Prosthetic aids are usually design based on a mix of quantitative and qualitative data, tested internally by the companies and launched on market place at an expensive price.

Our approach:

1. Starting from sport devices: the hardest challenge



2. Adopting this method to design a prosthetic aid: starting from quantitative data and using high technology, like optoelectronic system, in order to actually improve the state of art.



3. Innovation of product and of process to obtain the high technology aid accessible to all people soon as possible, pursuing the mission "High technology accessible for all users"

(Below: Rio for Haiti - Haiti 2010 - Haiti 2011)



ROADRUNNERFOOT
HIGH TECHNOLOGY
FOR ALL USERS

Our methodology:

1. Gait analysis of sound limb and limb with prosthetic foot available on market
2. Defining targets (functionalities of the sound limb) eliminating the negative backward force component (FK) during the weight loading as the other existing feet
3. Designing and manufacturing a prototype
4. First FEM analysis
5. Structural check through static and fatigue experimental testing
6. Second FEM Analysis
7. Testing outside the product according to ISO 10328 (performance del consummatori)
8. Patenting new product in Europe and US

Prepreg Carbon Fiber textile 8% leggerezza, strength, elasticity (able to store and return elastic energy)

Testing by LAB - Politecnico



Gait and FEM Analysis



Every year we make a step towards people's needs, designing new products, supporting new athletes, helping people without economic means. Now we are testing a fiber-carbon foot through compression moulding aimed to substitute totally the SACH foot in the world and we have to complete the development of Active Ankle foot Orthosis. Next year we will produce wheelchairs and develop further our sports line. Here below our patented feet (Walking MF, Roadwalking - the only one with 3 touches on the ground - Sprinter's King) and Mauro, Daniele, Federico, some of our athletes.



Each step let grow the company and its social corporate responsibility activity: we are in Haiti from February 2010 and we keep on sending prostheses thanks to Unicef International. We will start at short to help people in Syria and Iraq.

The main cause of the 90% of prosthetic users in developing countries is amputation due to landmine explosions. More than 80% out of victims are civilians, 1 out of 5 is a child. "Only 5-15% of people of these countries who require assistive devices have access to them; production is low and often of limited quality; there are few trained personnel and costs may be prohibitive" (WHO)

We believe that technology and ethics by joining the forces of all actors acting in each country can really change this situation. The objective of prosthetics is to restore, as close as possible, the functional capacity formerly held by a limb deficient person, in the work as in developing countries. High health technological devices can be accessible for all. Technology to all users doesn't mean profit for vast industries but means: for companies, innovation to bring down prices always more and more without losing the best results; implementing corporate social responsibility projects to donate prostheses to people who can't afford it; for states and all other entities promoting persons with disabilities rights, provide access to devices for all.



Corporate Social Responsibility



www.roadrunnerfoot.com

RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

INFLUENCE OF COVER CHARACTERISTICS ON PROSTHETIC FEET ENERGY STORE

AND RESTITUTION MECHANISM; Bonacini, Cecini, Frigo, Pavan;

SIAMOC 2011 September 28, 2011

534

Gait & Posture 35 (2012) 51

Influence of cover characteristics on prosthetic feet energy store and restitution mechanism

E. Pavan^{1,*}, D. Bonacini², P. Cecini², C. Frigo¹

¹ Laboratory of Movement Biomechanics and Motor Control - TBM Lab Bioengineering Department, Politecnico di Milano, Milan, Italy

² Roadrunnerfoot Engineering Srl, Milan, Italy

Introduction: Most advanced prosthetic feet for lower limb amputees are designed to exploit the elastic properties of different materials (carbon fiber and other composite materials) in order to recover part of the elastic energy stored along the stride cycle during walking. However, in order to improve cosmetics and wearing suitability, prosthetic feet for walking are usually enclosed in a plastic cover that, due to specific viscoelastic characteristics of the material, can modify the original energy-store and restitution mechanism of the foot and cause energy dissipation. Hence, not only the material and structural properties of the prosthetic feet but also the characteristics of the cover are critical for proper foot functioning. The whole prosthetic foot may be modeled as a combination of springs and dampers [1] whose coefficients (stiffness and viscosity) may be experimentally identified by means of material testing machines. However these testing conditions are very different from walking, and to analyze the effect of different foot covers in a operative condition, the analysis of the elastic energy store and restitution have to be directly performed in the amputees during walking. It must be considered, though, that common models of gait analysis are not suitable to this purpose, as they usually consider the foot as a rigid body, and do not keep into account foot deformations under load. In this work, a different approach, based on the analysis of power transmitted from the ground to the rigid pylon above the foot has been used which allows to compute the energy flow through the elastic foot structure and the changes induced by different covers.

Materials and methods: A young male amputee (22 yrs old, 1.67 m, 60 kg), wearing a carbon fiber prosthetic foot (Roadwalking, Roadrunnerfoot Engineering, Italy), was analyzed during walking in six different conditions: bare foot (without cover) and with five different covers (3 models in polyurethane PU, one in silicone and one in EVA). Leg length discrepancies were compensated by regulating the pylon length. The six degree-of-freedom of the shank pylon were analyzed from the movement of 3 markers placed on it and acquired by an optoelectronic motion system (Smart, BTS, Italy). The ground reaction forces were measured by means of a force platform (Kistler 9286). The force vector was moved at the basis of the pylon, where a transfer moment was also applied. The translational and rotational velocities of the pylon were computed and multiplied by the force and the moment respectively, as to obtain the power [2]. Then, by time integration, the energy flow was computed. Minimum and dissipated energy values obtained from each condition were then compared by using a Student's test analysis.

RESULTS: The courses of the elastic energy obtained during stance phase (in Fig. 1: black- without the cover, gray- PU1 cover) were similar to those reported in [3] for old prosthetic feet models. The results showed two phases in which the prosthetic foot stores energy, and two in which it returns a portion of that energy, mainly in the phase preceding the toe off. The final level of energy (negative) represents the energy dissipated during one cycle. The values obtained for each condition analyzed are reported in Table 1. No differences in stride length were observed, even though stance phase duration was increased and mean velocity was slightly reduced.

DISCUSSION: Energy dissipation were similar, except for one cover (PU 1) in which it increased significantly when compared with barefoot condition (* $p < 0.01$), instead, temporal parameters

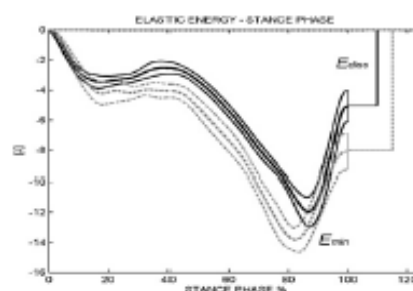


Fig. 1.

Table 1

	E_{store} [J]	$E_{restore}$ [J]
Barefoot	-12.1 ± 1.0	-5.1 ± 1.1
PU 1	$-14.2 \pm 0.9^*$	-8.1 ± 1.3
PU 2	-11.90 ± 6	-5.4 ± 0.3
PU 3	-11.50 ± 4	-5.0 ± 0.3
Silicone	-12.50 ± 5	-5.2 ± 0.2
EVA	-11.30 ± 8	-4.9 ± 1.3

were different for all covers considered. Hence, not only material and structural properties of the feet but also characteristics of the covers remain critical to foot function. The effect of shoes would also need to be considered. By using the 6-DOF approach, limits and assumption related to conventional gait analysis were overcome and neither feet testing nor viscoelastic model assumptions were necessary.

Reference

- [1] Geil 2002, An iterative method for viscoelastic modeling of prosthetic feet, J Biomech 35:1405-1410.
- [2] Buzek FL, Kepple TM, et al. Translational and rotational joint power terms in a six degree-of-freedom model of the normal ankle complex. J Biomech 1994;27(12):1447-57.
- [3] Postema K, Hermens HJ, de Vries J, Koopman HF, Eisma WH. Energy storage and release of prosthetic feet. Part 1: Biomechanical analysis related to user benefits. Prosthet Orthot Int 1997;21(1):17-27.

doi:10.1016/j.gaitpost.2011.09.068



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

TECHNOLOGY AND INNOVATION IN PROSTHETICS (Tecnologia ed innovazione nella protesica), Pestelli, Bonacini SIMFER 21-25 Ottobre 2012, Sorrento



La Roadrunnerfoot Engineering S.r.l. nasce il 13 marzo 2007, su iniziativa di Daniele Bonacini, amputato, Ingegnere meccanico e atleta paralimpico di Atene 2004 su spin off di Politecnico Innovazione, consorzio del Politecnico di Milano che promuove la nascita e la crescita di nuove imprese. La mission dell'azienda è rendere la tecnologia accessibile all'utenza: la Roadrunnerfoot si propone di ottenere un rapporto qualità/prezzo dei prodotti superiore ai concorrenti, prodotti di elevato standard qualitativo, altamente prestazionali, fabbricati con materiali innovativi e costantemente controllati durante il ciclo produttivo e certificati secondo la normativa CE 93/42 relativa ai dispositivi medici e la ISO 10328. I prodotti e la loro fabbricazione sono assolutamente MADE IN ITALY, facendo della Roadrunnerfoot Engineering S.r.l. la prima azienda italiana che progetta, produce e vende ausili per disabili.

Dati quantitativi e strumenti di misurazione tecnologici, come i sistemi optoelettronici, consentono di analizzare lo stato dell'arte dei piedi protesici presenti in commercio e progettare e produrre nuovi ausili con una performance superiore.

Attraverso il Gait Analysis è possibile ricavare i dati mancanti, costruendo un database con tutte le variabili del cammino e della corsa relative a soggetti normodotati (performance da raggiungere) e soggetti amputati (piedi presenti in commercio).

Le protesi per correre hanno presentato una forza negativa sull'anca durante il contatto iniziale, una fase di presa del carico troppo lunga e un accumulo di energia non comparabile con l'arto sano. I piedi protesici per camminare presentano una dorsiflessione simile o inferiore all'arto sano, nessuna flessione plantare e spinta.

Progettazione del nuovo ausilio: il piede è progettato secondo la performance che si vuole ottenere, le caratteristiche vengono validate attraverso la FEM analysis che mostra performance dell'ausilio, energia accumulata e rilasciata (efficienza) e "curve" disegnate nel movimento (simulazione dell'ausilio al lavoro basata sui dati Gait). Questa fase si conclude con un prototipo che viene testato secondo la normativa ISO. A seguito del test il piede protesico viene analizzato con la Gait per verificare che gli obiettivi siano stati raggiunti.

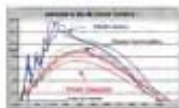


I sistemi optoelettronici sono in grado di misurare le coordinate tridimensionali di marker, elementi di materiale catarfrangente che vengono apposti sul corpo del soggetto in particolari punti di repere o landmark, fissati dal protocollo. I marker sono illuminati ad intervalli regolari da una sorgente di luce in prossimità dell'infrarosso proveniente da ciascuna telecamera ed il riflesso viene "catturato" dalla telecamera. Note le coordinate tridimensionali del marker è possibile quindi calcolare traiettorie, angoli delle articolazioni, velocità e accelerazioni di tutte le articolazioni: in questo modo è possibile conoscere in dettaglio la cinematica del movimento del segmento corporeo sul quale sono stati posizionati i marker.

Attraverso l'analisi con i sistemi optoelettronici della corsa di atleti normali abbiamo fissato i parametri-obiettivo quantitativi da raggiungere. Attraverso l'analisi della corsa di 5 atleti amputati sotto il ginocchio con diversi piedi in commercio abbiamo definito lo stato dell'arte e soprattutto quantificato il gap tra soggetti normali e soggetti amputati in funzione dei piedi presenti sul mercato.



Le piastrelline di forza sono sistemi in grado di misurare il sistema di forze scambiate al terreno. Conoscendo il sistema di forze scambiate al terreno ed acquisita la cinematica mediante i sistemi optoelettronici è quindi possibile calcolare i momenti e le potenze alle diverse articolazioni.



CONFRONTO DELLE FORZE SCAMBIATE AL TERRENO DA UNO STESSO ATLETA CON DIFFERENTI PIEDI
(ARTO SANO (32M N),
0,7 SPRINGLITE (2254 ME),
0,6 CHETAH (3360 ME)



Lo Sprinter's King è un piede protesico da corsa, il ideale per atleti agonisti perché "mimetizza le prestazioni, ma anche per atleti principianti perché ha la semplicità di concetto favorevole allo sport di nuovi utenti minimizzando l'energia spesa e quindi la fatica. Non presenta la componente negativa della forza sull'anca che hanno gli altri piedi in commercio, dove l'energia necessaria la fatica nel correre. Non è un piede realmente solamente per atleti agonisti, va bene anche per fare jogging al parco.

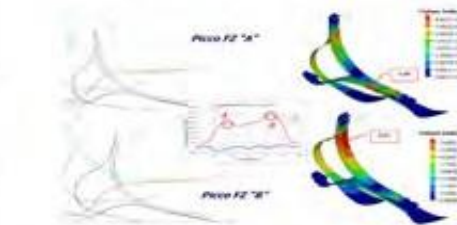
Gli obiettivi raggiunti sono:

- eliminazione della componente negativa della forza in direzione di avanzamento (la) durante il caricamento, caratteristica dei piedi presenti in commercio;
- funzionalità del piede protesico che simula in modo accurato la funzionalità della gamba umana, dove l'appareto muscolo-tendineo rappresentato dal muscolo gastrocnemio-unico e dal tendine d'Achille rappresentano circa il 90% dell'elasticità dell'arto;
- propulsione da parte del piede dopo il mid stance, in modo che l'utente possa sfruttare al massimo la risposta elastica generata dal piede.

Immagine forza propulsiva in direzione di avanzamento rispetto alla forza verticale

Il piede protesico ha l'obiettivo di simulare esattamente il comportamento del piede umano durante la fase di appoggio, in modo da garantire una buona dorsiflessione e una efficace plantarflexione, che sono i parametri chiave di un cammino stabile, equilibrato, controllato e fluido.

Il Roadwalking è composto da 4 lamine in ogni fase del passo 2 lamine lavorano contemporaneamente. La lamina inferiore consente la fase di carico del peso, l'accumulo di energia e garantisce stabilità e comfort. Le due lamine superiori permettono un "rotolamento" graduale, la dorsiflessione e la flessione plantare. La lamina posteriore consente la trazione del Movimento alla fine finale del passo. L'utilizzo delle quattro lamine, consente un assorbimento/ restituzione continuo di energia da parte del piede tale da consentire una camminata completamente "passiva" dal piede protesico e parte del primo contatto al terreno fino all'istante finale del toe off il piede protesico lavora sempre tenendo almeno due lamine, di cui una assorbe e l'altra restituisce energia in modo da generare un contributo costante alla generazione della spinta propulsiva, necessaria all'avanzamento del cammino. In ogni istante della fase di appoggio a terra lavorano in maniera attiva, assorbendo e restituendo energia, almeno due lamine.



Roadwalking, mobilità intermedia tra Roadwalking e Roadrunning MP



Il Roadrunning MP è composto da due lamine e consente un livello maggiore di elasticità con un più lento rilascio di energia.



Roadrunning

Roadrunnerfoot Engineering produce in Lombardia tutta la componentistica di protesi e ortesi, a breve le carrozine. La progettazione di nuovi ausili per cominciare a per praticare sport (ciclismo, tennis, badminton) continua attraverso investimenti propri, bandi e commissioni. I progetti di Corporate Social Responsibility e le sponsorizzazioni dirette consentono agli amputati anche in situazioni economiche indigenti di accedere ad ausili che permettono di avere una vita migliore. Roadrunnerfoot viene prevalentemente affittato, in Europa, Canada e US. I progetti di CSR sono invece in Italia, Haiti, Iraq, Siria, Libia, Tanzania, Etiopia, Kenya.

ROADRUNNERFOOT ENGINEERING - VIALE JENNER 69 - 20089 MILANO - WWW.ROADRUNNERFOOT.COM



RESEARCH AND DEVELOPMENT: SCIENTIFIC PAPER

A MOVEMENT ANALYSIS APPLICATION TO ANALYZE ENERGY RECOVERY

IN THE PROSTHETIC FEET; Bonacini, Cecini, Frigo, Pavan

ISPO 2013, 14th World Congress, Hyderabad

February 4, 2013

A method has been developed to compute the amount of energy stored and restituted during walking by prosthetic feet. This approach can be used to compare different foot designs and the effect of different covering materials and shoes. A movement analysis system (Smart-E, BTS, Italy) with 8 TV cameras working at 60 Hz, and one force platform (Kistler 9286, Switzerland) were used to collect kinematic and kinetic data. Retro-reflective markers were positioned over relevant bone prominences. At the amputated limb, markers were attached to the prosthetic pylon just above the deformable foot leaves. The ground reaction force (GRF), that was measured during the foot-ground contact, was transferred to a reduction point at the basis of the pylon, and the ground reaction moment (GRM) was computed in relation to this same reduction point. The translational and rotational velocities of the pylon were computed and multiplied by GRF and GRM respectively, so that the power flow between

ground and pylon was quantified. Then, by time integration, the energy exchange was computed. Two subject with transtibial and one with transfemural amputation were analyzed. They wear their own prosthesis that was equipped with a newly designed multi-leaf foot (Roadrunnerfoot, Italy). Trials were performed barefoot and with covers of different materials: polyurethane, silicone and EVA. Results have shown that energy wasted by the barefoot was about 5 J and did not increase significantly with covers (t-Student test, $p < 0.05$) except for covers in polyurethane, for which the energy dissipated was about 8 J. The flow of energy was also obtained all along the stride cycle, so that the absorption-restitution mechanism could be analyzed with reference to relevant phases of the stride, like heel-strike, load acceptance, mid-stance, push-off. This can help improving the design of the structural components of the foot and their mechanical characteristics.



Chapter 69

Evolution of prosthetic feet and design based on gait analysis data

Bonacini Daniele, CEO

Roadrunnerfoot Engineering srl, Pregnana Milanese, Italy; Politecnico of Milan, Milan, Italy

Introduction: Prosthetic lower limb history and structure

Modern prosthesis, either standard or custom, have an elevated impact on daily life quality and are complex medical devices requiring superior technical knowledge level in design and development phases: in order to understand the evolution of the materials and technologies in prosthetic field, it is necessary to proceed step by step.

The first prosthesis was discovered in 2600 BC by the Egyptians (Fig. 1) made of wood and leather; the second in 300 BC in Capua (Fig. 2) made of bronze, iron, and with a wooden core; during Renaissance the prostheses were made of iron, steel, copper, and wood and acquired a functionality and an esthetic role. Amputation techniques improved in parallel with the evolution of technology: no longer suffering and the well-closed stumps created the need for an amputee to return to autonomous life. Mr. Parè (Fig. 3) in 1536 introduced the surgical procedures of modern amputation and construction of lower limb prostheses; he invented a wooden leg with articulated knee and foot in a fixed position. In 1843, Mr. Syme (Fig. 4) defined a new method of ankle amputation that allowed walking using a prosthetic foot. In 1912, Marcel Desoutter, the famous English amputee aviator, produced the first aluminum prosthesis. The American Civil War caused a large number of amputees and a patient named James Hanger, one of the first war amputees, invented the Hanger limb. After the World War II the solid ankle cushion heel (SACH) (Fig. 5) foot was developed at the University of California. After the Vietnam War, the first prosthetic foot dynamic elastic response (DER), made of Delrin (polyamide PA6) built in 1981. By the end of the 1970s the aeronautic and military field started the development of carbon-fiber feet and the continuum reduction of component's weight with aluminum alloys and titanium: the prosthetic limb acquires a new concept: lighter, more durable, and with release of energy (Fig. 6).

The lower limb prosthesis is made of four main components: the liner, the socket, the modular adapters, the foot, and the knee joint for the above-knee (AK) amputee. The liner, which is the interface between the socket and the stump, protects the stump from injuries and loads that the stump suffers during walking. It is made of soft and elastic material and the stump's comfort depends on this. The socket is the custom-made prosthetic component, obtained through the plaster cast on the stump. Socket is the most important prosthesis component: it has the function to contain the residual limb of the amputee, to permit the unloading of weight during gait, and to assure both stump comfort and prosthesis functionality. In fact, an incorrect socket design may generate heavy pressures on stump and may cause skin abrasion, which leads to the patient's suffering conditions until the impossibility of wearing socket. The modular adapters connect socket and foot.

The foot represents the active prosthetic component: it stores and releases the energy and reduces the stump traumas.

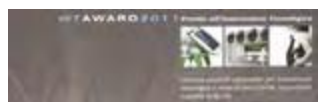
The evolution of materials and technologies generated a continuum change of prosthesis structure:

- The first liner was made of rubber, after that silicone, polyurethane, styrene, and thermoplastic gel with mineral oil were used in order to guarantee maximum comfort.
- The socket was made of wood, with metal parts, after that polyethylene was used and for the past 40 years composite materials are used in order to guarantee reduction in weight and maximum structural resistance to loads.
- The foot was made from wood and external polyurethane cover (SACH); by the end of the 1970s arrived the composite materials technology that allowed to realize DER feet.

AWARDS



The Italian President Napolitano honoured Ing. Daniele Bonacini as CEO of Roadrunnerfoot, with the title of “Commendatore” for the action in behalf of people with a disability, in Italy and abroad. 3th December 2012, International Day of People with Disability

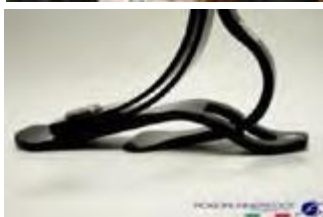


1 WT Award 2011 - Accessibilità Well Tech Awards



2009 Federsalute Award

(Photo: Ing. Bonacini, Dott.Scrofina e Dr.Fazio. Ass. Moioli, Ass. Boscagli)



Piazza dei Mercanti 2009

photo: Ing Bonacini, Dott. Sangalli, Dott. Romiti



“Gli eroi del running 2009” by Runner’s World

Award
Brambilla 2006
Innovative
enterprise.
Comune di Milano.

Award Brambilla 2006



Orthopedic Awards 2018:

Roadrunnerfoot company and innovative products



CORPORATE SOCIAL RESPONSABILITY

At least 650 million people with disabilities worldwide nowadays.

Wars, conflicts and poverty increase higher rates of disabilities in the less developed world. Many are invisible citizens, forced to deal with discrimination, social exclusion, isolation and poverty. In developing countries the main cause of the 90 of prosthesis users is amputation due to landmine explosions; according to the International Red Cross, landmine victims come from military actions (13%), playing (8%), fieldwork (20%), travelling (15%), demining (4%), non- military actions (38%) and others (2%). International organizations report about 1.500.000 victims. According to

International Campaign to Ban Landmine(ICBL), more than 80 out of 15.000/20.000 victims/ year are civilians; 1 out of 5 is a child. The most affected countries are Cambodia, Afghanistan, Angola, Mozambique, ex-Yugoslavia, Somalia, El Salvador, Kurdistan, Kuwait, mostly located in Africa and Middle-East countries. The Landmine issue is strictly connected to child fighting in wars. More than 300.000 under 18 are recruited as warchildren; hundreds of thousands fought during the last decade, some of them in government army, some others in the opposition ones. Most of them are between 15 and 18 years old, with an increasing tendency to recruit younger children. 5 of landmine victims are warchildren. **Only 5–15% of people of these countries who require assistive devices and technologies have access to them: production is low and often of limited quality, there are very few trained personnel and costs may be prohibitive (sources: WHO) Our answer: the objective of prosthetics is to restore, as close as possible, the functional capacity formerly held by a limb deficient person, in the west as in developing countries. High health technological devices can be accessible for all. This means: for companies, innovations to bring down prices always more and more without losing the best results, implementing corporate social responsibility projects to donate prosthesis to people who can't afford it; for states and all other entities promoting persons with disabilities rights, provide access to devices for all.**



At 2015 born ROADRUNNERHEART NGO, heart and passion of Roadrunnerfoot's Team, that help and support always amputee people in the world. Roadrunnerheart manages directly No profit project of Roadrunnerfoot without manpower costs.

(www.roadrunnerheartngo.org)



CORPORATE SOCIAL RESPONSABILITY

Roadrunnerfoot is a young company but has already begun to work with Institutions, Foundations, Associations and NGOs, from small projects to greater and greater.

2009 Milan: Above knee amputee prosthesis for a focomelic. Partner: Croce Rossa – Disabili No Limits.

2010 HAITI, I^a mission: 300 prosthesis for children, equipment for an assembly plant, raw materials . Partner: Fondation Francesca Rava .

2010 Milan: 20 feet donated from Municipality of Milan, without funds.

2011 June, Iraq – 77 kit prosthesis for Emergency

2011 June, Syria: 12 feet for Iraq refugees by Terre Des Hommes, Prosolidar, UNHCR.

2011-2012 HAITI II mission: taking 700 prosthesis to Haiti children by Lions, A Leg to Stand On, World Rehabilitation Fund, Prosthética.

2012 ICRC Ethiopia materials lamination

2012 CUAMM- Africa: Walking prosthesis and running prosthesis for 4 african people.

2012 PROSOLIDAR- Napoli: Walking prosthesis and running prosthesis for 10 people.



2012 Italian Foreign affairs ministry Project in Benghazi-Libia for 100 amputee.

2013 Foundation Molokai-Peru'

2013 Syria refugees –Terres des Hommes.

2014 Jordan for Syria Refugees –Prosolidar;
Rwanda-One Love Rwanda; **Indonesia**-Exceed

2010-2014 Milan Marathon with african and italian amputee athlete-Allianz.

2015 Ukraine's Project: 50 prosthesis for victims of war- Prosolidar- Roadrunnerheart.

2016 Kim Camyod: Runner from Cambodia .

2016 Ecuador's Project: 12 Fundacion Protesis para la Vida- Roadrunnerheart.

2017 Senegal's Project: 14 prosthesis- Longlife- Roadrunnerheart.

2018 Portugal's Project: 2 prosthesis for children - Padro Ortopedico- Roadrunnerheart.

2019 OSO Project: 7 running prosthesis - Vodafo- ne Italy Foundation – Roadrunnerheart.

2020 Marocco's Project: 1 prosthesis child .

2020 Se negal's Project: 3 prosthesis for young amputees.

2020 Kenya's Project: 1 running prostheses.

2020 Italia's Project: 1 running prostheses.



CORPORATE SOCIAL RESPONSABILITY



RELIEF HAITI

Prosthetic Program for amputee children.
A project of

Fondazione Francesca Rava - N.P.H Italia Onlus
for haitian children injured by earthquake.
Location: N.P.H. Rehabilitation Centre
"House of Little angels",
Port au Prince



The Prosthesis

1 week

1 orthopaedic laboratory,
3 orthopaedic technicians,
130 prosthesis sended.

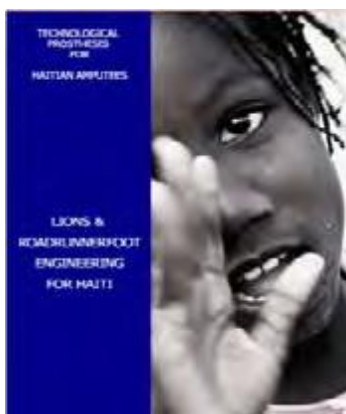
Today

240 prosthesis sended
(190 Foundation RAVA, 50 Disabili No Limits).
150 children now walking.
12 missions of orthopaedics technician
and physioterapists.

WE MADE IT



78
Stragili no lwa



KEY-LEVEL AND FUNCTIONAL DESCRIPTION

K-Levels: K-levels are defined by Medicare based on an individual's ability or potential to ambulate and navigate their environment. Once it is determined in which K-level an individual resides, it can be determined which prosthetic components are covered by Medicare.

The 5-level functional classification system describes the functional abilities of persons who had undergone lower-limb amputation and the medical necessity of certain prosthetic components and additions. By using this system, the physician and prosthetist determine the patient's ability to reach a "defined functional state within a reasonable period of time."

K - Level	Description	Foot/Ankle Assemblies	Knee Units
K0	This patient does not have the ability or potential to ambulate or transfer safely with or without assistance and a prosthesis does not enhance their quality of life or mobility.	Not eligible for prosthesis.	Not eligible for prosthesis.
K1	This patient has the ability or potential to use a prosthesis for transfers or ambulation on level surfaces at fixed cadence - a typical limited or unlimited household ambulator.	External keel, SACH feet or single axis ankle/feet.	Single-axis, constant friction knee, locked knee joint.
K2	This patient has the ability or potential for ambulation with the ability to traverse low-level environmental barriers such as curbs, stairs, or uneven surfaces - a typical community ambulator.	Flexible-keel feet and multi-axial ankle/feet.	Single-axis, constant friction knee, polycentric knee joint.
K3	This patient has the ability or potential for ambulation with variable cadence - a typical community ambulator with the ability to transverse most environmental barriers and may have vocational, therapeutic, or exercise activity that demands prosthetic use beyond simple locomotion.	Flex foot and flex walk systems, energy storing feet, multi-axial ankle/feet, or dynamic response feet.	Fluid and pneumatic control knees.
K4	The patient has the ability or potential for prosthetic ambulation that exceeds basic ambulation skills, exhibiting high impact, stress, or energy levels - typical of the prosthetic demands of the child active adult, or athlete.	Any ankle foot system appropriate.	Any ankle knee system appropriate.

The evaluation of mobility key level for an amputee is based on a subjective evaluation of

- the patient's past history (age, including prior prosthetic use, if applicable);
- the patient's current condition, including the status of the residual limb;
- concomitant medical problems;
- the patient's desire to ambulate.

Reference: The Amputee Mobility Predictor: An Instrument to Assess Determinants of the Lower-Limb Amputee's Ability to Ambulate Robert S. Gailey, Kathryn E. Roach, E. Brooks Applegate, Brandon Cho, Bridgid Cuniffe, Stephanie Licht, Melanie Maguire, Mark S. Nash)



KEY-LEVEL AND FUNCTIONAL DESCRIPTION

Roadrunnerfoot realizes a complete product range of prosthetic components: you can choose the knee joint and foot suitable and appropriate to the patient's need and the patient's key level of mobility. The feet and knee joints have a different efficiency and different patient's key levels.

Key Level 1



Limited and unlimited household ambulation.

Level surfaces.

Fixed cadence.

