MiniMix™: The perfect partner for orthopaedic, spinal and orthobiologic procedures

Summit Medical Cementation Products

Large Port MiniMix Mixing System

Medium Port MiniMix Mixing System

Small Port MiniMix Mixing System with Luer Lock

4 Port MiniMix Mixing System

10ml MiniMix Delivery Syringe

www.summit-medical.co.uk

We keep patients moving

Interesting fact: Summit Medical were first to market a crystal clear mixing system.

As a trusted cementation partner to the top global orthopaedic leaders, we instil confidence and offer simplicity to healthcare professionals treating complex clinical challenges.

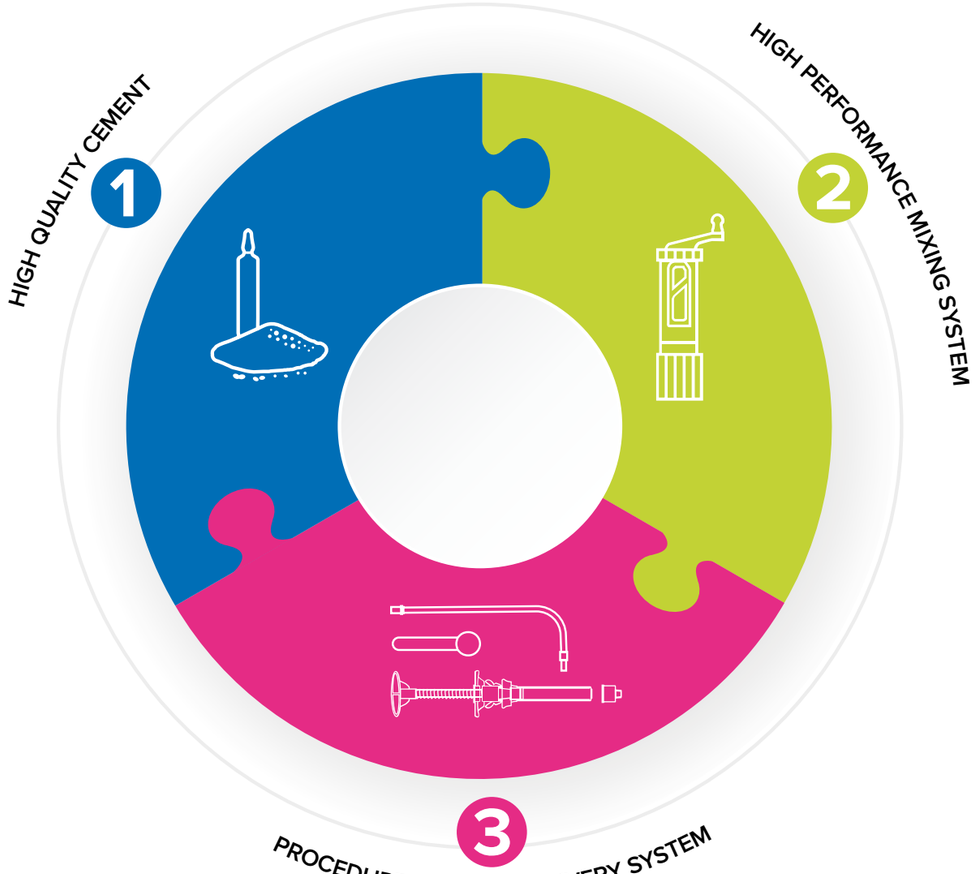
MiniMix™ has been designed to mix *40g or less of PMMA bone cement or bone substitute materials, to support vertebroplasty, kyphoplasty, hip resurfacing, unicondylar knees, osteoarthritis, bone void filling and small joint procedures.

*20g Simplex®

What is needed for long-term survivorship?

The skill of the surgeon is not the only factor in ensuring a successful procedure, the perioperative practitioner is a vital link in the chain.

Good quality bone cement is essential and the role of the theatre nurse in preparing that cement is vitally important. Cement mantle failure is the primary cause of aseptic loosening which is the most common indication for arthroplasty revision[1]. With the population getting older and staying active for longer, the survival rate of procedures is becoming even more important.



What is bone cement?

Bone cement is made from Polymethyl methacrylate (PMMA) which is usually supplied in combination to hospitals as a sachet of polymer powder and a glass ampoule of monomer liquid.

BONE CEMENT MIXING

When using bone cement in theatre it is important to understand the distinct phases that occur when the powder and liquid are mixed together, known as the polymerisation process.

