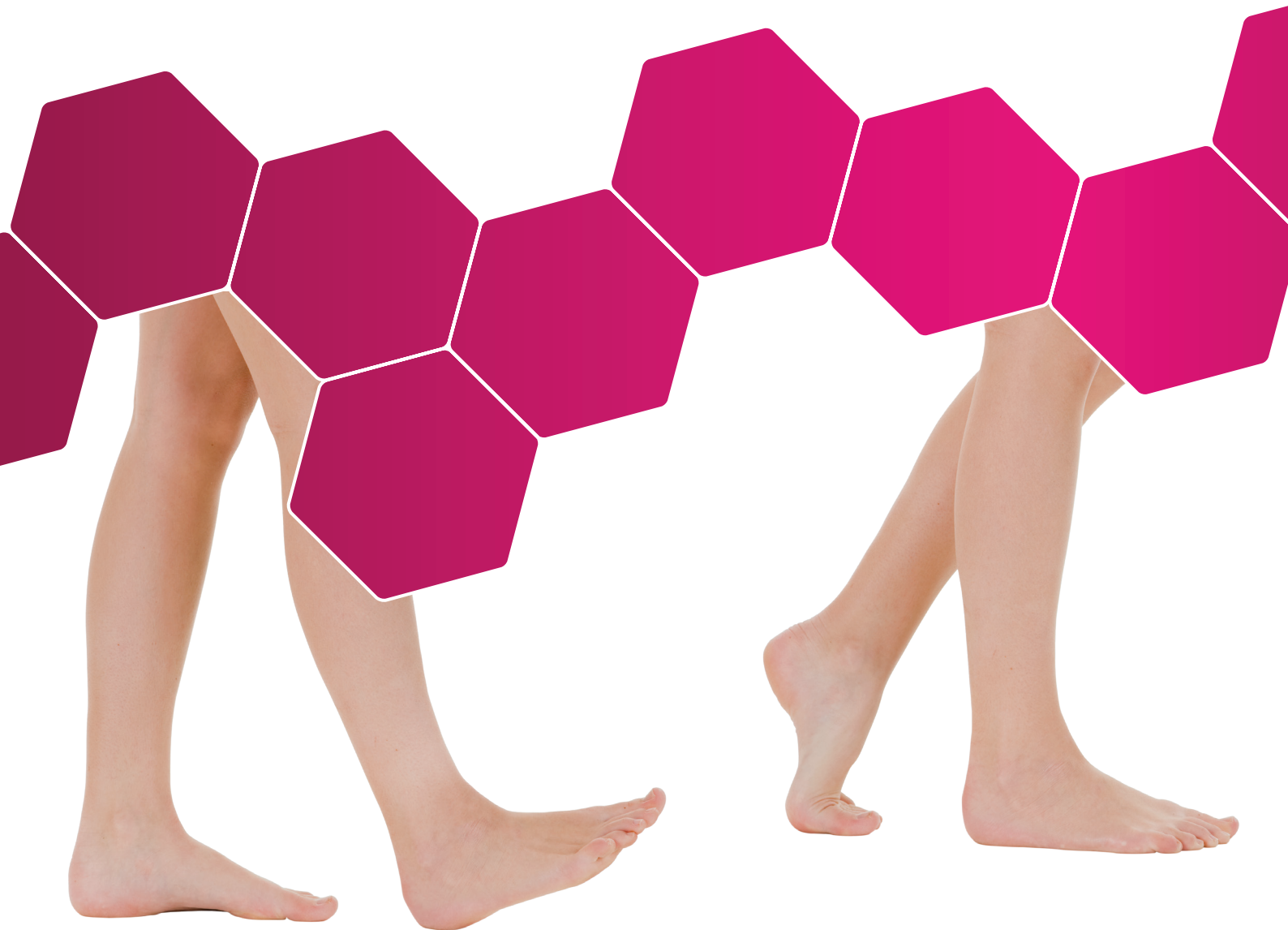




**OFFLOADING & POST-OP**  
**SPRING 2018 UPDATE**



# ABOUT US

PPL Biomechanics is Ireland's leading manufacturer and supplier of custom made/stock orthotic devices, orthopaedic footwear and offloading products. PPL was established in Cork over 20 years ago by James & Joanne McKenna. We combine our clinical knowledge with research evidence and more than 20 years of experience manufacturing, to identify the most appropriate offloading devices for our customers.



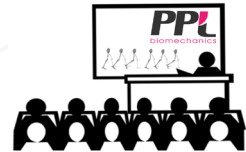
**CUSTOM ORTHOSES  
MANUFACTURE**



**STOCK ORTHOTIC  
DEVICES & FOOTWEAR**



**TECHNICAL SUPPORT &  
CUSTOMER SERVICES**



**EDUCATION &  
TRAINING SERVICES**

**SEE OUR WEBSITE AND CATALOGUE FOR FULL DETAILS OF THE WIDE SELECTION OF OTHER PRODUCTS WE MANUFACTURE AND SUPPLY**

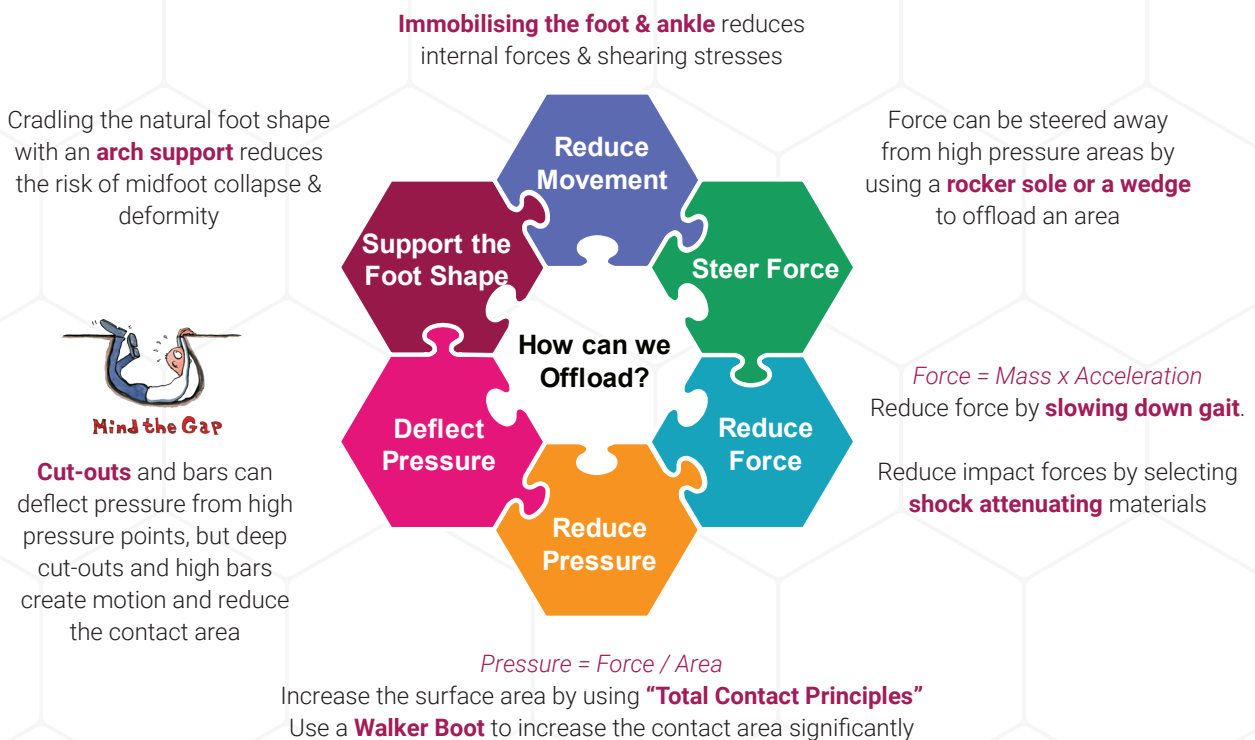
## WHY IS OFFLOADING IMPORTANT IN WOUND CARE?

