



Product Catalogue

Bone Cement and Cementing Systems

BIOMET®

CONTENTS

A Complete supplier for Modern Cementing Technique (MCT)	4
Safer working environment	5
Cementing University	6
Product Portfolio	
Bone Cements	7
Products	8
Reference numbers	10
Mixing and delivery	11
Products Optipac	12
Reference numbers	13
Products Optivac/Others	14
Reference numbers	16
Bone Bed preparation	18
Products	19
Reference numbers	20
Pressurization	22
Products	23
Reference numbers	25
Revision	26
Products	27
Reference numbers	29
Technical information	30
Website	31



A complete orthopaedic company



A UNIQUE SUPPLIER OF BONE CEMENT AND CEMENTING SYSTEMS

Biomet offers solutions for all applications of bone cement, including primary and revision surgery, vertebroplasty, and cranial surgery. It is the only major orthopaedic company with

a Center of Excellence for bone cement and cementing systems, with distribution in more than 80 countries around the world. Biomet continues to be the market leader in Europe for this segment by offering a complete product range for all the steps in Modern Cementing Technique, as defined by the Swedish Hip Arthroplasty Register.¹

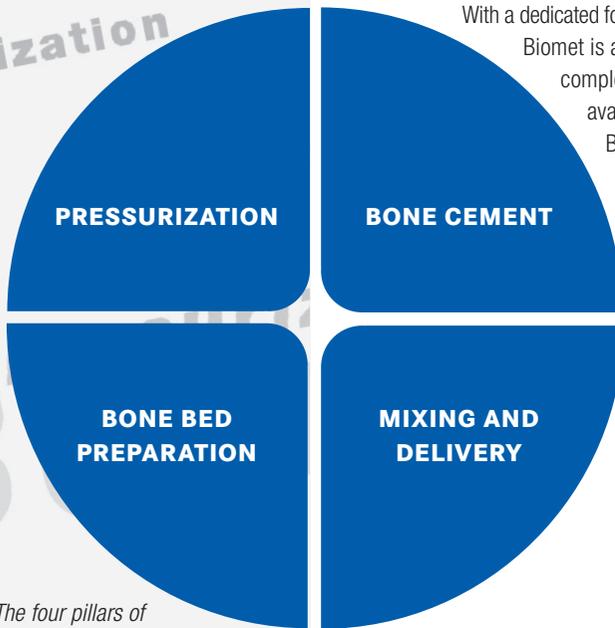
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Ref 1. The Swedish Hip Arthroplasty Register Annual Report, 2005, Department of Orthopaedics, Sahlgrenska University Hospital, 2006.

A complete supplier for Modern Cementing Technique (MCT)

The goal of Modern Cementing Technique (MCT), in general, is to improve both the long-term properties of the cement itself and the cement-bone interface.

According to the Swedish Hip Arthroplasty Register the use of MCT can lead to a significant reduction in the risk for revision.²



With a dedicated focus in the area of bone cement, Biomet is able to offer one of the most complete concepts for MCT available on the market today.

Biomet has proven products for each step in MCT, including bone cements, vacuum mixing systems, and pressurizers. Biomet will continue to offer new products and concepts through continuous research and development.

The four pillars of Modern Cementing Technique. Each step has been linked to approximately 20% reduction of risk for revision.² Modern Cementing Technique, is the path to successful arthroplasty.

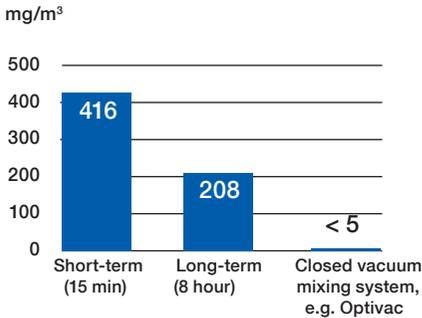
Ref 2. Malchau H, Herberts P, Garellick G, Söderman P, Eisler T, (2002) The Prognosis of Total Hip Replacement, Scientific exhibition presented at the 69th Annual Meeting of the American Academy of Orthopaedic Surgeons, February 13-17, 2002, Dallas, USA.

Safer working environment

The use of a closed vacuum mixing and delivery system is one of the cornerstones of MCT. In addition to improving bone cement quality, these vacuum mixing systems are also designed to reduce the level of monomer exposure in the OR and minimize direct contact with the cement, thereby creating a safer working environment.

Optivac is a world leading closed vacuum mixing system. Monomer exposure when using Optivac has been measured to barely detectable levels, which is far below the safe limits established by law.