Transfers and therapeutic use.

Key Level 2



Limited community ambulation.

**Able to traverse low-level environmental barriers
(curbs, ramps, stairs, uneven surfaces).**

Key Level 3



Community ambulation.

Variable cadence gait (or potential).

Most environmental barriers.

Key Level 4



Bilateral involvement.

Active adult.

Athletes.

Children.

Exceeds basic use.



PROSTHETIC FEET KEY-LEVEL

Our mission is “High technology accessible to all users”: Roadrunnerfoot wants to achieve a quality/price ratio better than competitors; our company’s aim is to supply high quality products, with high performance, made of new materials, and constantly controlled during manufacturing cycles. Our products are CE marked and comply with (U E) 2017/745 (about medical devices) and ISO standards. All products are Made in Italy. The design of new foot is the finish of the long process: we analyse the users’ needs, we start from Gait Analysis, with normal and disabled people, to define components characteristics, in order to simulate sound limbs. The prosthesis naturally must reproduce the human movement of lower muscles and limbs, offering stability and performance both in walking and running.

Roadrunnerfoot realizes a wide range of feet: you can choose the foot suitable and appropriate to patient’s need and patient’s key level of mobility. The feet have a different efficiency (the ratio between released and stored energy, as a spring) and difference patient’s key level.

The mechanical efficiency of Dynamic Elastic Response carbon fiber foot can be calculated as the ratio between Energy released and stored during gait analysis.

The ankle joint power has been calculated as $P = M_A \cdot \dot{\theta}$ where M_A moment ankle and $\dot{\theta}$ ankle angular velocity.

The time integral of the ankle power give the work at ankle joint:

and the spring or mechanical efficiency of prosthetic feet is

$$\text{Spring Efficiency} = \frac{W_o \text{ (recovered)}}{W_a \text{ (stored or dissipated)}} \cdot 100 \%$$

Different key level of prosthetic feet with Dynamic Elastic Response

In the bibliography of prosthetic feet papers all academic authors, in according with the global prosthetic feet producers, divides the prosthetic feet in several classes that depend of efficiency:

- 15-30% Key level 1
- 30-45% Key level 2
- 46-60% Key level 3
- 61-75% key level 4
- >75% running or sport activietes feet

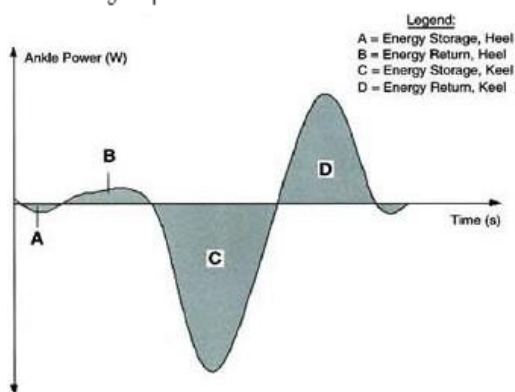


Figure 8.
Representative ankle power-time curve



PROSTHETIC FEET KEY-LEVEL

Different Key level mobility of ROADRUNNERFOOT prosthetic foot. Roadrunnerfoot evaluate the efficiency of prosthetic feet in collaboration with Berlin Cert and Politecnico of Milan (Engineering University)

SACH FOOT	25% efficiency Key level 1
SINGLE AXIS FOOT	35% efficiency Key level 2
DYNAMIC FOOT	40% efficiency Key level 2
DYNAMIC PLUS	40% efficiency Key level 2
WALKING MP	45% efficiency Key level 2
EQUILIBRIUM	50% efficiency Key level 3
ROADFLEXION HP	60% efficiency Key level 3
ROADWALKING II HP	70% efficiency Key Level 4

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Effects of prosthetic foot forefoot flexibility on gait of unilateral transtibial prosthesis users

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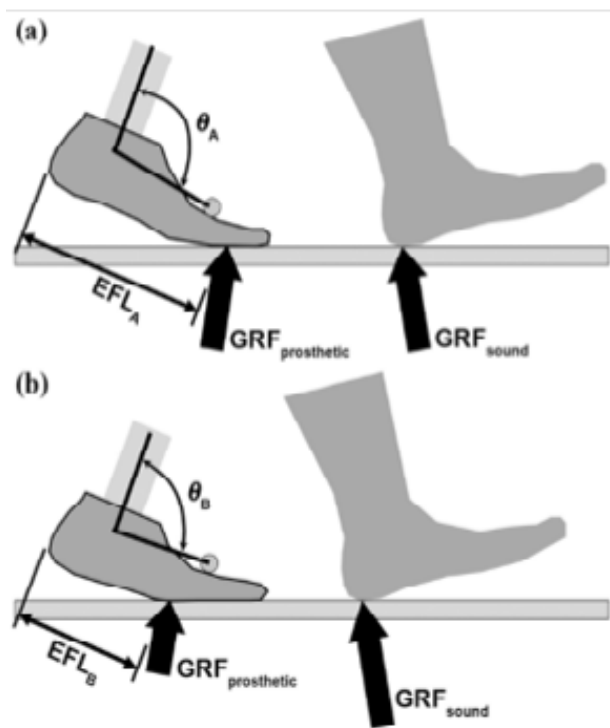


Figure 1.

Hypothesized differences between prosthetic feet with different levels of flexibility at time of opposite initial contact: (a) prosthetic foot that allows long forward progression of ground reaction force (GRF) and (b) highly flexible prosthetic foot with limited forward progression of GRF. Effective foot length (EFL) of foot A is larger than that of foot B. "Ankle" flexion (θ) range of motion for foot B is larger than for foot A. "Drop-off" in GRF is expected on overly flexible feet (such as foot B), leading to increased initial loading on sound limb and potentially reduced sound limb step length.



SPRINTER'S KING



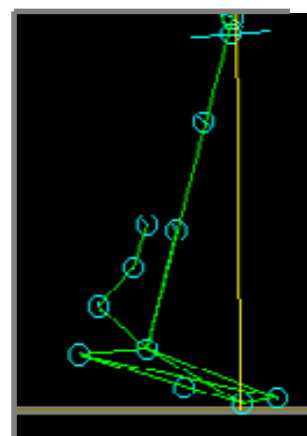
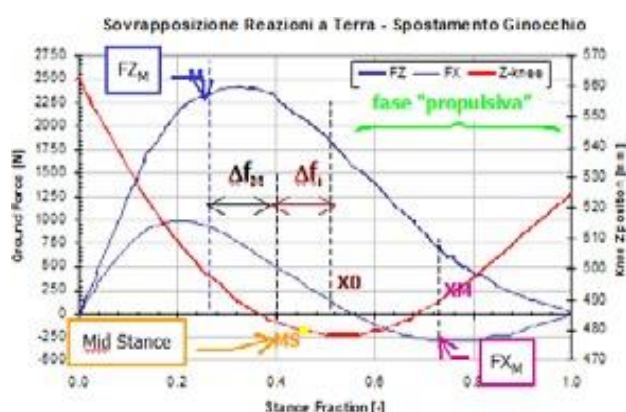
SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



**SPRINTER'S KING IS A RUNNING FOOT. SPORT DEVICE
AND NOT MEDICAL DEVICE.**

The Innovative morphology of Sprinter's King: 40° angle between virtual V metatarsus and virtual heel (posterior vertex), it allows an optimization of ankle plantar flexion; the 15° angle of the bracket is aimed to give the same functionality of triceps suralis muscles and Achille's tendon; the distance between toe-vertical line weight and vertical line weight and posterior vertex is the same; the width's foot is similar to the sound limb foot; the different thickness of laminate have the same functionality of the sound limb muscle and tendon. The Sprinter's King eliminates the negative force component opposite to forward direction that have the other running feet on the market; it allows a higher ankle plantar flexion; it allows the maximum elastic response, an optimum ratio between forces and the maximum peak of energy response, following mid stance phase. The first running foot with 85% as efficiency.

Material: carbon fiber. Warranty: 12 months





SPRINTER'S KING

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1





SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Positioning of the bracket in sagittal plane: the quantity of Siegelharz depends on the the right positioning of the load line (8-10 cm from toe of foot and trough femoral epicondyles)



Sprinter's King							
Code	Size	Category	User Characteristics				
			Weight range	Shoe number	User's range height	Ground-Foot's apex distance	Foot's apex distance vertical axis
1.001.01.I.S	I	soft	40-60	30-33	150-160	325-390	49-60
1.001.01.I.H	I	hard	60-90	30-33	150-160	325-390	49-60
1.001.01.II.S	II	soft	45-65	34-37	160-170	365-440	53-65
1.001.01.II.H	II	hard	65-100	34-37	160-170	365-440	53-65
1.001.01.III.S	III	soft	45-70	38-41	170-180	415-490	59-75
1.001.01.III.H	III	hard	70-110	38-41	170-180	415-490	59-75
1.001.01.IV.S	IV	soft	60-80	Over 42	Over 180	450-540	65-90
1.001.01.IV.H	IV	hard	80-120	Over 42	Over 180	450-540	65-90



ROADWALKING II HP

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 4



Roadwalking foot is an highly dynamic foot for young and very active people, with a mobility level 4 (K-level). The 4 laminates structure allow a foot's response during all stance phase: in every moment at least 2 laminates work together to support the amputee user in his/her daily activities. This prosthetic foot is composed by 4 main laminates: one inferior laminate, which defines the calcaneus and the forefoot; one posterior laminate, which defines the heel and functions like soleus-Achilles' tendon apparatus; two superior laminates, which define the instep and functions like the anterior tibialis muscle. The inferior laminate starts its work during Initial Contact: the durability and elasticity must allow load acceptance and storage with a shock absorption function to guarantee comfort to the user, but at the same time stability. Its functions stops during the final phase of Toe-off, when the forefoot gives the final propulsion. The posterior laminate functions like Achilles tendon and soleus , which work in eccentric contraction during second rolling, to steady the foot on the sagittal plane; when the foot reaches the contact with the ground, during mid-stance, the posterior laminate starts loading and it releases propulsion, allowing the transition from Mid-stance to final stance phase. The superior laminates function like the anterior tibialis muscle permitting a gradual foot roll-over until forefoot contact to the ground managing the transit from Initial Contact to the Mid-stance phase. Through their loading, they guarantee dorsiflexion during Mid-Stance phase and plantarflexion during final propulsive phase. These laminates are connected to the inferior laminate with two screws in the forefoot and other two in the ankle area. The Roadwalking foot has 70 % of efficiency (the ratio between energy released and stored): this is the best efficiency for a carbon fiber foot in all the world. This foot comply with ISO 10328 standard. Roadwalking foot is CE marked. It's available in 5 sizes, depending on shoe number. **Material: carbon fiber.**

Warranty: 36 months.



www.roadrunnerfoot.com

ROADWALKING II HP



PROSTHETIC FEET



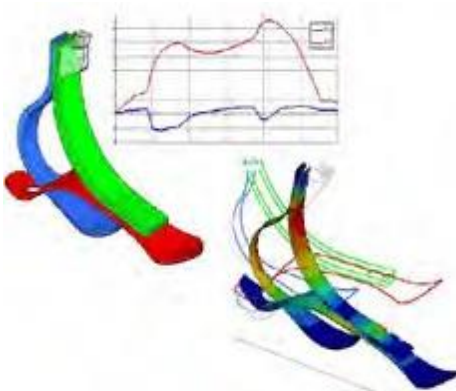
SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 4



THE ONLY PROSTHETIC FOOT IN ALL THE WORLD WITH 3 POINT ON THE GROUND AND
 ALLOWS A CONTINUUM ROLL-OVER BETWEEN FOREFOOT AND HEEL.
 BEST EFFICIENCY (70%)

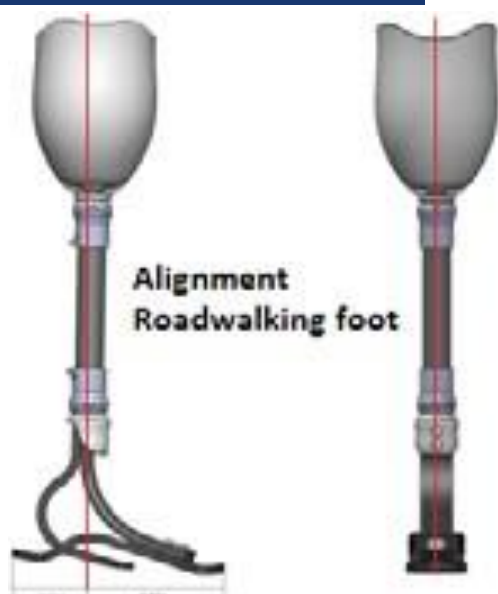
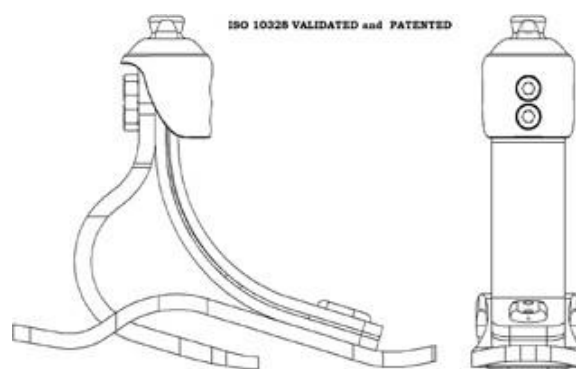




ROADWALKING II HP

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 4



Roadwalking II HP

Code	Size	Category	User Characteristics			Options
			Shoe number	Foot length	Weight range	
1.002.01.I.S	I	soft	35 - 36	23	30 - 50	wedge soft or hard
1.002.01.I.H	I	hard	35 - 36	23	51 - 75	wedge soft or hard
1.002.01.I.SH	I	super hard	35 - 36	23	76 - 100	wedge soft or hard
1.002.01.II.S	II	soft	37 - 38	24	30 - 50	wedge soft or hard
1.002.01.II.H	II	hard	37 - 38	24	51 - 75	wedge soft or hard
1.002.01.II.SH	II	super hard	37 - 38	24	76 - 100	wedge soft or hard
1.002.01.III.S	III	soft	39 - 40	25	30 - 50	wedge soft or hard
1.002.01.III.H	III	hard	39 - 40	25	51 - 75	wedge soft or hard
1.002.01.III.SH	III	super hard	39 - 40	25	76 - 100	wedge soft or hard
1.002.01.IV.S	IV	soft	41 - 42	26	40 - 60	wedge soft or hard
1.002.01.IV.H	IV	hard	41 - 42	26	61 - 85	wedge soft or hard
1.002.01.IV.SH	IV	super hard	41 - 42	26	86 - 130	wedge soft or hard
1.002.01.V.S	V	soft	43 - 44	27-28	40 - 60	wedge soft or hard
1.002.01.V.H	V	hard	43 - 44	27-28	61 - 85	wedge soft or hard
1.002.01.V.SH	V	super hard	43 - 44	27-28	86 - 130	wedge soft or hard

NOTE: FOR PATIENTS WITH WEIGHT BETWEEN DIFFERENT CATEGORIES, IT'S BETTER TO CHOOSE THE UPPER TYPE OF LAMINATION AND CATEGORY; THE CHOSEN COVER LENGTH MUST BE THE SAME OF FOOT SOUND LIMB LENGTH





SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 3



Roadflexion walking foot is a highly dynamic foot for young and very active people, with a mobility level 3 (K-level). This is a new development of Roadwalking. The 4 laminates structure allows a foot's response during all stance phases: in every moment at least 2 laminates work together to support the amputee user in his/her daily activities. This prosthetic foot is composed by 4 main laminates: the inferior laminate defines the calcaneus and the forefoot; the posterior laminate defines the heel and has the function of cushioning; the superior laminates define the instep and functions like anterior tibialis muscle. A pyramid adapter closer to the ankle helps the pylon attachment. The inferior and posterior laminates start to work during Initial Contact: the durability and elasticity must allow load acceptance and storage with a shock absorption function to guarantee comfort to the user, but at the same the balance and stability. Its function stops during the final phase of Toe-off, when the forefoot gives the final propulsion. The posterior laminate works as shock absorber during initial contact and stores energy that the laminate release after mid-stance phase until toe-off during the propulsion phase; the superior laminates works like the anterior tibialis muscle permitting a gradual foot roll-over until forefoot contact to the ground; The Roadflexion foot has 60 % of efficiency (the ratio between energy released and stored). This foot is tested according to ISO 10328 standard. Roadflexion foot is CE marked. It's available in 6 sizes, depending on shoe number.

Material: carbon fiber. Warranty: 36 months.

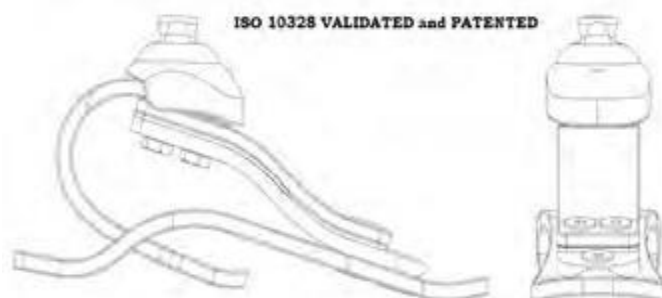




ROADFLEXION HP

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



WEIGHT 550-700 g, LENGTH 190-240 mm, HEIGHT 110-112 mm



Key Level 3



Roadflexion HP					
Code	Size	Category	User Characteristics		
			Shoe number	Foot length	Weight range
1.002.02.I.S	I	soft	35 - 36	23	30-69
1.002.02.I.H	I	hard	35 - 36	23	70-100
1.002.02.II.S	II	soft	37 - 38	24	30-69
1.002.02.II.H	II	hard	37 - 38	24	70-100
1.002.02.III.S	III	soft	39 - 40	25	30-69
1.002.02.III.H	III	hard	39 - 40	25	70-120
1.002.02.IV.S	IV	soft	41 - 42	26	40-79
1.002.02.IV.H	IV	hard	41 - 42	26	80-130
1.002.02.V.S	V	soft	43 - 44	27-28	50-79
1.002.02.V.H	V	hard	43 - 44	27-28	80-130
1.002.02.VI.S	VI	soft	45	29	40-79
1.002.02.VI.H	VI	hard	45	29	80-130

NOTE: FOR PATIENTS WITH WEIGHT BETWEEN DIFFERENT CATEGORIES, IT'S BETTER TO CHOOSE THE UPPER TYPE OF LAMINATION AND CATEGORY; THE CHOSEN COVER LENGTH MUST BE THE SAME OF FOOT SOUND LIMB LENGTH





SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



The main characteristic of the EQUILIBRIUM foot is the spring/bumper system that generate an ankle moment and effective roll-over. A posterior spring works during load acceptance, it guarantees the comfort during initial contact and allows the roll over between heel and forefoot. Anterior bumper, joined with the ankle's adapter, works during MID STANCE ensuring gradual roll over. The carbon fiber-glass fiber laminate generates the propulsion energy to walk during the loading of arch plantar in MID STANCE and during the loading of forefoot in TOE OFF. 30 degree of plantar-dorsiflexion and 50% of efficiency.



Functional advantages are:

- Incremental load acceptance thanks to posterior spring. The adapter rotates backward and allows gradual forefoot's contact on the ground ensuring user's stability.
- An effective dorsiflexion and support during mid-stance due to the posterior spring.
- Plantarflexion and propulsion release of energy guaranteed by the inferior laminate in composite materials.
- Possibility to choose the spring's stiffness in order to obtain the right behavior requested from user.

Material: carbon fiber and glass fiber . Warranty: 36 months.

NOTE: FOR PATIENTS WITH WEIGHT BETWEEN DIFFERENT CATEGORIES, IT'S BETTER TO CHOOSE THE UPPER TYPE OF LAMINATION AND CATEGORY; THE CHOSEN COVER LENGTH MUST BE THE SAME OF FOOT SOUND LIMB LENGTH





EQUILIBRIUM

PROSTHETIC FEET

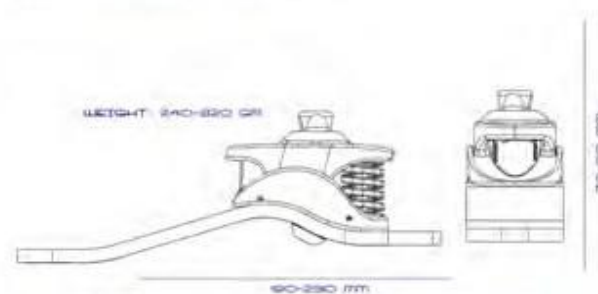
SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



TECHNICAL DATA

FEATURES OF STALLER AND BASSER SIZES

ISO 10328 APPROVED
PATENTED

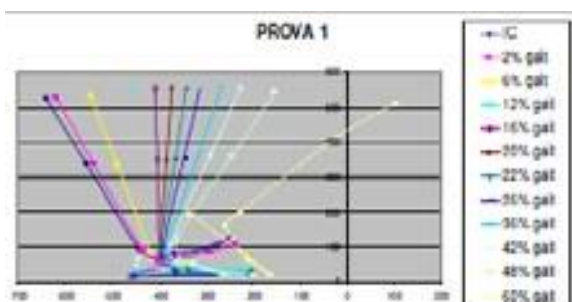


Key Level 3



Equilibrium							
Code	Size	Category	User Characteristics			Spring's Colour	
			Shoe number	Foot length	Weight range	Anterior Spring	Posterior Spring
1.003.02.I	I	soft	35-36	23	30-69	blue	blue
	I	hard	35-36	23	70-100	blue	red
1.003.02.II	II	soft	37-38	24	30-69	blue	blue
	II	hard	37-38	24	70-100	blue	red
1.003.02.III	III	soft	39-40	25	30-69	blue	blue
	III	hard	39-40	25	70-120	blue	red
1.003.02.IV	IV	soft	41-42	26	40-79	blue	red
	IV	hard	41-42	26	80-130	blue	yellow
1.003.02.V	V	soft	43	27	40-79	blue	red
	V	hard	43	27	80-130	blue	yellow
1.003.02.VI	VI	soft	44	28	40-79	blue	red
	VI	hard	44	28	80-130	blue	yellow





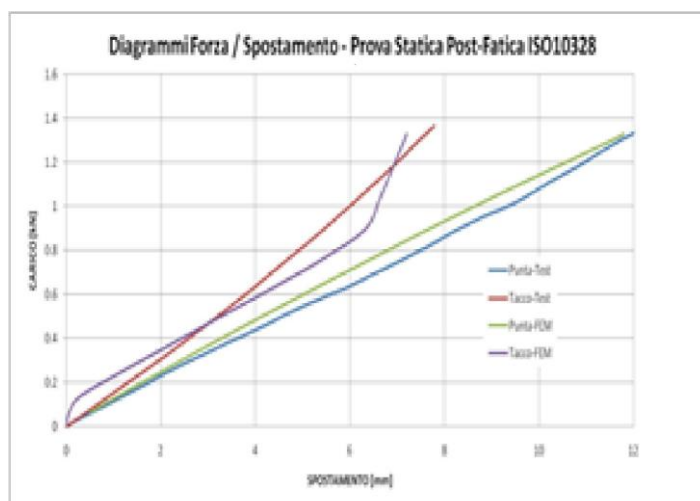
SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 2



The main characteristic of the Walking foot Medium Performance is the simple morphology that includes two carbon fiber laminates; the walking foot MP is perfectly suitable to the patients that need a medium but dynamic mobility. The morphology and the connection between the laminates give the following functional advantages: load acceptance with higher cushioning during initial contact and gradual rollover between the heel and forefoot, because of the superior laminate working as anterior tibialis muscle; an effective dorsiflexion and high balance during mid-stance; plantarflexion and propulsion between mid-stance and push off phase guaranteed by superior and inferior laminates. The Walking foot MP has 45% of efficiency (the ratio between energy released and stored). The Walking Foot MP is available in 8 sizes depending on number of shoes. **Material: carbon fiber. Warranty: 36 months.**

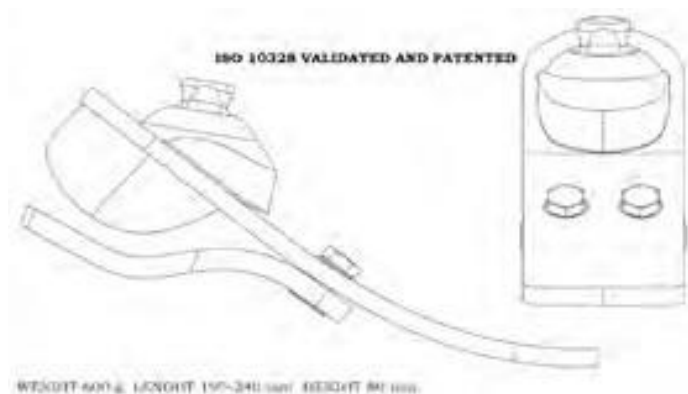




WALKING MP

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 2



Walking MP					
Code	Size	Category	User Characteristics		
			Shoe number	Foot length	Weight range
1.003.01.KIDS1.S	KIDS1	soft	31-32	21	30-69
1.003.01.KIDS1.H	KIDS1	hard	31-32	21	70-100
1.003.01.0.S	0	soft	33-34	22	30-69
1.003.01.0.H	0	hard	33-34	22	70-100
1.003.01.I.S	I	soft	35-36	23	30-69
1.003.01.I.H	I	hard	35-36	23	70-100
1.003.01.II.S	II	soft	37-38	24	30-69
1.003.01.II.H	II	hard	37-38	24	70-100
1.003.01.III.S	III	soft	39-40	25	30-69
1.003.01.III.H	III	hard	39-40	25	70-100
1.003.01.IV.S	IV	soft	41-42	26	40-79
1.003.01.IV.H	IV	hard	41-42	26	80-130
1.003.01.V.S	V	soft	43-44	27-28	40-79
1.003.01.V.H	V	hard	43-44	27-28	80-130
1.003.01.VI.S	VI	soft	45	29	40-79
1.003.01.VI.H	VI	hard	45	29	80-130





SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 2



Dynamic Plus foot has a simple morphology that defines the ankle joint. The bumper with two different density configurations and shore allows to choose between a hard and a soft version. During load acceptance it's possible to have good comfort thanks to the carbon fiber blade. After the initial contact the blade starts to release the stored energy till toe-off phase. The adapter is made of stainless steel. Mobility level is K2 and the aim is to give to users a good efficiency foot (40% = the ratio between energy released and stored) with reasonable prices.

The Dynamic Plus Foot is available in 6 sizes depending on number of shoes.

Material: carbon fiber. Warranty: 36 months.





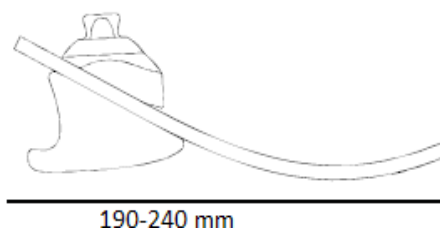
DYNAMIC PLUS

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1

TECHNICAL DATA
MEASURE OF SMALLEST AND BIGGEST SIZE

ISO 10328 APPROVED



Key Level 2



Dynamic Plus					
Code	Size	Category	User Characteristics		
			Shoe number	Foot length	Weight range
1.008.01.I.S	I	soft	35-36	23	30-69
1.008.01.I.H	I	hard	35-36	23	70-100
1.008.01.II.S	II	soft	37-38	24	30-69
1.008.01.II.H	II	hard	37-38	24	70-100
1.008.01.III.S	III	soft	39-40	25	30-69
1.008.01.III.H	III	hard	39-40	25	70-100
1.008.01.IV.S	IV	soft	41-42	26	40-79
1.008.01.IV.H	IV	hard	41-42	26	80-130
1.008.01.V.S	V	soft	43-44	27-28	40-79
1.008.01.V.H	V	hard	43-44	27-28	80-130
1.008.01.VI.S	VI	soft	45	29	40-79
1.008.01.VI.H	VI	hard	45	29	80-130



DYNAMIC FOOT WITH ADAPTER



PROSTHETIC FEET



SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1

The Dynamic foot has 40 % of efficiency (the ratio between energy released and stored).

Material: polyurethane and carbon fiber. Warranty: 36 months.



Key Level 2



Dynamic Foot For Adults

Code	Size	User Characteristics		
		Sound Limb Foot Length	Side	Max Weight
1.006.02.22L	22	22 cm	left	100 Kg
1.006.02.22R	22	22 cm	right	100 Kg
1.006.02.23L	23	23 cm	left	100 Kg
1.006.02.23R	23	23 cm	right	100 Kg
1.006.02.24L	24	24 cm	left	100 Kg
1.006.02.24R	24	24 cm	right	100 Kg
1.006.02.25L	25	25 cm	left	100 Kg
1.006.02.25R	25	25 cm	right	100 Kg
1.006.02.26L	26	26 cm	left	130 Kg
1.006.02.26R	26	26 cm	right	130 Kg
1.006.02.27L	27	27 cm	left	130 Kg
1.006.02.27R	27	27 cm	right	130 Kg
1.006.02.28L	28	28 cm	left	130 Kg
1.006.02.28R	28	28 cm	right	130 Kg



DYMANIC FOOT ADAPTER STAINLESS STEEL code **33.004.10.EXT**





SINGLE AXIS FOOT TWO HOLE WITH ADAPTER

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level 2



The Single axis foot has 35 % of efficiency (the ratio between energy released and stored).

Material: polyurethane. Warranty: 36 months.

Single Axis Foot two hole

Code	Size	User Characteristics		
		Sound Limb Foot Length	Side	Max Weight
1.007.02.22L	22	22 cm	left	100 Kg
1.007.02.22R	22	22 cm	right	100 Kg
1.007.02.23L	23	23 cm	left	100 Kg
1.007.02.23R	23	23 cm	right	100 Kg
1.007.02.24L	24	24 cm	left	100 Kg
1.007.02.24R	24	24 cm	right	100 Kg
1.007.02.25L	25	25 cm	left	100 Kg
1.007.02.25R	25	25 cm	right	100 Kg
1.007.02.26L	26	26 cm	left	130 Kg
1.007.02.26R	26	26 cm	right	130 Kg
1.007.02.27L	27	27 cm	left	130 Kg
1.007.02.27R	27	27 cm	right	130 Kg
1.007.02.28L	28	28 cm	left	130 Kg
1.007.02.28R	28	28 cm	right	130 Kg
1.007.02.29L	29	29 cm	left	130 Kg
1.007.02.29R	29	29 cm	right	130 Kg



SINGLE AXIS FOOT ADAPTER STAINLESS STEEL code **33.004.08.EXT.S** (22-25 sizes)
code **33.004.08.EXT.M** (26-29 sizes)





SACH FOOT WITH ADAPTER



SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level I



SACH is an acronym for “solid ankle, cushion heel” and refers to a compressible heel wedge that provides “pseudoplantar flexion” after heel strike. The rigid wooden keel provides mid-stance stability but little lateral movement. The SACH is frequently prescribed because it is cheap, light, durable, and available in various heel heights so people can wear different shoes. The SACH foot has 25 % of efficiency (the ratio between energy released and stored).