Offloading is now recognised as the key factor in both the prevention and management of foot ulcers. Foot ulcers are a major complication of diabetes, due to a combination of peripheral neuropathy, foot deformity, inadequate offloading, ischaemia and minor trauma. When an ulcer is formed, healing may be chronically delayed if the area is not effectively offloaded. (Synder et al, 2014) (IWGDF, 2015) (Hingorani et al, 2016)

## MECHANICAL PRINCIPLES OF OFFLOADING

All or some of the mechanical principles of offloading can be applied relative to status – Acute, Chronic or Prevention? The Acute phase demands use of all the principles, as the more principles you apply the more effective the offloading.

ACUTE	CHRONIC	PREVENTION
Ulceration is present, or active Charcot foot	History of ulceration or foot deformity where risk is higher	Where no ulceration is present, but the foot is at risk



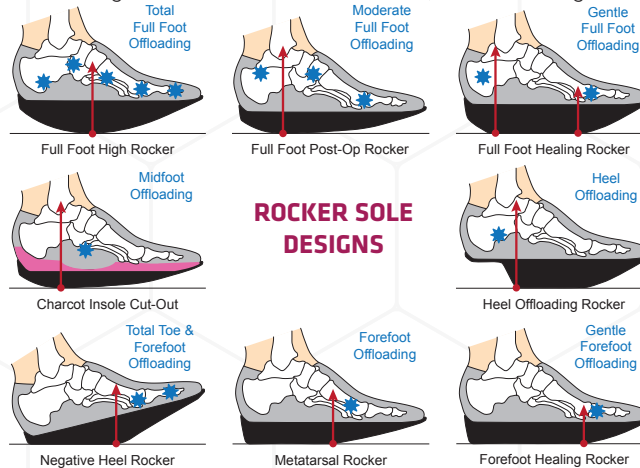
# ROCKER SOLES - A KEY ATTRIBUTE OF MOST OFFLOADING DEVICES

A **Rigid Rocker Sole** restricts sagittal plane motion, changes force distribution and alters loading times on specific areas. The rocker apex position (pivot point) and the height of the angle determine which area of the foot is offloaded and how effective the offloading is.

A **Flexible Rocker Sole** assists the natural rockers of the foot and ankle by allowing the body's centre of mass to "roll over" the base of support. They stabilise and facilitate normal heel-toe gait, but offer little assistance in offloading or steering force.

The **Acute Situation** demands immobilisation and slowing down a patient's gait pattern, which alters the gait pattern significantly. The boot or shoe is moving instead of the foot and ankle, therefore a rigid rocker sole is always required.

A thicker sole increases the rocker angle and will offload more effectively, but a balancing device for the opposite limb will be required.



## ROCKER SOLE DESIGNS

Negative Heel or higher rocker angles and more proximal rocker apex positions, will improve forefoot offloading, but consider stability.

# WHAT OFFLOADING METHODS DOES RESEARCH RECOMMEND?

IWDF guidance on footwear and offloading interventions to prevent and heal foot ulcers in patients with diabetes. International Working Group on Footwear and Offloading, 2015

The management of diabetic foot: A clinical practice guideline by the Society for Vascular Surgery in collaboration with the American Podiatric Medical Association and the Society for Vascular Medicine. Journal Vascular Surgery. 2016 3S-21S

The Management of Diabetic Foot Ulcers through Optimal Off-loading. Building Consensus Guidelines and Practical Recommendations to Improve Outcomes. JAPMA. 2014, Synder et al

## TOTAL CONTACT CASTING

**ACUTE**

Total Contact Casting (TCC) is the gold standard offloading method, but is widely underused. TCC-EZ makes this a more practical and implementable method.

## WALKER BOOTS

**ACUTE**

Walker Boots which can be made non-removable (instant TCC) are considered to be the secondary choice to TCC, or by some to be equivalent with an offloading insole.

## OFFLOADING FOOTWEAR

**ACUTE**

Offloading Footwear may be more acceptable to the patient than a boot and will offload segments of the foot, but not as effectively as a Walker Boot.

## HEALING FOOTWEAR

**ACUTE & CHRONIC**

Healing Footwear used with a customised insole, will offload pressure areas and result in a more stable gait pattern. However, it will not offload as effectively as a Walker Boot.

## INSOLES & ORTHOSES

**PREVENTION, ACUTE & CHRONIC**

Insoles & orthoses can cradle the arch, increase the contact area, and deflect pressure, which enhances the offloading capacities of any boot or shoe. See PPL's Stock Orthoses and Custom Orthoses brochures for more information.

## POST-HEALING FOOTWEAR

**CHRONIC**

Post-Healing Footwear have a rigid rocker sole and reduce the risk of ulcerations reoccurring. It is important that suitable insoles or orthoses are used. See PPL's Footwear brochure for more information.

## PREVENTION FOOTWEAR

**PREVENTION**

Prevention Footwear have flexible rocker soles that reduce the risk of ulcerations occurring. It is important that suitable insoles or orthoses are used. See PPL's Footwear brochure for more information.

## POSITIONING DEVICES & BALANCING FOOTWEAR

**PREVENTION, ACUTE & CHRONIC**

Positioning Devices can be used to offload high pressure areas while in bed. Balancing Devices are required for some offloading devices to balance the opposing limb.

# TOTAL CONTACT CASTING

Total Contact Casting (TCC) is recognized as the Gold Standard of Care for diabetic foot ulcers. TCC offloads by deflecting pressure up the leg, reducing movement and pressure by maximising the contact area. The cast contours exactly to the leg and foot providing a complete "Total Contact Effect". The cast is generally changed weekly to allow debridement and dressing changes. The non-removable status ensures patient compliance, which is believed to be a major factor in the efficacy of Total Contact Casting. Changing the cast weekly ensures that as changes occur, the cast remains closely contoured.



GOLD Standard of Care  
**89%**  
 TCC wound healing rate

## RESEARCH EVIDENCE

- The use of Total Contact Casting is supported by level I evidence, including international guidelines, consensus documents and numerous RCTs.
- The Total Contact Cast has been shown to have 89% healing rates for the diabetic foot ulcer in multiple RCTs, with most healing times between 5-8 weeks.
- International Guidelines and panels of leading experts, have recommended the Total Contact Cast as the preferred method for offloading a diabetic foot ulcer.