MMA exposure levels, UK³



The new Optipac system reduces monomer exposure levels even further. All ingredients come pre-packed in this closed vacuum mixing system, minimizing exposure to monomer fumes and direct contact with the bone cement.⁴

All of Biomet's products are Latex free.



Ref 3. EH40/2005 Workplace exposure limits, ISBN 0-7176-2977-5.

Ref 4. Report from SP Technical Research Institute of Sweden (20070813). Airborne methyl methacrylate monomer during the use of different bone cement mixing systems.

Cementing University

Cementing University was founded in 2000 and is a forum for training and education. Throughout the years, the courses offered by Cementing University have educated more than 2500 orthopaedic professionals. The goal of Cementing University is to provide the latest knowledge with regard to Modern Cementing Technique and to emphasize the importance of bone cement and cementing techniques.

IN ASSOCIATION WITH LEADING EXPERTS

Cementing University works closely with experts from leading medical institutions worldwide. These centers have earned a top reputation in the bone and joint field. Key Opinion Leaders participate in the University's education and training, formulating curricula and educational materials.

CERTIFICATION AND ACCREDITATION

To ensure that the content of its educational materials is of the highest quality, Cementing University collaborates with nurses' and surgeons' associations.

The educational tools are endorsed by clinical experts. Much of the educational content is approved and accredited by AfPP (Association for Perioperative Practice) in the UK.

CEMENTING UNIVERSITY COURSES

Cementing University includes local and inter-national courses covering cement and cementing technique. Biomet representatives can organize workshops in your hospital or arrange for training sessions at one of our Centers of Excellence. Please visit the www.cementinguniversity.com for more information.

CEMENTING
UNIVERSITY 

Bone Cements

Biomet produces a range of bone cements to meet the special requirements of implantation and Modern Cementing Technique. Our broad spectrum of high and low viscosity bone cements, with or without antibiotics, ensures optimal clinical results by combining the appropriate cement and cementing technique for the given situation. In addition to the standard range of bone cements, Biomet also offers a special low viscosity cement, specifically designed for vertebroplasty surgery.



REFOBACIN® BONE CEMENT R GENTAMICIN-LOADED CEMENT



- High viscosity cement.
- Excellent mechanical properties.
- Optimal handling in modern vacuum mixing system.
- Local, long-lasting gentamicin release
 - Reduced risk of revisions.
- Green color for easy recognition during surgery.

BIOMET® BONE CEMENT R



- High viscosity cement.
- Excellent mechanical properties.
- Optimal handling in modern vacuum mixing system.
- Green color for easy recognition during surgery.

REFOBACIN® PLUS BONE CEMENT GENTAMICIN-LOADED CEMENT



- Pre-chilling unnecessary.
- High viscosity cement.
- Excellent mechanical properties.
- Optimal handling in modern vacuum mixing system.
- Local, long-lasting gentamicin release
 - Reduced risk of revisions.
- Green color for easy recognition during surgery.

BIOMET® PLUS BONE CEMENT



- Pre-chilling unnecessary.
- High viscosity cement.
- Excellent mechanical properties.
- Optimal handling in modern vacuum mixing system.
- Green colour for easy recognition during surgery.



REFOBACIN® REVISION GENTAMICIN- AND CLINDAMYCIN LOADED CEMENT



- Tailor-made for revisions.
- Two antibiotics for increased efficiency.
 - Prevents infections and re-infections.
 - High local antibiotic concentration.
- Excellent mechanical properties.
- Green color for easy recognition during surgery.

REFOBACIN® BONE CEMENT LV GENTAMICIN-LOADED CEMENT



- Low viscosity cement.
- Increased penetration into cancellous bone.
- Local, long-lasting gentamicin release.
 - Reduced risk of revisions.
- Easy handling in modern vacuum mixing system.
- Green color for easy recognition during surgery.

Vertebroplasty

BIOMET® BONE CEMENT V



- Tailor-made for vertebroplasty.
- Optimized viscosity and handling time for vertebroplasty.
- Ready to use – **no need for additional radiocontrast media.**
- Excellent mechanical properties.

Patient Matched Cement

PATIENT MATCHED CEMENT

Biomet can offer **patient matched bone cements**, manufactured according to the European Medical Device Directive*. Patient matched bone cement is tailor-made for a specific patient with the main indication being MRSA.

* Patient matched bone cements are produced upon request by the surgeon, using the patients antibiogram.