Material: polyurethane and wood. **Warranty:**36 months.

SACH Foot For Children

Code	Size	User Characteristics		
		Sound Limb Foot Length	Side	Max Weight
1.005.01.14.R	14	14 cm	right	25 Kg
1.005.01.14.L	14	14 cm	left	25 Kg
1.005.01.16.R	16	16 cm	right	35 Kg
1.005.01.16.L	16	16 cm	left	35 Kg
1.005.01.18.R	18	18 cm	right	45 Kg
1.005.01.18.L	18	18 cm	left	45 Kg
1.005.01.20.R	20	20 cm	right	55 Kg
1.005.01.20.L	20	20 cm	left	55 Kg



SACH FOOT ADAPTER STAINLESS STEEL code **33.004.07.EXT**





SACH FOOT WITH ADAPTER

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level I



SACH is an acronym for “solid ankle, cushion heel” and refers to a compressible heel wedge that provides “pseudopantar flexion” after heel strike. Our Sach foot is in technopolymer and resists moisture better than the classic way and ensures stability. The rigid wooden keel provides mid-stance stability but little lateral movement. The SACH is frequently prescribed because it is cheap, light, durable, and available in various heel heights so people can wear different shoes. The SACH foot has 25 % of efficiency (the ratio between energy released and stored).

Material: polyurethane, technopolymer and wood.

Warranty: 36 months.

SACH Foot For Adults

Code	Size	User Characteristics		
		Sound Limb Foot Length	Side	Max Weight
1.005.01.22.R	22	22 cm	right	100 Kg
1.005.01.22.L	22	22 cm	left	100 Kg
1.005.01.23.R	23	23 cm	right	100 Kg
1.005.01.23.L	23	23 cm	left	100 Kg
1.005.01.24.R	24	24 cm	right	100 Kg
1.005.01.24.L	24	24 cm	left	100 Kg
1.005.01.25.R	25	25 cm	right	100 Kg
1.005.01.25.L	25	25 cm	left	100 Kg
1.005.01.26.R	26	26 cm	right	130 Kg
1.005.01.26.L	26	26 cm	left	130 Kg
1.005.01.27.R	27	27 cm	right	130 Kg
1.005.01.27.L	27	27 cm	left	130 Kg
1.005.01.28.R	28	28 cm	right	130 Kg
1.005.01.28.L	28	28 cm	left	130 Kg
1.005.01.29.R	29	29 cm	right	130 Kg
1.005.01.29.L	29	29 cm	left	130 Kg
1.005.01.30.R	30	30 cm	right	130 Kg
1.005.01.30.L	30	30 cm	left	130 Kg

SACH FOOT ADAPTER STAINLESS STEEL code **5.003.01.SS**



SACH FOOT WITH ADAPTER



PROSTHETIC FEET



SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1

SACH is an acronym for “solid ankle, cushion heel” and refers to a compressible heel wedge that provides “pseudopantar flexion” after heel strike. The rigid wooden keel provides mid-stance stability but little lateral movement. The SACH is frequently prescribed because it is cheap, light, durable, and available in various heel heights so people can wear different shoes. The SACH foot has 25 % of efficiency (the ratio between energy released and stored).



Key Level I



SACH FOOT For Adults - Brown Warranty: 36 months.

Code	Size	User Characteristics		
		Sound Limb Foot Length	Side	Max Weight
1.005.01.20.R.B	20	20 cm	right	100 Kg
1.005.01.20.L.B	20	20 cm	left	100 Kg
1.005.01.22.R.B	22	22 cm	right	100 Kg
1.005.01.22.L.B	22	22 cm	left	100 Kg
1.005.01.23.R.B	23	23 cm	right	100 Kg
1.005.01.23.L.B	23	23 cm	left	100 Kg
1.005.01.24.R.B	24	24 cm	right	100 Kg
1.005.01.24.L.B	24	24 cm	left	100 Kg
1.005.01.25.R.B	25	25 cm	right	100 Kg
1.005.01.25.L.B	25	25 cm	left	100 Kg
1.005.01.26.R.B	26	26 cm	right	130 Kg
1.005.01.26.L.B	26	26 cm	left	130 Kg
1.005.01.27.R.B	27	27 cm	right	130 Kg
1.005.01.27.L.B	27	27 cm	left	130 Kg
1.005.01.28.R.B	28	28 cm	right	130 Kg
1.005.01.28.L.B	28	28 cm	left	130 Kg
1.005.01.29.R.B	29	29 cm	right	130 Kg
1.005.01.29.L.B	29	29 cm	left	130 Kg
1.005.01.30.R.B	30	30 cm	right	130 Kg
1.005.01.30.L.B	30	30 cm	left	130 Kg

SACH FOOT ADAPTER STAINLESS STEEL code **5.003.01.SS**



www.roadrunnerfoot.com



PIROGOFF FOOT

PROSTHETIC FEET

SPRINTER'S KING	Running Foot
ROADWALKING II HP	Key Level 4
ROADFLEXION HP	Key Level 3
EQUILIBRIUM	Key Level 3
WALKING MP	Key Level 2
DYNAMIC PLUS	Key Level 2
DYNAMIC FOOT	Key Level 2
SINGLE AXIS FOOT	Key Level 2
SACH FOOT	Key Level 1
PIROGOFF FOOT	Key Level 1



Key Level I



PIROGOFF FOOT is a medium level foot with a micro-cellular polyurethane structure and shock wedge.

The foot has a heel height of 18 ± 2 mm.

Material: polyurethane and wood. Warranty: 36 months.

Pirogoff foot			
Code	Side	Sound limb foot length	Max weight
1.009.01.22.R	right	22 cm	100 kg
1.009.01.22.L	left	22 cm	100 kg
1.009.01.23.R	right	23 cm	100 kg
1.009.01.23.L	left	23 cm	100 kg
1.009.01.24.R	right	24 cm	100 kg
1.009.01.24.L	left	24 cm	100 kg
1.009.01.25.R	right	25 cm	100 kg
1.009.01.25.L	left	25 cm	100 kg
1.009.01.26.R	right	26 cm	100 kg
1.009.01.26.L	left	26 cm	100 kg
1.009.01.27.R	right	27 cm	100 kg
1.009.01.27.L	left	27 cm	100 kg
1.009.01.28.R	right	28 cm	100 kg
1.009.01.28.L	left	28 cm	100 kg
1.009.01.29.R	right	29 cm	100 kg
1.009.01.29.L	left	29 cm	100 kg



EVA FOOT COVER



EVA FOOT COVER
PVC FOOT COVER
PU FOOT COVER
PU FOOT COVER BROWN
MCV FOOT COVER BROWN
BELOW KNEE COSMETIC FOAM
ABOVE KNEE COSMETIC FOAM
BK SILICONE COSMETIC SKIN
COSMETIC SOCKS



The product Eva cover is the results of research of one year: we study all materials as Silicone, PVC, Polyurethane and Rubber (resistance, elasticity and mechanical characteristic). EVA is the material that has the highest memory form, the minimum dissipation of energy, best elasticity. It is the same material of shoes and insoles. EVA cover allows to dissipate only the 1% of energy that the carbon fiber feet released and stored. In comparison silicone cover dissipates 30% of energy, Polyurethane cover dissipates 15%, PVC cover dissipates 10%. The EVA cover is usable with Roadwalking II HP, Roadflexion HP, Equilibrium, Walking MP, Dynamic Plus. **Material: EVA. Warranty: 6 months.**

EVA foot cover				
Code	Foot Size	Side	User's Foot Length	User's Shoe Number
2.003.01.23.R	I	right	230 mm	35 – 36
2.003.01.23.L	I	left	230 mm	35 - 36
2.003.01.24.R	II	right	240 mm	37 - 38
2.003.01.24.L	II	left	240 mm	37 - 38
2.003.01.25.R	III	right	250 mm	39 - 40
2.003.01.25.L	III	left	250 mm	39 - 40
2.003.01.26.R	IV	right	260 mm	41 - 42
2.003.01.26.L	IV	left	260 mm	41 - 42
2.003.01.27.R	V	right	270 mm	43
2.003.01.27.L	V	left	270 mm	43
2.003.01.28.R	V	right	280 mm	44
2.003.01.28.L	V	left	280 mm	44
2.003.01.29.R	VI	right	290 mm	45
2.003.01.29.L	VI	left	290 mm	45



PVC FOOT COVER

EVA FOOT COVER
 PVC FOOT COVER
 PU FOOT COVER
 PU FOOT COVER BROWN
 MCV FOOT COVER BROWN
 BELOW KNEE COSMETIC FOAM
 ABOVE KNEE COSMETIC FOAM
 BK SILICONE COSMETIC SKIN
 COSMETIC SOCKS



PVC foot cover with the inner sole.

The PVC cover allows you to dissipate 10% of the energy that the carbon fiber foot stores and releases.

Material: PVC . Warranty: 6 months.

PVC foot cover				
Code	Foot Size	Side	User's Foot Length	User's Shoe Number
2.003.02.23.R	I	right	230 mm	35 - 36
2.003.02.23.L	I	left	230 mm	35 - 36
2.003.02.24.R	II	right	240 mm	37 - 38
2.003.02.24.L	II	left	240 mm	37 - 38
2.003.02.25.R	III	right	250 mm	39 - 40
2.003.02.25.L	III	left	250 mm	39 - 40
2.003.02.26.R	IV	right	260 mm	41 - 42
2.003.02.26.L	IV	left	260 mm	41 - 42
2.003.02.27.R	V	right	270 mm	43
2.003.02.27.L	V	left	270 mm	43
2.003.02.28.R	V	right	280 mm	44
2.003.02.28.L	V	left	280 mm	44
2.003.02.29.R	VI	right	290 mm	45
2.003.02.29.L	VI	left	290 mm	45



POLYURETHANE FOOT COVER



EVA FOOT COVER
PVC FOOT COVER
PU FOOT COVER
PU FOOT COVER BROWN
MCV FOOT COVER BROWN
BELOW KNEE COSMETIC FOAM
ABOVE KNEE COSMETIC FOAM
BK SILICONE COSMETIC SKIN
COSMETIC SOCKS

COSMETIC COVERS

For a user preferring lightness to aesthetics, this cover is made of Polyurethane inside a Kevlar sole. It's very flexible and durable. Fingers are less detailed but the result is this cover is lighter.



Material: Polyurethane. Warranty: 6 months

PU foot cover				
Code	Foot Size	Side	User's Foot Length	User's Shoe Number
2.001.01.23.R	I	right	230 mm	35 - 36
2.001.01.23.L	I	left	230 mm	35 - 36
2.001.01.24.R	II	right	240 mm	37 - 38
2.001.01.24.L	II	left	240 mm	37 - 38
2.001.01.25.R	III	right	250 mm	39 - 40
2.001.01.25.L	III	left	250 mm	39 - 40
2.001.01.26.R	IV	right	260 mm	41 - 42
2.001.01.26.L	IV	left	260 mm	41 - 42
2.001.01.27.R	V	right	270 mm	43
2.001.01.27.L	V	left	270 mm	43
2.001.01.28.R	V	right	280 mm	44
2.001.01.28.L	V	left	280 mm	44
2.001.01.29.R	VI	right	290 mm	45
2.001.01.29.L	VI	left	290 mm	45



POLYURETHANE FOOT COVER BROWN

EVA FOOT COVER
PVC FOOT COVER
PU FOOT COVER
PU FOOT COVER BROWN
MCV FOOT COVER BROWN
BELOW KNEE COSMETIC FOAM
ABOVE KNEE COSMETIC FOAM
BK SILICONE COSMETIC SKIN
COSMETIC SOCKS



For a user preferring lightness to aesthetics, this cover is made of Polyurethane inside a Kevlar sole. It's very flexible and durable. Fingers are less detailed but the result is this cover is lighter.

Material: Polyurethane. Warranty: 6 months

PU foot cover brown

Code	Foot Size	Side	User's Foot Length	User's Shoe Number
2.001.01.23.R.B	I	right	230 mm	35 - 36
2.001.01.23.L.B	I	left	230 mm	35 - 36
2.001.01.24.R.B	II	right	240 mm	37 - 38
2.001.01.24.L.B	II	left	240 mm	37 - 38
2.001.01.25.R.B	III	right	250 mm	39 - 40
2.001.01.25.L.B	III	left	250 mm	39 - 40
2.001.01.26.R.B	IV	right	260 mm	41 - 42
2.001.01.26.L.B	IV	left	260 mm	41 - 42
2.001.01.27.R.B	V	right	270 mm	43
2.001.01.27.L.B	V	left	270 mm	43
2.001.01.28.R.B	V	right	280 mm	44
2.001.01.28.L.B	V	left	280 mm	44
2.001.01.29.R.B	VI	right	290 mm	45
2.001.01.29.L.B	VI	left	290 mm	45



MCV FOOT COVER BROWN



EVA FOOT COVER
PVC FOOT COVER
PU FOOT COVER
PU FOOT COVER BROWN
MCV FOOT COVER BROWN
BELOW KNEE COSMETIC FOAM
ABOVE KNEE COSMETIC FOAM
BK SILICONE COSMETIC SKIN
COSMETIC SOCKS

COSMETIC COVERS

MCV Micro Coated Vinyl foot shell. Realistic appearance in shape and color. Flexibility. Duration.

Material: MCV. Warranty 6 months



MCV foot cover brown				
Code	Foot Size	Side	User's Foot Length	User's Shoe Number
2.003.03.23.R.B	I	right	230 mm	35 - 36
2.003.03.23.L.B	I	left	230 mm	35 - 36
2.003.03.24.R.B	II	right	240 mm	37 - 38
2.003.03.24.L.B	II	left	240 mm	37 - 38
2.003.03.25.R.B	III	right	250 mm	39 - 40
2.003.03.25.L.B	III	left	250 mm	39 - 40
2.003.03.26.R.B	IV	right	260 mm	41 - 42
2.003.03.26.L.B	IV	left	260 mm	41 - 42
2.003.03.27.R.B	V	right	270 mm	43
2.003.03.27.L.B	V	left	270 mm	43
2.003.03.28.R.B	V	right	280 mm	44
2.003.03.28.L.B	V	left	280 mm	44
2.003.03.29.R.B	VI	right	290 mm	45
2.003.03.29.L.B	VI	left	290 mm	45



BELOW KNEE COSMETIC FOAM

EVA FOOT COVER
PVC FOOT COVER
PU FOOT COVER
PU FOOT COVER BROWN
MCV FOOT COVER BROWN
BELOW KNEE COSMETIC FOAM
ABOVE KNEE COSMETIC FOAM
BK SILICONE COSMETIC SKIN
COSMETIC SOCKS



Below knee cosmetic FOAM (cone shape) polyurethane 45 Kg/mc

Code: 2.004.02



Below knee cosmetic FOAM (preformed) polyurethane 45 Kg/mc

Code 2.004.02.S



Below knee cosmetic FOAM (open cells) polyurethane 35 Kg/mc

Code 2.004.02.G



Below knee cosmetic FOAM Plastazote (Thermoformable)

Code 2.004.02.PLZ





ABOVE KNEE COSMETIC FOAM

EVA FOOT COVER
PVC FOOT COVER
PU FOOT COVER
PU FOOT COVER BROWN
MCV FOOT COVER BROWN
BELOW KNEE COSMETIC FOAM
ABOVE KNEE COSMETIC FOAM
BK SILICONE COSMETIC SKIN
COSMETIC SOCKS



Above knee cosmetic FOAM (open cells) polyurethane 35 Kg/mc

Code 2.004.03.G.L (left) 2.004.03.G.R. (right)

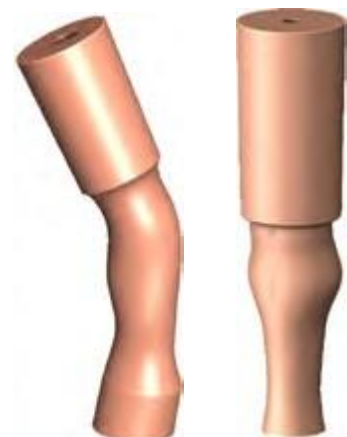
Disarticulated knee cosmetic FOAM (open cells) polyurethane 35 Kg/mc

Code 2.004.04.G.D

Above knee cosmetic FOAM (preformed) polyurethane 45 Kg/mc

Code 2.004.05 (with deflection)

Code 2.004.06 (without deflection)



BK SILICONE COSMETIC SKIN

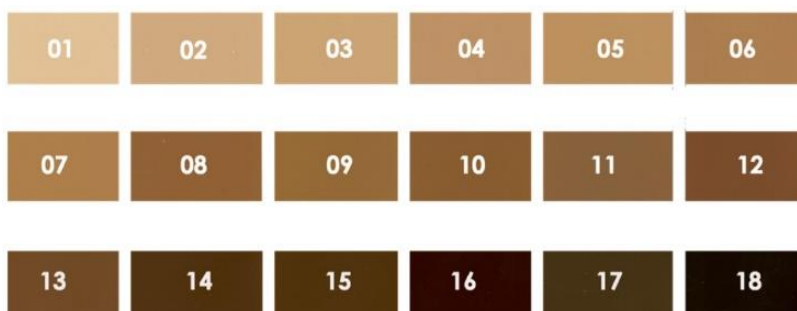
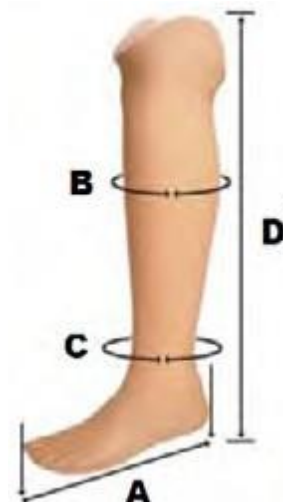
EVA FOOT COVER
PVC FOOT COVER
PU FOOT COVER
PU FOOT COVER BROWN
MCV FOOT COVER BROWN
BELOW KNEE COSMETIC FOAM
ABOVE KNEE COSMETIC FOAM
BK SILICONE COSMETIC SKIN
COSMETIC SOCKS



Cosmetic coating stain resistant, water resistant, thermoformable for easy application and adaptation, available in 18 different shades

Material: Silicone

Warranty: 6 months



Below Knee Silicone Cosmetic Skin/ Below Knee Silicone Cosmetic Skin Split Toe

Code	Category Foot	User Characteristics				
		Foot Length A	Calf size min.	Ankle size min.	Length D	Side
2.005.01.I.R/2.005.02.I.R	I	210-220 mm	30,5	19	500 mm	Right
2.005.01.I.L/2.005.02.I.L	I	210-220 mm	30,5	19	500 mm	Left
2.005.01.II.R/2.005.02.II.R	II	230-240 mm	32	20	550 mm	Right
2.005.01.II.L/2.005.02.II.L	II	230-240 mm	32	20	550 mm	Left
2.005.01.III.R/2.005.02.III.R	III	250-260 mm	34	21	600 mm	Right
2.005.01.III.L/2.005.02.III.L	III	250-260 mm	34	21	600 mm	Left
2.005.01.IV.R/2.005.02.IV.R	IV	270-280 mm	35,5	21.5	600 mm	Right
2.005.01.IV.L/2.005.02.IV.L	IV	270-280 mm	35,5	21.5	600 mm	Left
2.005.01.V.R/2.005.02.V.R	V	290-300 mm	37	22	650 mm	Right
2.005.01.V.L/2.005.02.V.L	V	290-300 mm	37	22	650 mm	Left



COSMETIC SOCKS



COSMETIC COVERS



Cosmetic Socks	
Code	Description and color
2.006.01	Above knee nylon cosmetic sock color skin or brown
2.006.02	Below knee nylon cosmetic sock color skin or brown

EVA FOOT COVER
 PVC FOOT COVER
 PU FOOT COVER
 PU FOOT COVER BROWN
 MCV FOOT COVER BROWN
 BELOW KNEE COSMETIC FOAM
 ABOVE KNEE COSMETIC FOAM
 BK SILICONE COSMETIC SKIN
 COSMETIC SOCKS



Pantyhoses AK		
Code	Height (cm)	Ankle circumference (cm)
2.006.09.M	154-162	18-20.5
2.006.09.L	158-166	20.5-23
2.006.09.XL	162-174	23-25.5
2.006.09.XXL	166-182	25.5-28
2.006.09.XXXL	174-190	28-30.5



Lower limb socks open toe		
Code	Height (cm)	Circumference (cm)
2.006.04.S	35-41	30-35
2.006.04.M	35-41	34-39
2.006.04.L	35-41	38-43
2.006.04.XL	35-41	42-47
2.006.04.XXL	35-41	46-51



Pantyhoses AK compression stocking		
Code	Height (cm)	Circumference (cm)
2.006.07.S	65-72	52-60
2.006.07.M	65-72	56-64
2.006.07.L	65-72	60-68
2.006.07.XL	65-72	64-72
2.006.07.XXL	65-72	68-76



LINERS FOR BELOW AND ABOVE KNEE AMPUTEE

LINERS FOR BK AMPUTEE
 LINERS FOR AK AMPUTEE
 SILICONE LINERS FOR BK/AK
 AMPUTEE
 TP GEL KNEE SLEEVES
 THERMOFORMABLE CONE



ROADRUNNERFOOT GEL LINER is skin-friendly, made of mineral oil and deformable thermoplastic material.

Besides the skin-friendly feature, the liner provides very good comfort for bony stumps and sensible stumps. The long live fabric covers the Gel and makes it easier to dress and undress the liner for the patient. The ROADRUNNERFOOT GEL LINER has a Matrix of 10cm. The matrix is only available in Locking liners, because of the matrix, the liner is very good as well for stumps with a lot of soft tissue.

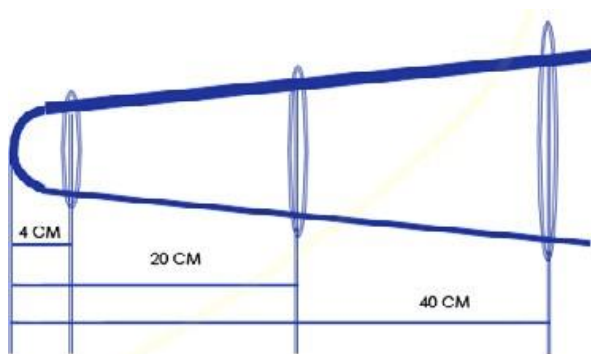
The ROADRUNNERFOOT GEL LINER provides a unique gel shape in comparison with other liners. The Gel thickness on the anterior part can be 3mm, 6mm, and 9mm. At the posterior area, the Gel thickness is each time only 3mm Gel. This is very useful for the proximal thin fitting of the liner flexion zone of the knee.

The Liner is available in the following sizes: Small, Medium, Medium Plus, Large, large Plus, Extra large. Small and medium Liners are available with small umbrellas beside the standard size. The small umbrella gives the CPO the possibility to fit a patient with very thin stump end contours. The Liner is available in the Cushion and Locking version.

Material: TP gel thermoplastic Warranty: 6 months



LINERS FOR BELOW KNEE AMPUTEE



LINERS FOR BK AMPUTEE
 LINERS FOR AK AMPUTEE
 SILICONE LINERS FOR BK/AK AMPUTEE
 TP GEL KNEE SLEEVES
 THERMOFORMABLE CONE



LINERS AND SLEEVES

Liners for Below Knee (BK) Amputee without lock

Code	Size	User Characteristics		
		Distal Circumferences at 4 cm from apex of the stump	Distal Circumferences at 20 cm from apex of the stump	Distal Circumferences at 40 cm from apex of the stump
3.001.01.BK.S	Small	18-26 cm	22-33 cm	27-40 cm
3.001.01.BK.M	Medium	21-31 cm	26-40 cm	30-47 cm
3.001.01.BK.MP	Medium Plus	23-33 cm	31-45 cm	37-60 cm
3.001.01.BK.L	Large	27-38 cm	35-48 cm	43-63 cm
3.001.01.BK.LP	Large Plus	29-42 cm	40-55 cm	46-68 cm
3.001.01.BK.XL	Extra large	33-49 cm	43-65 cm	49-75 cm

Liners for Below Knee (BK) Amputee with Matrix and Lock

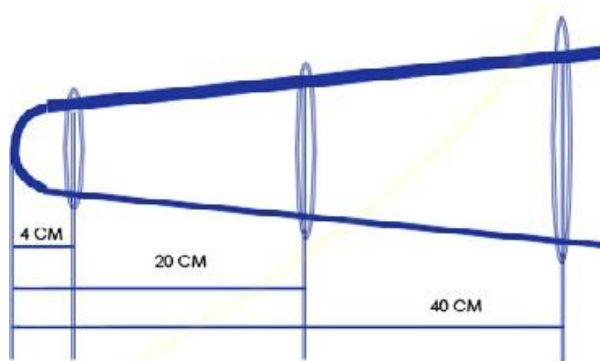
Code	Size	User Characteristics		
		Distal Circumferences at 4 cm from apex of the stump	Distal Circumferences at 20 cm from apex of the stump	Distal Circumferences at 40 cm from apex of the stump
3.001.01.BK.MLK.S	Small	18-26 cm	22-33 cm	27-40 cm
3.001.01.BK. MLK.M	Medium	21-31 cm	26-40 cm	30-47 cm
3.001.01.BK. MLK.MP	Medium Plus	23-33 cm	31-45 cm	37-60 cm
3.001.01.BK. MLK.L	Large	27-38 cm	35-48 cm	43-63 cm
3.001.01.BK. MLK.LP	Large Plus	29-42 cm	40-55 cm	46-68 cm
3.001.01.BK. MLK.XL	Extra large	33-49 cm	43-65 cm	49-75 cm





LINERS FOR ABOVE KNEE AMPUTEE

LINERS FOR BK AMPUTEE
LINERS FOR AK AMPUTEE
SILICONE LINERS FOR BK/AK AMPUTEE
TP GEL KNEE SLEEVES
THERMOFORMABLE CONE



Liners for Above Knee (AK) Amputee without lock

Code	Size	User Characteristics		
		Distal Circumferences at 4 cm from apex of the stump	Distal Circumferences at 20 cm from apex of the stump	Distal Circumferences at 40 cm from apex of the stump
3.001.02.AK.S	Small	18-26 cm	22-33 cm	27-40 cm
3.001.02.AK.M	Medium	21-31 cm	26-40 cm	30-47 cm
3.001.02.AK.MP	Medium Plus	23-33 cm	30-42 cm	37-53 cm
3.001.02.AK.L	Large	26-35 cm	35-49 cm	42-60 cm
3.001.02.AK.LP	Large Plus	29-40 cm	38-53 cm	43-64 cm
3.001.02.AK.XL	Extra large	32-47 cm	41-62 cm	47-73 cm
3.001.02.AK.XXL	Ultra large	38-49 cm	47-63 cm	55-80 cm

Liners for Above Knee (AK) Amputee with Matrix and Lock

Code	Size	User Characteristics		
		Distal Circumferences at 4 cm from apex of the stump	Distal Circumferences at 20 cm from apex of the stump	Distal Circumferences at 40 cm from apex of the stump
3.001.02.AK.MLK.S	Small	18-26 cm	22-33 cm	27-40 cm
3.001.02.AK.MLK.M	Medium	21-31 cm	26-40 cm	30-47 cm
3.001.02.AK.MLK.MP	Medium Plus	23-33 cm	30-42 cm	37-53 cm
3.001.02.AK.MLK.L	Large	26-35 cm	35-49 cm	42-60 cm
3.001.02.AK.MLK.LP	Large Plus	29-40 cm	38-53 cm	43-64 cm
3.001.02.AK.MLK.XL	Extra large	32-47 cm	41-62 cm	47-73 cm
3.001.02.AK.MLK.XXL	Ultra large	38-49 cm	47-63 cm	55-80 cm



SILICONE LINER FOR AK/BK AMPUTEE



LINERS FOR BK AMPUTEE
 LINERS FOR AK AMPUTEE
 SILICONE LINERS FOR BK/AK
 AMPUTEE
 TP GEL KNEE SLEEVES
 THERMOFORMABLE CONE



SILICONE LINER is made of silicone material. In addition to this, the headset guarantees great comfort even in the case of bony and sensitive bumps. There are two versions of the headset, the version with Lock and the version without Lock. In the Lock version, a matrix is embedded in the gel at the distal end of the headset, for a length of 10cm. The matrix makes the headset with Lock suitable for the use of Lock technology even in the case of a flaccid stump. Silicone Liner is available in the following sizes: 16 20 24 26 28 32 38 44.

Silicone Liner for Below knee (BK) Amputee without lock/with matrix and lock			
Code	Size	Distal circumference	Thickness
3.006.01.BK.16/3.006.01.BK.MLK.16	16	16-19 cm	3 mm
3.006.01.BK.20/3.006.01.BK.MLK.20	20	20-23 cm	3 mm
3.006.01.BK.24/3.006.01.BK.MLK.24	24	24-25 cm	3 mm
3.006.01.BK.26/3.006.01.BK.MLK.26	26	26-27 cm	3 mm
3.006.01.BK.28/3.006.01.BK.MLK.28	28	28-31 cm	3 mm
3.006.01.BK.32/3.006.01.BK.MLK.32	32	32-37 cm	3 mm
3.006.01.BK.38/3.006.01.BK.MLK.38	38	38-43 cm	3 mm
3.006.01.BK.44/3.006.01.BK.MLK.44	44	44-52 cm	3 mm





SILICONE LINER FOR AK/BK AMPUTEE

LINERS FOR BK AMPUTEE
 LINERS FOR AK AMPUTEE
 SILICONE LINERS FOR BK/AK
 AMPUTEE
 TP GEL KNEE SLEEVES
 THERMOFORMABLE CONE



SILICONE LINER is made of silicone material. In addition to this, the headset guarantees great comfort even in the case of bony and sensitive bumps. There are two versions of the headset, the version with Lock and the version without Lock. In the Lock version, a matrix is embedded in the gel at the distal end of the headset, for a length of 10cm. The matrix makes the headset with Lock suitable for the use of Lock technology even in the case of a flaccid stump. Silicone Liner is available in the following sizes: 16 20 24 26 28 32 38 44.

