

WHAT IS IPC?

PULSEPRESS
DYNAMIC COMPRESSION SYSTEMS



What is IPC?

Basics

Two parts to the system.

Pump Units - They comprise of an air pump which has a pressure regulated output and timed cycle time. (In essence they are powerful bedpumps).

Garments - They are inflatable splints which encompass the limbs of the body.

System - The pump unit inflates the garment which compresses the limb. After a set time the garment is then deflated to relieve pressure. This cycle continues for a required time of therapy (30-120mins).

In essence the therapy acts as an intense massage.



WHAT IS IPC?



What is IPC used for?

There are basically 2 main benefits of using IPC.

Aid circulation

Reduce inflammation

Reducing Inflammation

The technical term for inflammation on a limb is oedema. This can be caused by a multitude of reasons.



Sports Injuries:

-Normally occurring after an individual has fallen, miss-stepped e.t.c and includes sprains, muscle tears, pulled tendons, cramps and so on.

The natural reaction of the body after an injury of this type is swelling up around the damaged area. This causes pain with the desired effect that you stop using the damaged area in order that the healing process is allowed to occur.

In reality there is also a negative impact which is that the circulation of fresh oxygenated blood is also restricted which slows down the healing process.



WHAT IS IPC?

PULSEPRESS
DYNAMIC COMPRESSION SYSTEMS



Aid Circulation

This reduction in circulation of oxygenated blood has a significant effect on the healing rate. It is the oxygenated blood into a damaged area which promotes rapid regeneration of the injured tissue structure and also removes any toxins which are accumulating/building up.

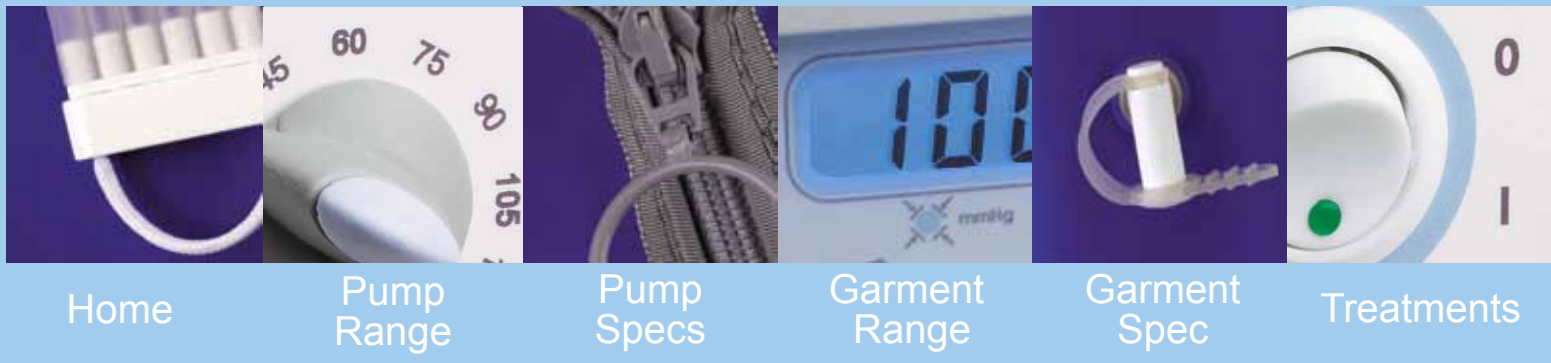
How does IPC work?

This is a two stage process. The regular low pressure compression on the limb helps squeeze the oedema (retained water) into the blood stream via the capillary network. Once the inflammation has been removed then the second stage kicks in. The compression of the muscles, where most blood flows, pushes the blood through the venous system back towards the heart. There are 'one-way' valves in the venous return system which ensure blood only travels back to the heart in one direction. When the inflation cycle ends and garment is de-pressurized the blood naturally fills up the areas of low pressure within the muscles with fresh oxygenated blood. And so the cycle continues to pump the blood around the injured limb and increase the healing rate significantly.

- Leg Ulcers (venous/arterial/diabetic)
- Heel Ulcers
- Lymphadema
- Stroke rehab
- Post operative trauma
- Wound Healing
- Sports training
- Sports injuries



WHAT IS IPC?