The polymerisation process indicates to the user when the cement is ready to be placed and the length of time it then requires to set.

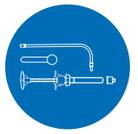
Although this process has four distinct phases, the length of each phase can vary from cement to cement. The four distinct phases are:

1. MIXING PHASE

The time to fully integrate the powder and liquid together.

2. WAITING PHASE

The time to achieve a suitable viscosity so that it can be handled without sticking to gloves. This time can be used to load the cement into the delivery device.



3. WORKING PHASE

The time during which the cement can be applied and the prosthesis implanted. The implant must be in place before the end of the working phase.

4. SETTING PHASE

The time for the cement to harden and set completely.

WHY DO CEMENTS VARY DURING THE MIXING PROCESS?

There are several factors that can contribute to the variation in behaviour of bone cement seen during the polymerisation process. A few of the factors include:

COMPOSITION – Can be influenced by the use of different copolymers, different powder-liquid ratio and the manufacturing or sterilisation process of the cement.

VISCOSITY – High viscosity cement is relatively thick (dough like), and loses its stickiness quickly making the working phase longer whereas medium/low viscosity cement is more runny (liquid) and keeps its stickiness longer but has a shorter working phase.

TEMPERATURE – Higher temperatures speed up the process reducing the waiting phase and working time.

HUMIDITY – Higher humidity accelerates all the phases of the polymerisation process, whereas a dry atmosphere could lengthen the process[2].

Spinal

Vertebral Compression Fractures (VCFs)

VCFs occur when the vertebral body in the spine collapses, which can lead to severe pain, deformity and loss of height.

CAUSES:
- Osteoporosis
- Tumors
- Infections

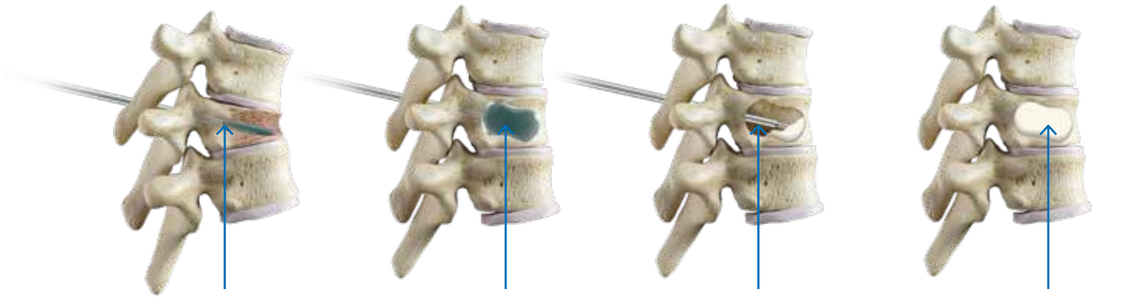
TREATMENT:

Conservative
- Back Brace
- Injections

Surgical
- Kyphoplasty
- Vertebroplasty

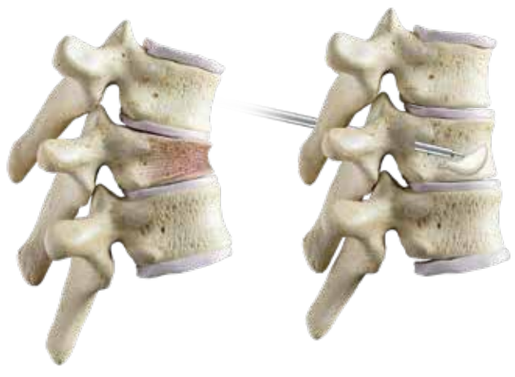
KYPHOPLASTY

Balloon Kyphoplasty is a minimally invasive surgical procedure where a balloon catheter is inflated inside the vertebra, the void is then filled with bone cement to provide stability to the vertebra and also to restore the original heights of the vertebra.



VERTEBROPLASTY

Vertebroplasty is similar to Kyphoplasty but without the balloon being used to open a space. Cement is injected, through a needle, into the collapsed or fractured vertebra to strengthen the bone and restore height.



MiniMix™

SMLV Low Viscosity Mixing System with Luer Lock

BONE CEMENT AND BONE SUBSTITUTE MIXING

The product is available as MiniMix™ LV to mix low viscosity bone cement. This product can be used in combination with the MiniMix™ delivery syringe for precision delivery.