	Description	Reference number	Size	Contents	Pcs/ Box
	Refobacin Bone Cement R	3003910002	2x10	2 sachets of 10.2 g powder 2 ampoules of 5 ml liquid	25
	Refobacin Bone Cement R	3003920002	2x20	2 sachets of 20.4 g powder 2 ampoules of 10 ml liquid	20
	Refobacin Bone Cement R	3003940001	1x40	1 sachet of 40.8 g powder 1 ampoule of 20 ml liquid	20
	Refobacin Bone Cement R	3003940002	2x40	2 sachets of 40.8 g powder 2 ampoules of 20 ml liquid	20
	Refobacin Bone Cement R	3003960001	1x60	1 sachet of 61.3 g powder 1 ampoule of 30 ml liquid	12
	Biomet Bone Cement R	3035890011	1x40	1 sachet of 40.0 g powder 1 ampoule of 20 ml liquid	20
	Biomet Bone Cement R	3035890022	2x40	2 sachets of 40.0 g powder 2 ampoules of 20 ml liquid	20
	Refobacin Plus Bone Cement	3020820401	1x20	1 sachet of 22.4 g powder 1 ampoule of 10 ml liquid	20
	Refobacin Plus Bone Cement	3021180001	2x20	2 sachets of 22.4 g powder 2 ampoules of 10 ml liquid	20
	Refobacin Plus Bone Cement	3020830401	1x40	1 sachet of 44.9 g powder 1 ampoule of 20 ml liquid	20
	Refobacin Plus Bone Cement	3021170001	2x40	2 sachets of 44.9 g powder 2 ampoules of 20 ml liquid	20
	Refobacin Plus Bone Cement	3020840401	1x60	1 sachet of 67.4 g powder 1 ampoule of 30 ml liquid	20
	Biomet Plus Bone Cement	3020810401	1x40	1 sachet of 44.0 g powder 1 ampoule of 20 ml liquid	20
	Biomet Plus Bone Cement	3021190001	2x40	2 sachets of 44.0 g powder 2 ampoules of 20 ml liquid	20
	Refobacin Revision	3011630001	1x40	1 sachet of 42.9 g powder 1 ampoule of 20 ml liquid	20
	Refobacin Bone Cement LV	3805780011	1x40	1 sachet of 41.7 g powder 1 ampoule of 20 ml liquid	20
	Biomet Bone Cement V	3005550011	1x26	1 sachet of 26.0 g powder 1 ampoule of 10 ml liquid	20



Mixing and Delivery

The mixing and collection of bone cement under vacuum has been proven to reduce porosity and improve fatigue strength. The world leading patented vacuum mixing system, Optivac, provides mixing and collection under vacuum for optimal porosity reduction. The new Optipac vacuum mixing system features the added benefit that all ingredients come pre-packed in the mixing system, which remains closed until the cement is delivered. This all-in-one system offers further porosity reduction and reduced exposure to the cement components resulting in improved cement quality and a better working environment.^{5,6} Delivering bone cement with an Optigun, in combination with pressurization, allows for adequate cement filling and improved cement penetration into the bone.



Ref 5. Report from Lund University (20070814). Porosity analysis in pre-pack vacuum mixing system.

Ref 6. Report from SP Technical Research Institute of Sweden (20070813). Airborne methyl methacrylate monomer during the use of different bone cement mixing systems.

OPTIPAC



Optipac is a new, revolutionary way of mixing bone cement. Building on the success of Optivac, we have now taken the technology one step further and developed an all-in-one system.

All ingredients come pre-packed in the vacuum mixing system, which remains closed until the cement is delivered.

The Optipac system minimizes exposure to monomer fumes and contact with the bone cement during mixing and delivery.

- Safer working environment.
- Time saving.
- Practical and easy to use.
- High quality and reproducible results.
- Based on a proven system, Optivac.

There are three options of bone cement available:
 Refobacin Bone Cement R
 Refobacin Plus Bone Cement
 Refobacin Revision, which are available in different sizes.

The Refobacin Bone Cement R are also available in an application set for Total Hip Arthroplasty.

OPTIPAC 40	OPTIPAC 60	OPTIPAC 80	OPTIPAC Hip Set
			
<p>Contents</p>	<p>Contents</p>	<p>Contents</p>	<p>Contents</p>
<p>1 mixing system pre-packed with polymer and 1 pouch of monomer 1 mixing rod 1 breakaway cement nozzle 1 vacuum line with sterile filter</p>	<p>1 mixing system pre-packed with polymer and 2 pouches of monomer 1 mixing rod 1 breakaway cement nozzle 1 vacuum line with sterile filter 1 femoral pressurizer</p>	<p>1 mixing system pre-packed with polymer and 2 pouches of monomer 1 mixing rod 1 breakaway cement nozzle 1 vacuum line with sterile filter 1 femoral pressurizer</p>	<p>1 Optipac 40 1 Optipac 80 together in a convenient package for Total Hip Arthroplasty. Optipac Hip Set is only available with Refobacin Bone Cement R.</p>