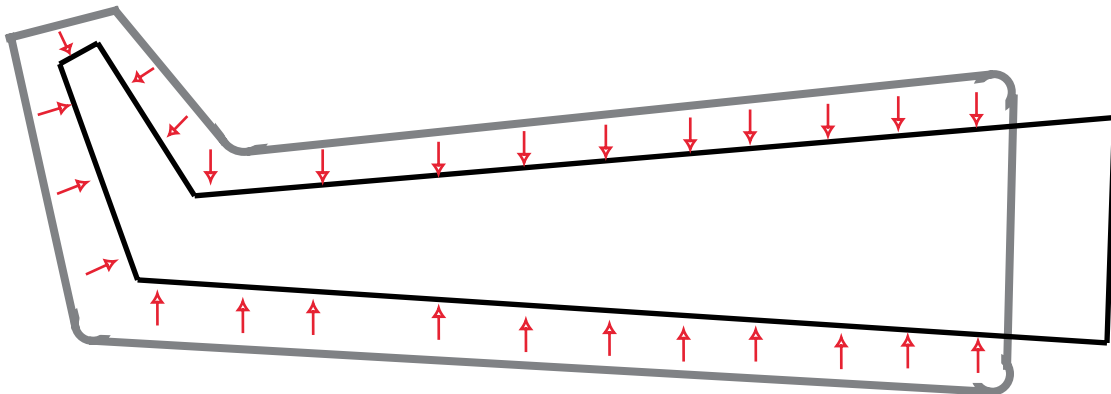


Types of IPC

There are 3 main types of IPC on the market, namely, Single, Sequential and Peristaltic

Single Chamber (Uniform) Compression

This is the most cost effective option. The garment is made up of a single inflating chamber.



A single hose feed air from the pump unit and inflates the entire garment in one go. In general this method is only now used for the very small specialized garments.

- ~ Foot & Ankle
- ~ Hand & Wrist
- ~ Limb Sleeves
- ~ Stumps





Home

Pump Range

Pump Specs

Garment Range

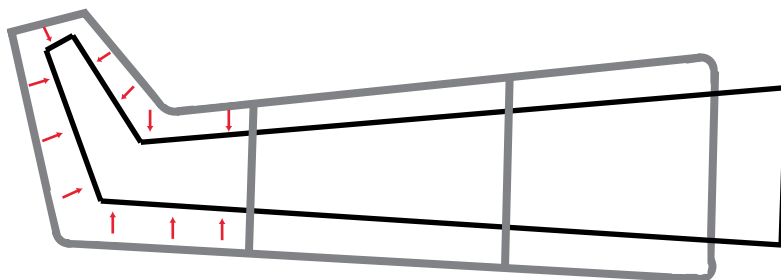
Garment Spec

Treatments

Gradient Sequential Compression

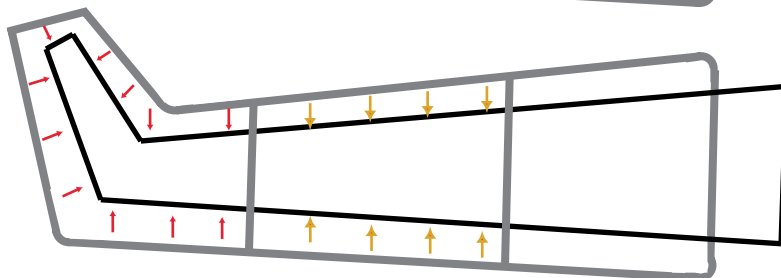
The garment is divided into segments along its length. There are generally between 3 and 12 chambers. The inflation cycle will always operate in a distal (further from the heart) to proximal (closest to the heart). To explain, that would mean in a 3-chamber device the foot section would inflate, followed by the calf, and the finally the thigh.

The gradient system reduces the pressure progressively in each successive chamber. This is currently the preferred method and that used by all Pulse Press systems.

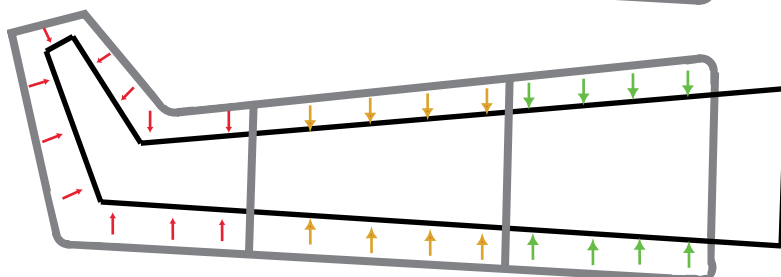


Gradient Sequential Inflation Cycle

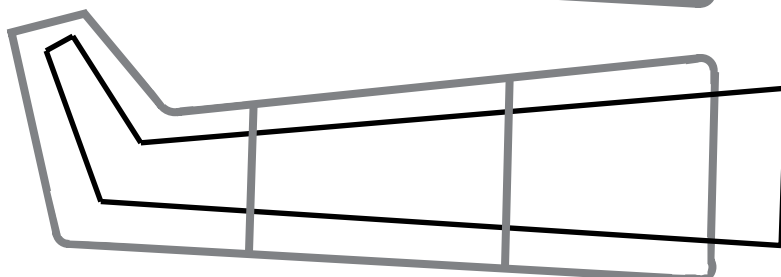
Stage 1 Foot = 50mmHg
 Calf = 0mmHg
 Thigh = 0mmHg