(Synder et al, 2014) (IWGDF, 2015) (Hingorani et al, 2016)

## THE GAP BETWEEN EVIDENCE AND PRACTICE

Despite being established as the Gold Standard, total contact casting is not widely adopted in practice.



LESS THAN 4% OF  
 'TCC-ELIGIBLE' PATIENTS  
 RECEIVED TCC  
 (Fife, 2014)

## CONTRAINDICATIONS TO TOTAL CONTACT CASTING

There are some contraindications to Total Contact Casting, but this doesn't explain the huge gap between evidence and practice.

- Infection
- Vascular status not adequate for healing
- Ulcers deeper than wide
- Probing to tendon, capsule or bone

## BARRIERS TO TRADITIONAL TOTAL CONTACT CASTING

Traditional TCC is time consuming, messy and requires a lot of training and skill to apply. Many podiatrists complete the training but lack confidence in applying the cast correctly and subsequently they decide it is impractical to implement in their clinic. Many podiatrists restrict its use to complex inpatients or the Charcot foot and refer to orthopaedic plaster rooms for traditional TCC application.

## TCC-EZ® OFFERS PODIATRISTS A PRACTICAL, IMPLEMENTABLE TOTAL CONTACT CASTING METHOD



The TCC-EZ® system was developed by Dr. Jeff Jensen (Director of Research, Barry University School of Podiatric Medicine, Florida). Dr. Jensen's aim was to produce a Total Contact Casting system that was **quick** and **easy to use**, enabling podiatrists to provide a Gold Standard service.



- **TCC-EZ®** outcomes are comparable or better than traditional TCC
- **TCC-EZ®** takes less than ¼ of the amount of time than traditional TCC
- **TCC-EZ®** can be applied in under 10 minutes
- **TCC-EZ®** is easy to apply
- **TCC-EZ®** requires minimal training
- **TCC-EZ®** is lighter and more comfortable than traditional TCC
- **TCC-EZ®** application methods are consistent
- **TCC-EZ®** outer boot ensures an offloading rocker sole

# TCC-EZ® - TOTAL CONTACT CASTING SYSTEM

TCC-EZ® is a unique and versatile total contact casting system designed to reduce application time, while providing improved healing rates for the diabetic foot ulcer, along with increased stability and comfort for the patient.



TCC-EZ® creates a natural healing chamber that allows active wound healing and provides a safe environment for the foot, halting the cycle of the diabetic foot ulcer which could eventually lead to amputation if not treated appropriately.

## TCC-EZ® CASTING KIT CONTAINS EVERYTHING YOU NEED

- Foam dressing (other dressings can be used)
- Tan stockinette
- Protective felt padding (cut to size)
- Soft "Easy Roll On" sock
- 3 rolls of tape for securing dressing & soft layers
- Hard resin "Easy Roll On" cast sock



Equipment Needed - Water, Scissors & Gloves

## QUICK & EASY - ROLL ON DESIGN (10 MINUTES TO APPLY)

- The unique "Easy Roll On" soft sock and hard resin cast sock are significantly faster to apply than the wrap-around padding and resin bandages used with traditional TCC.
- The outer boot provides further stability, allowing the cast to contain less resin, be lighter and more comfortable than traditional TCC.
- **TCC-EZ®** takes less than 10 minutes to apply and just 15 minutes to dry.



## CAST REMOVAL

A standard easy to use oscillating cast saw is used to remove the cast. Oscillating saws vibrate rather than spin, so practitioners and patients can be confident in their safety (Available from PPL).

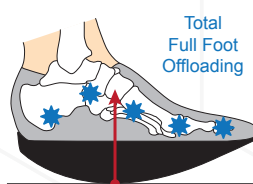
## OUTER BOOT

The outer boot provides further stability to the cast, and has quality fixtures and closing, maintaining the ankle at 90°. The same boot is worn throughout the average 5-8 weeks casting period.



The **Regular Boot** has a "Full Foot High Rocker Sole" ensuring maximum offloading and a flat insole base.

### Regular Boot

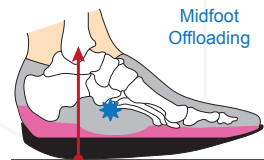


Full Foot High Rocker

Total Full Foot Offloading

The **Charcot Boot** has 3 layers of cut-away customisable EVA insoles in differing shore densities

### Charcot Boot



Charcot Insole Cut-Out

Midfoot Offloading

## COST EFFECTIVE, TIME SAVING & GOLD STANDARD

- 89% HEALING RATES
- AVERAGE HEALING TIMES 5-8 WEEKS
- LESS TIME, LESS VISITS, LESS COST
- LESS RISK OF AMPUTATION

## WALKER BOOTS

**Walker Boots immobilise by reducing sagittal plane movement, in the ankle and metatarsal. They also deflect pressure, transferring up to 60% of the load from the foot to the lower leg. (Begg et al, 2015)**

The taller the boot, the more secure and closer the fit. This results in greater pressure deflection. Closer fits can be achieved with some Walkers via heat moulding the shells or using air bladder inflation. Thicker, more shock attenuating soles, with higher rocker angles, provide more foot offloading, but will require a balancing device for the opposite limb.

All Walker boots can be made non-removable by using a fixing strap, this is known as iTCC (instant total contact casting). Practitioners can evaluate patient compliance by reviewing whether or not the boot has been removed. However, quick and easy removal for wound inspection or in the case of emergencies is also obtained. **See fitting notes at end of Walker Boot section.**



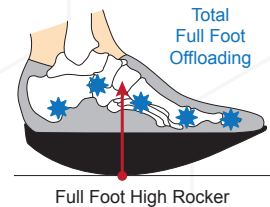
## HEAT MOULDABLE CUSTOMISABLE WALKERS

The heat mouldable shell can be adapted using a simple heatgun to create a close contact fit. Optima Diab Walker Boots have been designed specifically for offloading, rather than a post-op boot. The mouldable shell, high quality rocker sole, lockable mechanisms and adaptable offloading insole create an instant Total Contact Casting System that in studies has been found to be as effective as Total Contact Casting (Piagessi, 2007, 2016).

### OPTIMA DIAB

### SINGLE - UNIVERSAL LEFT/RIGHT FIT

The Optima Diab is a high quality Walker Boot which studies have found to be as effective as Total Contact Casting (Piagessi, 2007, 2016). The combination of heat mouldable shell, rigid full foot high rocker polyurethane sole and locking mechanisms, ensure compliance, optimal offloading and management of impact forces. Optima Diab is easy & quick to fit, lightweight & comfortable.



#### Features

- Heat mouldable shell
- Polyurethane full foot high rocker sole
- Lockable (can be rendered irremovable)
- Adjustable Puzzle insole system

#### Recommended For

- Diabetic foot ulceration offloading
- Treatment of Charcot foot in the phase of conversion from acute to chronic
- Easier wound inspection

#### Insole System

- 3 layers of interlocking, adaptable insoles
- Differing shore densities (hard, medium, soft)



Size	UK	EU
Small	2 - 3.5	34 - 36
Medium	4 - 6	37 - 39
Large	6.5 - 8	40 - 42
X-Large	9 - 10.5	43 - 45
XX-Large	11 - 13	46 - 48

# AIR WALKERS

Air Walker Boots have inflatable air bladders which allow for more customised contact and immobilisation. This enhances comfort and provides maximum deflection of pressure from the foot to the lower leg. Air bladders should be deflated and re-inflated during each fitting, hence patient compliance should be considered. Care should be taken with the ischemic patient. It should be inflated until snug, comfortable and secure.