Silicone Liner for Above knee (AK) Amputee without lock/with matrix and lock

Code	Size	Distal circumference	Thickness
3.006.01.AK.16/3.006.01.AK.MLK.16	16	16-19 cm	3 mm
3.006.01.AK.20/3.006.01.AK.MLK.20	20	20-23 cm	3 mm
3.006.01.AK.24/3.006.01.AK.MLK.24	24	24-25 cm	3 mm
3.006.01.AK.26/3.006.01.AK.MLK.26	26	26-27 cm	3 mm
3.006.01.AK.28/3.006.01.AK.MLK.28	28	28-31 cm	3 mm
3.006.01.AK.32/3.006.01.AK.MLK.32	32	32-37 cm	3 mm
3.006.01.AK.38/3.006.01.AK.MLK.38	38	38-43 cm	3 mm
3.006.01.AK.44/3.006.01.AK.MLK.44	44	44-52 cm	3 mm



THERMOPLASTIC GEL KNEE SLEEVES



LINERS FOR BK AMPUTEE
 LINERS FOR AK AMPUTEE
 SILICONE LINERS FOR BK/AK
 AMPUTEE
 TP GEL KNEE SLEEVES
 THERMOFORMABLE CONE



The Thermoplastic gel sleeves are made of the same material as liners. The sleeves guarantee the anchorage of the prosthesis on the stump. The size is XS, S, M, L, XL, and XXL.

The sleeves are thermoformable.

Material: TP gel thermoplastic Warranty: 6 months

Thermoplastic Gel Knee Sleeves			
Code	Size	User Characteristics	
		Higher Circumference	Lower Circumference
3.003.01.XS	Extra Small	16-24 cm	10-17 cm
3.003.01.S	Small	23-34 cm	15-22 cm
3.003.01.M	Medium	29-43 cm	21-30 cm
3.003.01.L	Large	36-51 cm	28-42 cm
3.003.01.XL	Extra Large	42-60 cm	34-50 cm
3.003.01.XXL	Ultra Large	52-73 cm	28-55 cm





THERMOFORMABLE CONE

LINERS FOR BK AMPUTEE
LINERS FOR AK AMPUTEE
SILICONE LINERS FOR BK/AK
AMPUTEE
TP GEL KNEE SLEEVES
THERMOFORMABLE CONE



Thermoformable Cone	
Code	Size
3.004.01.D13	Small
3.004.01.D16	Medium
3.004.01.D18	Large



STUMP SHOCK ABSORBER



STUMP SHOCK ABSORBER

DISTAL CUP and PATCH TP GEL

VALVE



SILICONE PARTS

Stump Shock Absorber		
Code	Size	User Characteristics
		Circumference of the stump
4.001.01.S	Small	14-19 cm
4.001.01.M	Medium	20-23 cm
4.001.01.L	Large	24-27 cm
4.001.01.XL	Extra Large	28-31 cm
4.001.01.XXL	Ultra Large	32-35 cm
4.001.01.XXX	Ultra Extra Large	36-38 cm





DISTAL CUP AND PATCH THERMOPLASTIC GEL

STUMP SHOCK ABSORBER

DISTAL CUP and PATCH TP GEL

VALVE



Distal Cup And Patch Thermoplastic gel

Code	Description
4.002.01.L	Distal Cup Thermoplastic GEL size L
4.002.01.M	Distal Cup Thermoplastic GEL size M
4.002.01.S	Distal Cup Thermoplastic GEL size S
4.002.01.XL	Distal Cup Thermoplastic GEL size XL
4.003.01.L	Patch Thermoplastic Gel sizes L
4.003.01.M	Patch Thermoplastic Gel sizes M
4.003.01.S	Patch Thermoplastic Gel sizes S





STUMP SHOCK ABSORBER

DISTAL CUP and PATCH TP GEL

VALVE



Flat Silicone Rubber Valve Size Unique With Seat Ring

Code 4.004.01.A



Flat Silicone Rubber Valve Size Unique With Tube

Code 4.004.01.B



One Way Socket Valve W

Code 4.004.02.W



CARBON FIBER PYLON

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBULAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Carbon Fiber Pylon

Description

The Carbon Fiber Pylon connects two tubular adapters or tubular adapter with the knee joint and playing the same role as the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by carbon fiber pylon is 5 N*m. **Carbon Fiber Pylon tested in according to ISO 10328.**

Code 5.001.01

Length	500 mm
External Diameter	30 mm
Component Weight	184 g
Material	Prepreg Carbon fiber textile
Maximum User Weight	130 Kg



Carbon Fiber Pylon With Tubular Adapter Glued

Description

The Carbon Fiber Pylon with tubular adapter glued connects the socket adapter with the tubular adapter or knee joint and playing the same role as the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by carbon fiber pylon is 5 N*m. **Carbon Fiber Pylon and tubular adapter glued tested in according to ISO 10328.**

Code 5.001.01.ASS

Length	518 mm
External Diameter	30 mm
Component Weight	261 g
Material	Prepreg Carbon fiber textile + Aluminum Alloy
Maximum User Weight	130 Kg



ALUMINUM ALLOY PYLON



Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

PYLONS AND MODULAR ADAPTERS

Aluminium Alloy Pylon	
Description	
The Aluminium Alloy Pylon connects two tubular adapters or tubular adapter with the knee joint and playing the same role as the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by aluminum pylon is 5 N*m. Aluminum alloy Pylon tested in according to ISO 10328.	
Code 5.002.01	
Length	400 mm
External Diameter	30 mm
Component Weight	216 g
Material	Aluminum Alloy
Maximum User Weight	130 Kg

Aluminium Alloy Pylon With Tubular Adapter Glued	
Description	
The Aluminium Alloy Pylon with tubular adapter glued connects the socket adapter with the tubular adapter playing the same role as the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by aluminum pylon is 5 N*m. Aluminum alloy pylon and tubular adapter glued tested in according to ISO 10328.	
Code 5.002.01.ASS	
Length	418 mm
External Diameter	30 mm
Component Weight	300 g
Material	Aluminum Alloy + Aluminum Alloy
Maximum User Weight	130 Kg

Pylon tubular glued for children	
Description	
The Pylon tubular glued connects the socket adapter with the tubular adapter playing the same role of the human femur and/or tibia and fibula, depending on amputation level. Pylon tubular glued for children tested in according to ISO 10328.	
Code 5.002.01.K.LG-5.002.01.K.SH	
Length	310-160 mm
External Diameter	22 mm
Component Weight	165-116 g
Material	Aluminum Alloy + Aluminum Alloy
Maximum User Weight	75-50 Kg



TITANIUM PYLON

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBULAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Titanium Pylon

Description

The Titanium Pylon connects two tubular adapters or tubular adapter with the knee joint and playing the same role as the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by titanium fiber pylon is 5 N*m. **Titanium Pylon tested in according to ISO 10328.**

Code 5.002.01.T

Length	400 mm
External Diameter	30 mm
Component Weight	185 g
Material	Titanium
Maximum User Weight	130 Kg



Titanium Pylon With Tubular Adapter Glued

Description

The Titanium Pylon with tubular adapter glued connects the socket adapter with the tubular adapter playing the same role of the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by titanium pylon is 5 Nm.

Titanium pylon and tubular adapter glued tested in according to ISO 10328.

Code 5.002.01.ASS.T

Length	418 mm
External Diameter	30 mm
Component Weight	265 g
Material	Titanium + Aluminum Alloy
Maximum User Weight	130 Kg



STAINLESS STEEL PYLON



Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Stainless steel pylon

Description

The Stainless steel Pylon connects two tubular adapters or tubular adapter with the knee joint and playing the same role as the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by stainless steel pylon is 5 N*m. **Stainless Steel Pylon tested in according to ISO 10328.**

Code 5.002.01.SS

Length	400 mm
External Diameter	30 mm
Component weight	300 g
Material	Stainless steel
Maximum user weight	130 Kg



Stainless steel pylon with tubular adapter glued

Description

The Stainless steel Pylon with tubular adapter glued connects the socket adapter with the tubular adapter playing the same role of the human femur and/or tibia and fibula, depending on amputation level. The fixing torque for tubular adapter by stainless steel pylon is 5 Nm. **Stainless Steel Pylon and tubular adapter glued tested in according to ISO 10328.**

Code 5.002.01.SS.ASS / 5.002.01.SS.ASS.34

Length	418 mm
External diameter	30-34 mm
Component weight	377 g- 350 g
Material	Stainless steel + Aluminum alloy
Maximum user weight	130 Kg



PYLONS AND MODULAR ADAPTERS





TUBULAR ADAPTERS

PYLONS AND MODULAR ADAPTERS

CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Warranty: 36 months



Tubular Adapter

Description

The tubular adapter connects the pylon with a foot pyramidal adapter or with a prosthetic knee joint. **Tubular adapter tested in according to ISO 10328.**

Code 5.004.01

External Diameter	30 mm
Component Weight	75 g
Material	Aluminum Alloy
Maximum User Weight	130 Kg

Code 5.004.01.SS

External Diameter	30 mm
Component Weight	114 g
Material	Stainless steel
Maximum User Weight	130 Kg

Code 5.004.01.T

External Diameter	30 mm
Component Weight	64 g
Material	Titanium
Maximum User Weight	130 Kg

Tubular Adapter with pyramid

Code 5.004.22.SS

External Diameter	30 mm
Component Weight	170 g
Material	Stainless steel
Maximum User Weight	130 Kg



TUBULAR ADAPTERS



Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

PYLONS AND MODULAR ADAPTERS

Tubular adapter for children	
Description	
The tubular adapter for children connects one end with pyramid receiver, another end with Ø 22 mm tube receiving. Tubular adapter tested in according with ISO 10328.	
Code 5.004.01.K	
External diameter	22 mm
Component weight	66 g
Material	Stainless steel
Maximum user weight	75 Kg
Tubular adapter for children angled 10°	
Code 5.004.01.K.A	
External diameter	22 mm
Component weight	80 g
Material	Stainless steel
Maximum user weight	75 Kg



DOUBLE TUBULAR ADAPTERS

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBULAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Double tubular adapter	
Description	
The double tubular adapter connects the socket adapter with a foot pyramidal adapter or with a prosthetic knee joint. Double Tubular adapter tested in according to ISO 10328.	
Code 5.004.01.L32	
Length	32 mm
Component Weight	85 / 130 / 86 g
Material	Aluminum Alloy /Stainless Steel/ Titanium
Maximum User Weight	130 Kg
Code 5.004.01.L47	
Length	47 mm
Component Weight	102 / 148 / 98 g
Material	Aluminium Alloy /Stainless Steel/ Titanium
Maximum User Weight	130 Kg
Code 5.004.01.L62	
Length	62 mm
Component Weight	112 / 167 / 110 g
Material	Aluminium Alloy /Stainless Steel/ Titanium
Maximum User Weight	130 Kg
Code 5.004.01.L77	
Length	77 mm
Component Weight	120 / 185 / 120 g
Material	Aluminium Alloy /Stainless Steel/ Titanium
Maximum User Weight	130 Kg



DOUBLE TUBULAR ADAPTERS



Warranty: 36 months



CARBON FIBER PYLON
ALLUMINIUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Double tubular adapter with receiver

Description

The double tubular adapter features a pyramid adapter and a pyramid receiver. It is used to connect various prosthetic components or with a prosthetic knee joint. **Double tubular adapter with receivers tested in according with ISO 10328.**

Code 5.004.01.L32.T

Length 32 mm

Component weight 69 g

Material Titanium

Maximum user weight 100 Kg

Code 5.004.01.L34.T

Length 34 mm

Component weight 70 g

Material Titanium

Maximum user weight 100 Kg

Code 5.004.01.L45.T

Length 45 mm

Component weight 83 g

Material Titanium

Maximum user weight 100 Kg

Code 5.004.01.L60.T

Length 60 mm

Component weight 100 g

Material Titanium

Maximum user weight 100 Kg

Code 5.004.01.L75.T

Length 75 mm

Component weight 113 g

Material Titanium

Maximum user weight 100 Kg



PYLONS AND MODULAR ADAPTERS





FEET ADAPTERS

PYLONS AND MODULAR ADAPTERS

CARBON FIBER PYLON
ALUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM



Warranty: 36 months



Sach Foot Adapter

Description

The SACH foot adapter is the adapter that connects the SACH foot with tubular adapter. **SACH foot adapter tested in according with ISO 10328.**

Code 5.003.01

Characteristics	washer and screw M10 included
Component Weight	63 g
Material	Aluminium Alloy
Maximum User Weight	130 kg

Code 5.003.01.SS

Characteristics	washer and screw M10 included
Component Weight	135 g
Material	Stainless steel
Maximum User Weight	130 kg

Code 5.003.01.T

Characteristics	washer and screw M10 included
Component Weight	98 g
Material	Titanium
Maximum User Weight	130 kg





Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Fixing Bracket Running Foot - Below Knee Amputee

Description

The fixing bracket running foot on the socket is made in Aluminum Alloy and the bracket will be laminated within the socket.
The mechanical resistance of the bracket is over 7000 N (strenght) and over 3000 N for 300.000 cycles (fatigue).

Code 5.002.02.S

Accessories	2 screws M10 – Stainless steel and 2 washers
Component Weight	207 g
Material	Aluminum Alloy
Maximum User Weight	150 kg

Code 5.002.02.L

Accessories	2 screws M10 – Stainless steel and 2 washers
Component Weight	262 g
Material	Aluminum Alloy
Maximum User Weight	150 kg



Fixing Bracket Running Foot - Above Knee Amputee

Description

The fixing bracket running foot is made in Aluminum Alloy and the bracket will be fixed on the knee with four screws.
The mechanical resistance of the bracket is over 7000 N (strenght) and over 3000 N for 300 000 cycles (fatigue).

Code 5.003.03

Accessories	2 screws, M10 Stainless steel, 2 washers, 2 nuts in order to fix the foot
Dimensions	95 mm x 60 mm foot fixing area 60 mm x 60 mm knee joint fixing area
Component Weight	544 g
Material	Aluminum Alloy
Maximum User Weight	150 kg



MODULAR ADAPTERS FOR BK

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBULAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Socket Adapter Square Section

Description

This socket adapter connects the tubular adapter with socket poliurethane-wood adapter.

This adapter is tested according to ISO 10328

Code 5.004.02

Accessories	screws M6
Holes diameter	6 mm
Component Weight	62 g
Material	Aluminum Alloy
Maximum User Weight	130 kg

Code 5.004.02.SS

Accessories	screws M6
Holes diameter	6 mm
Component Weight	135 g
Material	Stainless steel
Maximum User Weight	130 Kg

Code 5.004.02.T

Accessories	screws M6
Holes diameter	6 mm
Component Weight	70 g
Material	Titanium
Maximum User Weight	130 kg

Rotating socket square adapter section male

Code 5.004.02.R

Accessories	screws M6
Holes diameter	6 mm
Component Weight	120 g
Material	stainless steel
Maximum User Weight	130 kg



MODULAR ADAPTER FOR BK



Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Four Prongs Socket Adapter

Description

This socket adapter connects the tubular adapter with the socket and it will be laminated within the socket.

This adapter tested in according to ISO 10328

Code 5.004.03

Accessories	screws M5
Holes diameter	5 mm
Component Weight	71 g
Material	Aluminum Alloy
Maximum User Weight	130 kg

Code 5.004.03.SS

Accessories	screws M5
Holes diameter	5 mm
Component Weight	120 g
Material	Stainless steel
Maximum User Weight	130 kg

Code 5.004.03.T

Accessories	screws M5
Holes diameter	5 mm
Component Weight	66 g
Material	Titanium
Maximum User Weight	130 kg

Four Prongs Socket Adapter for children

Code 5.004.03.K

Component Weight	44 g
Material	stainless steel
Maximum User Weight	75 kg



PYLONS AND MODULAR ADAPTERS



MODULAR ADAPTERS FOR BK

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBULAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Socket Adapter Square Section Female

Description

This adapter connects the socket with the prosthetic knee and it will be fixed with four screws.

This adapter tested in according to ISO 10328

Code 5.004.07.B

Accessories	screws M6
Holes diameter	6 mm
Component Weight	50 g
Material	Aluminum Alloy
Maximum User Weight	130 kg

Code 5.004.07.B.SS

Accessories	screws M6
Holes diameter	6 mm
Component Weight	100 g
Material	Stainless steel
Maximum User Weight	130 kg

Code 5.004.07.B.T

Accessories	screws M6
Holes diameter	6 mm
Component Weight	85 g
Material	Titanium
Maximum User Weight	130 kg

Rotating socket square adapter section female

Code 5.004.07.B.R

Accessories	screws M6
Holes diameter	6 mm
Component Weight	134 g
Material	stainless steel
Maximum User Weight	130 kg



MODULAR ADAPTER FOR BK



Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Socket Wood- PU Adapter with holes

Description

This socket adapter connects the socket adapter square section with the socket and it will be fixed with four screws.

This adapter tested in according to ISO 10328.

Code 5.004.08

Accessories	screws M6
Holes diameter	6 mm
Component Weight	207 g
Material	Polyurethane and wood
Maximum User Weight	100 kg



Children plastic inside cup for socket

Description

This socket adapter connects the socket adapter square section with the socket and it will be fixed with four screws.

This adapter tested in according to ISO 10328.

Code 5.004.08.K

Component Weight	80 g
Material	plastic
Maximum User Weight	80 kg



PYLONS AND MODULAR ADAPTERS



MODULAR ADAPTERS FOR AK

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBULAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Three Prongs Socket Adapter Female

Description

This socket adapter connects the prosthetic knee joint with socket and it will be fixed to the socket with screws or laminated within the socket.
Socket adapter tested in according to ISO 10328.

Code 5.004.04.CNC

Characteristics	CNC milled, prongs can't be bent due to the strength with holes for pyramidal receiver
Component Weight	246 g
Material	Stainless Steel
Maximum User Weight	130 Kg

Code 5.004.04.DC

Characteristics	Die-casted, prongs can be bent with holes for pyramidal receiver
Component Weight	175 g
Material	Stainless Steel
Maximum User Weight	130 Kg

Female socket adapter with rotating receivers

Code 5.004.21.SS

Component Weight	144 g
Material	stainless steel
Maximum User Weight	130 kg

Code 5.004.21.T

Component Weight	114 g
Material	stainless steel/titanium
Maximum User Weight	130 kg





Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Three Prongs Socket Adapter - Upper Part

Description

This is the upper part of three prong socket adapter that have two version, male and female.

Socket adapter tested in according to ISO 10328.

Code 5.004.06.A.CNC

Characteristics	CNC milled, it can't be bent due to its strength
Component Weight	190 g
Material	Stainless Steel
Maximum User Weight	130 Kg

Code 5.004.06.A.DC

Characteristics	die-casted, it can't be bent
Component Weight	190 g
Material	Stainless Steel
Maximum User Weight	130 Kg

Code 5.004.06.B

Description	Three Prongs Socket Adapter – Lower Part Male
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Code 5.004.06.C

Description	Three Prongs Socket Adapter – Lower Part Female
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MODULAR ADAPTERS FOR AK

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBOLAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Three Prongs Socket Adapter Male

Description

This socket adapter connects the prosthetic knee joint with the socket and it will be fixed to the socket with screws or laminated within the socket. **Socket adapter tested in according to ISO 10328.**

Code 5.004.05.CNC

Characteristics	CNC milled, prongs can't be bent due to the strenght
Component Weight	240 g
Material	Stainless Steel
Maximum User Weight	130 Kg

Code 5.004.05.DC

Characteristics	Die-casted, prongs can be bent
Component Weight	165 g
Material	Stainless Steel
Maximum User Weight	130 Kg

Male socket adapter with rotating pyramid

Code 5.004.20.SS

Component Weight	134 g
Material	stainless steel
Maximum User Weight	130 kg

Code 5.004.20.T

Component Weight	109 g
Material	stainless steel/titanium
Maximum User Weight	130 kg





Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Assembly Bracket For Above Knee Socket	
Description	
This socket adapter connects the prosthetic knee joint with the socket and this adapter will be fixed to the socket with screws or laminated within the socket. Adapter tested in according to ISO 10328.	
Code 5.004.07	
Characteristics	4 screws M6 for the lower part and 4 screws M5 upper part
Component Weight	350 g
Material	Stainless Steel – upper part Aluminum alloy 7075 – the lower part
Maximum User Weight	130 Kg



Traslation adapter	
Description	
Fitted on the Three Prongs socket adapter it allows to shift the alignment up to 20 mm in 360° direction. Adapter tested in according to ISO 10328.	
Code 5.004.14	
Characteristics	36 mm
Component Weight	350 g
Material	Stainless steel
Maximum User Weight	130 Kg



Rotation adapter male for above knee	
Description	
The rotational adapter allows rotation of the knee. The adapter tested in according to ISO 10328.	
Code 6.007.01.A	
Component Weight	292 g
Material	Stainless steel
Maximum User Weight	125 Kg



PYLONS AND MODULAR ADAPTERS



MODULAR ADAPTERS FOR AK

CARBON FIBER PYLON
 ALLUMINUM ALLOY PYLON
 TITANIUM PYLON
 STAINLESS STEEL PYLON
 TUBULAR ADPTERS
 DOUBLE TUBULAR ADAPTERS
 FEET ADAPTERS
 MODULAR ADAPTER FOR BK
 MODULAR ADAPTER FOR AK
 LOCK'S SYSTEM

Warranty: 36 months



Double adapter with pyramid

Description

The double adapter with pyramid is used for distal und proximal angle adjustment.

This adapter tested in according to ISO 10328

Code 5.004.12.L18.T

Component Weight 105 g

Material Titanium

Maximum User Weight 130 kg



Torsion adapter titanium

Descripción

Torsion adapter is a prosthetic component allows a fine adjustment of mounting height up to 8 mm together with variable rotation mounting height adjustable from 50 mm to 58 mm. **This adapter tested in according to ISO 10328**

Code 5.004.13.T

Component Weight 160 g

Material Titanium

Maximum User Weight 130 kg



Slide adapter

Descripción

For an additional translation movement between prosthetic socket and tube adapter, even if the prosthesis is already in place.

This adapter tested in according to ISO 10328

Code 5.004.19

Component Weight 284 g

Material stainless steel

Maximum User Weight 130 kg

Code 5.004.19.T

Component Weight 175 g

Material Titanium

Maximum User Weight 130 kg





Warranty: 36 months



CARBON FIBER PYLON
ALLUMINUM ALLOY PYLON
TITANIUM PYLON
STAINLESS STEEL PYLON
TUBULAR ADPTERS
DOUBLE TUBULAR ADAPTERS
FEET ADAPTERS
MODULAR ADAPTER FOR BK
MODULAR ADAPTER FOR AK
LOCK'S SYSTEM

Bimodular Clutch Lock Pin included

Description

This clutch lock is bimodular pin include is a component for transtibial and transfemoral prostheses and allows the connection of the metal PIN of the cap to the prosthetic chain.

Bimodular Clutch lock pin included tested in according to ISO 10328.

Code 5.004.11

Characteristics	Plus pin
Component Weight	204 g
Material	Aluminum
Maximum User Weight	130 Kg



Bimodular Clutch Lock with receiver Pin included

Description

Bimodular Clutch lock with receiver pin included is a component for transtibial and transfemoral prostheses and allows the connection of the metal PIN of the cap to the prosthetic chain.

Bimodular Clutch lock with receiver pin included tested in according to ISO 10328.

Code 5.004.17

Characteristics	Plus pin
Component Weight	230 g
Material	Aluminum
Maximum User Weight	130 Kg



PYLONS AND MODULAR ADAPTERS



PROSTHETIC KNEE K-LEVEL JOINT

SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

People with an above knee amputation deserve to spend the day in the best way. This is only possible through the correct choice of his mechanical knee and his foot. We think the foot and the knee had to work together in order to offer a good performance. So, we suggest to always join a carbon fiber foot to our following knees. As for feet, also mechanical knees offer different performance for different K level people.

Our knees spread from a very safe low mobility locked knee, through polycentric knees with different trajectories, to high technology pneumatic and hydraulic devices.



Warranty: 36 months

Key Level I



**MODULAR SINGLE
AXIS KNEE JOINT
WITH LOCKING
UNIT**
Code 6.001.01



**SINGLE AXIS KNEE
JOINT WITH
FRICTION**
Code 6.001.03

Key Level 2



**POLYCENTRIC KNEE
JOINT COMPACT**
Code 6.002.01



**POLYCENTRIC KNEE
JOINT MEDIUM**
Code 6.002.02



**POLYCENTRIC
HYPERSTABLE KNEE
JOINT**
Code 6.002.04

Key Level 3



**POLYCENTRIC KNEE
JOINT WITH SPRING**
Code 6.002.02.SPRING



**POLYCENTRIC KNEE
JOINT WITH BLOCK**
Code 6.009.01



**POLYCENTRIC
PNEUMATIC KNEE JOINT**
Code 6.002.02.PN

Key Level 4



**ROADKNEE
HYDRAULIC
KNEE**
Code 6.003.07



**HYDRAULIC
KNEE JOINT
NK-6**
Code 6.003.03



**HYBRID
KNEE**
Code 6.006.01



SINGLE AXIS KNEE JOINT



Warranty: 36 months



SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

PROSTHETIC KNEE JOINT

Modular Single Axis Knee Joint With Locking Unit

Description

This kind of knee is designed for elderly people with reduced mobility. The block guarantees security while walking. It's possible to unlock it in order to be able to sit down..

This knee tested in according to ISO 10328.

Code 6.001.01

Characteristics	Unlocked, flexion angle 110°
Component Weight	355 g for Adult
Material	Aluminum Alloy + Stainless Steel (pyramid)
Maximum User Weight	130 Kg

Key Level I



Single Axis Knee Joint With Friction

Description

Suitable for young and old people, it offers safety, due to the friction system, and extension assisted due to springs.

This knee tested in according to ISO 10328.

Code 6.001.03 Aluminum Alloy

Code 6.001.03.SS Stainless Steel

Code 6.001.03.T Titanium

Characteristics	Flexion angle 140°
Component Weight	310 g Aluminum Alloy 485 g Stainless steel 376 g Titanium
Material	Stainless Steel - Titanium - Aluminium Alloy
Maximum User Weight	130 Kg

Code 6.001.03.A Components for single-axis friction knee



POLYCENTRIC KNEE JOINT

SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Warranty: 36 months



Polycentric knees allow users walk with outstanding safety: during INITIAL CONTACT phase the knee is locked in completely extension position. In order to support patients at best, suggesting the best knee for them, we had to know the behaviour of each knee considering the trajectory of his CIR (Instantaneous Rotation Center). As follow You can see the shadow of the CIR during a complete flexion of each knee compared to the load line.



1

CIR very high and close to the hip, low fatigue to start flexion.

2

CIR posterior to the load line.

3

CIR very close to the load line, good for voluntary control.

Thanks to the pyramidal adapter suitable in each knee, it's impossible to change the CIR position compared to the LOAD LINE in order to offer user more safety or more voluntary control.



POLYCENTRIC KNEE JOINT

Warranty: 36 months



SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Key Level 2



Polycentric Knee Joint Compact

Description

Polycentric Knee Joint Compact is specific for people approaching to walk with variable CIR (Center Instantaneous Rotation). Safety achieved due to polycentric mechanism. Studied geometry allows "prosthetic shortening" during the PUSH OFF phase avoid to stumble. Extension assisted and suitable for different walking speeds due to spring stiffness adjustment. **This knee tested in according to ISO 10328.**

Code 6.002.01

Characteristics Flexion angle 135°

Component Weight 590 g

Material Aluminum alloy

Maximum User Weight 130 Kg

Code 6.002.01.SS

Characteristics Flexion angle 135°

Component Weight 700 g

Material Stainless steel

Maximum User Weight 130 Kg

Code 6.002.01.T

Characteristics Flexion angle 135°

Component Weight 516 g

Material Titanium

Maximum User Weight 130 Kg



POLYCENTRIC KNEE JOINT

SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Warranty: 36 months



Key Level 2



Polycentric Knee Joint Medium

Description

Specific for people approaching to walk with variable CIR (Center Instantaneous Rotation) but need more voluntary control. Voluntary control achieved due to polycentric mechanism with a CIR trajectory very close to the load line. Studied geometry allows "prosthetic shortening" during PUSH OFF phase avoid to stumble. Extension assisted and suitable for different walking speed due to spring stiffness adjustment.

This knee tested in according to ISO 10328.

Code 6.002.02

Characteristics	Flexion angle 120°
Component Weight	450 g
Material	Aluminum alloy
Maximum User Weight	130 Kg



Polycentric Hyperstable Knee Joint

Description

Polycentric Knee Joint Hyperstable: specific for people approaching to walk with variable CIR (Center Instantaneous Rotation) but need additional more safety. Safety achieved due to polycentric mechanism with a CIR trajectory very posterior compared to the load line. Studied geometry allows "prosthetic shortening" during the PUSH OFF phase avoid to stumble. Extension assisted and suitable for different walking speeds due to spring stiffness adjustment.

This knee tested in according to ISO 10328.

Code 6.002.04

Characteristics	Flexion angle 165°
Component Weight	550 g
Material	Aluminum alloy
Maximum User Weight	130 Kg





Warranty: 36 months



SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

PROSTHETIC KNEE JOINT

Polycentric Knee Joint With Spring

Description

Polycentric Knee Joint With Spring: specific for people approaching to walk with variable CIR (Center Instantaneous Rotation) but need more voluntary control. Voluntary control achieved due to the polycentric mechanism with a CIR trajectory very close to the load line. Studied geometry allows "prosthetic shortening" during the PUSH OFF phase avoid to stumble. Extension assisted and suitable for different walking speeds due to spring stiffness adjustment. **This knee tested in according to ISO 10328.**

Code 6.002.02.SPRING – Stainless steel

Code 6.002.02.SPRING.T- Titanium

Characteristics	Flexion angle 120°
Component Weight	909 g/ 688 g
Material	Stainless Steel/Titanium
Maximum User Weight	130 Kg

Polycentric Knee Joint with block

Description

This knee tested in according to ISO 10328.