Stage 2 Foot = 50mmHg
 Calf = 45mmHg
 Thigh = 0mmHg



Stage 3 Foot = 50mmHg
 Calf = 45mmHg
 Thigh = 40mmHg



Deflate Foot = 0mmHg
 Calf = 0mmHg
 Thigh = 0mmHg

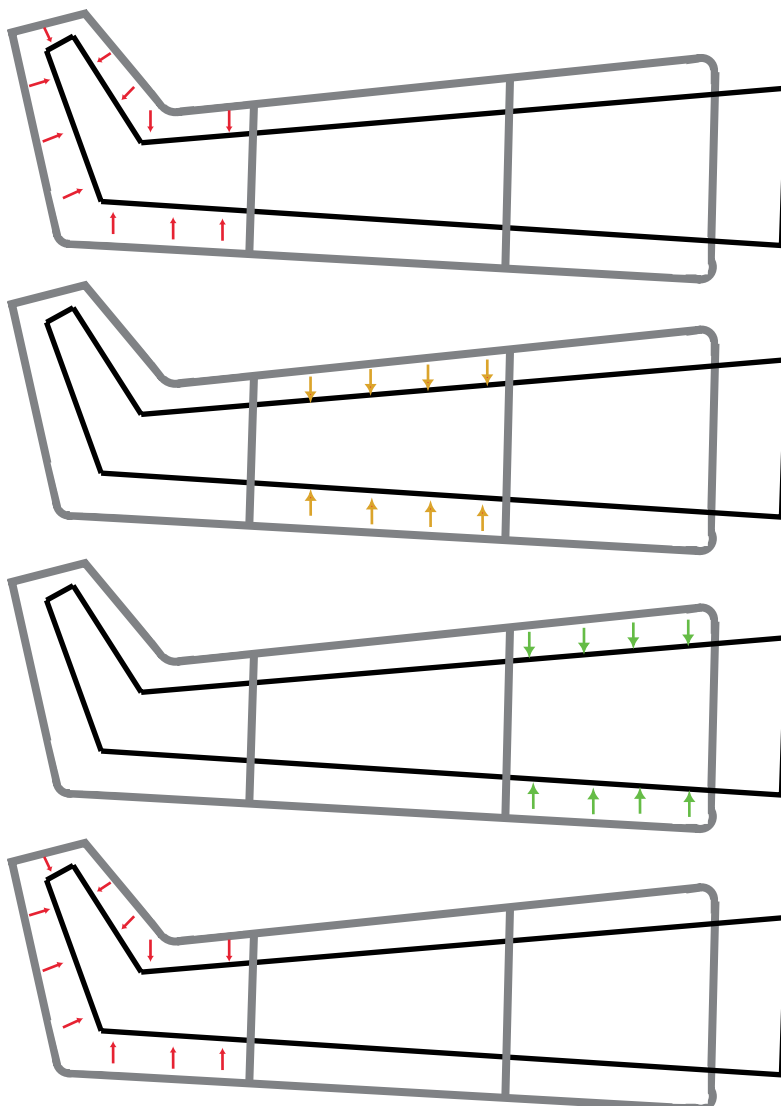
WHAT IS IPC?



Peristaltic Compression

This is used with multi – chamber systems and is like a wave pushing the fluid up the limb.

Studies have shown that this treatment is not particularly effective and is not very popular. Some units use a reverse peristaltic system which it sells as a manual lymph drainage mode. This starts from the top and then progressively moves down the limb. In general, it has not been well received and is a marketing tool.



Peristaltic Inflation Cycle

Stage 1 Foot = 50mmHg
 Calf = 0mmHg
 Thigh = 0mmHg

Stage 2 Foot = 0mmHg
 Calf = 45mmHg
 Thigh = 0mmHg

Stage 3 Foot = 0mmHg
 Calf = 0mmHg
 Thigh = 40mmHg

Stage 4 Foot = 50mmHg
 Calf = 0mmHg
 Thigh = 0mmHg

WHAT IS IPC?