FEATURES:
- Rotational axis mixing
- Transfer valve
- Clarity of mixing chamber

MiniMix™

SMDS1C 10ml Delivery Syringe

BONE CEMENT AND BONE SUBSTITUTE DELIVERY SYSTEM

MiniMix™ delivery syringe is a sterile, single use precision syringe designed for the delivery of mixed bone cement or substitute material.
This can be attached to MiniMix™ mixing systems via a secure luer lock connection and has a capacity for 10ml of the mixed material.

FEATURES:
- Push and screw application modes
- 200mm catheter with 90 degree bend
- 10ml precision syringe

Orthopaedics

Osteoarthritis (OA)

OA is the wearing or thinning of the smooth cartilage joint surface as well as stiffening to the soft tissue surrounding the joint. As a result swelling, inflammation and pain are potential consequences.

CAUSES:

- Trauma
- Age
- Genetics
- Poor biomechanics
- Increased body weight

TREATMENT:

Conservative

- Lifestyle changes
- Physical therapy
- Medication
- Assistive devices

Surgical

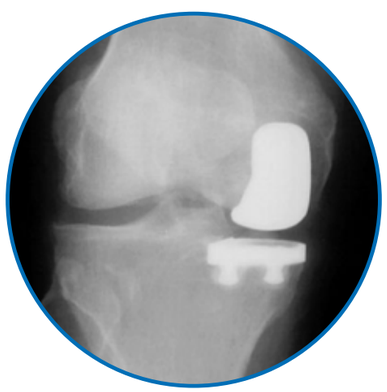
- Arthroplasty
- Arthroscopic debridement

TOTAL ANKLE REPLACEMENT (ARTHOPLASTY)

Arthroplasty involves removing the damaged cartilage and bone, followed by positioning a new metal or plastic joint surface to restore the function of the joint. This procedure relieves the pain of arthritis and offers patients increase mobility and movement, whilst lessening the chance of developing adjacent joint arthritis.

UNICONDYLAR KNEE

Unicompartmental arthroplasty is being used more frequently for isolated Unicompartmental arthritis, usually in the medial compartment. In this setting, a single femoral condyle and its corresponding tibial articulation are resurfaced[3].



MiniMix™

SMMM1 Mixing System

BONE CEMENT AND
BONE SUBSTITUTE MIXING

The product is available as MiniMix™ to mix low to high viscosity bone cement. This product can be used in combination with the MiniMix™ delivery syringe for precision delivery.

FEATURES:

- Rotational axis mixing
- Vacuum level of 550mmhg
- Transfer valve
- Clarity of mixing chamber

MiniMix™

SMDS1C 10ml Delivery Syringe

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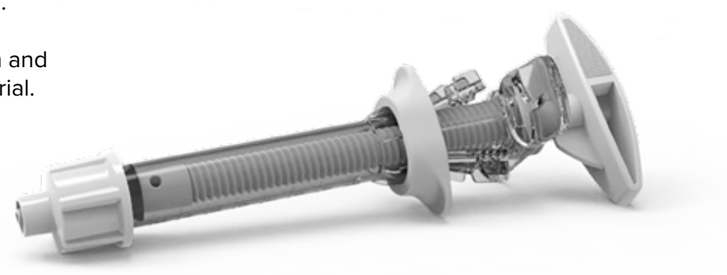
FEATURES:

- Push and screw application modes
- 10ml precision syringe



Orthobiologics

Subchondral Bone Lesions

Following on from the principles of vertebroplasty we are able to inject orthobiologics, percutaneously, into the desired areas highlighted by the image shown below.

The orthobiologics can be of varying viscosity and can be made up of EXACTLY what is needed for the specific indication.

INDICATIONS:

- Subchondral bone lesions

APPLICATION AREAS FOR BONE MARROW LESIONS:

Proximal Humerus

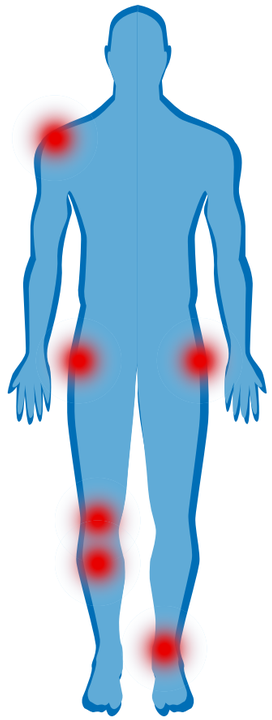
Distal Femur

Proximal Tibia

Femoral Head

Hip

Ankle Joint



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SMMM1 Mixing System

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FEATURES:

- Rotational axis mixing
- Transfer valve
- Clarity of mixing chamber

MiniMix™

SMDS1C 10ml Delivery Syringe

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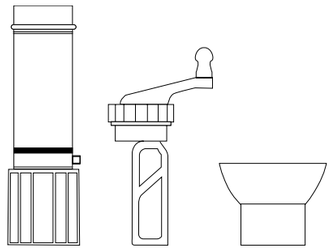
FEATURES:

- Push and screw application modes
- 10ml precision syringe

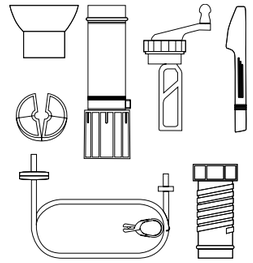
Product Ordering Information



MiniMix Small Port with Luer Lock

Sterile:
SMLV QTY/BOX 10

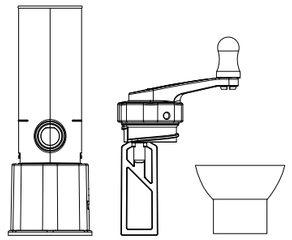
Non-sterile:
MMS1-NS QTY/BOX 50



MiniMix Medium Port

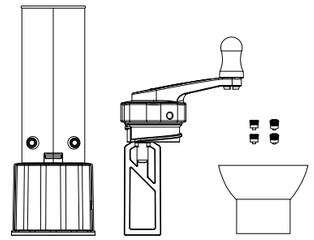
Sterile:
SMMM1 QTY/BOX 10

Non-sterile:
132892 QTY/BOX 50



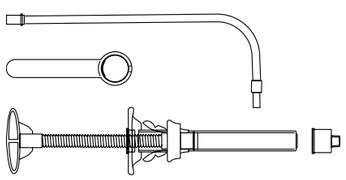
MiniMix Large Port

Non-sterile:
MMS1-NS QTY/BOX 50



MiniMix 4 Port

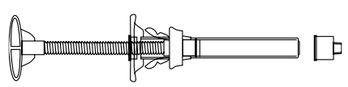
Non-sterile:
CMM4-NS QTY/BOX 50



MiniMix Delivery Syringe with Catheter

Sterile:
SMDS1C QTY/BOX 10

Non-sterile:
MDS1C-NS QTY/BOX 50



MiniMix Delivery Syringe

Non-sterile:
MDS1-NS QTY/BOX 50

Summit Medical

Here at Summit Medical, we believe in being responsive to the needs of our customers and business partners, in the ever changing dynamic market place.

That is why we are always listening to feedback, to allow us to be flexible and adaptable, so we can stay one step ahead of the competition and offer the best in class solutions for the most important customers... the patients!

Founded in 1984, Summit Medical Group Ltd is a global leader in the provision of quality medical products, trusted by clinicians, physicians, hospitals and patients; manufactured in the UK, with a commitment to innovation, service and quality.

Summit Medical utilises highly skilled and advanced manufacturing techniques that meet the changing demands in global healthcare.

> **“ It is not the strongest of the species that survives, nor the most intelligent. It is the one most adaptable to change. ”**
>
> - Charles Darwin

Ref 1: Nicholas A. Bedard MD, John J. Callaghan MD, Michael D. Stefl MD, Steve S. Liu MD Published online: 20 August 2014 The Association of Bone and Joint Surgeons 2014 Systematic Review of Literature of Cemented Femoral Components: What Is the Durability at Minimum 20 Years Followup?

Ref 2: Jung-Ro Yoon, MD, Young-Rok Ko, MD, Young-Soo Shin, MD* Effect of shape on bone cement polymerization time in knee joint replacement surgery* Correspondence: Young-Soo Shin, Department of Orthopedic Surgery, Veterans Health Service Medical Center, 61 Jinhwangdoro-gil, Gangdong-Gu, Seoul, 134-791.

Ref 3: Mihra S. Taljanovic, Marci D. Jones, Tim B. Hunter, James B. Benjamin, John T. Ruth, Andrew W. Brown, Joseph E. Sheppard Published online: 01 September 2003 RadioGraphics Joint Arthroplasties and Prostheses.

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