## DARCO AIR TRAVELER

The Air Traveler™ Walker features a circumferential air bladder contained in a foam wraparound lining secured with Velcro® straps. The Air Traveler™ is cost effective, easy to inflate and secure. The low-profile rocker and lightweight sole, make this boot very easy to wear and reduces the requirement for a balancing device.

### Features

- Circumferential Air Bladder - Medial, lateral & posterior ankle & calf
- Hand inflation pump with 1 inflation valve & posterior pocket for storage
- Lower profile full foot post-op rocker sole
- Quality side-stirrup shell design
- 10 mm EVA Insole

### Recommended For

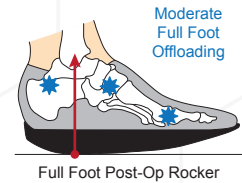
- Post fracture
- Ease of use & comfort
- Post-op immobilisation
- Soft tissue injury
- Acute ankle sprain

### Optional Extras



DARCO PegAssist

### SINGLE - UNIVERSAL LEFT/RIGHT FIT



### HIGH & SHORT OPTIONS AVAILABLE

Size	UK	EU
X-Small	12 - 3	31 - 36
Small	4 - 5	37 - 38
Medium	6 - 8	39 - 42
Large	8 - 10	43 - 44
X-Large	10 - 12	45 - 48

## DARCO BODY ARMOR PRO TERM

The DARCO Pro Term is an air walker boot specifically designed for patients up to 10 weeks post Transmet, Chopart and Lisfranc amputation. The adjustable air bladder with integrated pump, and strong variable closure system allow further adaptation to the foot stump situation.

### Features

- Circumferential Air Bladder - Medial, lateral & posterior ankle & calf
- Integrated pump with 1 inflation valve
- Wedge-shaped adjustable insole system
- Reinforced closure system

### Recommended For

- Transmet, Chopart and Lisfranc amputation
- Easy stump access for VAC Therapy
- Diabetic care

Size	Stump Length
Medium	16 cm
Large	19 cm



## AIRCAST AIRSELECT STANDARD

SINGLE - UNIVERSAL LEFT/RIGHT FIT

The Aircast AirSelect Standard Walker features 2 air bladders and a foam liner secured with a front panel and Velcro® straps. It features an easy to use integrated inflation pump. The low profile rocker sole, reduces the requirement for a balancing device.

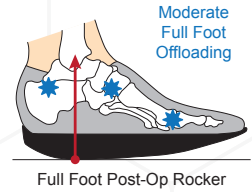
### Features

- 2 air bladders – medial & lateral ankle
- Integrated inflation pump
- Low profile full foot post-op rocker
- Rigid Shell and front panel
- 10 mm EVA Insole

### Recommended For

- Diabetic care
- Post-op immobilisation
- Soft tissue injury
- Acute ankle sprain
- Post-fracture

Size	UK	EU
X-Small	12 - 3	31 - 36
Small	4 - 5	37 - 38
Medium	6 - 8	39 - 42
Large	8 - 10	43 - 44
X-Large	10 - 12	45 - 48



HIGH & SHORT OPTIONS AVAILABLE

## AIRCAST XP DIABETIC WALKER

SINGLE - UNIVERSAL LEFT/RIGHT FIT

The Aircast XP Diabetic Walker features 4 air bladders and a foam liner secured with a front panel and Velcro® straps. The 4 air bladders are inflated with a regulated hand pump, which allows clinicians to recommend a specific pressure. The higher profile non-slip rocker sole provides improved foot offloading, however a balancing device is required for the opposing limb. Supplied with an Impax Peg Insole & diabetic soft socks.

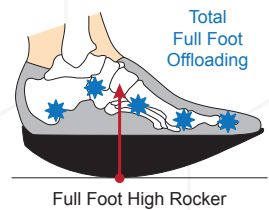
### Features

- 4 Air Bladders – Medial & lateral ankle, posterior calf & dorsal foot & shin
- Regulated hand inflation pump with 4 valves
- High profile full foot high rocker none slip sole
- Rigid Shell and front panel
- 10mm Plastazote Insole
- Impax Peg Insole
- 2 x Soft Diabetic Sock

### Recommended For

- Diabetic foot ulceration offloading
- Patients who can operate a regulated pump

Size	UK	EU
Small	4 - 5	37 - 38
Medium	6 - 8	39 - 42
Large	8 - 10	43 - 44



### Inflation Guidelines

Order		Pressure
1	Front	10 to 20
2	Side	20 to 30
3	Side	20 to 30
4	Back	10 to 20

### ACCESSORIES ALSO AVAILABLE SEPARATELY:



Impax Grid Insole Kit



Replacement Pump



Replacement Sock & Insole



Replacement Sock



## STANDARD WALKERS

Standard Walker Boots are the lowest cost Walkers which allow minimal customisation.

### DARCO FX PRO WALKER

SINGLE - UNIVERSAL LEFT/RIGHT FIT

The DARCO FX Pro™ is a low-profile cost-effective Walker. This boot does not have air bladders, but the Velcro® straps provide a customisable fit. The low-profile rocker and lightweight sole make the boot very easy to wear and reduces the requirement for a balancing device.

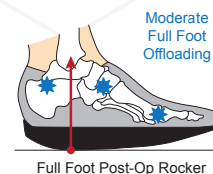
#### Features

- Quality side-stirrup shell design
- Wrap-around foam lining
- Standard lower profile rocker-sole design
- Very lightweight

#### Recommended For

- Post-op immobilisation
- Strains and sprains of the lower leg, ankle or foot
- Post-fracture

Size	UK	EU
X-Small	2 - 3.5	34 - 36
Small	4 - 5.5	37 - 38
Medium	6 - 7.5	39 - 41
Large	8 - 9.5	42 - 44
X-Large	10 - 11.5	45 - 46



HIGH & SHORT OPTIONS AVAILABLE

## GENERAL TIPS ON FITTING WALKER BOOTS

**ALWAYS CONSIDER: VASCULAR STATUS, STABILITY, FIT, COMFORT & PATIENT COMPLIANCE**  
**ALWAYS FOLLOW: MANUFACTURERS INSTRUCTIONS FOR FITTING AND USE**

### PREPARE LIMB & POSITION FOOT IN BOOT

- Apply stockinette/soft sock to leg & foot, apply padding to bony prominences if required.
- If boot contains a soft foam cuff, this can be wrapped and secured around limb.
- The ankle should be centred at the struts with the ankle and foot at 90°.
- To ensure the heel is at back & bottom of the boot "Tap the back of the heel on the floor"

### SECURE THE STRAPS

- When Velcro® straps are opened, ensure straps are folded back on themselves.
- The sequence of securing the straps depends on the height of the boot.
- Generally work from ankle to shin, then toe. Trim excess strap-ends off.
- **Do not over-tighten.** Boot should fit **snugly, comfortably and securely.**

### CUSTOMISATION

- **Heat-mouldable Walkers** – heat mould shell using a heatgun 15-20cm away from the boot and conform to desired shape.
- **Air Walkers** - air bladders should be fully deflated before fitting. Do not over-inflate.
- **All Boots** should be customised until fitting snugly, comfortably and securely.