Code 6.009.01

Characteristics	Flexion angle 120°
Component Weight	915 g
Material	Stainless steel
Maximum User Weight	130 Kg

Polycentric Pneumatic Knee Joint

Description

Polycentric Pneumatic Knee Joint: specific for people approaching to walk with variable CIR (Center Instantaneous Rotation) but need pneumatic flexion and swing softness. Studied geometry allows "prosthetic shortening" during the PUSH OFF phase avoid to stumble. Extension and flexion completely assisted and customizable on each patient due to the 2 pneumatic valves. **This knee tested in according to ISO 10328.**

Code 6.002.02.PN

Characteristics	Flexion angle 150°
Component Weight	750 g
Material	Aluminum alloy
Maximum User Weight	130 Kg

Key Level 3



ROADKNEE HYDRAULIC KNEE

SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Warranty: 36 months



Key Level 4



Roadknee Hydraulic Knee Joint

Description

This hydraulic knee is specific for people with K level 4, high mobility level. It is possible to regulate during the dynamic alignment the response and the stiffness.

This knee tested in according to ISO 10328.

Code 6.003.07

Characteristics	Flexion angle 140°
Component Weight	1200 g
Material	Aluminium alloy + Stainless Steel + Carbon Fiber cover
Maximum User Weight	130 Kg





HYDRAULIC KNEE JOINT NK-6



Warranty: 36 months



SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

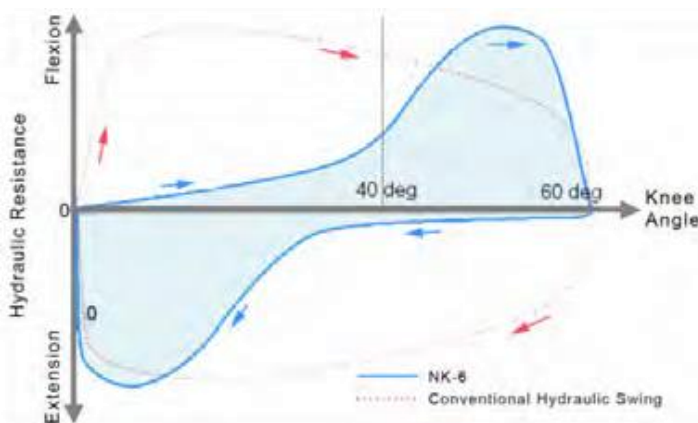
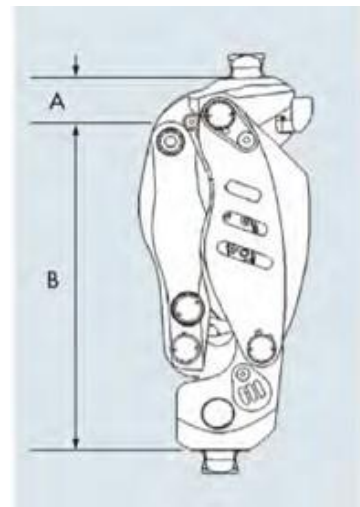
The NK-6 has a unique 6 bars polycentric structure, which provides great stability in the stance phase. An original mechanical sensing mechanism, the p-MRS system automatically detects the walking status and then controls the stability accordingly. The stance flexion feature and the smooth swing phase provided by a hydraulic cylinder promise comfortable walking to the user. Optional is a selective lock.

Key Level 4



Sensing Point

p-MRS system is an originally developed mechanical sensor utilizing a principle of the polycentric link system. This detects the position of the ground reaction force around the sensing point, and automatically control the knee's stability.



HYDRAULIC KNEE JOINT NK-6

SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Key Level 4



Warranty: 36 months



NK-6

NK-6+L

NK-6 SH

NK-6 SH +L

Code 6.003.01 Hydraulic Knee Joint NK-6	
Proximal Connections	Male pyramid adapter
Selective Lock	--
Total Length	197 mm
A ref measurements	14 mm
B ref measurements	156 mm
Component Weight	890 g
Max Knee Flexion	170°
Material	Titanium and aluminum
Maximum User Weight	125 kg
Code 6.003.02 Hydraulic Knee Joint NK-6 SH	
Proximal Connections	Screw Head
Selective Lock	--
Total Length	191 mm
A ref measurements	14.5 mm
B ref measurements	156 mm
Component Weight	930 g
Max Knee Flexion	170°
Material	Titanium and aluminum
Maximum User Weight	125 kg
Code 6.003.03 Hydraulic Knee Joint NK-6 +L	
Proximal Connections	Male pyramid adapter
Selective Lock	x
Total Length	197 mm
A ref measurements	14. mm
B ref measurements	156 mm
Component Weight	940 g
Max Knee Flexion	170°
Material	Titanium and aluminum
Maximum User Weight	125 kg
Code 6.003.04 Hydraulic Knee Joint NK-6 SH+L	
Proximal Connections	Screw head
Selective Lock	x
Total Length	191 mm
A ref measurements	14.5 mm
B ref measurements	156 mm
Component Weight	980 g
Max Knee Flexion	170°
Material	Titanium and aluminum
Maximum User Weight	125 kg





Warranty: 36 months



SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Key Level 4



Hybrid Knee

Description

Rotary Hydraulic Dampener functions reliably during the stance phase, allowing the knee to flex/yield at a controlled rate that is adjustable by the user. During the swing phase, the microprocessor controlled pneumatic cylinder functions to provide cadence responsive swing control. As weight is transmitted through the heel at heel strike the MRS system detects the ground reaction force which initiates the rotary hydraulic Dampener and produces resistance to flexion. This allows the knee to yield at a controlled rate. As the stance phase progresses and the weight passes through the toes, the MRS turns off the hydraulic resistance to allow the transition into the swing phase. A proximity sensor within the microprocessor detects the time taken for each walking cycle, using knee joint flexion data. The microprocessor then signals a stepping motor within the unit which in turn activates the needle valve of the pneumatic cylinder causing it to adjust to the patients walking speed.

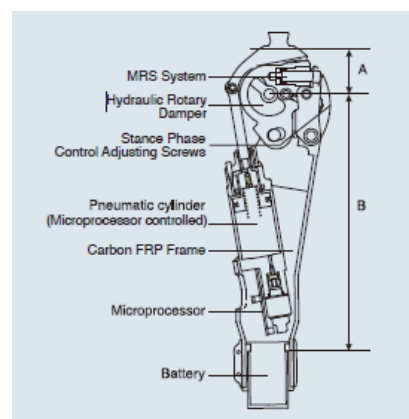
This knee tested in according to ISO 10328.

Code 6.006.01

Characteristics	Flexion angle 140°
Component Weight	1375 g
Material	Aluminium alloy + Stainless Steel + Carbon Fiber cover
Maximum User Weight	125 Kg

Code 6.005.03

Intelligent Knee Programming Unit



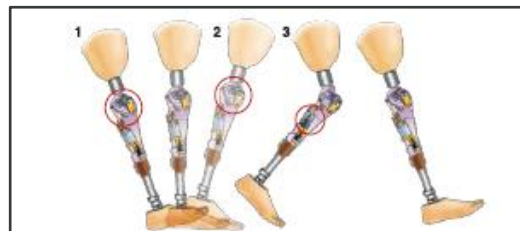
HYBRID KNEE JOINT

SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Key Level 4



Warranty: 36 months



HEEL STRIKE

Function: MRS system closes valves in the hydraulic damper, increasing hydraulic resistance and preventing knee from unexpected bending.

Benefits

- Independently adjusts for individual needs.
- Continuously Available stance control, even if battery is completely exhausted.

LATE STANCE

Function: MRS system opens valves in the hydraulic damper, reducing hydraulic resistance and enabling knee to bend smoothly.

Benefits

- Proportional response ; Sensing point and damping resistance are adjustable.
- Energy Efficient Yielding Function allows comfortable walking on uneven terrain.

SWING PHASE

Function: Microprocessor detects gait speed of wearer and automatically adjusts pneumatic pressure to match user's cadence.

Benefits

- No Overcompensation – Amputee has no need to swing residual limb strongly.
- Lower Resistance & Lighter Swing - Wearer is more comfortable and consumes less energy with each stride.





Warranty: 36 months



SINGLE AXIS KNEE JOINT
POLYCENTRIC KNEE JOINT
POLYCENTRIC K3 AND
PNEUMATIC KNEE JOINT
ROADKNEE HYDRAULIC KNEE
HYDRAULIC KNEE JOINT NK-6
HYBRID KNEE
KNEE JOINT FOR CHILDREN

Locked knee joint for children

Description

Locked knee joint for children is a prosthetic component used for above knee amputee. There is a locking system can be released to seat down. **This knee tested in according to ISO 10328.**

Code 6.001.01.K

Characteristics	flexion angle 145°
Component Weight	150 g
Material	Aluminum Alloy
Maximum User Weight	45 Kg



Key Level I



Single axis knee joint with friction for children

Description

Due to the friction system, and extension assisted due to springs. **This knee tested in according to ISO 10328.**

Code 6.001.03.K

Characteristics	flexion angle 145°
Component Weight	170 g
Material	Aluminum Alloy
Maximum User Weight	45 Kg



Key Level I



Polycentric knee joint compact for children

Description

Particular geometry that allows a minimum shortening of the prosthetic limb during the flexion phase, thus avoiding having to excessively shorten the prosthetic limb, compared to the healthy contralateral limb. Continuous adjustment of the swing phase through spring pre-compression. **This knee tested in according to ISO 10328.**

Code 6.002.01.K

Characteristics	flexion angle 175°
Component Weight	370 g
Material	Aluminum Alloy
Maximum User Weight	45 Kg



Key Level 2





HIP JOINT

PROSTHETIC HIP JOINT

HIP JOINT

HIP JOINT FOR CHILDREN

Warranty: 36 months



Hip Joint

Description

Hip joint is a prosthetic component suitable for users who have suffered a hip amputation.
It has 20 degree adjustment for rolling
Spring mechanism.
Lightweight.
Plate for pre-shaped lamination
This hip joint tested in according to ISO 10328.

Code 5.005.01

Characteristics	Flexion angle 115°
Component Weight	600 g
Material	Aluminum alloy, stainless steel, Carbon fiber frame
Maximum User Weight	100 Kg



Hip Joint for children

Description

Hip joint for children is a prosthetic component suitable for users who have suffered a hip amputation.
This hip joint tested in according to ISO 10328.

Code 5.005.01.K

Characteristics	Flexion angle 175°
Component Weight	550 g
Material	stainless steel
Maximum User Weight	75 Kg



THERMOFORMING SHEETS FOR SOCKET



THERMOFORMING SHEETS

General Properties				
	PetG	Stiff	Flexible	Extra Flexible
Density [g/cm ³]	1,27	1,01	0,95	0,95
Tensile Strenght [MPa]	50	21	25	10
Elongation at break [%]	200	250	350	800
Flexural/Tensile [MPa]	-	1150 (F)	350 (F)	30 (F)
Mod. Impact Resist. [kJ/m ²]	No Break	No Break	No Break	No Break
Hardness [Shore D]	-	68	65	33
Working Temperature [°C]	170	170	150	150



THERMOFORMING SHEETS
FOR SOCKET

T. SHEETS FOR
ORTHOSIS/CORSET

TH. SHEETS FOR ORTHOSIS

TH. SHEETS FOR
ORTHOSIS/BRACE/CORSET



Code	Category	Type	Description	Measures	Thickness
7.001.01.Th10	Socket sheet	Stiff	Stiff socket thermoforming sheet	400x400 mm	10 mm
7.001.01.Th12	Socket sheet	Stiff	Stiff socket thermoforming sheet	400x400 mm	12 mm
7.001.01.Th15	Socket sheet	Stiff	Stiff socket thermoforming sheet	400x400 mm	15 mm
7.001.02.Th6	Socket sheet	Soft	Flexible socket thermoforming sheet	400x400 mm	6 mm
7.001.02.Th9	Socket sheet	Soft	Flexible socket thermoforming sheet	400x400 mm	9 mm
7.001.02.Th12	Socket sheet	Soft	Flexible socket thermoforming sheet	400x400 mm	12 mm
7.001.03.Th9	Socket sheet	Extra Soft	Extra-Flexible socket thermoforming sheet	400x400 mm	9 mm
7.001.03.Th12	Socket sheet	Extra Soft	Extra-Flexible socket thermoforming sheet	400x400 mm	12 mm
7.001.03.Th15	Socket sheet	Extra Soft	Extra-Flexible socket thermoforming sheet	400x400 mm	15 mm
7.001.04.Th3	Socket sheet	PETG	Transparent sheet for temporary socket	400x400 mm	3 mm
7.001.04.Th4	Socket sheet	PETG	Transparent sheet for temporary socket	400x400 mm	4 mm
7.001.04.Th5	Socket sheet	PETG	Transparent sheet for temporary socket	400x400 mm	5 mm
7.001.04.Th6	Socket sheet	PETG	Transparent sheet for temporary socket	400x400 mm	6 mm
7.001.04.Th8	Socket sheet	PETG	Transparent sheet for temporary socket	400x400 mm	8 mm
7.001.04.Th10	Socket sheet	PETG	Transparent sheet for temporary socket	400x400 mm	10 mm



THERMOFORMING SHEETS
FOR SOCKETT. SHEETS FOR ORTHOSIS/
CORSET

TH. SHEETS FOR ORTHOSIS

TH. SHEETS FOR ORTHOSIS/
BRACE/CORSET

General Properties

	Value
Specific weight [g/cm ³]	0,995
Elastic strength [N/mm ²]	22
Elastic deformation [%]	10
Deformation at break [%]	> 50
Elastic Modulus [N/mm ²]	800
Hardness [Shore D]	63
Crystallization temperature [°C]	135
Linear expansion coeff. [1/K]	1,5-2,3x10 ⁻⁴
Heat conduction [W/mK]	0,4
Temperature range (short range) [°C]	-50/100
Temperature range [°C]	-50/80

PE ORTHO HD HIGH DENSITY

Homopolymer of high density polyethylene. The material is approved for orthopedic use, in particular to realize corsets. It has a good flexibility, good elongation at break and high impact strength. It has good resistance to chemical agents and it's easy to work.

Thermoforming Sheets for Orthosis/ Corset

Code	Category	Color	Description	Measures	Thickness
7.002.01.Th6	Orthosis	white	PE HD 300	400x400 mm	6 mm
7.002.01.Th8	Orthosis	white	PE HD 300	400x400 mm	8 mm
7.002.01.Th10	Orthosis	white	PE HD 300	400x400 mm	10 mm
7.002.01.Th12	Orthosis	white	PE HD 300	400x400 mm	12 mm
7.002.01.Th8.black	Orthosis	black	PE HD 300	400x400 mm	8 mm
7.002.01.Th10.black	Orthosis	black	PE HD 300	400x400 mm	10 mm
7.002.02.Th2	Orthosis and corset	white	PE HD 300	1000x2000 mm	2 mm
7.002.02.Th3	Orthosis and corset	white	PE HD 300	1000x2000 mm	3 mm
7.002.02.Th4	Orthosis and corset	white	PE HD 300	1000x2000 mm	4 mm
7.002.02.Th5	Orthosis and corset	white	PE HD 300	1000x2000 mm	5 mm
7.002.02.Th6	Orthosis and corset	white	PE HD 300	1000x2000 mm	6 mm
7.002.02.Th8	Orthosis and corset	white	PE HD 300	1000x2000 mm	8 mm
7.007.01.Th2	Orthosis and corset	white	PE HD orthopedic	2000x1000 mm	2 mm
7.007.01.Th3	Orthosis and corset	white	PE HD orthopedic	2000x1000 mm	3 mm
7.007.01.Th4	Orthosis and corset	white	PE HD orthopedic	2000x1000 mm	4 mm
7.007.01.Th5	Orthosis and corset	white	PE HD orthopedic	2000x1000 mm	5 mm





General Properties	
	Value
Specific weight [g/cm ³]	0,905
Elastic strength [N/mm ²]	32
Elastic deformation [%]	8
Deformation at break [%]	> 50
Elastic Modulus [N/mm ²]	1300
Hardness [Shore D]	72
Crystallization temperature [°C]	162-167
Linear expansion coeff. [1/K]	1,0-2,0x10 ⁻⁴
Heat conduction [W/mK]	0,2
Temperature range (short range) [°C]	0/150
Temperature range [°C]	0/100

THERMOFORMING SHEETS
FOR SOCKET

T. SHEETS FOR ORTHOSIS/
CORSET

TH. SHEETS FOR ORTHOSIS

TH. SHEETS FOR ORTHOSIS
BRACE/CORSET



PP HOMOPOLIMER

Homopolimer of high density polypropylene. The material is approved for orthopedic use. It's more elastic than polyethylene and working temperature are higher.

Thermoforming Sheets For Orthosis					
Code	Category	Color	Description	Measures	Thickness
7.005.01.Th8	Orthosis	white	Natural PP	400x400 mm	8 mm
7.005.01.Th10	Orthosis	white	Natural PP	400x400 mm	10 mm
7.005.01.Th12	Orthosis	white	Natural PP	400x400 mm	12 mm
7.005.02.Th3	Orthosis	white	Natural PP	1000x2000 mm	3 mm
7.005.02.Th4	Orthosis	white	Natural PP	1000x2000 mm	4 mm
7.005.02.Th5	Orthosis	white	Natural PP	1000x2000 mm	5 mm
7.005.02.Th3.BR	Orthosis	brown	Natural PP	1000x2000 mm	3 mm
7.005.02.Th4.BR	Orthosis	brown	Natural PP	1000x2000 mm	4 mm
7.005.02.Th5.BR	Orthosis	brown	Natural PP	1000x2000 mm	5 mm
7.005.03.Th3	Orthosis	grey	Natural PP	1000x2000 mm	3 mm
7.005.03.Th4	Orthosis	grey	Natural PP	1000x2000 mm	4 mm
7.005.03.Th5	Orthosis	grey	Natural PP	1000x2000 mm	5 mm
7.005.03.Th10	Orthosis	grey	Natural PP	1000x2000 mm	10 mm
7.008.01.Th2	Orthosis	white	PP homopolymer	2000x1000 mm	2 mm
7.008.01.Th3	Orthosis	white	PP homopolymer	2000x1000 mm	3 mm
7.008.01.Th4	Orthosis	white	PP homopolymer	2000x1000 mm	4 mm
7.008.01.Th5	Orthosis	white	PP homopolymer	2000x1000 mm	5 mm





THERMOFORMING SHEETS FOR ORTHOSIS/BRACE/CORSET

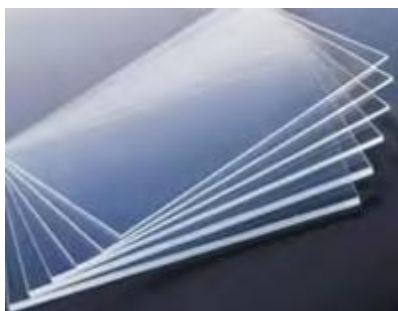
THERMOFORMING SHEET

THERMOFORMING SHEETS
FOR SOCKET

T. SHEETS FOR ORTHOSIS/
CORSET

TH. SHEETS FOR ORTHOSIS

TH. SHEETS FOR ORTHOSIS/
BRACE/CORSET



General Properties	
	Value
Density [g/cm ³]	127
Tensile Strength [MPa]	50
Elongation at break [%]	> 100
Flexural/Tensile [MPa]	-
Modulus Impact Resistance [kJ/m ²]	No
Hardness [Shore]	Break
Working Temperature [°C]	60

PETG transparent

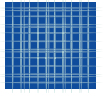
Polyethylene terephthalate glycol-modified is approved for orthosis, brace, and corset.



Thermoforming Sheets For Orthosis, Brace and Corset

Code	Category	Description	Measures	Thickness
7.006.01.Th3	Orthosis, brace and corset	PETG transparent	1000x2000 mm	3 mm
7.006.01.Th4	Orthosis, brace and corset	PETG transparent	1000x2000 mm	4 mm
7.006.01.Th5	Orthosis, brace and corset	PETG transparent	1000x2000 mm	5 mm
7.006.01.Th8	Orthosis, brace and corset	PETG transparent	1000x2000 mm	8 mm
7.006.01.Th10	Orthosis, brace and corset	PETG transparent	1000x2000 mm	10 mm





For applications where more than one fibre orientation is required, a fabric combining 0° and 90° fibre orientations is useful. Woven fabrics are produced by the interlacing of warp (0°) fibres and weft (90°) fibres in a regular pattern or weave style. The fabric's integrity is maintained by the mechanical interlocking of the fibres. Drape (the ability of a fabric to conform to a complex surface), surface smoothness and stability of a fabric are controlled primarily by the weave style.

Each warp fibre passes alternately under and over each weft fibre. The fabric is symmetrical, with good stability and reasonable porosity. However, it is the most difficult of the weaves to drape, and the high level of fibre crimp imparts relatively low mechanical properties compared with the other weave styles. With large fibres (high tex) this weave style gives excessive crimp and therefore it tends not to be used for very heavy fabrics.

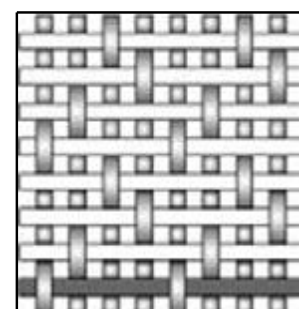
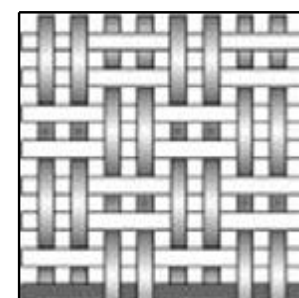
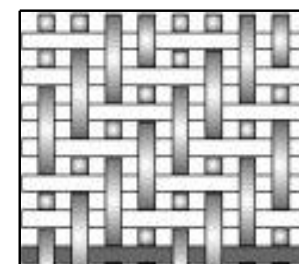
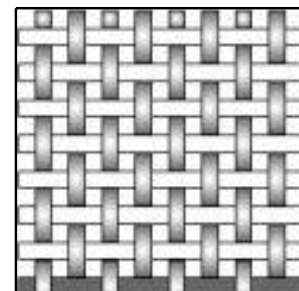
One or more warp fibres alternately weave over and under two or more weft fibres in a regular repeated manner. This produces the visual effect of a straight or broken diagonal rib to the fabric. Superior wet out and drape is seen in the twill weave over the plain weave with only a small reduction in stability. With reduced crimp, the fabric also has a smoother surface and slightly higher mechanical properties.

Basket weave is fundamentally the same as plain weave except that two or more warp fibres alternately interlace with two or more weft fibres. An arrangement of two warps crossing two wefts is designated 2x2 basket, but the arrangement of fibre need not be symmetrical. Therefore it is possible to have 8x2, 5x4, etc. Basket weave is flatter, and, through less crimp, stronger than a plain weave, but less stable. It must be used on heavy weight fabrics made with thick (high tex) fibres to avoid excessive crimping.

Satin weaves are fundamentally twill weaves modified to produce fewer intersections of warp and weft. The harness number used in the designation (typically 4, 5 and 8) is the total number of fibres crossed and passed under, before the fibre repeats the pattern. A crow'sfoot weave is a form of satin weave with a different stagger in the repeat pattern. Satin weaves are very flat, have good wet out and a high degree of drape. The low crimp gives good mechanical properties. Satin weaves allow fibres to be woven in the closest proximity and can produce fabrics with a close tight weave. The asymmetry causes one face of the fabric to have fibre running predominantly in the warp direction while the other face has fibres running predominantly in the weft direction.

CARBON FIBER TEXTILE

GLASS FIBER , KEVLAR AND HYBRID TEXTILE





CARBON FIBER TEXTILE

CARBON FIBER TEXTILE

GLASS FIBER ,
KEVLAR AND HYBRID
TEXTILE

Mechanical Properties of T300 3K

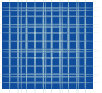
	Value
Tensile Strenght [MPa]	360
Tensile Modulus [MPa]	23,5
Elongation at break [%]	1,50
Density [g/cm ³]	1,76
Yield [tex]	198
Specific Heat [cal/g °C]	0,19
Volume Resistivity [ohm cm]	1,7 x 10 ⁻³



Carbon Fiber Braided Sleeves

Code	Diameter
8.001.01.D25	25 mm
8.001.01.D60	60 mm
8.001.01.D80	80 mm
8.001.01.D95	95 mm
8.001.01.D100	100 mm
8.001.01.D130	130 mm
8.001.01.D150	150 mm
8.001.01.D180	180 mm
8.001.01.D200	200 mm
8.001.01.D250	250 mm





CARBON FIBER TEXTILE

GLASS FIBER ,
KEVLAR AND HYBRID
TEXTILE

Carbon Fiber Textile C201 Properties

	Typical Value	Standard
Weight [g/cm2]	194 4%	UNI EN 12127
Thickness [μm]	250 15%	UNI EN ISO 5084
Counts [threads/cm]		
Warp	4.9 0.3	UNI EN 1049-2
Weft	4.9 0.3	
Tensile Strenght [MPa]		
Warp	N/A	UNI EN 13934-1
Weft	N/A	

Carbon Fiber Textile C206 Properties

	Typical Value	Standard
Weight [g/cm2]	200 4%	UNI EN 12127
Thickness [μm]	450 15%	UNI EN ISO 5084
Counts [threads/cm]		
Warp	1.25 0.3	UNI EN 1049-2
Weft	1.25 0.3	
Tensile Strenght [MPa]		
Warp	N/A	UNI EN 13934-1
Weft	N/A	

Carbon Fiber Textile and Band

Code	Description
8.001.02.C201	Textile C201
8.001.02.C206	Textile C206
8.001.03.BCF50	Band TC 420 H 50 mm
8.001.03.BCF100	Band TC 420 H100 mm

Carbon Fiber Thermoformable Laminate

Code	Description
LAM.TERM.CF.01	3D Form 1000 x 600 x 0,5 mm
LAM.TERM.CF.04	3D Form 1000 x 600 x 0,7 mm

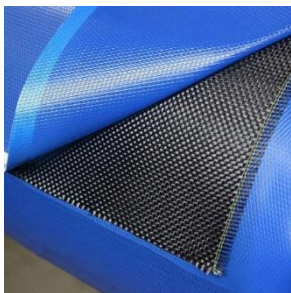




CARBON FIBER TEXTILE

CARBON FIBER TEXTILE

GLASS FIBER ,
KEVLAR AND HYBRID
TEXTILE



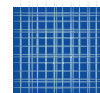
Pre-preg is a term for “pre-impregnated” composite fibers where a matrix material, such as epoxy, is already present. The fibers often take the form of a weave and the matrix is used to bond them together and to other components during manufacture. The matrix is only partially cured to allow easy handling; this is called B-Stage material and requires cold storage to prevent complete curing. B-Stage pre-preg is always stored in cooled areas since heat accelerates complete polymerization. Hence, composite structures built of pre-pregs will mostly require an oven or autoclave to cure.

The use of PREPREG is a big advantage for the production because it is possible to have the same ratio/percentage between resin and fibers in the prepreg, easy to laminate and more efficient control of the properties of the composite reliability and homogeneity of the laminate and process repeatability.