PULSEPRESS
DYNAMIC COMPRESSION SYSTEMS



TREATMENT INFORMATION

Now you have an overview of what IPC is in general, it is time to move onto specific points of how the Pulse press system operate and the advantages of them in offering a class beating therapy.

What makes for a good therapy

As previously explained the system is broken into two parts, the pump and the garment. Both require big features in order to deliver a good treatment.

Pump unit

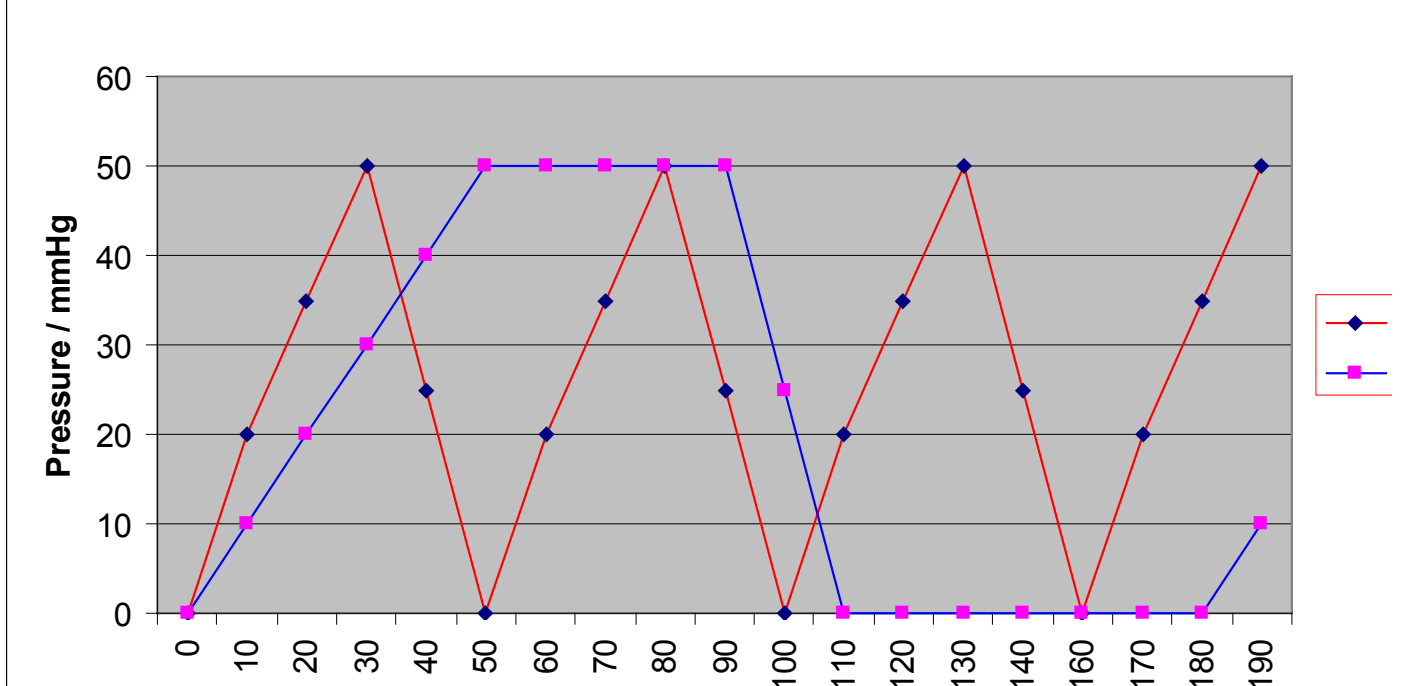
The speed with which the garment is inflated up to pressure is paramount in delivering a good therapy. The key here is the use of a powerful compressor. All Pulse Press pump units use the patented Cyclone compressor. this is a purpose built unit specially for IPC use and it gives a high free flow of air to initially fill up the garment and then very good pressurized air flow to ensure that the garment is brought up to pressure in as short a time as is possible.

The majority of our competitors use off the shelf compressors which have been designed to be all things to all men, and thus are not as effective. See graph below.



TREATMENT INFORMATION

GRAPH SHOWING PUMP PERFORMANCE
Product Comparison Graph



What does the graph show?

- 1) Due to the high performance compressor the system inflates the garment to pressure quicker. The pressure rise time is what gives an effective therapy as it acts more like a pump on the blood.
- 2) As the systems have adjustable time cycles for setting the inflate & deflate times an optimal setting can be achieved by deflating the garment prior to the other system even reaching pressure.
- 3) The feed time cycle of the competitor pump unit means that the number of compression cycles you receive per therapy session is far less.