### RENDERING A BOOT IRREMOVABLE

- All Walker boots can be made non-removable by using a fixing or locking strap. This is commonly referred to as iTCC (instant Total Contact Casting).

### GAIT SYMMETRY, STABILITY & BALANCE CHECK/TRAINING

- Gait should be slower, shorter strides and less steps per minute.
- Review stability & balance; look for swaying and COM excursions (consider walking aids).
- Review symmetry; look for pelvic tilts, hip circumduction, knee hyperextension etc.
- Use a balancing device for all symmetry concerns.
- Train and advise patient in safety, stability and rolling over the boot from "heel to toe".



# OFFLOADING FOOTWEAR

Offloading footwear are designed to steer force from an overloaded area. The fully rigid soles reduce sagittal plane motion in the ankle and metatarsal rocker. The position of the rocker apex and the height of the rocker angle, dictate which area of the foot will be offloaded most effectively.



## HEEL OFFLOADING FOOTWEAR

Plantar heel ulcers are less frequent than forefoot ulcers, however researchers have estimated that they are 1.5 times more expensive to treat and are 2-3 times less likely to heal compared to metatarsal ulcers (Jacobs & Kerstein 2000).

### DARCO HEELWEDGE

#### SINGLE - UNIVERSAL LEFT/RIGHT FIT

The DARCO HeelWedge is a heel offloading half shoe which is clinically proven to reduce heel loading by 26%. The square toe design acts as a bumper to protect the toes and provides better universal left/right fit. A balancing shoe is recommended for the opposing limb.

#### Features

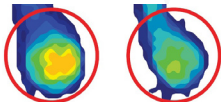
- Sole cut away under the heel for maximal offloading
- Covered toe design
- Removable insole

#### Recommended For

- Plantar heel offloading
- Post-operative use

#### Peak Pressure Reduction

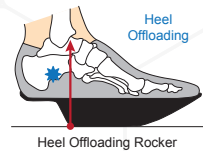
- Heel Pressure – 26%



#### Optional Extras



DARCO PegAssist



Size	UK	EU
X-Small	2 - 3.5	34 - 36
Small	4 - 6	37 - 39
Medium	6.5 - 8	40 - 42
Large	8.5 - 10.5	43 - 45
X-Large	11 - 13	46 - 48

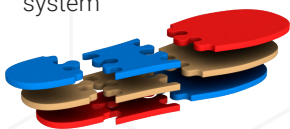
### OPTIMA HEEL

#### SINGLE - UNIVERSAL LEFT/RIGHT FIT

The Optima Heel features a rigid full foot Polyurethane rocker sole and a heel cut-away which as well as offloading plantar heel ulcers, also avoids posterior heel contact. The lateral shell of the boot is heat mouldable for a customised close contact fit.

#### Features

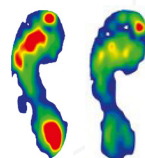
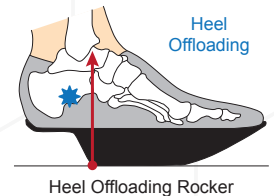
- Heat-mouldable shell
- Polyurethane full foot high rocker sole
- 4 adjustable velcro straps for stability
- Adjustable Puzzle insole system



#### Recommended For

- Plantar heel offloading
- Posterior heel protection
- Diabetic care
- Post-operative use

Size	UK	EU
Small	2 - 3.5	34 - 36
Medium	4 - 6	37 - 39
Large	6.5 - 8	40 - 42
X-Large	9 - 10.5	43 - 45
XX-Large	11 - 13	46 - 48



#### Peak Pressure Reduction

- Offloads the heel and reduces pressure in midfoot and forefoot.

## FOREFOOT OFFLOADING FOOTWEAR

Studies have shown the forefoot to be the most common location of plantar foot ulcers, and within the forefoot the 1st MPJ (27%) and hallux (18%) are the most predominant sites (Waaijman et al., 2012).

### DARCO RELIEF DUAL

The DARCO Relief Dual has a fully rigid shank which extends the full length and width of the shoe, making it highly efficient forefoot offloading. Impact & slip resistant. Lower profile reduces requirement for a balancing device.

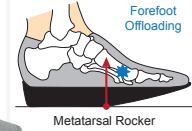
#### Features

- Metatarsal Rocker sole
- Full foot rigid shank
- Impact & Slip resistant sole
- Stretchable, seamless, breathable Upper
- Strong heel counter

#### Recommended For

- Forefoot offloading.
- Diabetic Care
- Post-operative use
- Gait stability
- Use insoles to enhance offloading

### SINGLE - UNIVERSAL LEFT/RIGHT FIT



#### Peak Pressure Reduction

- Forefoot – 59%
- Hallux – 70%
- Heel – 57%

#### Ladies Sizing

Size	UK	EU
Small	2 - 3.5	34 - 36.5
Medium	4 - 5.5	37 - 38.5
Large	6 - 7.5	39 - 41

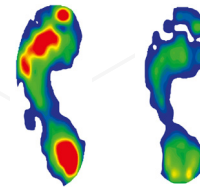
#### Optional Extras



DARCO Relief Contour

DARCO PegAssist

Toe Cap



#### Mens's Sizing

Size	UK	EU
Small	6 - 7.5	39 - 41
Medium	8 - 9	41.5 - 43
Large	9 - 10.5	43.5 - 45
X-Large	11 - 12.5	45.5 - 47

### DARCO ORTHOWEDGE

The DARCO OrthoWedge is a forefoot offloading negative heel rocker half-shoe. As well as offloading the forefoot, the high rocker angle offers maximum Hallux offloading. Gait training and a balancing shoe is recommended for the opposing limb.

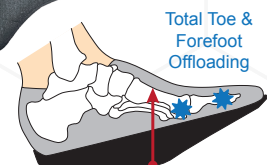
#### Features

- Half-shoe
- Sole cut away under the forefoot for maximal offloading
- Negative heel rocker with high rocker angle

#### Recommended For

- Hallux offloading
- Forefoot offloading.
- Post-operative use
- Patients where stability is less of an issue

### SINGLE - UNIVERSAL LEFT/RIGHT FIT



#### Peak Pressure Reduction

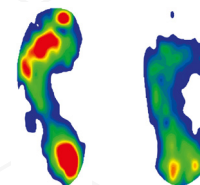
- Hallux – 75%
- Forefoot – 57%

#### Optional Extras



DARCO PegAssist

Toe Cap



Size	UK	EU
X-Small	2 - 3.5	34 - 36
Small	4 - 6	37 - 39
Medium	6.5 - 8	40 - 42
Large	8.5 - 10.5	43 - 45
X-Large	11 - 13	46 - 48

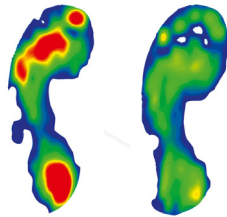
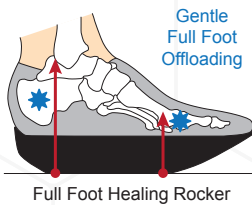
## OPTIMA EUROPA

The Optima Europa is an offloading sandal with a full foot healing rocker sole which facilitates an efficient and consistent gait. Its heat mouldable posterior shell and two adjustable Velcro fasteners ensure a secure and comfortable fit.