Carbon Fiber Textile PC206		Prepreg CBX (± 45°)		
Weave Style	Twill 2x2	Code	8.001.02.PCBX400	8.001.02.PCBX600
Fiber Orientation	0° / 90°	Material	100% carbon	100% carbon
Width	1 m	Total weight [g/m ²]	400	600
Warp Fiber	High strength carbon T700 12K - 8000 dtex (or equivalent)	Standard width [mm]	1270	1270
Weft Fiber	High strength carbon T700 12K - 8000 dtex (or equivalent)	Dry thickness [mm]	0,45±15%	0,6±15%
		Fiber orientation	±45°	±45°
		Weight [g/m ²]	200	300
		Fiber type	Carbon 12K T700 FC50C	compatible with epoxy an polyester resin

PREPREG	
Code	Description
8.001.02.M30SC	Texipreg unidir M30SC-200-DT120-36EF H 600 mm
8.001.02.PC202	Prepreg CC202 ET223
8.001.02.PC206	Prepreg CC206 ER440
8.001.02.PCBX400	Prepreg CBX400
8.001.02.PCBX600	Prepreg CBX600
8.001.02.PCHS180	Texipreg unidir. HS 180 prepreg H 600 mm
8.001.02.S2540	Texipreg unidir S2 540 g/m





CARBON FIBER TEXTILE

GLASS FIBER , KEVLAR AND HYBRID TEXTILE

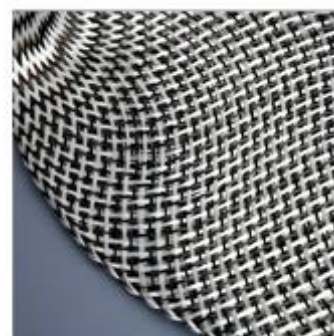
Glass Fiber braided sleeves, textile and band

Code	Description	Length
8.002.01.D80	Glass fiber braided sleeves	80 mm – 154 g/mq
8.002.01.D100	Glass fiber braided sleeves	100 mm - 123 g/mq
8.002.01.D110	Glass fiber braided sleeves	110 mm - 80 g/mq
8.002.01.D120	Glass fiber braided sleeves	120 mm - 124 g/mq
8.002.02.GF50	Textile glass fiber 50 g/m 0 /90 H 1 m	
8.002.02.GF100	Textile glass fiber 100 g/m 0 /90 H 1 m	
8.002.02.GF130	Textile glass fiber 130 g/m 0 /90 H 1 m	
8.002.03.GF165	Textile glass fiber 165 g/m 0 /90 H 1 m	
8.002.03.GF200	Textile glass fiber 200 g/m 0 /90 H 1 m	
8.002.02.GF300	Textile glass fiber 300 g/m 0 /90 H 1 m	
8.002.03.BGF30	Glass fiber band h.30 mm	
8.002.03.BGF50	Glass fiber band h.50 mm	
8.002.03.BGF70	Glass fiber band h.70 mm	
8.002.03.BGF100	Glass fiber band h.100 mm	



Hybrid Fiber Sleeves

Code	Description
8.003.01.D80	Hybrid (carbon-glass) fiber braided sleeves d80-80g
8.003.02.D90	Hybrid (carbon-glass) fiber braided sleeves d90-76g
8.003.03.D110	Hybrid (carbon-glass) fiber braided sleeves d110-90,7g
8.003.04.D130	Hybrid (carbon-glass) fiber braided sleeves d130-80g
8.003.05.D180	Hybrid (carbon-glass) fiber braided sleeves d180-83g



Glass and Carbon Fiber Thermoformable Laminate

Code	Description
LAM.TERM.CF.02	3D Form 1000 x 600 x 1,5 mm
LAM.TERM.CF.03	3D Form 1000 x 600 x 2,1 mm

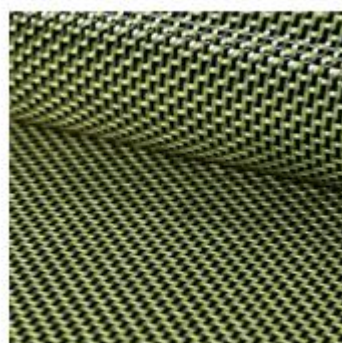




GLASS FIBER, KEVLAR AND HYBRID TEXTILE

CARBON FIBER TEXTILE

GLASS FIBER , KEVLAR AND HYBRID TEXTILE



Kevlar Properties

	Typical Value	Standard
Weight [g/m2]	387 4%	UNI 51114
Thickness [μm]	350 15%	UNI EN ISO 5084
Counts [threads/cm]		
Warp	4.6 0.3	UNI EN 1049-2
Weft	6.1 0.3	
Tensile Strenght [MPa]		
Warp	N/A	UNI EN 13934-1
Weft	N/A	

Kevlar braided sleeves, textile and band

Code	Description
8.004.01.D100	Kevlar fiber braided sleeves d100-77g/mq
8.004.01.D110	Kevlar fiber braided sleeves d110-78g/mq
8.004.01.D130	Kevlar fiber braided sleeves d130-80g/mq
8.004.01.D190	kevlar fiber braided sleeves d190-140g/mq
8.004.02.K170	Textile kevlar k170/d H 1 m
8.004.03.BK30	kevlar fiber band H 30 mm
8.004.03.BK50	kevlar fiber band H 50 mm
8.004.03.BK100	kevlar fiber band H 100 mm

Hybrid braided and Textile carbon-kevlar

Code	Description
8.004.04.CK100	Hybrid carbon-kevlar braided sleeves d100 mm
8.005.01	Textile Carbon-Kevlar 190 g/mq h.1 mt



This resin is clear with a light blue reflex and a low tendency to turn yellow. Suggested to cold stratifications with glass, carbon fiber, and Kevlar allows to achieve high-quality laminates with high mechanical properties, rigidity, and impact resistance.

The distortion point is close to 70 C.

This kind of resin is highly versatile and easy to use: low viscosity and good wet properties of fibers promote impregnation. Light tissue laminates are transparent with bright and not greasy surfaces. The hardening process can be accelerated using heat; moreover, a post-cooking at 40 C gives the laminates better properties.

EPOXY RESIN
ACRYLIC AND PLASTIC RESIN
POLYURETHANE AND POLYESTER
SILICONE
PVA BAGS
CELLACAST
OTHER RESINS
PERLON, NYLON AND NYGLASS



Epoxy Resin		
Code	Description	Weight
9.001.01	Epoxy resin E227 -Comp. A&B	10 kg
9.001.02.KG1	Araldite resin	1 kg
9.001.02.KG5	Araldite resin	5 kg
9.001.02.H1	Hardener Araldite	1 kg
9.001.02.H5	Hardener Araldite	200 g
9.001.03.DUR7001	Epoxy resin Duraloid 7001 A+B	1 kg
9.001.03.DUR30	Epoxy resin Duraloid Al30 Transparent A+B	1 kg



ACRYLIC AND PLASTISCH RESIN

EPOXY RESIN
ACRYLIC AND PLASTISCH RESIN
POLYURETHANE AND POLYESTER
SILICONE
PVA BAGS
CELLACAST
OTHER RESINS
PERLON, NYLON AND NYGLASS



Sealing acrylic resin. In addition to rolling, it is used, for example, for acrylic bonding, for wood, and for polyurethane.

Directions for use:

For use, add to the resin 1-3% of the hardening agent in paste or powder.

Acrylic Resin		
Code	Description	Weight
9.002.01.LH.25	Acrylic resin Laminienharz	25 kg
9.002.01.LH.4	Acrylic resin Laminienharz	4,6 kg
9.002.01.LH.09	Acrylic resin Laminienharz	900 g
9.002.01.SH.25	Acrylic resin Siegelharz	25 kg
9.002.01.SH.4	Acrylic resin Siegelharz	4,6 kg
9.002.01.SH.09	Acrylic resin Siegelharz	900 g
9.002.01.CH.25	Acrylic resin Carbonharz	25 kg
9.002.01.CH.4	Acrylic resin Carbonharz	4,6 kg
9.002.01.CH.09	Acrylic resin Carbonharz	900 g
9.002.01.PLAST900g	Plastisch Resin	900 g
9.002.01.PLAST4,6kg	Plastisch Resin	4,6 kg
9.002.02.HW50	Hardener paste white color	50 g
9.002.02.HW200	Hardener paste white color	200 g
9.002.02.HW500	Hardener paste white color	500 g
9.002.02.HR50	Hardener paste red color	50 g
9.002.02.HR200	Hardener paste red color	200 g
9.002.02.HR500	Hardener paste red color	500 g
9.002.02.HP03	Hardener pulver	30 g
9.002.02.HP150	Hardener pulver	150 g
9.002.02.HP500	Hardener pulver	500 g
9.002.02.HP15	Hardener pulver	15 kg
9.002.02.HP25	Hardener pulver	25 kg
9.010.04.FL200	Pigment paste flash color	200 g
9.010.05	Pigment paste brown color	150 g





Polyurethane resin

The two-component foam used for modeling and for the production of rigid parts for cosmetic prostheses.

Indications for use:

To use, mix the 2 parts (part A and part B) in a 1: 1 ratio.

The mixture must therefore contain the same quantities of the two components.

EPOXY RESIN

ACRYLIC AND PLASTISCH RESIN

POLYURETHANE AND POLYESTER

SILICONE

PVA BAGS

CELLACAST

OTHER RESINS

PERLON,NYLON AND NYGLASS

Polyester resin

The resin used in order to reinforced fiber parts.

Indication for use:

to use with a 3% hardener pulver.

Polyurethane and Polyester resin		
Code	Description	Weight
9.003.01.EXP200	Expanded PU resin 200 A+B	4,6 kg
9.003.01.EXP300	Expanded PU resin 300 A+B	4,6 kg
9.003.01.EXP500	Expanded PU resin 500 A+B	4,6 kg
9.003.02	Abformer duplication resin A+B	1,4 kg
9.004.01	Polyester resin	1 kg



SILICONE

EPOXY RESIN
 ACRYLIC AND PLASTIC RESIN
 POLYURETHANE AND POLYESTER
 SILICONE
 PVA BAGS
 CELLACAST
 OTHER RESINS
 PERLON, NYLON AND NYGLASS



Silicone		
Code	Description	Weight
9.005.01	RTV Silbione 4428 (silicone cover)	1 kg
9.005.02	Siliconic pigment flesh tone	3,6 kg
9.005.03	Release agent siliconice spray	200 ml
9.005.04	Kit Dragon Skin 20	0,9 kg





PVA (polyvinyl alcohol) film has the property that it is under the influence of moisture and extremely flexible while drying can shrink up to the original measure.

It also has excellent release properties against the most common laminating resins and is insensitive to organic solvents and heat. It is used in the lamination in tubular form as a release film.

EPOXY RESIN
ACRYLIC AND PLASTISCH RESIN
POLYURETHANE AND POLYESTER
SILICONE
PVA BAGS
CELLACAST
OTHER RESINS
PERLON,NYLON AND NYGLASS



PVA Bags and roll					
Code	Description	Type	Diameter	Length	Quantity
9.007.D10	Lamination PVA Bags	BK	10 cm	100 cm	pack 20 pcs
9.007.D15	Lamination PVA Bags	BK	15 cm	100 cm	pack 20 pcs
9.007.D20	Lamination PVA Bags	AK	20 cm	100 cm	pack 20 pcs
9.007.D25	Lamination PVA Bags	AK	25 cm	100 cm	pack 20 pcs
9.007.D30	Lamination PVA Bags	AK	30 cm	100 cm	pack 20 pcs
9.007.D35	Lamination PVA Bags	AK	35 cm	100 cm	pack 20 pcs
9.008.D20	Lamination PVA Bags	KAFO	20 cm	130 cm	pack 10 pcs
9.008.D25	Lamination PVA Bags	KAFO	25 cm	130 cm	pack 10 pcs
9.009.D10	Lamination PVA Bags	Upper limb	10 cm	77 cm	pack 10 pcs
9.009.01	PVA ROLL	-	-	130 x 3 m	roll



CELLACAST

EPOXY RESIN
 ACRYLIC AND PLASTISCH RESIN
 POLYURETHANE AND POLYESTER
 SILICONE
 PVA BAGS
 CELLACAST
 OTHER RESINS
 PERLON,NYLON AND NYGLASS



Thin, light, and stable: as a modern synthetic support bandage, Cellacast guarantees secure stabilization. It consists of a rigid fiberglass backing and is used for immobilization after fractures, surgery, and orthopedic corrections. In addition, it is suitable for the treatment of joint and bone diseases and as a splint to strengthen circular bandages.

Reinforce structural bandages cellacast

Code	Description
9.006.01.H10	Reinforce structural bandages cellacast H 10 cm
9.006.01.H7,5	Reinforce structural bandages cellacast H 7,5 cm
9.006.01.H5	Reinforce structural bandages cellacast H 5 cm





EPOXY RESIN
ACRYLIC AND PLASTISCH RESIN
POLYURETHANE AND POLYESTER
SILICONE
PVA BAGS
CELLACAST
OTHER RESINS
PERLON, NYLON AND NYGLASS

Other Resins	
Code	Description
4.005.23	Urethane 40 - 0,9 kg
4.005.24	Urethane 40 - 7,2 kg
4.005.25	Urethane 40 - 18,2x2 kg
4.005.26	Urethane 50 - 18,2x2 kg
4.005.27	Urethane 90 - 18,2x2 kg
4.005.28	Rigid foam 0,9 kg
4.005.29	Rigid foam 7,2 kg
4.005.30	Rigid foam 18, 14x3 kg
4.005.31	Flexible foam standard 0,86 kg
4.005.32	Flexible foam standard 6,81 kg
4.005.33	Flexible foam slow 0,86 kg
4.005.34	Flexible foam slow 6,81 kg
4.005.35	Dispensing gun
4.005.36	Brush on 40 0,81 kg
4.005.37	Brush on 40 8,17 kg
4.005.38	Brush on 50 8,17 kg
4.005.39	Smooth cast 300 0,86 kg
4.005.40	Smooth cast 300 6,99 kg



PERLON, NYLON AND NYGLASS

EPOXY RESIN
ACRYLIC AND PLASTISCH RESIN
POLYURETHANE AND POLYESTER
SILICONE
PVA BAGS
CELLACAST
OTHER RESINS
PERLON,NYLON AND NYGLASS



Perlon

Code	Description	Diameter	Weight
8.006.01.D60	Perlon stockinette	60 mm	1 kg
8.006.01.D80.KG0.5	Perlon stockinette	80 mm	0,5 kg
8.006.01.D80	Perlon stockinette	80 mm	1 kg
8.006.01.D100	Perlon stockinette	100 mm	1 kg
8.006.01.D120	Perlon stockinette	120 mm	1 kg
8.006.01.D140	Perlon stockinette	140 mm	1 kg
8.006.01.D150	Perlon stockinette	150 mm	1 kg
8.006.01.D200	Perlon stockinette	200 mm	1 kg
8.006.01.D300	Perlon stockinette	300 mm	1 kg

Nylon

Code	Description	Diameter	Weight
8.007.01.D60	Nylon stockinette	60 mm	1 kg
8.007.01.D80	Nylon stockinette	80 mm	1 kg
8.007.01.D100	Nylon stockinette	100 mm	1 kg
8.007.01.D125	Nylon stockinette	125 mm	1 kg
8.007.01.D150	Nylon stockinette	150 mm	1 kg
8.007.01.D180	Nylon stockinette	180 mm	1 kg
8.007.01.D200	Nylon stockinette	200 mm	1 kg

Nyglass

Code	Description	Diameter	Weight
8.008.01.D60	Nyglass stockinette	60 mm	1 kg
8.008.01.D80	Nyglass stockinette	80 mm	1 kg
8.008.01.D100	Nyglass stockinette	100 mm	1 kg
8.008.01.D120	Nyglass stockinette	120 mm	1 kg
8.008.01.D150	Nyglass stockinette	150 mm	1 kg
8.008.01.D200	Nyglass stockinette	200 mm	1 kg
8.008.01.D250	Nyglass stockinette	250 mm	1 kg





PLASTER

CHALK BANDAGES

GYPSUM

Plaster			
Code	Type	Weight	Quantity
10.001.01.PG	Very hard	25 kg	60 bags
10.001.01.PGS	Hard (Scagliola)	25 kg	50 bags
10.001.01.PGA	Medium (alabatrino)	5 kg	143 bags





CHALK BANDAGES

GYPSUM

PLASTER

CHALK BANDAGES



Chalk bandages		
Code	Roll N.	Dimensions
10.002.01.H10	80	10 cm x 2 m
10.002.01.H12	50	12 cm x 2 m
10.002.01.H15	60	15 cm x 2 m
10.002.01.H20	40	20 cm x 2 m
10.002.02.H10	60	10 cm x 3 m
10.002.02.H12	50	12 cm x 3 m
10.002.02.H15	40	15 cm x 3 m
10.002.02.H20	30	20 cm x 3 m
10.002.03.H10	40	10 cm x 4 m
10.002.03.H12	32	12 cm x 4 m



Plastazote and evazote are thermoplastic expanded materials widely used in clinical environment in contact with the skin. Evazote is more resistant and elastic. They are pure and inert, with no residuum after expansion and a structure with uniform cellular walls. No layex contained, they are hypoallergenic and not toxic. These materials are expanded with no moulds and have low deformation tendency during conversion. They can be easily transformed into final products, even with complex form. They are suitable for thermo moulding process, both com- pressing and vacuum. It's possible to divide, to mill, to cut with water-jet, to butt weld them. Safe and no toxic, light and lasting, close cellular structure, waterproof, excellent chemical resistance, different densities, excellent thermal insulation, purity and meager odor, high resistance to lotions or creams, easy to modelingf, transparent to MNR and CAT.

PLASTAZOTE

LEATHERS AND RUBBER

EVA FOAM



Plastazote				
Code	Low Density	Color	Thickness	Measures
11.001.01.Th2	LD33	white	2 mm	1000x2000 mm
11.001.01.Th3	LD33	white	3 mm	1000x2000 mm
11.001.01.Th5	LD33	white	5 mm	1000x2000 mm
11.001.01.Th8	LD33	white	8 mm	1000x2000 mm
11.001.01.Th10	LD33	white	10 mm	1000x2000 mm
11.001.01.Th15	LD33	white	15 mm	1000x2000 mm
11.001.01.Th20	LD33	white	20 mm	1000x2000 mm
11.001.01.Th25	LD33	white	25 mm	1000x2000 mm
11.001.02.Th2	LD45	skin	2 mm	1000x2000 mm
11.001.02.Th3	LD45	skin	3 mm	1000x2000 mm
11.001.02.Th5	LD45	skin	5 mm	1000x2000 mm
11.001.02.Th8	LD45	skin	8 mm	1000x2000 mm
11.001.02.Th10	LD45	skin	10 mm	1000x2000 mm
11.001.02.Th15	LD45	skin	15 mm	1000x2000 mm
11.001.02.Th20	LD45	skin	20 mm	1000x2000 mm
11.001.02.Th25	LD45	skin	25 mm	1000x2000 mm
11.001.02.Th3B	LD33	blue	3 mm	1000x2000 mm
11.001.02.Th5B	LD33	blue	5 mm	1000x2000 mm





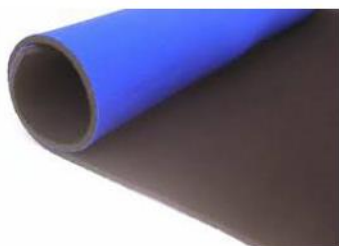
LEATHERS AND RUBBER

PLASTAZOTE

LEATHERS AND RUBBER

EVA FOAM

Leathers, rubber and Neoprene used to cover prosthesis socket and orthosis.



Leather and Neoprene

Code	Description	Color
12.001.01	aniline calf lining slaughter	beige
12.001.02	italian Calf slaughter lining	brown
12.002.01	Aniline Cromflex goat lining mol	beige
12.002.02	aniline kid CTO	brown
12.002.03	aniline cromflex goat	
12.002.04	goat lining	malaga
12.002.05	IRAN goat lining big size	rosè
16.001.01	Double-lined Neoprene 2100x1100x3 mm	blue/black
16.001.02	Double-lined Neoprene 500x500x3 mm	blue/black

Rubber sheet 75 Shore A 1,5 Kg/dmc

Code	Thickness	Color
12.003.01	2 mm	black
12.003.03	4 mm	black
12.003.04	5 mm	black
12.003.10	12 mm	black
12.003.11	15 mm	black



Polyethylene foam sheets: it is used to make particularly flexible and elastic products



PLASTAZOTE

LEATHERS AND RUBBER

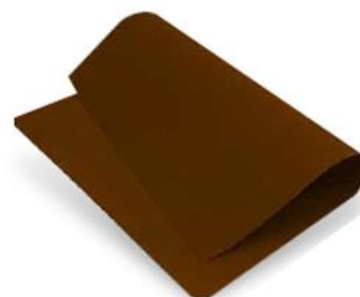
EVA FOAM

PLASTAZOTE, LEATHERS AND EVA FOAM

EVA Foam 200 Kg/mc			
Code	Color	Thickness	Measures
14.001.01	skin	5 mm	500x500 mm
14.002.01.Th3	beige	3 mm	1900 1000 mm
14.002.01.Th5	beige	5 mm	1900 1000 mm
14.002.01.Th6	beige	6 mm	1900 1000 mm
14.002.01.Th10	beige	10 mm	1900 1000 mm
14.002.01.Th12	beige	12 mm	1900 1000 mm



EVA Foam 170 Kg/mc			
Code	Color	Thickness	Measures
14.003.01.Th3.BR	brown	3 mm	500x500 mm
14.003.01.Th6.BR	brown	6 mm	500x500 mm
14.003.01.Th10.BR	brown	10 mm	500x500 mm
14.003.01.Th12.BR	brown	12 mm	500x500 mm



EVA Foam			
Code	Color	Measures	Description
14.001.04. BLACK	black	900 x 1800 x 12 mm	EVA foam 240 kg/mc
14.004.01	green	1100 x 900 x 5 mm	EVA Foam shore A 35
14.004.02	beige	800 x 780 x 4 mm	EVA Foam shore A 30
14.004.03	white	950 x 850 x 5 mm	EVA Foam shore A 45
14.004.04	Beige	700 x 1000 x 6 mm	EVA Foam Orthocontact 10
14.004.05	beige	600 x 900 x 8 mm	EVA Foam Orthocontact 20





COTTON STUMP STOCKINETTE

STUMP STOCKINETTE, BANDAGES AND SOCKS

COTTON STUMP STOCKINETTE

STUMP SOCKS

STUMP ELASTIC BANDAGES



Cotton Stockinette

Code	Width	Weight
13.002.01.H60	60 mm	1 kg
13.002.01.H80	80 mm	1 kg
13.002.01.H100	100 mm	1 kg
13.002.01.H120	120 mm	1 kg
13.002.01.H140	140 mm	1 kg
13.002.01.H150	150 mm	1 kg
13.002.01.H180	180 mm	1 kg
13.002.01.H200	200 mm	1 kg
13.002.01.H220	220 mm	1 kg
13.002.01.H240	240 mm	1 kg
13.002.01.H300	300 mm	1 kg





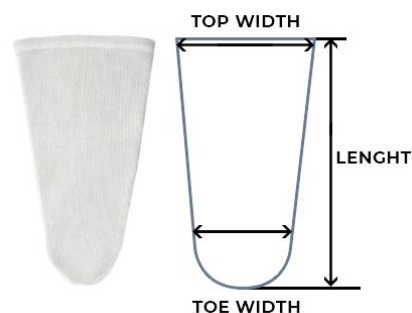
COTTON STUMP STOCKINETTE

STUMP SOCKS

STUMP ELASTIC BANDAGES



Nylon Stump Sock (97% nylon 3% elastane)			
Code	Category	Description	Length
13.001.02.AK20	AK amputee	highly elastic	20 cm
13.001.02.AK25	AK amputee	highly elastic	25 cm
13.001.02.AK30	AK amputee	highly elastic	30 cm
13.001.02.AK35	AK amputee	highly elastic	35 cm
13.001.02.AK40	AK amputee	highly elastic	40 cm
13.001.02.AK45	AK amputee	highly elastic	45 cm
13.001.02.AK50	AK amputee	highly elastic	50 cm
13.001.02.AK55	AK amputee	highly elastic	55 cm
13.001.02.AK60	AK amputee	highly elastic	60 cm



Nylon Stump Sock (97% nylon 3% elastane)			
Code	Category	Description	Length
13.001.04.BK20	BK amputee	highly elastic	20 cm
13.001.04.BK25	BK amputee	highly elastic	25 cm
13.001.04.BK30	BK amputee	highly elastic	30 cm
13.001.04.BK35	BK amputee	highly elastic	35 cm
13.001.04.BK40	BK amputee	highly elastic	40 cm
13.001.04.BK45	BK amputee	highly elastic	45 cm
13.001.04.BK50	BK amputee	highly elastic	50 cm
13.001.04.BK55	BK amputee	highly elastic	55 cm
13.001.04.BK60	BK amputee	highly elastic	60 cm





STUMP SOCKS

STUMP STOCKINETTE, BANDAGES AND SOCKS

COTTON STUMP STOCKINETTE

STUMP SOCKS

STUMP ELASTIC BANDAGES



Nylon Stump Sock with hole (97% nylon 3% elastane)

Code	Category	Description	Length
13.001.03.AK20	AK amputee	highly elastic with hole	20 cm
13.001.03.AK25	AK amputee	highly elastic with hole	25 cm
13.001.03.AK30	AK amputee	highly elastic with hole	30 cm
13.001.03.AK35	AK amputee	highly elastic with hole	35 cm
13.001.03.AK40	AK amputee	highly elastic with hole	40 cm
13.001.03.AK45	AK amputee	highly elastic with hole	45 cm
13.001.03.AK50	AK amputee	highly elastic with hole	50 cm
13.001.03.AK55	AK amputee	highly elastic with hole	55 cm
13.001.03.AK60	AK amputee	highly elastic with hole	60 cm

Nylon Stump Sock with hole (97% nylon 3% elastane)

Code	Category	Description	Length
13.001.04.V.BK20	BK amputee	highly elastic with hole	20 cm
13.001.04.V.BK25	BK amputee	highly elastic with hole	25 cm
13.001.04.V.BK30	BK amputee	highly elastic with hole	30 cm
13.001.04.V.BK35	BK amputee	highly elastic with hole	35 cm
13.001.04.V.BK40	BK amputee	highly elastic with hole	40 cm
13.001.04.V.BK45	BK amputee	highly elastic with hole	45 cm
13.001.04.V.BK50	BK amputee	highly elastic with hole	50 cm
13.001.04.V.BK55	BK amputee	highly elastic with hole	55 cm
13.001.04.V.BK60	BK amputee	highly elastic with hole	60 cm





COTTON STUMP STOCKINETTE

STUMP SOCKS

STUMP ELASTIC BANDAGES



Terry Cloth Stump Sock with hole			
Code	Category	Description	Length
13.001.05.AK20	AK amputee	with hole	20 cm
13.001.05.AK25	AK amputee	with hole	25 cm
13.001.05.AK30	AK amputee	with hole	30 cm
13.001.05.AK35	AK amputee	with hole	35 cm
13.001.05.AK40	AK amputee	with hole	40 cm
13.001.05.AK45	AK amputee	with hole	45 cm
13.001.05.AK50	AK amputee	with hole	50 cm
13.001.05.AK55	AK amputee	with hole	55 cm
13.001.05.AK60	AK amputee	with hole	60 cm

Terry Cloth Stump Sock with hole			
Code	Category	Description	Length
13.001.05.BK20	BK amputee	with hole	20 cm
13.001.05.BK25	BK amputee	with hole	25 cm
13.001.05.BK30	BK amputee	with hole	30 cm
13.001.05.BK35	BK amputee	with hole	35 cm
13.001.05.BK40	BK amputee	with hole	40 cm
13.001.05.BK45	BK amputee	with hole	45 cm
13.001.05.BK50	BK amputee	with hole	50 cm
13.001.05.BK55	BK amputee	with hole	55 cm
13.001.05.BK60	BK amputee	with hole	60 cm





STUMP SOCKS

STUMP STOCKINETTE, BANDAGES AND SOCKS

COTTON STUMP STOCKINETTE

STUMP SOCKS

STUMP ELASTIC BANDAGES



Terry Cloth Stump Sock without hole			
Code	Category	Description	Length
13.001.05.H.AK20	AK amputee	without hole	20 cm
13.001.05.H.AK25	AK amputee	without hole	25 cm
13.001.05.H.AK30	AK amputee	without hole	30 cm
13.001.05.H.AK35	AK amputee	without hole	35 cm
13.001.05.H.AK40	AK amputee	without hole	40 cm
13.001.05.H.AK45	AK amputee	without hole	45 cm
13.001.05.H.AK50	AK amputee	without hole	50 cm
13.001.05.H.AK55	AK amputee	without hole	55 cm
13.001.05.H.AK60	AK amputee	without hole	60 cm

Terry Cloth Stump Sock without hole			
Code	Category	Description	Length
13.001.05.H.BK20	BK amputee	without hole	20 cm
13.001.05.H.BK25	BK amputee	without hole	25 cm
13.001.05.H.BK30	BK amputee	without hole	30 cm
13.001.05.H.BK35	BK amputee	without hole	35 cm
13.001.05.H.BK40	BK amputee	without hole	40 cm
13.001.05.H.BK45	BK amputee	without hole	45 cm
13.001.05.H.BK50	BK amputee	without hole	50 cm
13.001.05.H.BK55	BK amputee	without hole	55 cm
13.001.05.H.BK60	BK amputee	without hole	60 cm





COTTON STUMP STOCKINETTE

STUMP SOCKS

STUMP ELASTIC BANDAGES



Cotton Stump Sock without hole			
Code	Category	Description	Length
13.006.02.AK25	AK amputee	without hole	25 cm
13.006.02.AK30	AK amputee	without hole	30 cm
13.006.02.AK35	AK amputee	without hole	35 cm
13.006.02.AK40	AK amputee	without hole	40 cm
13.006.02.AK45	AK amputee	without hole	45 cm
13.006.02.AK50	AK amputee	without hole	50 cm
13.006.02.AK55	AK amputee	without hole	55 cm
13.006.02.AK60	AK amputee	without hole	60 cm

Cotton Stump Sock without hole			
Code	Category	Description	Length
13.006.02.BK20	BK amputee	without hole	20 cm
13.006.02.BK25	BK amputee	without hole	25 cm
13.006.02.BK30	BK amputee	without hole	30 cm
13.006.02.BK35	BK amputee	without hole	35 cm
13.006.02.BK40	BK amputee	without hole	40 cm
13.006.02.BK45	BK amputee	without hole	45 cm
13.006.02.BK50	BK amputee	without hole	50 cm
13.006.02.BK55	BK amputee	without hole	55 cm
13.006.02.BK60	BK amputee	without hole	60 cm





STUMP ELASTIC BANDAGES

STUMP STOCKINETTE, BANDAGES AND SOCKS

COTTON STUMP STOCKINETTE

STUMP SOCKS

STUMP ELASTIC BANDAGES



Stump Elastic Bandages

Code	Width	Length
13.003.01.H6	6 cm	7 m
13.003.01.H8	8 cm	7 m
13.003.01.H10	10 cm	7 m
13.003.01.H12	12 cm	7 m
13.003.01.H15	15 cm	7 m
13.003.01.H20	20 cm	7 m



Suspension sleeves for AK

Code	Size	Socket Circumference (cm)
18.019.02.L.S	S left	36-40
18.019.02.R.S	S right	36-40
18.019.02.L.M	M left	40-44
18.019.02.R.M	M right	40-44
18.019.02.L.L	L left	44-48
18.019.02.R.L	L right	44-48
18.019.02.L.XL	XL left	48-52
18.019.02.R.XL	XL right	48-52





- Sold in pairs
- Square bar slot for easy fabrication



Warranty: 12 months

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE

ORTHESIS

Modular Integrated Ankle Joint				
Code	Description	Type	Material	Bar Slot
18.002.001	Modular integrated ankle joint. Double action: Square bar slot for easy fabrication, nickel plated for corrosion resistance. Available in steel or Aluminium, offers spring loaded dorsiflexion assist combined with an infinitely adjustable dorsiflexion stop. Accepts double action stirrup or solid stirrup.	Double Action square slot	Stainless Steel	12 mm
18.002.002			Stainless Steel	16 mm
18.002.003			Stainless Steel	19 mm
18.002.007			Aluminum Alloy	12 mm
18.002.008			Aluminum Alloy	16 mm
18.002.009			Aluminum Alloy	19 mm
18.002.004	Modular integrated ankle joint. Adjustable range of motion: square bar slot for easy fabrication, available in steel or Aluminium, features anterior and posterior adjustment. Accepts double action stirrup head or solid stirrup. Ability to initial lock ROM and then gradually increases it as patient progresses.	Adjustable range of motion square slot	Stainless Steel	12 mm
18.002.005			Stainless Steel	16 mm
18.002.006			Aluminum Alloy	19 mm
18.002.010			Aluminum Alloy	12 mm
18.002.011			Aluminum Alloy	16 mm
18.002.012			Aluminum Alloy	19 mm