For many conditions (removal of edema), this is directly proportionate to the effectiveness of the treatments. In real terms the patient would have to wear the garment for three times as long to get the same number of compressions.



Garment Design

Design features:- triangular foot section prevents toes being pinched and compresses the sole of the foot.

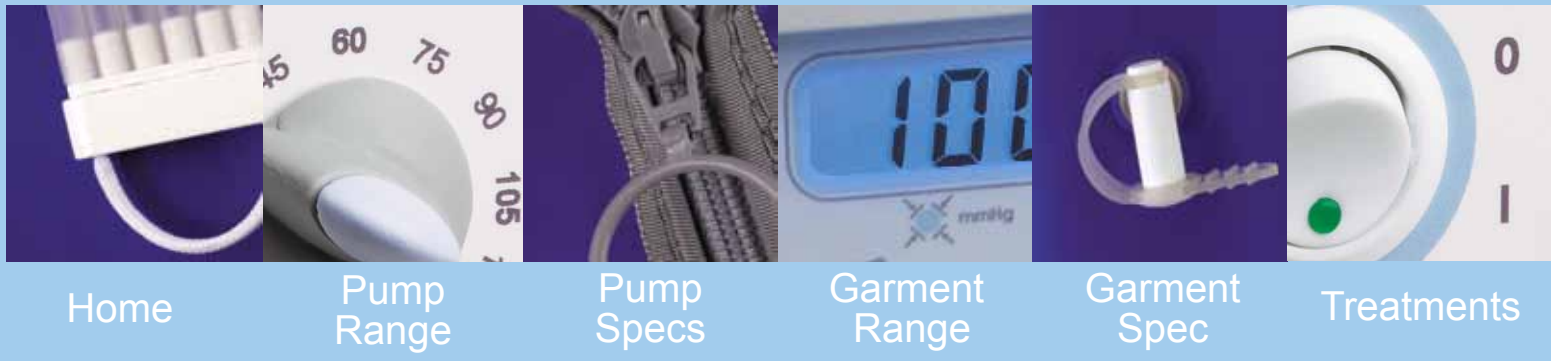
Internal gussets:- gives a totally flat inner surface (not sausages) automatically adjusted to size of patient limbs. This allows simple installation and use. It means that the single garment stays with the patient throughout treatment without need for expanders or new smaller garments.

Some competitors use individual cells in an outer shell with many zips. Need to fit each time you use and sometimes refit halfway through therapy. Also not effective if one part, e.g. knee, is disproportionably swollen as only that area receives effective treatment.

Another common offering is garments with a soft, stretchy inner material. on the face of it this appears very comfortable but is actually only there to prevent the toe-pinching from occurring. The downside is that with a stretchy inner material it is possible to get shearing action on the skin which is not a good thing especially with leg ulcer patients.

For comfort we do offer an absorbent cotton-based, sterile liner. this helps to absorb sweat. It must be remembered that in essence all systems are the equivalent of a plastic bag and during treatment the limb under treat (along with the patient) sweat a lot, and can be very unpleasant. the other advantage of the liners is that they are a consumable, and hence a good source of revenue.

Finally, and probably the biggest sales point of the whole system is that the garments are machine washable. There is a wash bung on all garments and they can be put into a standard washing machine. All of our competitors' have to be hand-washed.



Home

Pump Range

Pump Specs

Garment Range

Garment Spec

Treatments

What Settings to use?

Pressure Settings

Current medical thinking is that you stay between 40-60mmHg. Each professional will have their own ideas and (your Insurance provider) with most likely prevent you from giving exact figures.

Normally start a treatment at 40mmHg and if after a week there is no change, gradually increase up to 60mmHg in 5mmHg increments.

Increasing pressures over 60mmHg will have a significant effect of reducing the swelling more but the flip-side is that it further damages the soft tissue structure and thus the limb will swell up quicker after therapy. Some consultants use higher pressures for 1-2 weeks for severe lymphedema to help soften the fibrous tissue and then reduce them later.

Time Cycles

ALL of the Pulse press units offer adjustable time cycles which allow individual settings for specific conditions. In general the following applies for time setting:

Primary Motive	Inflate	Deflate
Increase circulation – leg ulcers, heel ulcers sports injuries.	Short	Short
Reduce lymphedema	Medium	Short
Wound Healing	Short	Short
Arterial insufficiency	Short	Long
Stroke rehabilitation	Very short	Very short
Deep Vein Thrombosis	Short	Long