	Mixing Systems	Reference number	Description	Pcs/ Box
	Optipac 40 Refobacin Bone Cement R	4710500394	1 cartridge of 40.8 g powder 1 pouch of 20 ml liquid e.g. for knee or shoulder arthroplasty	8
	Optipac 60 Refobacin Bone Cement R	4711500396	1 cartridge of 61.3 g powder 2 pouches of 15 ml liquid e.g. for hybrid hip arthroplasty	8
	Optipac 80 Refobacin Bone Cement R	4712500398	1 cartridge of 81.6 g powder 2 pouches of 20 ml liquid e.g. for hybrid hip arthroplasty	8
	Optipac Hip Set (40 & 80) Refobacin Bone Cement R	4740500394	1 cartridge of 40.8 g powder 1 pouch of 20 ml liquid 1 cartridge of 81.6 g 2 pouches of 20 ml For two cement mixing at total hip arthroplasty	4
	Optipac 40 Refobacin Plus Bone Cement	4720502083	1 cartridge of 44.9 g powder 1 pouch of 20 ml liquid e.g. for knee and shoulder arthroplasty	8
	Optipac 60 Refobacin Plus Bone Cement	4721502084	1 cartridge of 67.4 g powder 2 pouches of 15 ml liquid e.g. for hybrid arthroplasty	8
	Optipac 80 Refobacin Plus Bone Cement	4722502117	1 cartridge of 79.9 g powder 2 pouches of 17.8 ml liquid e.g. for hybrid arthroplasty	8
	Optipac 40 Refobacin Revision	4730501163	1 cartridge of 42.9 g powder 1 pouch of 20 ml liquid gentamicin and clindamycin loaded cement for revisions.	8
	Optipac 80 Refobacin Revision	4732501165	1 cartridge of 76.6 g powder 2 pouches of 17.8 ml liquid gentamicin and clindamycin loaded cement for revisions.	8



OPTIVAC



The Optivac is the world leading vacuum mixing, collection and delivery system for bone cement. The system is the result of many years of continuous improvement since its original introduction in 1984. The standardized mixing procedure produces homogeneous cement with the lowest possible porosity.

- Reproducible bone cement quality.
- Collection under vacuum.
- Reduced micro- and macroporosity.
- Safe working environment.
- Proven and well-documented.

The closed system reduces exposure to monomer fumes and eliminates direct contact with bone cement during mixing and delivery. Any cement, high and low viscosity of high or low volume, can be mixed with the Optivac.

Five sets are available; Four OPTIVAC sets for low volume bone cements and one OPTIVAC+ set for high volume cements.

OPTIVAC Hip Set Reference number 4150	OPTIVAC S Reference number 4161	OPTIVAC M Reference number 4160	OPTIVAC L Reference number 4152
			
Contents	Contents	Contents	Contents
1 Short Cartridge 1 Long Cartridge 1 Short Nozzle, Length: 80 mm, Inner Ø: 9 mm 1 Long Nozzle, Length: 211 mm, Inner Ø: 9,5 mm 1 Funnel 1 Line with Sterile Filter 1 Charcoal Filter 1 Femoral Pressurizer 3 Ampoule Breakers	1 Short Cartridge 1 Short Nozzle, Length: 80 mm, Inner Ø: 9 mm 1 Funnel 1 Line with Sterile Filter 1 Charcoal Filter 3 Ampoule Breakers	1 Long Cartridge 1 Long Nozzle, Length: 211 mm, Inner Ø: 9,5 mm 1 Funnel 1 Line with Sterile Filter 1 Charcoal Filter 1 Femoral Pressurizer 3 Ampoule Breakers	1 Extra Long Cartridge 1 Long Nozzle, Length: 211 mm, Inner Ø: 9,5 mm 1 Funnel 1 Line with Sterile Filter 1 Charcoal Filter 3 Ampoule Breakers



OPTIVAC FUSION



Optivac Fusion is a closed system for the mixing and collection of bone cement under vacuum and for manual application of bone cement with a spatula during e.g. knee arthroplasty. The transparent bowl allows the user a clearer view during mixing.

- Reproducible bone cement quality.
- Reduced micro- and macroporosity.
- Flexible system.
- Safe working environment.
- Based on a proven system.

OPTIGUN AND OPTIGUN RATCHET



The Optigun and Optigun Ratchet are hand-held cement guns made of aluminum. They are specifically designed to deliver bone cement mixed in the Optivac and Optipac system.

- Easy to handle
- Light weight

VACUUM PUMP



Biomet's Vacuum Pump provides a constant and optimal vacuum level of at least 85%. This ensures optimal bone cement mixing conditions. For technical information about the Vacuum Pump, see page 30.