Integrated Ankle Joint				
Code	Description	Type	Size	Material
18.002.013	Integrated ankle joint. Double action: thermoformable for cosmetic reasons. The strenght of a metal ankle yet unobtrusive. Dorsiflexion and/or plantar flexion assist. Nickel plated for corrosion resistance. Includes all mounting hardware, stirrups and alignment fixtures.	Double Action	Small	Al. Alloy
18.002.014			Medium	Al. Alloy
18.002.015			Large	Al. Alloy
18.002.016	Integrated ankle joint. Dorsiflexion assist: thermoformable for cosmetic reasons. The strenght of a metal ankle yet unobtrusive. Low profile, lightweight alternative to a modular system. Includes all mounting hardware, stirrups and alignment fixture.	Dorsi-flexion assist	Small	Al. Alloy
18.002.017			Medium	Al. Alloy
18.002.018			Large	Al. Alloy
18.002.019	Integrated ankle joint. Adjustable range of motion: thermoformable for cosmetic reasons. The strenght of a metal ankle yet unobtrusive. Uses a double action stirrup, unlimited adjustability. Includes all mounting hardware, stirrups and alignment fixture.	Adjustable range of motion	Small	Al. Alloy
18.002.020			Large	Al. Alloy





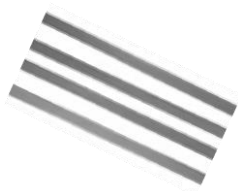
ANKLE ORTHESIS

ORTHESIS

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE



Warranty: 12 months



Bars- Comes in a four piece kit

Code	Length	Dimension	Material
18.002.021	1.83	5 x 12 mm	Aluminum
18.002.022	1.83	5 x 16 mm	Aluminum
18.002.023	1.83	5 x 19 mm	Aluminum



Split Tail Stirrups

Code	Description	Size
18.002.024	Unique "Y" shape of the split-tail is perfectly suited for use in plastic NYUCB shoe insert configurations. Special order drilled or drilled and tapped. Sold in pairs	Small
18.002.025		Medium
18.002.026		Large



Solid Stirrups - Wide Tongue

Code	Description	Small Length	Large Length
18.002.028	For Use with Double action ankle	-	20 cm
18.002.029	Joints and adjustable range of motion ankle joints	-	24 cm
18.002.030	- 20 cm child length	20 cm	26 cm
18.002.031	- Adult version available	-	28 cm





- Sold individually



Warranty: 12 months

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE

ORTHESIS

Short Leg Upright - Limited/Free Motion				
Code	Type	Size	Length	Material
18.002.033	Limited Motion	Medium	31.8 cm	Aluminum
18.002.034	Limited Motion	Large	43 cm	Aluminum
18.002.035	Free Motion	Small	21.6 cm	Aluminum
18.002.036	Free Motion	Medium	31.8 cm	Aluminum
18.002.037	Free Motion	Large	43 cm	Aluminum



Short Leg Upright - Toe Pick-Up/Double				
Code	Type	Size	Length	Material
18.002.038	Toe Pick Up	Small Right	21.6 cm	Aluminum
18.002.039	Toe Pick Up	Small Left	21.6 cm	Aluminum
18.002.040	Toe Pick Up	Medium Right	31.8 cm	Aluminum
18.002.041	Toe Pick Up	Medium Left	31.8 cm	Aluminum
18.002.042	Toe Pick Up	Large Right	43 cm	Aluminum
18.002.043	Toe Pick Up	Large Left	43 cm	Aluminum
18.002.044	Double Action	Large	40.6 cm	Aluminum





ANKLE ORTHESIS

ORTHESIS

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE

• Sold individually



Warranty: 12 months



Ankle Joint - Limited/Free Motion

Code	Type	Size	Material
18.002.045	Limited Motion	19 mm bar slot	Stainless Steel
18.002.046	Free Motion	19 mm bar slot	Stainless Steel



Ankle Joint - Toe Pick Up

Code	Type	Size	Material
18.002.047	Toe Pick Up Right	16 mm bar slot	Stainless Steel
18.002.048	Toe Pick Up Left	16 mm bar slot	Stainless Steel



Ankle Joint - Double Action

Code	Type	Size	Material
18.002.049	Double Action	19 mm channel	Stainless Steel
18.002.050	Double Action W/ Positioning Pins	19 mm channel	Stainless Steel
18.002.049.k	Adjustable stops allow movement from 0° to 30° in both direction	Thickness 6 mm	Stainless Steel





- Sold individually
- Has an opening for a 16 mm wide bar



Warranty: 12 months

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE

ORTHESIS

Limited Motion / Free Motion Stirrup Standard		
Code	Size	Material
18.002.062	Large 222 mm	Stainless Steel
18.002.063	Large 241 mm	Stainless Steel
18.002.064	Large 260 mm	Stainless Steel



Limited Motion/Free Motion Stirrup - Long Tongue		
Code	Size	Material
18.002.065	Large 222 mm	Stainless Steel
18.002.066	Large 241 mm	Stainless Steel
18.002.067	Large 260 mm	Stainless Steel



Limited Motion/Free Motion Stirrup - Wide Tongue		
Code	Size	Material
18.002.068	Large 222 mm	Stainless Steel
18.002.069	Large 241 mm	Stainless Steel
18.002.070	Large 260 mm	Stainless Steel





ANKLE ORTHESIS

ANKLE ORTHESIS
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SPINAL ORTHESIS
FOOT SUPPORT
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KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
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Warranty: 12 months



Limited Motion / Free motion Stirrup split (Sold individually)			
Code	Size	Dimension	Material
18.002.071	Small	2.4 x 12 mm	Stainless Steel
18.002.073	Medium	3.1 x 12 mm	Stainless Steel
18.002.074	Medium	3.1 x 16 mm	Stainless Steel
18.002.075	Medium	3.1 x 18 mm	Stainless Steel
18.002.076	Large	3.1 x 16 mm	Stainless Steel
18.002.077	Large	3.1 x 19 mm	Stainless Steel
18.002.078	Large	3.1 x 22 mm	Stainless Steel



Insert stirrup for plastic orthotics-Double action (sold in pair)			
Code	Type	Dimension	Material
18.002.083	Double Action	70 mm	Stainless Steel
18.002.084	Double Action	60 mm	Stainless Steel



PlyCar-C Ankle Inserts		
Code	Description	Size
18.002.093	High performance reinforced composite. Heating temp. 175°C - 200°C Easy to mold. High carbon content. Thermobonds to polypropylene, copolymer and metal.	Small 1.5 mm
18.002.094		Medium 2.3 mm
18.002.095		Large 2.3 mm
18.002.096		Extra Large 3.2 mm





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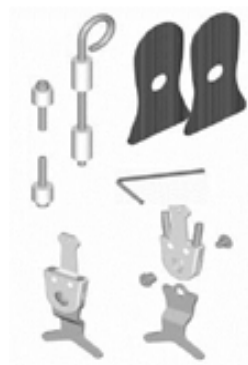


Warranty: 12 months

Universal Ankle joint pair w/fabrication kit		
Code	Description	Includes
18.002.097	Smooth Plantar/dorsiflexion action. Adjustable calcaneal inversion/eversion after fabrication. AFO design can also create a plantar stop.	Joints (pair) PolyCar-C (2pcs) Alignment rod



PDC Ankle Joints Kits With PolyCar-C		
Code	Description	Includes
18.002.099	Plantar/dorsiflexion control 82kg weight limit. Indicated for conditions requiring ankle positioning. Aluminum head, stainless steel, stirrup, right.	PDC ankle joint body, 2 ea. AFO alignment tool, 1 ea. Screw 10-32 x 3/4", SHSS, SS, 4ea. Joint nut, 2 ea. Double action stirrup insert, 2ea. Allen Wrench, 3/23" Screw 10-32 x 1/4", truss HD, S.S., 2ea.



Code	Size
18.002.100	Precut PolyCar-C, Large
18.002.101	Ankle joint Head W/o stirrup





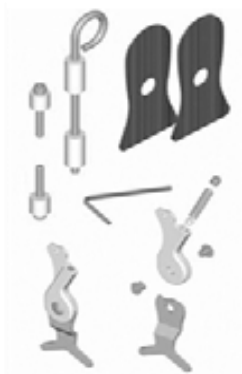
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Warranty: 12 months



Dorsiflexion Assist Ankle Joint Kits With PolyCar-C

Code	Description	Includes
18.002.102	82kg weight limit Indicated for conditions requiring toe lift Aluminum head, stainless steel, stirrup	Dorsiflexion ankle joint body, right Dorsiflexion ankle joint body left AFO alignment tool, 1 ea. Spring retainer screw, 2ea. Spring, 21 C.D., 2 ea. Double action stirrup insert, 2 ea. Allen Wrench 3/23" Ball, chrome, 7/32", 2ea. Precut PolyCar-C, 060 composite, 2ea. Screw 10-32x1/4", truss HD, S.S, 2ea. Dorsiflexion stirrup insert, right, 2ea. Dorsiflexion stirrup insert, left, 2ea. Joint nut, 2ea. Allen Wrench, 1/8"



PDA Ankle Joint kits with Polycar-C

Code	Description	Includes
18.002.103	Plantar Dorsiflexion assist 82kg weight limit Indicated for conditions requiring rigid ankle support and positioning	PDA ankle joint body, 2ea. AFO alignment tool, 1 ea. Precut PolyCar-C, 060 composite, 2ea. Screw 10-32x1/4", truss HD, S.S, 2ea. Spring retainer screw, 2ea. Spring, 21 O.D., 2 ea. Double action stirrup insert, 2 ea. Allen Wrench 3/23" Ball, chrome, 7/32", 2ea. Dowel pin, 1/8 x 7/8", 4ea. Joint nut, 2ea. Allen Wrench, 1/8"



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- Dynamic AFO orthosis made with a composite of carbon-resistant fiber and with springs in PEEK (polyether ether ketone) on both sides that provide a lot of strength and flexibility.
- This allows you to drive the car and climb stairs as the movement is free and produces a constant action in raising the foot.
- The open heel construction allows natural movement of the foot and thanks to the slim design of the footbed it fits easily to normal shoes.
- Recommended for patients with peroneal nerve palsy.
- Not recommended for patients with contractures.

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Warranty: 12 months

Dynamic Walk standard without padding- AFO			
Code	Size	Heel Width	Shoe
18.001.001	Small right	67.5 mm	35-38
18.001.002	Medium right	72.5 mm	39-43
18.001.003	Large right	80.5 mm	44-47
18.001.004	Small left	67.5 mm	35-38
18.001.005	Medium left	72.5 mm	39-43
18.001.006	Large left	80.5 mm	44-47



Padding for Dynamic Walk standard	
Code	Size
18.001.019	Small
18.001.020	Medium
18.001.021	Large





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- This model with an innovative design has PEEK springs both on one side which can optionally be medial or lateral.
- Easy to insert and remove from the shoe, even if tight.
- Offers the same features as the Dynamic Walk Standard.



Warranty: 12 months



Dynamic Walk single side without padding- AFO lateral side

Code	Size	Shoe
18.001.007	Small right	35-38
18.001.008	Medium right	39-43
18.001.009	Large right	44-47
18.001.010	Small left	35-38
18.001.011	Medium left	39-43
18.001.012	Large left	44-47

Dynamic Walk single side without padding- AFO medial side

Code	Size	Shoe
18.001.013	Small right	35-38
18.001.014	Medium right	39-43
18.001.015	Large right	44-47
18.001.016	Small left	35-38
18.001.017	Medium left	39-43
18.001.018	Large left	44-47

Padding for Dynamic Walk single side- medial side

Code	Size
18.001.022	Small
18.001.023	Medium
18.001.024	Large

Padding for Dynamic Walk single side- lateral side

Code	Size
18.001.025	Small
18.001.026	Medium
18.001.027	Large





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Warranty: 12 months

AFO for leg and foot			
Code	Type	Shoe	Height
18.010.01.S.L	Small Left	35/39	34 cm
18.010.02.M.L	Medium Left	40/43	36 cm
18.010.03.L.L	Large Left	41/46	39 cm
18.010.04.XL.L	Extra Large Left	46 and other	41 cm
18.010.05.S.R	Small Right	35/39	34 cm
18.010.06.M.R	Medium Right	40/43	36 cm
18.010.07.L.R	Large Right	41/46	39 cm
18.010.08.XL.R	Extra Large Right	46 and other	41 cm



AFO extrastrong for drop foot			
Code	Type	Shoe	Height
18.011.01.S.L	Small Left	35/39	28 cm
18.011.02.M. L	Medium Left	40/43	29 cm
18.011.03.L.L	Large Left	41/44	34 cm
18.011.04.XL.L	Extra Large Left	44 and other	39 cm
18.011.05.S.R	Small Right	35/39	34 cm
18.011.06.M.R	Medium Right	40/43	36 cm
18.011.07.L.R	Large Right	41/44	39 cm
18.011.08.XL.R	Extra Large Right	44 and other	41 cm



Orthopedic AFO carbon fiber			
Code	Type	Shoe	Height
18.012.01.S.L	Small left	32/36	Adjustable
18.012.02.S.R	Small right	32/36	Adjustable
18.012.03.M.L	Medium left	36/41	Adjustable
18.012.04.M.R	Medium right	36/41	Adjustable
18.012.05.L.L	Large left	41 and other	Adjustable
18.012.06.L.R	Large right	41 and other	Adjustable
18.012.07.XL.L	Extra Large left	46 and other	Adjustable
18.012.08.XL.R	Extra Large right	46 and other	Adjustable





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• Sold in pair



Warranty: 12 months



Ring lock knee joint

Code	Type	Dimensions	Material
18.003.001	Straight medial and straight lateral joint	16 mm	Stainless steel
18.003.002	Straight medial and straight lateral joint	20 mm	Stainless steel



Ring lock knee joint with lateral bars for children

Code	Type	Dimensions	Material
18.003.001.k	Straight medial and straight lateral joint	14 mm	Aluminum
18.003.002.k	Straight medial and straight lateral joint	14 mm	Stainless steel





- Sold in pair



Warranty: 12 months

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Ring lock knee joint			
Code	Type	Dimensions	Material
18.003.003	Straight lateral joint and down side contoured medial joint	16 mm- left	Stainless steel
18.003.004	Straight lateral joint and down side contoured medial joint	16 mm- right	Stainless steel
18.003.005	Straight lateral joint and down side contoured medial joint	20 mm- left	Stainless steel
18.003.006	Straight lateral joint and down side contoured medial joint	20 mm- right	Stainless steel



Ring lock knee joint			
Code	Type	Dimensions	Material
18.003.007	Contoured medial joint and straight lateral joint	16 mm- left	Stainless steel
18.003.008	Contoured medial joint and straight lateral joint	16 mm- right	Stainless steel
18.003.009	Contoured medial joint and straight lateral joint	20 mm- left	Stainless steel
18.003.010	Contoured medial joint and straight lateral joint	20 mm- right	Stainless steel





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· Sold in pair



Warranty: 12 months



Swiss type springy knee joint			
Code	Type	Dimensions	Material
18.003.011	Straight medial and lateral joint	16 mm	Stainless steel
18.003.012	Straight medial and lateral joint	20 mm	Stainless steel



Swiss type springy knee joint			
Code	Type	Dimensions	Material
18.003.013	Straight lateral joint and down side contoured medial joint	16 mm- left	Stainless steel
18.003.014	Straight lateral joint and down side contoured medial joint	16 mm- right	Stainless steel
18.003.015	Straight lateral joint and down side contoured medial joint	20 mm- left	Stainless steel
18.003.016	Straight lateral joint and down side contoured medial joint	20 mm- right	Stainless steel



Swiss type springy knee joint			
Code	Type	Dimensions	Material
18.003.017	Straight lateral joint and both up-down side contoured medial joint	16 mm- left	Stainless steel
18.003.018	Straight lateral joint and both up-down side contoured medial joint	16 mm- right	Stainless steel
18.003.019	Straight lateral joint and both up-down side contoured medial joint	20 mm- left	Stainless steel
18.003.020	Straight lateral joint and both up-down side contoured medial joint	20 mm- right	Stainless steel



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- Sold in pair



Warranty: 12 months

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Swiss type springless knee joint

Code	Type	Dimensions	Material
18.003.021	Straight lateral joint and down side contoured medial joint	16 mm- left	Stainless steel
18.003.022	Straight lateral joint and down side contoured medial joint	16 mm- right	Stainless steel
18.003.023	Straight lateral joint and down side contoured medial joint	20 mm- left	Stainless steel
18.003.024	Straight lateral joint and down side contoured medial joint	20 mm- right	Stainless steel



Swiss type springless knee joint

Code	Type	Dimensions	Material
18.003.025	Contoured medial joint and straight lateral joint	16 mm- left	Stainless steel
18.003.026	Contoured medial joint and straight lateral joint	16 mm- right	Stainless steel
18.003.027	Contoured medial joint and straight lateral joint	20 mm- left	Stainless steel
18.003.028	Contoured medial joint and straight lateral joint	20 mm- right	Stainless steel





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- Set of 4 bars
- Thickness 4 mm and Length 410-450 mm



Warranty: 12 months



Stainless steel lateral bars
(lower bars straight, upper bars countured)

Code	Size
18.003.029	16 mm
18.003.030	20 mm



Aluminum lateral bars
(lower bars straight, upper bars countured)

Code	Size
18.003.031	16 mm
18.003.032	20 mm





- Sold in pair
- The locking tip is attached by a cable to a trigger allowing the patient to discharge the locks without bending over.



Warranty: 12 months

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Automatic Trigger lock knee joint			
Code	Type	Dimensions	Material
18.003.033	Straight medial and lateral joint	6 x 16 mm	Aluminum
18.003.034	Straight medial and lateral joint	5 x 16 mm	Aluminum
18.003.035	Straight medial and lateral joint	6 x 19 mm	Aluminum
18.003.036	Straight medial and lateral joint	5 x 19 mm	Aluminum

Automatic Trigger lock knee joint			
Code	Type	Dimensions	Material
18.003.037	Both medial and lateral contoured	6 x 16 mm	Aluminum
18.003.038	Both medial and lateral contoured	5 x 16 mm	Aluminum
18.003.039	Both medial and lateral contoured	6 x 19 mm	Aluminum
18.003.040	Both medial and lateral contoured	5 x 19 mm	Aluminum

Automatic Trigger lock knee joint			
Code	Type	Dimensions	Material
18.003.041	Right medial contoured	6 x 16 mm	Aluminum
18.003.042	Left medial contoured	6 x 16 mm	Aluminum
18.003.043	Right medial contoured	5 x 16 mm	Aluminum
18.003.044	Left medial contoured	5 x 16 mm	Aluminum
18.003.045	Right medial contoured	6 x 19 mm	Aluminum
18.003.046	Left medial contoured	6 x 19 mm	Aluminum
18.003.047	Right medial contoured	5 x 19 mm	Aluminum
18.003.048	Left medial contoured	5 x 19 mm	Aluminum





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- Sold in pair
- The locking tip is attached by a cable to a trigger allowing the patient to discharge the locks without bending over.



Warranty: 12 months



Automatic Trigger lock knee joint			
Code	Type	Dimensions	Material
18.003.049	Straight medial and lateral joint	5 x 16 mm	Stainless steel
18.003.050	Straight medial and lateral joint	5 x 19 mm	Stainless steel

Automatic Trigger lock knee joint			
Code	Type	Dimensions	Material
18.003.051	Both medial and lateral contoured	5 x 16 mm	Stainless steel
18.003.052	Both medial and lateral contoured	5 x 19 mm	Stainless steel

Automatic Trigger lock knee joint			
Code	Type	Dimensions	Material
18.003.053	Right medial contoured	5 x 16 mm	Stainless steel
18.003.054	Left medial contoured	5 x 16 mm	Stainless steel
18.003.055	Right medial contoured	5 x 19 mm	Stainless steel
18.003.056	Left medial contoured	5 x 19 mm	Stainless steel





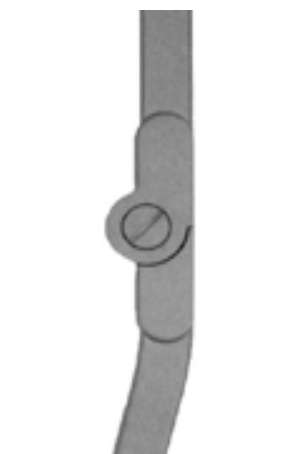
- Sold in pair
- Free motion knee joint has a 180 degrees extension stop.



Warranty: 12 months

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Free Motion knee joint			
Code	Type	Dimensions	Material
18.003.057	Straight medial and lateral joint	3 x 13 mm	Aluminum
18.003.058	Straight medial and lateral joint	5 x 13 mm	Aluminum
18.003.059	Straight medial and lateral joint	5 x 16 mm	Aluminum
18.003.060	Straight medial and lateral joint	5 x 19 mm	Aluminum
18.003.061	Straight medial and lateral joint	6 x 19 mm	Aluminum



Free Motion knee joint			
Code	Type	Dimensions	Material
18.003.072	Straight medial and lateral joint	3 x 13 mm	Stainless steel
18.003.073	Straight medial and lateral joint	5 x 13 mm	Stainless steel
18.003.074	Straight medial and lateral joint	5 x 16 mm	Stainless steel
18.003.075	Straight medial and lateral joint	4 x 16 mm	Stainless steel
18.003.076	Straight medial and lateral joint	5 x 19 mm	Stainless steel
18.003.077	Straight medial and lateral joint	4 x 19 mm	Stainless steel





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- Sold in pair
- A knee joint with the axis of motion located posteriorly to the upright bars.



Warranty: 12 months



Posterior offset Free motion knee joint

Code	Type	Dimensions	Material
18.003.078.k	Straight medial and lateral joint (for children)	3 x 13 mm	Aluminum
18.003.078	Straight medial and lateral joint	3 x 13 mm	Aluminum
18.003.079	Straight medial and lateral joint	5 x 13 mm	Aluminum
18.003.080	Straight medial and lateral joint	5 x 16 mm	Aluminum
18.003.081	Straight medial and lateral joint	6 x 16 mm	Aluminum
18.003.082	Straight medial and lateral joint	5 x 19 mm	Aluminum
18.003.083	Straight medial and lateral joint	6 x 19 mm	Aluminum

Posterior offset Free motion knee joint

Code	Type	Dimensions	Material
18.003.084	Both medial and lateral contoured	5 x 16 mm	Aluminum
18.003.085	Both medial and lateral contoured	6 x 16 mm	Aluminum
18.003.086	Both medial and lateral contoured	5 x 19 mm	Aluminum
18.003.087	Both medial and lateral contoured	6 x 19 mm	Aluminum

Posterior offset Free motion knee joint

Code	Type	Dimensions	Material
18.003.088	Right medial contoured	5 x 16 mm	Aluminum
18.003.089	Left medial contoured	5x 16 mm	Aluminum
18.003.090	Right medial contoured	6 x 16 mm	Aluminum
18.003.091	Left medial contoured	6 x 16 mm	Aluminum
18.003.092	Right medial contoured	5 x 19 mm	Aluminum
18.003.093	Left medial contoured	5 x 19 mm	Aluminum
18.003.094	Right medial contoured	6 x 19 mm	Aluminum
18.003.095	Left medial contoured	6 x 19 mm	Aluminum





- Sold in pair
- A knee joint with the axis of motion located posteriorly to the upright bars.



Warranty: 12 months

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Posterior offset Free motion knee joint			
Code	Type	Dimensions	Material
18.003.096	Straight medial and lateral joint (for children)	3 x 13 mm	Stainless steel
18.003.097	Straight medial and lateral joint	3 x 13 mm	Stainless steel
18.003.098	Straight medial and lateral joint	5 x 13 mm	Stainless steel
18.003.099	Straight medial and lateral joint	5 x 16 mm	Stainless steel
18.003.100	Straight medial and lateral joint	5 x 19 mm	Stainless steel



Posterior offset Free motion knee joint			
Code	Type	Dimensions	Material
18.003.101	Both medial and lateral contoured	5 x 16 mm	Stainless steel
18.003.102	Both medial and lateral contoured	5 x 19 mm	Stainless steel

Posterior offset Free motion knee joint			
Code	Type	Dimensions	Material
18.003.103	Right medial contoured	5 x 16 mm	Stainless steel
18.003.104	Left medial contoured	5 x 16 mm	Stainless steel
18.003.105	Right medial contoured	5 x 19 mm	Stainless steel
18.003.106	Left medial contoured	5 x 19 mm	Stainless steel





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- Sold in pair
- Polycentric knee joints are made with stainless steel midsections for increased durability and strength.



Warranty: 12 months



Polycentric free motion knee joint			
Code	Type	Dimensions	Material
18.003.107	Straight medial and lateral joint	3 x 13 mm	Aluminum
18.003.108	Straight medial and lateral joint	5 x 13 mm	Aluminum
18.003.109	Straight medial and lateral joint	5 x 16 mm	Aluminum
18.003.110	Straight medial and lateral joint	5 x 19 mm	Aluminum
18.003.111	Straight medial and lateral joint	6 x 19 mm	Aluminum

Polycentric free motion knee joint			
Code	Type	Dimensions	Material
18.003.112	Straight medial and lateral joint	3 x 13 mm	Stainless steel
18.003.113	Straight medial and lateral joint	5 x 13 mm	Stainless steel
18.003.114	Straight medial and lateral joint	5 x 16 mm	Stainless steel
18.003.115	Straight medial and lateral joint	5 x 19 mm	Stainless steel





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Warranty: 12 months

Knee sleeve long with adjustable polycentric bars			
Code	Type	Circumference	Height (cm)
18.009.01.XS	Extra Small	33/39	41
18.009.02.S	Small	39/45	41
18.009.03.M	Medium	45/52	41
18.009.04.L	Large	52/58	41
18.009.05.XL	Extra Large	58/66	41
18.009.06.XXL	Super Large	66/75	41



ROM Orthosis		
Code	Universal Type	Rod Length (cm)
18.026.01.S	Small	50
18.026.02.M	Medium	50
18.026.03.L	Large	50





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Warranty: 12 months

- Commonly used for children with cerebral palsy, the orthosis prevents the scissor kick of the thigh and must be worn medially making sure that the child's hips are properly aligned.
- Aluminum joint with stainless steel adjustment guides.
- The thighs are of 4 mm copolymer PP.
- Can be attached with Velcro straps; detect the circumference 5 cm above the center of the knee for the correct size of the thigh.
- Medial condylar silicone wedges are included to provide more comfort to the child.