The sandal design enhances breathability and caters for oedema. Compatible with the Optima 3x3 Puzzle Insole for further customisation.

### Features

- Full foot healing rocker sole
- Shock attenuating and durable Polyurethane sole unit
- Gentle offloading with enhanced stability
- Pressure relieving and shock attenuating
- Extra depth for accommodation of bulky dressings
- Rigid rear heat mouldable shell
- Easy access wide opening
- Universal fitting suitable for left and right
- Breathable and washable upper



## SINGLE - UNIVERSAL LEFT/RIGHT FIT



### Recommended For

- Pressure relieving and offloading of wounds and ulcerations
- Suitable for diabetic or post-op use
- At-risk sensitive foot
- Postoperative phase after toe and/or forefoot surgery
- Assists a normal heel-to-toe gait pattern

### Compatible With



3x3 Puzzle Insole

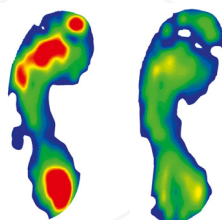
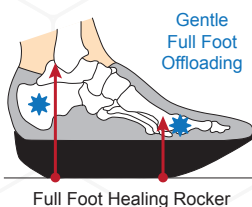
Size	UK	EU
Small	2 - 3.5	34 - 36
Medium	4 - 6	37 - 39
Large	6.5 - 8	40 - 42
X-Large	9 - 10.5	43 - 45
XX-Large	11 - 13	46 - 48

## OPTIMA FREE

The Optima Free is an offloading sandal which is specifically designed for patients with dorsal digital lesions. It has a full foot healing rocker sole which facilitates an efficient and consistent gait. Three adjustable Velcro straps have been anatomically designed to relieve pressure on the dorsum of the foot. The posterior shell can be heat moulded for enhanced comfort and stability. The sandal design enhances breathability and caters for oedema. This sandal is compatible with the Optima 3x3 Puzzle Insole for further customisation.

### Features

- Full foot healing rocker sole
- Shock attenuating and durable Polyurethane sole unit
- Gentle offloading with enhanced stability
- Pressure relieving and shock attenuating
- Extra depth for accommodation of bulky dressings
- Rigid rear heat mouldable shell
- Easy access wide opening
- Universal fitting suitable for left and right
- Breathable and washable upper



## SINGLE - UNIVERSAL LEFT/RIGHT FIT



### Recommended For

- Dorsal lesion and forefoot offloading
- Suitable for diabetic or post-op use
- At-risk sensitive foot
- Postoperative phase after toe and/or forefoot surgery
- Assists a normal heel-to-toe gait pattern

### Compatible With



3x3 Puzzle Insole

Size	UK	EU
Small	2 - 3.5	34 - 36
Medium	4 - 6	37 - 39
Large	6.5 - 8	40 - 42
X-Large	9 - 10.5	43 - 45
XX-Large	11 - 13	46 - 48

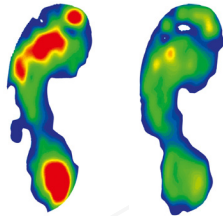
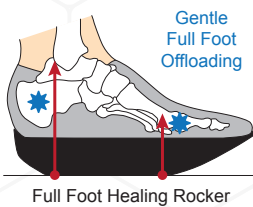
## OPTIMA POST-OP

SINGLE - UNIVERSAL LEFT/RIGHT FIT

The Optima Post-Op is a lightweight, low cut offloading boot with a full foot healing rocker sole, facilitating an efficient and consistent gait. This boot is suitable for post-operative offloading and diabetic wound pressure relief. Three adjustable Velcro fasteners and a heat mouldable shell ensure a secure and comfortable fit. The sandal design of this boot enhances breathability and caters for oedema. This boot can be further customised with the use of the Optima 3x3 Puzzle Insole.

### Features

- Full foot healing rocker facilitates an efficient and consistent gait
- Shock attenuating and durable Polyurethane sole unit
- Lightweight, heat mouldable shell
- Facilitates an efficient and consistent gait
- Universal fitting suitable for left and right
- Hand washable



### Recommended For

- Diabetic ulceration offloading
- Post-operative rehabilitation
- Assists a normal heel-to-toe gait pattern

### Compatible With



3x3 Puzzle Insole

Size	UK	EU
Small	2 - 3.5	34 - 36
Medium	4 - 6	37 - 39
Large	6.5 - 8	40 - 42
X-Large	9 - 10.5	43 - 45
XX-Large	11 - 13	46 - 48

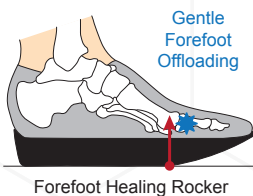
## ORLIMAN POST-OP DIABETIC SHOE

SINGLE - UNIVERSAL LEFT/RIGHT FIT

The Orliman Post-Op Diabetic Shoe features a low profile forefoot healing rocker sole which provides moderate forefoot offloading, suitable for diabetic or post-op use. A deep and wide fit allows this shoe to be worn over a cast or bulky dressings. A strong heel counter and multi adjustable Velcro fasteners provide a secure and comfortable fit. This shoe is equipped with a protective toe-cap which can be removed dependent on the presenting conditions.

### Features

- Low profile forefoot healing rocker sole
- Semi-rigid shank
- Strong heel counter
- Breathable mesh upper
- Closed toe design
- Adjustable ankle strap
- Low boot cut
- Universal fitting suitable for left and right
- Hand washable



### Compatible With



Orliman Plug Insole



### Recommended For

- Moderate forefoot offloading
- Accommodation of bulky dressings
- Wearing over a cast
- Suitable for diabetic or post-op use

Size	UK	EU
X-Small	1 - 3	33 - 35
Small	3.5 - 5	36 - 38
Medium	6 - 7	39 - 40
Large	7.5 - 8	41 - 42
X-Large	8.5 - 10.5	43 - 45

## ORLIMAN NEGATIVE HEEL SHOE SINGLE - UNIVERSAL FIT

The Orliman Negative Heel Shoe features a negative heel rocker with a high rocker angle and sole cut-away under the forefoot for maximal offloading. Its wide and deep fit allows for the accommodation of bulky dressings.