- Powered by air or nitrogen.
- ON/OFF pedal function.
- Constant high vacuum level of at least 85%, 0.15 bar.
- Sterile filter prevents system contamination.



	Mixing Systems	Reference number	Description	Pcs/Box
	Optivac Hip Set	4150	For two cement mixings, e.g. 40 g and 80 g for total hip arthroplasty	10
	Optivac S	4161	For a single mix of 20 g to 40 g cement, e.g. for knee or shoulder arthroplasty	10
	Optivac M	4160	For a double mix of 60 g to 80 g cement, e.g. for hybrid hip arthroplasty	10
	Optivac L	4152	For a triple mix of 100 g to 120 g cement, e.g. for revision arthroplasty	10
	Optivac + Hip Set	4250	For two cement mixings, e.g. 40 g and 80 g for total hip arthroplasty <i>To be used with high volume cements</i>	10
	Mixing Systems	Reference number	Description	Pcs/Box
	Optivac Fusion	4810	Mixing and collection under vacuum for manual application. For mixing between 40 g and 80 g of bone cements . Transparent bowl	5
	Instruments	Reference number	Description	Pcs/Box
	Optigun	4193	Cement gun for mixing systems Light weight delivery system made of aluminium Weight 0.86 kg	1
	Optigun Ratchet	4195	Cement gun for mixing systems Light weight delivery system made of aluminium, with a ratchet system Weight 0.79 kg	1



	Vacuum Pump	4232	Vacuum Pump with silencer Includes inlet hose	1
	Vacuum Pump	4235	Vacuum pump with silencer without inlet hose.	1
	Air Hose	4236	Air Hose for Vacuum Pump 5 metres	1
Accessories				
	Reference number	Description	Pcs/ Box	
	Nozzle Angled	4149	Application: knee and acetabular arthroplasty Length: 108 mm Inner Ø: 9.5 mm	5
	Nozzle Slim	4154	Application: shoulder arthroplasty Length: 230 mm Inner Ø: 5.8 mm	5
	Nozzle Revision	4155	Application: revision arthroplasty Length: 300 mm Inner Ø: 11 mm	5
	Nozzle Knee	4146	Application: knee arthroplasty Length: 80 mm Inner Ø: 2.4 mm	5
	Nozzle Cutter	4159	To cut the nozzle in different lengths and angles	1

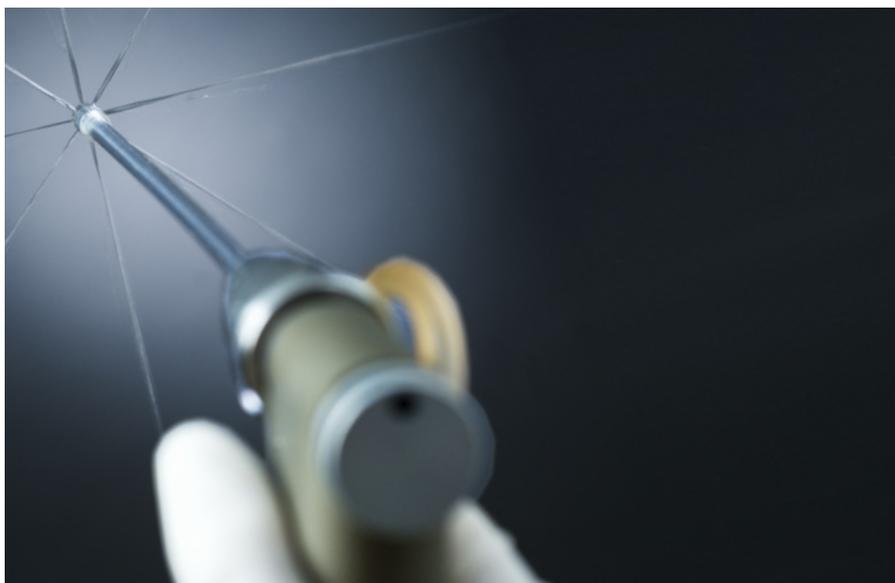


Bone Bed Preparation

Preparation of the bone bed with pulse lavage prior to cementing reduces the risk for revision due to aseptic loosening.⁷ OptiLavage and OptiLavage AC are high-pressure pulse lavage system, which effectively removes blood and debris from the cancellous bone surface. The preparation of the bone bed, prior to pressurization, provides good micro-interlock between bone and cement and an optimal cement penetration. Cleaning of the bone bed with pulse lavage has also shown to significantly reduce the risk of fat embolism.⁷



Ref 7. Breusch, Lukoschek, Schneider, Ewerbeck, State of the Art in Cemented Total Hip Arthroplasty – Cementing Technique is Essential, Deutsches Ärzteblatt, Jg. 97 Heft 30, 28. juli 2000, Seite A-2030 [MEDIZIN].