Anti-adduction orthosis for children		
Code	Description	Circumference
18.004.001	only stainless steel articulation	-
18.004.001.S	polymer leg straps	from 16.5 to 25 cm
18.004.001.M	polymer leg straps	of 25 and over





- Sold individually



Warranty: 12 months

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Ring Lock hip joint			
Code	Type	Dimensions	Material
18.004.002	Orthotic straight, manually locked	16 mm - left	Stainless steel
18.004.003	Orthotic straight, manually locked	16 mm - right	Stainless steel
18.004.004	Orthotic straight, manually locked	20 mm - left	Stainless steel
18.004.005	Orthotic straight, manually locked	20 mm - right	Stainless steel



Ring Lock hip joint			
Code	Type	Dimensions	Material
18.004.006	Orthotic contoured, manually locked	16 mm - left	Stainless steel
18.004.007	Orthotic contoured, manually locked	16 mm - right	Stainless steel
18.004.008	Orthotic contoured, manually locked	20 mm - left	Stainless steel
18.004.009	Orthotic contoured, manually locked	20 mm - right	Stainless steel





HIP ORTHESIS

ORTHESIS

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE

• Sold individually



Warranty: 12 months



Ring Lock hip joint with lateral bars for children

Code	Type	Dimensions	Material
18.004.006.k	Orthotic straight, manually locked	14 mm - left	Stainless steel
18.004.007.k	Orthotic straight, manually locked	14 mm - right	Stainless steel





- Sold individually
- A free motion hip joint with a 180° extension stop



Warranty: 12 months

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE

Free Motion hip joint			
Code	Type	Dimensions	Material
18.004.010	Straight, left	3 x 13 mm	Aluminum
18.004.011	Straight, right	3 x 13 mm	Aluminum
18.004.012	Straight, left	5 x 13 mm	Aluminum
18.004.013	Straight, right	5 x 13 mm	Aluminum
18.004.014	Straight, left	6 x 16 mm	Aluminum
18.004.015	Straight, right	6 x 16 mm	Aluminum
18.004.016	Straight, left	6 x 19 mm	Aluminum
18.004.017	Straight, right	6 x 19 mm	Aluminum



Free Motion hip joint			
Code	Type	Dimensions	Material
18.004.018	Straight, left	3 x 13 mm	Stainless steel
18.004.019	Straight, right	3 x 13 mm	Stainless steel
18.004.020	Straight, left	5 x 13 mm	Stainless steel
18.004.021	Straight, right	5 x 13 mm	Stainless steel
18.004.022	Straight, left	5 x 16 mm	Stainless steel
18.004.023	Straight, right	5 x 16 mm	Stainless steel
18.004.024	Straight, left	5 x 19 mm	Stainless steel
18.004.025	Straight, right	5 x 19 mm	Stainless steel





SPINAL ORTHESIS

ORTHESIS

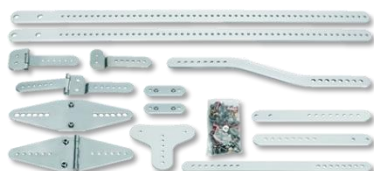
ANKLE ORTHESIS
 KNEE ORTHESIS
 HIP ORTHESIS
 SPINAL ORTHESIS
 FOOT SUPPORT
 ANKLE BRACE
 KNEE BRACE
 HIP BRACE
 CERVICAL BRACE
 BODY BRACE
 WRIST AND ARM BRACE



Warranty: 12 months



Milwaukee spinal orthosis		
Code	Type	Collar Circumference (cm)
18.029.01	Small	27
18.029.02	Medium	30
18.029.03	Large	34



Lyon spinal orthosis	
Code	Type
18.031.01.S	Small
18.031.01.M	Medium
18.031.01.L	Large





Warranty: 12 months

ANKLE ORTHESIS
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KNEE BRACE
HIP BRACE
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BODY BRACE
WRIST AND ARM BRACE

Shank Shock Absorbent Reinforced	
Code	Shoes size
18.018.01.S	34 / 36
18.018.02.M	37 / 40
18.018.03.L	41 / 44
18.018.04.XL	45 / 46



Shank with Exhaust Heel	
Code	Shoes size
18.019.01.S	34 / 38
18.019.02.M	39 / 42
18.019.03.L	43 / 47



Soft sole full insole- silicone	
Code	Shoes size
18.018.05.S	36 / 38
18.018.05.M	39 / 40
18.018.05.L	41 / 43
18.018.05.XL	44 / 45



Carbon fiber foot plate	
Code	Size
2.003.04.23.L/R	23 left/ right
2.003.04.24.L/R	24 left/ right
2.003.04.25.L/R	25 left/ right
2.003.04.26.L/R	26 left/ right
2.003.04.27.L/R	27 left/ right
2.003.04.28.L/R	28 left/ right
2.003.04.29.L/R	29 left/ right





ANKLE BRACE

ORTHESIS

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
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FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE



Warranty: 12 months



Elastic ankle brace with support

Code	Type	Ankle circumference
18.029.01.S	Small	15/20
18.029.02.M	Medium	20/25
18.029.03.L	Large	25/30
18.029.04.XL	Extra large	30/36





ANKLE ORTHESIS
KNEE ORTHESIS
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SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE



Warranty: 12 months

Orthopedic knee sleeve short			
Code	Type	Circumference	Height (cm)
18.007.01.XS	ExtraSmall	33/39	27
18.007.02.S	Small	39/45	27
18.007.03.M	Medium	45/52	27
18.007.04.L	Large	52/58	27
18.007.05.XL	ExtraLarge	58/66	27
18.007.06.XXL	SuperLarge	66/75	27



Short knee sleeve with hole		
Code	Circumference	Height (cm)
18.017.01.XS	33/39	27
18.017.02.S	39/45	27
18.017.03.M	45/52	27
18.017.04.L	52/58	27
18.017.05.XL	58/66	27
18.017.06.XXL	66/75	27





HIP BRACE

ORTHESIS

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
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FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE



Warranty: 12 months



Orthotic modular for hip joint-upper part

Code	Type	Circumference
18.008.01.S	Small left	60/82
18.008.02.S	Small right	60/82
18.008.03.M	Medium left	80/96
18.008.04.M	Medium right	80/96
18.008.05.L	Large left	94/115
18.008.06.L	Large right	94/115
18.008.07.XL	Extra Large left	99/120
18.008.08.XL	Extra Large right	99/120

Orthotic modular for hip joint-lower part

Code	Type	Circumference
18.008.09.S	Small left	60/82
18.008.10.S	Small right	60/82
18.008.11.M	Medium left	80/96
18.008.12.M	Medium right	80/96
18.008.13.L	Large left	94/115
18.008.14.L	Large right	94/115
18.008.15.XL	Extra Large left	99/120
18.008.16.XL	Extra Large right	99/120





ANKLE ORTHESIS
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 HIP ORTHESIS
 SPINAL ORTHESIS
 FOOT SUPPORT
 ANKLE BRACE
 KNEE BRACE
 HIP BRACE
 CERVICAL BRACE
 BODY BRACE
 WRIST AND ARM BRACE



Warranty: 12 months

Hip abduction splint for DDH			
Code	Type	Basin Circumference (cm)	Basin width (cm)
18.025.01	Small	30-33	11
18.025.02	Medium	38-42	14
18.025.03	Large	46-50	17





CERVICAL BRACE

ORTHESIS

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE



Warranty: 12 months



Foam cervical collar

Code	Type	Circumference	Height (cm)
18.005.01.S	Small	30/35	6 - 8 - 10
18.005.02.M	Medium	36/41	6 - 8 - 10
18.005.03.L	Large	42/47	6 - 8 - 10
18.005.04.XL	Extra Large	48/53	6 - 8 - 10



Bivalve cervical collar with tracheal hole

Code	Type	Circumference	Height (cm)
18.006.01.S	Small	30/35	6 - 8 - 11 - 13
18.006.02.M	Medium	35/40	6 - 8 - 11 - 13
18.006.03.L	Large	40/45	6 - 8 - 11 - 13





ANKLE ORTHESIS
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HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE



Warranty: 12 months

Elastic Corset Striped Bass			
Code	Type	Circumference	Height (cm)
18.014.01.S	Small	75/90	20/26
18.014.01.M	Medium	90/105	20/26
18.014.01.L	Large	105/120	20/26
18.014.01.XL	Extra Large	120/135	20/26



Corset Low			
Code	Type	Circumference	Height (cm)
18.016.01.S	Small	60/75	20/26
18.016.02.M	Medium	75/90	20/26
18.016.03.L	Large	90/105	20/26
18.016.04.XL	Extra Large	105/120	20/26
18.016.05.XXL	Ultra Large	120/135	20/26





WRIST AND ARM BRACE

ORTHESIS

ANKLE ORTHESIS
KNEE ORTHESIS
HIP ORTHESIS
SPINAL ORTHESIS
FOOT SUPPORT
ANKLE BRACE
KNEE BRACE
HIP BRACE
CERVICAL BRACE
BODY BRACE
WRIST AND ARM BRACE



Warranty: 12 months



Brace for a Wrist Splint			
Code	Size	Circumference (cm)	Length (cm)
18.015.01.XS	Extra small	11/14	18
18.015.02.S	Small	14/17	18
18.015.03.M	Medium	17/19	18
18.015.04.L	Large	19/22	18
18.015.05.XL	Extra large	22/24	18

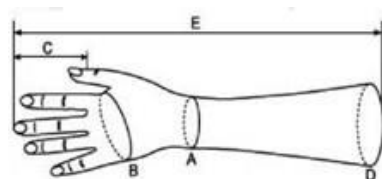


Arm sling		
Code	Type	Length (cm)
18.014.03.S	Small	34
18.014.03.M	Medium	42
18.014.03.L	Large	48
18.014.03.XL	Extra large	58





Cosmetic Cover for hands: PVC standard, PVC expanded, MCV-Micro Coated Vinyl expanded/ Silicone; the one structure of this cover allows to obtain a surface not tight to clothes. The glove is totally washable. Available in 18 colours. Usable for passive hands with separately positioning fingers. Standard Inner thread M12 x 1.5mm



A = Wrist circumference
B = Metacarpal circumference
C = Middle finger length
D = Glove end circumference
E = Length of glove



WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
PASSIVE HANDS

CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS



Warranty: 6 months

Woman Gloves and Passive Hands Measurements

Hand Glove n°	Side	Remarks	A	B	C	D	E
I	Left	Medium nails	125	160	70	200	410
I	Right	Medium nails	126	157	65	200	400
II	Left	Medium nails	130	170	74	214	440
II	Right	Medium nails	131	160	70	215	440
III	Left	Long nails	130	170	80	205	490
III	Right	Long nails	130	175	80	217	490
IV	Left	-	144	178	78	222	470
IV	Right	-	144	178	78	222	470
V	Left	Long nail and prominent skin	155	180	82	245	430
V	Right	Long nail and prominent skin	160	185	84	245	430



Gloves and Passive Hands for Woman

Code	Description	Material
19.002.01	Cosmetic glove	PVC standard
19.002.02	Cosmetic glove	PVC expanded
19.002.04	Cosmetic glove	MCV expanded
19.002.06	Cosmetic glove	silicone
19.002.08	Passive hand standard	-
19.002.09	Passive hand reinforced	-
19.002.10	Passive hand super reinforced	-





MAN GLOVES AND PASSIVE HANDS

UPPER LIMB

WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
PASSIVE HANDS

CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS

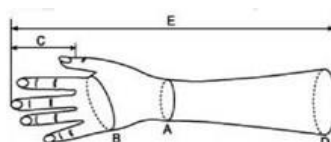


Warranty: 6 months



Cosmetic Cover for hands: PVC standard, PVC expanded, MCV-Micro Coated Vinyl expanded/ Silicone; the one structure of this cover allows to obtain a surface not tight to clothes. The glove is totally washable. Available in 18 colours. Usable for passive hands with separately positioning fingers.

Standard Inner thread M12 x 1.5mm



A = Wrist circumference
B = Metacarpal circumference
C = Middle finger length
D = Glove end circumference
E = Length of glove



Man gloves and Passive Hands Measurements

Hand glove n°	Side	Remarks	A	B	C	D	E
I	Left	-	140	170	78	206	330
I	Right	-	145	170	75	215	330
I	Left	-	145	187	83	215	320
I	Right	-	140	180	80	210	320
II	Left	Prominent veins	167	205	84	230	370
II	Right	Prominent veins	161	200	85	225	360
IV	Left	-	147	200	90	235	370
IV	Right	-	150	205	90	240	450
V	Left	Long fingers	160	210	95	224	400
V	Right	Long fingers	180	228	100	295	400
VI	Left	Stout-Plump	165	225	95	275	360
VI	Right	Stout-Plump	180	225	90	240	340
VII	Left	Stout-Plump	180	230	92	282	360
VII	Right	Stout-Plump	175	235	96	285	370

Gloves and Passive Hands for Man

Code	Description	Material
19.003.01	Cosmetic glove	PVC standard
19.003.02	Cosmetic glove	PVC expanded
19.003.04	Cosmetic glove	MCV expanded
19.003.06	Cosmetic glove	silicone
19.003.08	Passive hand standard	-
19.003.09	Passive hand reinforced	-
19.003.10	Passive hand super reinforced	-

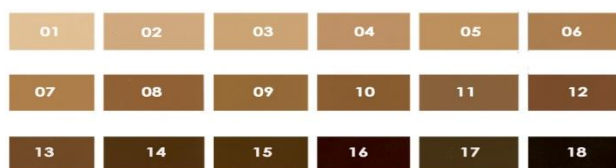
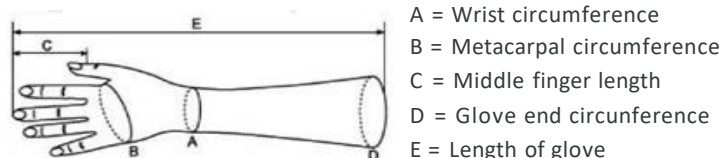


CHILDREN GLOVES AND PASSIVE HANDS



UPPER LIMB

Cosmetic Cover for hands: PVC standard, PVC expanded, MCV- Micro Coated Vinyl expanded/ Silicone; the one structure of this cover allows to obtain a surface not tight to clothes. The glove is totally washable. Available in 18 colours. Usable for passive hands with separately positioning fingers. Standard Inner thread M12 x 1.5mm



WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
PASSIVE HANDS

CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS



Warranty: 6 months



Child hands and Gloves closed hand Measurements

Hand glove n°	Side	Remarks	A	B	C	D	E
I	Left	0-18 months	90	128	-	112	116
I	Right	0-18 months	90	128	-	114	116
II	Left	1-3 years	98	140	-	122	126
II	Right	1-3 years	98	140	-	123	126
III	Left	3-6 years	104	148	-	130	137
III	Right	3-6 years	104	148	-	132	137

Child hands and Gloves open hand Measurements

Had glove n°	Side	Remarks	A	B	C	D	E
I	Left	0-18 months	100	100	40	133	175
I	Right	0-18 months	100	100	40	133	175
II	Left	1-3 years	115	115	45	145	210
II	Right	1-3 years	115	115	45	145	210
III	Left	3-6 years	115	140	50	145	230
III	Right	3-6 years	115	140	50	150	230
IV	Left	5-9 years	130	150	55	160	255
IV	Right	5-9 years	130	150	55	165	255

Gloves And Passive Hands for Child

Code	Description	Type	Material
19.001.01	Cosmetic glove	closed fist	PVC
19.001.02	Cosmetic glove	closed fist	MCV standard
19.001.06	Cosmetic glove	closed fist	MCV expanded
19.001.07	Cosmetic glove	open fist	PVC standard
19.001.08	Cosmetic glove	open fist	PVC expandend
19.001.10	Cosmetic glove	open fist	MCV expanded
19.001.12	Cosmetic glove	open fist	silicone
19.001.14	Passive hand standard	-	-
19.001.15	Passive hand reinforced	-	-
19.001.16	Passive hand super reinforced	-	-





ACTIVE HANDS AND COMPONENTS

UPPER LIMB

WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
PASSIVE HANDS

CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS

- Voluntary opening hand (SVO)
- Voluntary closing hand (SVC)



Warranty: 36 months



Voluntary opening hand (SVO)

Code	Description	Side	Size
19.004.01.L/R	Dorsal cable exit	Left /Right	7-1/4 in.
19.004.02.L/R	Palmar cable exit	Left /Right	7-1/4 in.
19.004.03.L/R	Standard cable exit	Left /Right	7-3/4 in.
19.004.04.L/R	Palmar cable exit	Left /Right	7-3/4 in.
19.004.05.L/R	Standard cable exit	Left /Right	8-1/4 in.
19.004.06.L/R	Palmar cable exit	Left /Right	8-1/4 in.

Voluntary closing hand (SVC)

Code	Description	Side	Size
19.005.01/02	Standard cable exit	Left /Right	7-1/4 in.
19.005.03/04	Palmar cable exit	Left /Right	7-1/4 in.
19.005.05/06	Standard cable exit	Left /Right	7-3/4 in.
19.005.07/08	Palmar cable exit	Left /Right	7-3/4 in.
19.005.09/10	Standard cable exit	Left /Right	8-1/4 in.
19.005.11/12	Palmar cable exit	Left /Right	8-1/4 in.





Male APRL Voluntary closing hand:

- Movable thumb, index, and middle finger
- Self-locking at any finger position and pre-positioning of the thumb in either of 2 positions permits handling of a wide variety of objects
- Heavy duty construction

Male Sierra voluntary opening hand:

- The back lock feature operates in all finger positions
- Two thumb positions permit easy handling of objects
- Heavy duty construction

WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
PASSIVE HANDS

CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS



Warranty: 36 months

Male APRL Voluntary closing hand			
Code	Description	Side	Size
19.006.01	Dorsal cable exit	Left	8 in.
19.006.02	Dorsal cable exit	Right	8 in.



Male Sierra Voluntary opening hand			
Code	Description	Side	Size
19.007.01	Dorsal cable exit	Left	8 in.
19.007.02	Dorsal cable exit	Right	8 in.





ACTIVE HANDS AND COMPONENTS

UPPER LIMB

WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
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CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS



Warranty: 36 months



Male Dorrance 400:

- Provides voluntary simultaneous opening of the thumb and first two fingers
- Adjustable pinch force
- Breakaway release protects wearer if excessive force is applied
- Heavy duty construction

Male Becker lock grip hand:

- All five fingers operate
- Locking mechanism provides a secure grip
- Size corresponds to MCP circumference
- Heavy duty construction

Male Becker Imperial hand:

- Round shaped wire fingers provide a secure grip on irregularly shaped objects
- Handgrip is adjustable using a screwdriver
- Heavy duty construction

Male Dorrance 400

Code	Description	Side	Size
19.008.01	Dorsal cable exit	Left	8 in.
19.008.02	Dorsal cable exit	Right	8 in.

Male Becker Lock grip hand

Code	Description	Side	Size
19.009.01/02	Dorsal cable exit	Left /Right	7 in.
19.009.03/04	Dorsal cable exit	Left /Right	7-1/2 in.
19.009.05/06	Dorsal cable exit	Left /Right	8 in.
19.009.07/08	Dorsal cable exit	Left /Right	8-1/2 in.
19.009.09/10	Dorsal cable exit	Left /Right	9 in.
19.009.11/12	Dorsal cable exit	Left /Right	9-1/2 in.
19.009.13/14	Dorsal cable exit	Left /Right	10

Male Becker Imperial hand

Code	Description	Side	Size
19.010.01	Dorsal cable exit	Left	8 in.
19.010.02	Dorsal cable exit	Right	8 in.





- Hooks from Hosmer

WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
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ACTIVE HANDS AND
COMPONENTS

UPPER LIMB



Warranty: 36 months

Hooks from Hosmer			
Code	Material	Side	Size
19.011.01	Titanium	Left	½-20 Large
19.011.02	Titanium	Right	½-20 Large
19.011.03	Stainless steel	Left	½-20 Large
19.011.04	Stainless steel	Right	½-20 Large
19.011.05	Aluminum	Left	½-20 Large
19.011.06	Aluminum	Right	½-20 Large
19.011.07	Aluminum	Left	M12 x 1,5 mm Large
19.011.08	Aluminum	Right	M12 x 1,5 mm Large
19.011.09	Stainless steel	Left	½-20 Medium
19.011.10	Stainless steel	Right	½-20 Medium
19.011.11	Aluminum	Left	½-20 Medium
19.011.12	Aluminum	Right	½-20 Medium
19.011.13	Aluminum	Left	M12 x 1,5 mm Medium
19.011.14	Aluminum	Right	M12 x 1,5 mm Medium
19.011.15	Aluminum	Left	½-20 Small
19.011.16	Aluminum	Right	½-20 Small
19.011.17	Aluminum	Left	M12 x 1,5 mm Small
19.011.18	Aluminum	Right	M12 x 1,5 mm Small
19.011.19	Aluminum	Left	½-20 Child
19.011.20	Aluminum	Right	½- 20 Child
19.011.21	Stainless steel	Left	½-20 Child
19.011.22	Stainless steel	Right	½- 20 Child





ACTIVE HANDS AND COMPONENTS

UPPER LIMB

WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
PASSIVE HANDS

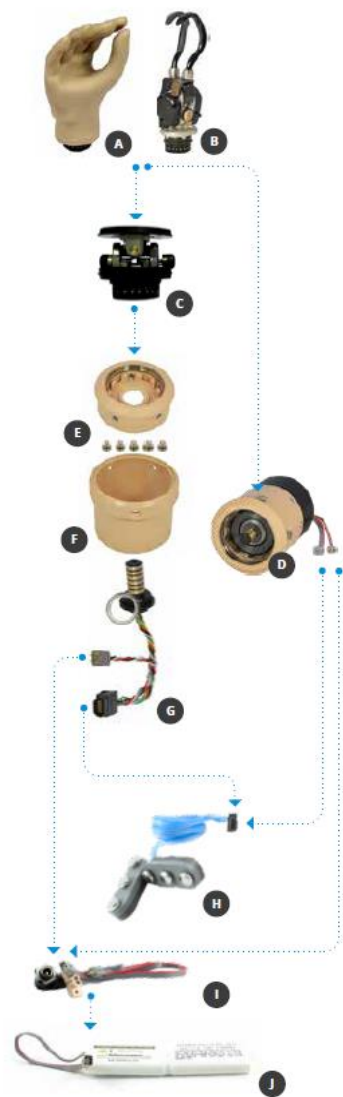
CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS

- MYOELECTRIC HAND +
standard or expanded glove PVC or MCV



Warranty: 36 months



MYOELECTRIC HAND + standard or expanded glove PVC
or MCV

Code

19.013.01





WOMAN GLOVES AND
PASSIVE HANDS

MAN GLOVES AND
PASSIVE HANDS

CHILDREN GLOVES
AND PASSIVE HANDS

ACTIVE HANDS AND
COMPONENTS



Warranty: 6 months

Other Components	
Code	Description
18.019.01	Elbow joint for orthosis, stainless steel, with upper and lower bars and manual locking, flexion approx. 135°
19.004.08	Wedge grip wrist
19.004.08.K	Wedge grip wrist for children
19.004.09	Automatic Elbow Joint
19.004.10	Blocking elbow Manual
19.004.11	Connection pin
19.004.12	Grooved stem
19.004.13	Wooden wrist fitting
19.004.14	Wrist adapter
19.004.15	Hand plate
19.004.16	Triple-Control elbow Harness
19.004.17	Below Elbow Harness big
19.004.18	Below Elbow Harness short
19.004.19	Above Elbow Harness
19.004.20	Attachment Plate with Stud
19.004.21	Wrist Connector-ratchet type rotation short
19.004.22	Wrist Connector-ratchet type rotation
19.014.01	Shoulder Flexion Abduction Joint
19.014.02	Shoulder Shaft
19.014.03	Cosmetic foam cover for above elbow
19.014.04	Cosmetic foam cover for shoulder disarticulation
19.014.05	Modular arm component for above elbow amputation
19.014.06	Modular components for shoulder disarticulation





WALKING AIDS

AIDS

WALKING AIDS
ORTHOPEDIC SHOES
WHEELCHAIRS
RUNNING WHEELCHAIRS
SLEDGE HOCKEY
RUGBY WHEELCHAIRS



Standing	
Code	Description
38.001.13	for children
38.001.14	for adult



Elbow crutches (pair)	
Code	Description
38.001.02	for children
38.001.03	for adult
38.002.05	crutch rubbers (ferrules) for adults



Auxillary crutches (pair)	
Code	Description
38.001.04	for children
38.001.05	for adult



WALKING AIDS
ORTHOPEDIC SHOES
WHEELCHAIRS
RUNNING WHEELCHAIRS
SLEDGE HOCKEY
RUGBY WHEELCHAIRS



Orthopedic boots pair		
Code	Size	Description
18.031.01.5	5 (22)	for children
18.031.01.6	6 (23)	for children
18.031.01.7	7 (24)	for children
18.031.02.6	6 (38)	for adult
18.031.02.7	7 (40)	for adult
18.031.02.8	8 (42)	for adult



Tarso open Toe boots pair		
Code	Size	Length (mm)
18.026.01.000	000	82
18.026.01.00	00	90
18.026.01.0	0	98
18.026.01.1	1	107
18.026.01.2	2	117
18.026.01.3	3	125
18.026.01.4	4	134
18.026.01.5	5	142
18.026.01.6	6	151
18.026.01.7	7	157





WHEELCHAIRS

AIDS

WALKING AIDS
ORTHOPEDIC SHOES
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RUGBY WHEELCHAIRS



Wheelchairs for Adult

Code	Description
21.003.02	Adult Wheelchair Aluminum Alloy
21.005.01	Adult Wheelchair Stainless Steel
21.004.01	Adult Wheelchair Carbon Fiber
21.004.01.CFW	Adult Wheelchair Carbon Fiber textile plus 2 Carbon fiber Wheels



Wheelchairs for Children

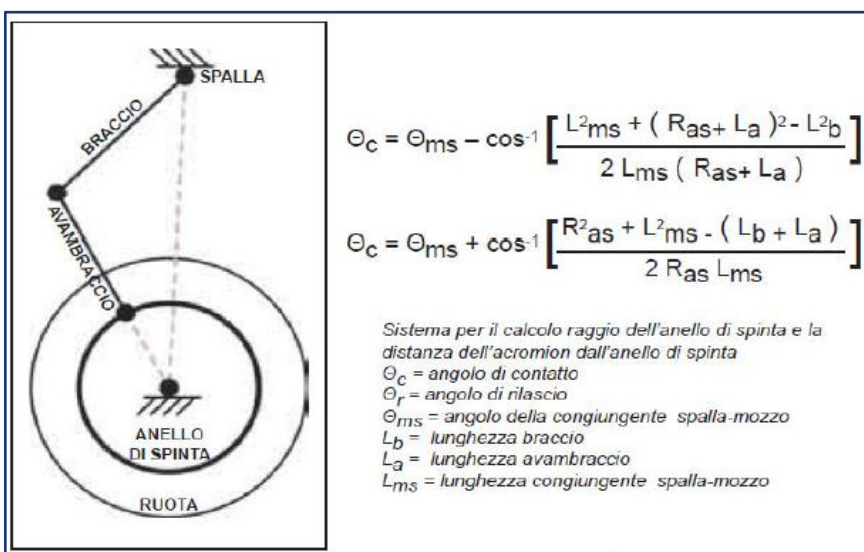
Code	Description
21.003.04.CH	Wheelchair Aluminum Alloy for children
21.004.01.CH	Wheelchair carbon fiber for children
21.005.01.CH	Wheelchair stainless steel for children
21.006.01	Wheelchair Carbon fiber chassis with CF wheels





WALKING AIDS
ORTHOPEDIC SHOES
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RUGBY WHEELCHAIRS

Running Wheelchairs	
Code	Description
21.003.04	Running Wheelchair Aluminum Alloy
21.004.02	Running Wheelchair Carbon fiber





SLEDGE HOCKEY

AIDS

WALKING AIDS
ORTHOPEDIC SHOES
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SLEDGE HOCKEY
RUGBY WHEELCHAIRS



Ice sledge Hockey

Code	Description
21.002.01	Sledge hockey Aluminum Alloy + Carbon fiber shell



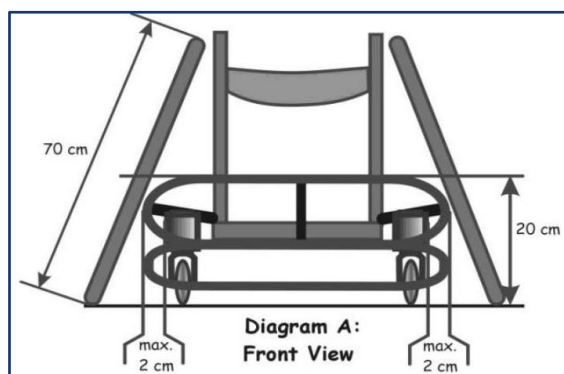
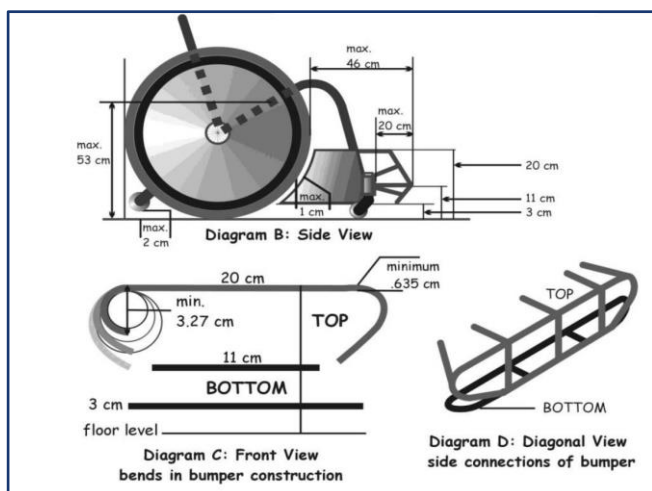


WALKING AIDS
ORTHOPEDIC SHOES
WHEELCHAIRS
RUNNING WHEELCHAIRS
SLEDGE HOCKEY
RUGBY WHEELCHAIRS



Rugby Wheelchairs

Code	Description
21.003.05	Rugby attack wheelchair
21.003.06	Rugby defense wheelchair





PROSTHETIC ACCESSORIES

ACCESSORIES

PROSTHETIC ACCESSORIES
VELCRO STRAP AND HOOKS
RIVETS
ELASTIC BAND



Socks for carbon fiber foot

Code	Description
31.004.01	Protective sock to insert carbon fiber foot into the cover



Easy Proth bag

Code	Size	Proximal circumference (cm)
2.012.01.XS	Extra Small	40
2.012.01.S	Small	41-45
2.012.01.M	Medium	46-58
2.012.01.L	Large	59-70
2.012.01.XL	Extra Large	71-80
2.012.01.XXL	Ultra Large	81



Plastic strap for bathroom prosthesis

Code	Description
12.006.02	Traditional plastic overstrap strap



Lamination spray- Aerofix 2

Code	Description
9.014.01	High strength spray adhesive





PROSTHETIC ACCESSORIES
VELCRO STRAP AND HOOKS
RIVETS
ELASTIC BAND

Velcro strap (loop and hook)

Code	Width	Length
31.001.01.TH20	20 mm	25 m
31.001.01.TH25	25 mm	25 m
31.001.01.TH30	30 mm	25 m
31.001.01.TH50	50 mm	25 m
31.001.02.TH20	20 mm	25 m
31.001.02.TH25	25 mm	25 m
31.001.02.TH30	30 mm	25 m
31.001.02.TH50	50 mm	25 m



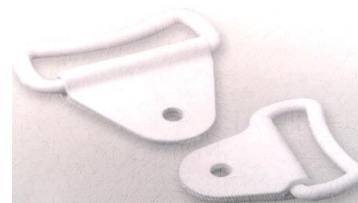
Hook & Loop clouser strap

Code	Width
13.004.01.TH25	25 mm
13.004.01.TH50	50 mm



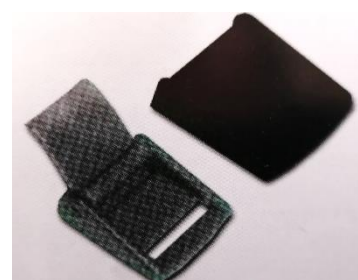
Roll plastic Loop for velcro strap

Code	Width	Box
30.001.44.H25	25 mm	100 pieces
30.001.44.H50	50 mm	100 pieces



Plastic Hooks

Code	Width	Box
30.001.45.H25	25 mm	100 pieces
30.001.45.H50	50 mm	100 pieces





RIVETS

PROSTHETIC ACCESSORIES
VELCRO STRAP AND HOOKS
RIVETS
ELASTIC BAND



Double Rivets (pack of 1000 pieces)

Code	Diameter (mm)	Length (mm)
30.001.35	3.5 x 11	11
30.001.36	3 x 8	8
30.001.37	4 x 10	10



Aluminum Rivets (pack of 1000 pieces)

Code	Diameter (mm)	Length (mm)
30.001.43	3 x 20	20

Copper Rivets (pack of 1 kg)

Code	Diameter (mm)	Length (mm)
30.001.39	4 x 30	30
30.001.40	4 x 20	13
30.001.41	3.5 x 15	10



Rivet buckle

Code	Description
30.001.42	available in different lengths



Speed Rivets (pack of 100 pieces)

Code	Length (mm)
30.001.33	7
30.001.34	5





PROSTHETIC ACCESSORIES
VELCRO STRAP AND HOOKS
RIVETS
ELASTIC BAND

Elastic Band			
Code	Type	Color	Length (m)
18.013.01	Extrasoft	Yellow	5
18.013.02	Soft	Orange	5
18.013.03	Medium	Green	5
18.013.04	Strong	Pink	5
18.013.05	Superstrong	Violet	5
18.013.06	Extrastrong	Grey	5





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