### Features

- Sole cut away under the forefoot
- Negative heel rocker with high rocker angle
- Open toe design
- 2 fully adjustable fastening straps
- Non-slip sole
- Breathable mesh upper
- Removable EVA insole

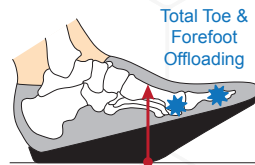
### Recommended For

- Forefoot offloading
- Peak pressure reduction
- Suitable for diabetic or post-op use
- Accommodation of bulky dressings

### Compatible With



Orliman Plug Insole



Negative Heel Rocker

Size	UK	EU
X-Small	1 - 3	33 - 35
Small	3.5 - 5	36 - 38
Medium	6 - 7	39 - 40
Large	7.5 - 8	41 - 42
X-Large	8.5 - 10.5	43 - 45

## ORLIMAN POST-OP / CAST SHOE SINGLE - UNIVERSAL LEFT/RIGHT FIT

This shoe features a forefoot healing rocker sole which assists pressure relieving and offloading. Its wide and deep fit allows for the accommodation of bulky dressings. Suitable for post-op use and wearing over a cast. Offloading can be further customised with the use of the "Orliman Offloading Shoe - Plug Insole".



### Features

- Forefoot healing rocker sole
- Anti-slip rigid sole unit
- Open toe design
- Strong heel counter
- 2 adjustable fastening straps
- 100% breathable polyester upper

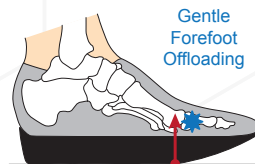
### Recommended For

- Wearing over a cast
- Accommodation of bulky dressings or oedema
- Moderate forefoot offloading and pressure relieving

### Compatible With



Orliman Plug Insole



Forefoot Healing Rocker

Size	UK	EU
X-Small	1 - 3	33 - 35
Small	3.5 - 5	36 - 38
Medium	6 - 7	39 - 40
Large	7.5 - 8	41 - 42
X-Large	8.5 - 10.5	43 - 45

## ORLIMAN OFFLOADING PLUG INSOLE

The Orliman Plug Insole provides localised offloading and plantar pressure relieving for post-op management and diabetic foot ulcerations. It is made up of three individual layers - PORON base, memory foam mid-layer and EVA top surface with square removable pegs. Pressure reduction of up to 60% can be achieved using this insole. Compatible with Orliman offloading footwear.

### SINGLE - UNIVERSAL LEFT/RIGHT FIT



Size	UK	EU
X-Small	1 - 3	33 - 35
Small	3.5 - 5	36 - 38
Medium	6 - 7	39 - 40
Large	7.5 - 8	41 - 42
X-Large	8.5 - 10.5	43 - 45

## DARCO A.P.B. (ALL PURPOSE BOOT)

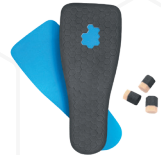
### SINGLE - UNIVERSAL LEFT/RIGHT FIT

The DARCO APB features a semi-rigid sole, soft heel counter, low boot design and covered toes. The low-profile forefoot healing rocker sole reduces the requirement for a balancing device. Suitable for post-operative use or wearing over a cast.

#### Features

- Low profile forefoot healing rocker sole
- Breathable mesh upper
- Closed toe design
- Adjustable ankle strap

#### Optional Extras



DARCO PegAssist

#### Recommended For

- Moderate forefoot offloading
- Accommodation of bulky dressings
- Wearing over a cast



Size	UK	EU
X-Small	2 - 3.5	34 - 36
Small	4 - 6	37 - 39
Medium	6.5 - 8	40 - 42
Large	8.5 - 10.5	43 - 45
X-Large	11 - 13	46 - 48

## DARCO SLIMLINE PAEDIATRIC

### SINGLE - UNIVERSAL LEFT/RIGHT FIT

The DARCO Slimline Paediatric boot is designed to be worn over a fibreglass cast, providing protection against dirt and external elements. Its fully adjustable strap closure system facilitates wearing with bulky bandages or a cast. An EVA base insole can be removed to create even more space. The upper material is water resistant and hand washable. Available in blue and pink.

#### Features

- Universal left/right fitting
- Rocker sole design
- Child specific design
- Adjustable fastening straps

#### Recommended For

- Wearing over a cast boot
- Moderate offloading
- Post-operative use



Size	UK (Child)	EU
Small	< 4	21
Medium	5 - 8	22 - 26
Large	9 - 13	27 - 32

## DARCO CAST BOOT PAEDIATRIC

### SINGLE - UNIVERSAL LEFT/RIGHT FIT

The DARCO Cast Boot Paediatric is designed for the smaller child. It is worn over a fibreglass cast, providing protection against dirt and external elements. This helps to prolong the lifespan of the cast by limiting wear and tear. Its rocker sole design assists a normal heel-toe gait pattern.

#### Features

- Universal left/right fitting
- Rocker sole design
- Child specific design
- Adjustable fastening straps

#### Recommended For

- Wearing over a cast boot
- Moderate offloading
- Post-operative use



Size	UK (Child)	EU
X-Small	< 3	20
Small	4 - 5	21 - 22

## OFFLOADING FOOTWEAR ACCESSORIES

### DARCO PEGASSIST INSOLE

SINGLE - UNIVERSAL LEFT/RIGHT FIT

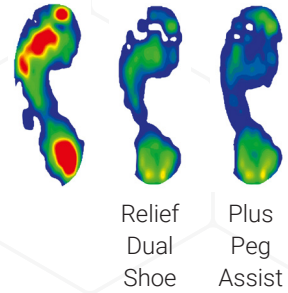
The DARCO PegAssist system is a 3 layered insole with removable pegs to effectively offload high pressure areas of the foot. Pressure can be reduced by as much as 60% while allowing patient to remain ambulatory.

**Features**

- Removable pegs
- PORON cushioning cover
- Self-adhesive card to stabilise pegs

**Recommended For**

- Diabetic foot ulceration offloading
- Post-operative use



**Compatible With**



DARCO Relief Dual



DARCO OrthoWedge



DARCO HeelWedge



DARCO A.P.B.



DARCO MedSurg

### DARCO RELIEF CONTOUR INSOLE

SINGLE - LEFT/RIGHT FIT

The DARCO Relief Contour is a shock attenuating Polyurethane insole. Pressure can be reduced by up to 90%. A negative heel enhances forefoot offloading and the contoured arch creates a total contact effect.

**Features**

- Shock attenuating Polyurethane
- Negative heel
- Contoured arch

**Recommended For**

- Diabetic foot offloading
- Post-operative use



**NEGATIVE HEEL INCREASES FOREFOOT OFFLOADING**

**Compatible With**



DARCO Relief Dual



DARCO MedSurg



### DARCO PUZZLE INSOLE

SINGLE - UNIVERSAL LEFT/RIGHT FIT

The DARCO Puzzle insole consists of EVA interchangeable components - 1st ray, 5th ray and middle 3rd of the foot.

**Compatible With**



DARCO Relief Dual



### DARCO TOE CAPS

PROTECTIVE TOE COVERING



DARCO Relief Dual



DARCO OrthoWedge



DARCO TwinShoe



DARCO W.C.S.



# HEALING FOOTWEAR

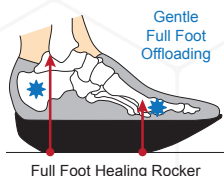
HEALING  
FOOTWEAR

Healing shoes and sandals provide a combination of a gentle offloading rocker, with a more stable, easier to wear shoe. Localised ulcer and pressure point deflection is achieved by customisation of insole systems.

## DARCO WOUND CARE SYSTEM

The WCS® is designed for offloading diabetic foot ulcerations and is available in two models; a sandal design and closed-toe shoes.