OPTILAVAGE SYSTEM



The OptiLavage system is designed to be used for applications requiring pulsed irrigation, such as total hip replacement, total knee replacement, revision or trauma. The OptiLavage system is an air-driven system, which consists of a reusable hand unit and disposable pump sets for high-pressure pulse lavage.

- High-pressure pulse lavage.
- Effective cleaning for optimal micro-interlock.
- Flexible and easy to use.

For technical information about the OptiLavage system see page 30.



	Instruments	Ref. no.	Description	Pcs/ Box
	OptiLavage Hand Unit with Biomet (Universal) connector incl. Instrument Oil (REF 4417)	4410		1
	OptiLavage Hand Unit with Synthes A.O. connector incl. Instrument Oil (REF 4417)	4418		1
	Air Hose for 4410	4411	Length 3 m	1
	Air Hose British Standard for 4410	4407	Length 3 m	1
	Cleaning End Cap for 4410	4412*		1
	Cleaning End Cap for 4418	4420*		1
	End Cap OptiLavage, for Air hose 4411 and 4407	4433*		1
Pump Sets				
	Standard Set	4413	Tubing: length 3 m Nozzle: length 10 cm	10
	Hip Set	4414	Tubing: length 3 m Nozzle: lengths 10 cm and 25 cm	10
	Knee Set	4415	Tubing: length 3 m Nozzle: length 10 cm Incl. Splash Shield Small-outer Ø 41 mm	10

* For cleaning purposes only. NOT TO BE STERILIZED.



Accessories				
	Splash Shield large, conical	4424		5
	Instrument Oil	4417		1
Brushes				
	Femoral brush	4391		25
	Acetabular brush	4392		25
	Femoral brush for chuck	4394		25
	Acetabular brush for chuck	4393		25



Pressurization

Good cement filling is a key step of Modern Cementing Technique. Pressurization has been shown to afford greater penetration into cancellous bone and reduce bone cement porosity. The result is an improved bone cement interface, increased cement strength and better stress distribution. Biomet offers a wide range of pressurizing devices for hip and knee arthroplasty.



OPTIPLUG



The OptiPlug is made of a completely synthetic biodegradable and flexible material called PolyActive, which is used to create a distal seal in the femoral canal. Optiplug has five flanges for optimal pressure resistance.

- Biodegradable.
- Made from synthetic material.
- Biocompatible.
- Affords high pressure resistance.
- Easy to use.
- Available in sizes covering the full range of canal diameters.

DISTAL PE PLUGS



The Distal PE Plug has been developed for all hip prostheses with rounded straight stems. The Distal Plug is made of high density polyethylene with an embedded metal indicator. It can be used in the medullary canal in the leg as well as in the arm.

- High density polyethylene.
- Embedded metal indicator.
- Flexible.
- To be used in the medullary canal in the leg as well as in the arm.
- Varying sizes for perfect fit.
- Easy-to-use plug sizers.

FEMORAL PRESSURIZERS AND SUPPORT PLATES



- Medical grade silicone femoral pressurizer.
- Femoral pressurizer – adapted to be used together with Optivac and Optipac, no additional tools required.
- Femoral pressurizer II, which generates a higher pressure for a longer time and less leakage.
- The support plates prevent deformation of the pressurizer, which allows for better pressure distribution and the possibility for hands free pressurizing.



ACETABULAR PRESSURIZERS AND OTHER PRESSURIZATION DEVICES FOR ACETABULUM



- Medical grade silicone pressurizers.
- Acetabular pressurizers are applied with the straight or angled handle for acetabular pressurizer.
- Acetabular pressurizers are available in four sizes, with diameters ranging from 50 to 71 mm.

KNEE CEMENTATION NOZZLE



The knee cementation nozzle is used to apply the cement over the tibial surface. It is also used to fill the femoral anchorage and stemholes with cement and to apply cement over the condyles.

- Optimal knee cement layer.
- Good filling of anchorage and stemholes.
- Compatible with the angled nozzle (reference number 4149) and the short nozzle (included in the Optivac sets).

	OptiPlug	Reference number	Pcs/box
	OptiPlug, size 10	4361	1
	OptiPlug, size 12	4362	1
	OptiPlug, size 14	4363	1
	OptiPlug, size 16	4364	1
	OptiPlug, size 18	4365	1
	OptiPlug, size 20	4366	1
Distal PE Plugs			
	Distal PE Plug, 11 mm	4341	5
	Distal PE Plug, 13 mm	4342	10
	Distal PE Plug, 15 mm	4343	10
	Distal PE Plug, 17 mm	4344	5
	Distal PE Plug, 19 mm	4345	5
	Distal PE Plug, 21 mm	4346	1
Instruments			
	Plug Inserter	4349	1
	Set of four Plug Sizers: Ø 10 mm, Ø 12 mm, Ø 14 mm, Ø 16 mm	1869	4
	Set of two Plug Sizers: Ø 18 mm, Ø 20 mm	1940	2
Pressurization Devices, Femur			
	Femoral Pressurizer	4320	5
	Femoral Pressurizer II	4309	5
	Support Plate for Femoral Pressurizer	4196	1
	Support Plate for Femoral Pressurizer II	4197	1
Pressurization Devices, Acetabulum			
	Acetabular Pressurizer, Ø 50 mm	4316	1
	Acetabular Pressurizer, Ø 57 mm	4317	1
	Acetabular Pressurizer, Ø 63 mm	4321	5
	Acetabular Pressurizer, Ø 71 mm	4322	1
	Handle for Acetabular Pressurizer, to be used with 4321 and 4322	4327	1
	Handle for Acetabular Pressurizer, to be used with 4316 and 4317	4318	1
	Angled Handle for Acetabular Pressurizer, compatible with all Acetabular Pressurizers (4316, 4317, 4321, 4322).	4319	1
Cup Protector, Acetabulum			
	ProCup, Ø 32 mm. To protect the cup from third body wear.	4324	5
Pressurization knee			
	Knee Cementation Nozzle, compatible with 4149	4312	10



Revision

The rise in revision procedures and MRSA cases is one of the most important and serious trends in the joint arthroplasty market. For this reason, there is an increasing demand for products for revision surgery from Biomet, including Optipac Refobacin Revision, Refobacin Revision Cement, Cement Spacer Molds and Patient Matched Cement. These products together with our knowledge and competence constitute a critical part of a solution for the surgeon with regard to the treatment of infections in joint arthroplasty.





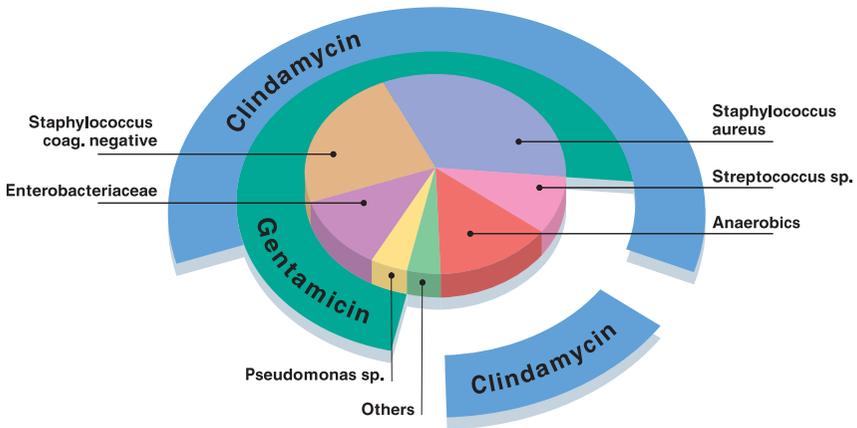
REFOBACIN® REVISION

Antibiotic-loaded bone cement containing both gentamicin and clindamycin developed specifically for one- and two-stage revision surgeries, infections and high-risk patients. For more information see page 9.

Biomet aslo offers a pre-packed solution with antibiotic-loaded cement, the Optipac Refobacin Revision. For more information see page 12.

The combination of gentamicin and clindamycin is known to have an antibacterial effect on more than 90% of the bacteria common to infected cases.⁸

Two antibiotics for increased efficiency



PATIENT MATCHED CEMENT

Biomet can offer a **patient matched bone cement** manufactured according to the European Medical Device Directive.* For more information see page 9.

Ref 8. Graph based on von Förster G.V, Buchholtz H.W, Heinert K, (1988) Die infizierte Hüftendoprothese-Spätinfektion nach der 6. postoperativen Woche. (The infected hip endoprosthesis-Late infection after 6th week postoperatively). In: Knochen und Gelenkeninfektionen. Cotta H, Braun A (Eds) Springer Berlin. (Hrsg.) 124-135.

Spacer Molds

HIP CEMENT SPACER MOLDS



Spacer molds can be used to produce temporary cement spacers for infected joints. For this application, an appropriate antibiotic-loaded cement should be used. The spacer molds are made of medical grade silicone. To determine the right size of the spacer mold for the patient during preoperative planning, x-ray models are available.