### WOUND CARE SYSTEM SOLE UNIT



Full Foot Healing Rocker sole offers gentle offloading, but is also very stable. The sole is lightweight, shock attenuating, fully rigid and non-slip. The sole unit contains a deep pocket to hold the 20mm customisable insoles securely in place. A balancing shoe is advised.

Size	UK	EU
X-Small	3 - 4.5	35 - 36
Small	5 - 5.5	37 - 38
Small-Medium	6 - 7	39 - 40
Medium	7.5 - 8.5	41 - 42
Large	9 - 10	43 - 44
X-Large	10.5 - 11.5	45 - 46
XX-Large	12 - 13	47 - 48

### WOUND CARE SYSTEM CUSTOMISABLE INSOLES

#### 4 Layers of Customisable Insoles (supplied with the both)

PINK - 6mm Contoured self moulding medical grade Plastazote

BLUE - 3mm Poron type material

WHITE - 6mm Low Density EVA (42A Shore)

ORANGE - 6mm Medium EVA (50A Shore)

Replacement "four-layer" insoles also available separately



## DARCO WOUND CARE LIGHT

PAIR

The DARCO Wound Care Light is a closed toe shoe with a stretchy seamless upper, and is sold in pairs. Cost effective and suitable for use post-healing.

#### Features

- Customisable insoles
- Healing rocker sole
- Stretchy upper
- Seamless lining
- Wide opening
- Quality straps

#### Recommended For

- Diabetic foot ulceration offloading
- Dorsal lesions
- Post-operative use
- Gait Stability
- Easy access



## DARCO WOUND CARE SANDAL

SINGLE - LEFT OR RIGHT FIT

The DARCO Wound Care Sandal is wide opening with seamless plastazote lining and adaptable leather upper.

#### Features

- Customisable insoles
- Healing rocker sole
- Seamless Plastazote lining
- Adaptable leather upper
- Wide opening
- Quality straps

#### Recommended For

- Diabetic foot ulceration offloading
- Dorsal lesions
- Post-operative use
- Gait stability
- Easy access



# POSITIONING & BALANCING DEVICES

Positioning Devices are used to offload and protect the at-risk leg and foot when in bed or at rest. As well as preventing the development of pressure ulcers, they are used to further protect active ulcers.

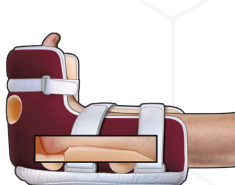
Balancing Shoes & Devices are used alongside Total Contact Casts, Walkers, Offloading Shoes and Healing Shoes, where the device has caused a functional leg length discrepancy.



## HEELIFT® SUSPENSION BOOTS

Heelift Suspension Boots are designed to protect the patient's foot and lower limb whilst in bed or resting. The heel is elevated to specifically prevent heel pressure ulcers. Heelift® suspension boots can also be customised (extra pad provided) to protect high risk areas elsewhere on the foot & lower limb, and for protecting the opposing limb when wearing TCCs or Walkers in bed. A smooth soft foam internal surface is combined with a nylon outer lining that glides easily on bed sheets.

**Suspended Heel**



**Easy to fit**



**Easy to use straps**



**Easy to customise (extra foam pad provided)**



## HEELIFT GLIDE SUSPENSION BOOT

The Heelift® Glide has a soft, smooth fabric cover which allows the leg to “glide” on bed sheets, to assist patients turning in bed.

**Features**

- Smooth soft foam internal surface
- Soft, smooth nylon exterior for easy turning in bed
- 3 easy to use straps
- Ventilation holes

**Recommended For**

- Bed bound patients
- Prevention of heel ulcers
- Protection for active ulcers

**Sizing - Calf Circumference**

Petite	15 - 25 cm
Standard	25 - 38 cm
Bariatric	38 - 58 cm



## HEELIFT AFO

Heelift® AFO has the same features as the Glide boot but also incorporates a semi-rigid polyprop AFO. Designed to hold the ankle at 90°. A non-slip sole and AFO facilitate safe indoors weight-bearing.

**Features**

- Same as Heelift Glide and:
- AFO to hold ankle at 90°
  - A non-slip sole for indoors weight-bearing

**Recommended For**

- Same as Heelift Glide and:
- Ambulant patients
  - Prevention Achilles tightening
  - Drop foot
  - Night splint for the sensitive foot

**Sizing - Calf Circumference**

Standard	25 - 38 cm
----------	------------



## BALANCING SHOES & DEVICES

Balancing Shoes & Devices are used alongside Total Contact Casts, Walkers, Offloading Shoes and Healing Shoes, where the device has caused a functional leg length discrepancy. We recommend that when fitting all one sided devices a balancing device should be considered. However, all devices with higher profile thicker soles will require a balancing device. The requirement is also related to the type of shoe they are wearing on the non-affected side.

### DARCO TWINSHOE

The DARCO TwinShoe™ equalises the sole height for patients wearing offloading wound care shoes, walkers and total contact casts. This ensures an improved and safer gait pattern. The perfect compliment to products such as the OrthoWedge, HeelWedge, Wound Care Sandal, Walkers and TCC-EZ.

#### Features

- Sole height 36mm
- Adjustable Velcro fastener
- Removable insole
- Breathable mesh upper

#### Recommended For

- Equalise the sole height for patients wearing offloading shoes or walkers



#### Optional Extras



Toe Cap

Size	UK	EU
X-Small	2 - 4.5	34 - 36
Small	5 - 6	37 - 39.5
Medium	7 - 8	40 - 41.5
Large	9 - 10	42 - 44
X-Large	10.5 - 12	45 - 47

### EVENUP SHOE BALANCER

Evenups offer a quick and easy strap-on approach to equalising sole height for patients wearing offloading wound care shoes, walker boots and total contact casts. This device works with almost any footwear style and comes in 3 sizing options. The Evenup is adjustable and can provide between 1.3 - 2.1 cm additional lift to the shoe.

#### Features

- Two-layered outer sole is adjustable to add 1.3 cm or 2.1 cm to the bottom of the shoe
- Lightweight rubber outer sole doesn't add bulk to the shoe

#### Recommended For

- Equalise the sole height for patients wearing offloading shoes or walkers



Size	UK	EU	Sole Length (cm)
Small	4 - 6	37 - 39	25 - 28
Medium	7 - 9	40 - 43	29 - 32
Large	10 - 13	44 - 49	33 - 37

We recommend that when fitting all one sided devices that a gait symmetry, stability and balance check and training is undertaken. This should include; observing their gait pattern - demonstrating and advising the patient on how to walk in the device; reviewing the overall stability - looking for swaying and centre of mass excursions; reviewing symmetry - looking for pelvic tilts, hip circumduction, knee hyperextension, arm swing and other issues.

## About Us:

PPL Biomechanics is Ireland's leading manufacturer and supplier of custom made & stock orthotic devices, orthopaedic footwear and offloading products. We exclusively deal with medical practitioners and are the leading provider of post-graduate biomechanics courses in Ireland. We have more than twenty years of experience supplying devices to practitioners working in a wide range of fields including sports medicine, orthopaedics, offloading & wound care, paediatrics, MSK, rheumatology, special needs and neurological deficits.

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