- Efficient treatment of infections.
- Prevents bone-on-bone contact and soft tissue contraction.
- Stabilises infected joints.
- Accommodates a range of cements and antibiotics for specific applications and needs.
- Facilitates joint mobility and function recovery.
- Accommodates protracted antibiotic release.

StageOne Cement Spacer Molds

STAGEONE HIP CEMENT SPACER MOLDS



StageOne hip cement spacer molds are designed to mold a temporary hip spacer for patients undergoing a two-stage revision due to an infected total joint.

Additional Features:

- Retain the patient's natural range of motion.
- Preserve the soft tissue envelope for second stage reimplantation.
- Reinforced core allows for partial weight bearing applications.

STAGEONE KNEE CEMENT SPACER MOLDS



StageOne knee cement spacer molds are designed to mold a temporary knee spacer for patients undergoing a two-stage revision due to an infected total joint.

Key Features:

- Retain the patient's natural range of motion.
- Maintain soft tissue tension for second stage reimplantation.
- Assist in enabling partial patient ambulation.
- Provide for potential to customize an antibiotic loaded cement spacer.

	Description	Reference number	Size	Description	Pcs/Box
	Refobacin Revision	3011630001	1x40	1 sachet of 42.9 g powder 1 ampoule of 20 ml liquid	10
	Optipac 40 Refobacin Revision	4730501163	1x40	1 cartridge of 42.9 g powder 1 pouch of 20 ml liquid	8
	Optipac 80 Refobacin Revision	4732501165	1x80	1 cartridge of 76.6 g powder 1 pouch of 17.8 ml liquid	8
Hip Cement Spacer Molds Collarless bi-metric style stem with an endo style head					40g packages*
			Stem Size (mm)	Head Size (mm)	
		431107	9x125	43	2
		431109	9x125	51	3
		431113	13x145	57	4
		431117	17x165	64	5
StageOne Hip Cement Spacer Molds Collarless bi-metric style stem with an endo style head					
		431207	9x125	43	2
		431209	9x125	51	3
		431213	13x145	57	3
		431217	17x165	64	4
StageOne Knee Cement Spacer Molds Cruciate sacrificing universal AGC-style components					
			Femoral Mold Size (mm)		
		432160	60		2
		432165	65		2
		432170	70		2
		432175	75		2
			Tibial Mold Size (mm)		
		433165	65		2
		433170	70		2
		433175	75		2
		433180	80		2

*Recommended number of 40g packages.

Technical Information

VACUUM PUMP

The Vacuum Pump is powered by an air or nitrogen source, which negates the need for electrical connections. It also has a built-in muffler so there is no disruptive noise. The air/nitrogen source should deliver a minimum of 5 bar absolute pressure (0.5 MPa, 70 psi) and the pressure should not exceed 9 bar absolute pressure (0.9 MPa, 130 psi). The pump needs an air flow of 50 l/min, and a nitrogen cylinder with reduction valve is sufficient.

When using a Vacuum Pump with Optivac, a charcoal filter between the pump and the vacuum line provides efficient absorption of free monomer fumes. With the Optipac, a charcoal filter is not necessary as the system has a pre-existing vacuum state when the monomer is introduced. A sterile filter for both the Optivac and Optipac prevent contamination of the system when the vacuum is released. The filter system also serves as a safeguard and prevents the pump from being damaged by monomer fumes or polymer powder.

The pump is delivered non-sterile.

OPTILAVAGE SYSTEM

Pulse Rate: Variable up to 1500 pulses per minute.
Flow Rate: > 750 ml per minute.
Operating Pressure: 5–7 bar, (0.5–0.7 MPa, 70–100 psi).

The Cleaning End Cap (4433) is intended to seal the Air Hose (4411) and the Air Hose British Standard (4407) during machine-washing, to prevent water-intrusion.

The Cleaning End Cap must be removed after washing prior to sterilization.

When cleaning the hand unit manually, the air hose can be attached to prevent water-intrusion. Alternatively, the Cleaning End Cap (4412) for the Hand Unit with Biomet (Universal) connector (4410) or the Cleaning End Cap (4420) for the Hand Unit with Synthes A. O. connector (4418) can be attached to prevent water-intrusion.

The air hose or the cleaning end caps must be removed after washing prior to sterilization.



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BIOMET®

For further inquiries please contact:
Biomet Cementing Technologies AB
 Phone + 46 40 669 7000
www.bonecement.com
bonecement@biometeurope.com

Responsible manufacturer
 Bone Cement and Optipac
Biomet Orthopaedics
Switzerland GmbH
 CH-8953 Dietikon
 Switzerland

Responsible manufacturer
 Cementing Systems
Biomet France
 F-26903 Valence Cedex 9
 France

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