

Lock

Bipolar head
Bipolarna glava



**PRODUCT DESCRIPTION
AND SURGICAL TECHNIQUE
OPIS PROIZVODA
I KIRURŠKA TEHNIKA**

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History and Philosophy

Povijest i filozofija



The Lock bipolar head proposes the philosophy of the partial hip prosthesis with forefront criteria of design, materials and ergonomics.

An highly congruent metallic polished shell working on the centers self-aligning principle, is equipped by conical UHMWPE liner and a simple retentive ring mechanism.

An essential instrumentation set allows to perform a fast and effective surgical technique.



Lock bipolarna glava pripada filozofiji parcijalne proteze kuka s naprednim kriterijem dizajna, materijala i ergonomije.

Vro kongruentna metalna polirana školjka koja radi na principu automatskog poravnavanja, opremljena je koničnim UHMWPE umetkom i jednostavnim prstenastim mehanizmom.

Osnovni set instrumenata omogućava brzu i učinkovitu kiruršku tehniku.

Materials

Materijali



The Lock bipolar heads are available in AISI 316L stainless steel or CoCrMo alloy, well known materials for the tribological characteristic.

The polished surface finish and the high congruence to the acetabular cavity allows a natural fluency and adaptation to the chondral surface.

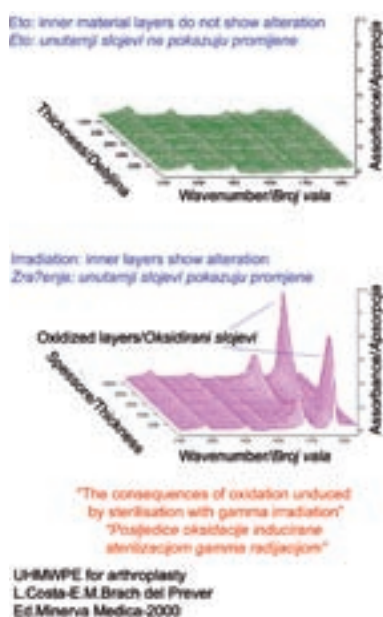


Each shell is uniquely combined with a liner and a retentive ring all made of UHMWPE.

Sterilization of the items is provided by means of ethylene oxide (Eto).

This method preserves intact the characteristics of the UHMWPE, because it only acts at the surface level of the solid parts, without long term degrading effects for the tribological and mechanical properties.

Physical chemical interactions are not possible by the sterilizing agent, therefore the polymer cannot be affected by structural alterations as per irradiating processes.



Bipolarne glave s vratom na raspolaganju su u izvedbi iz AISI 316L nehrđajućeg čelika ili CoCrMo legure, dobro poznati materijali za tribološke karakteristike.

Polirana površina i visoka kongruencija acetabularne šupljine, omogućava prirodni tok i adaptaciju hondralne površine.

Svaka školjka je jedinstveno kombinirana s umetkom i retentivnim prstenom, sve u UHMWPE izvedbi.

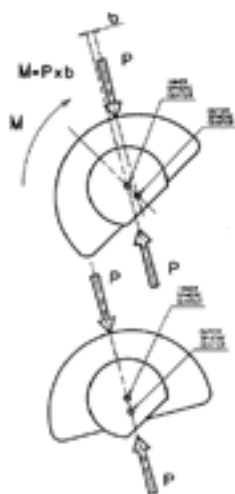
Sterilizacija se vrši etilen oksidom (Eto).

Ova metoda omogućava očuvanje UHMWPE jer djeluje samo na nivou površine krutih dijelova, bez dugotrajnih učinaka degradacije triboloških i mehaničkih karakteristika.

Fizičko-kemjske interakcije od strane agensa za sterilizaciju nisu moguće, pa na polimer ne mogu utjecati strukturalne alteracije kao što su to procesi zračenja. Navedene školjke u kombinaciji su s 28mm unutarnje artikulacije.

Biomechanical characteristics

Biomehaničke karakteristike



Self-alignment of the two centers of rotation.
Automatsko poravnanje dvaju rotacijskih centara.

A nearly hemispheric profile characterizes the outer shell. It increases the R.O.M with respect to the inner cephalic modular component, and decreases the risk ratio of accidental peripheral contacts with the femoral neck.

Skoro hemisferični profil karakterizira vanjsku školjku. Time se povećava R.O.M u odnosu na unutarnju cefaličku modularnu komponentu, te ujedno i smanjuje postotak rizika slučajnog perifernog kontakta s femoralnim vratom.

The positive eccentricity of the inner articulating head allows the self-alignment of the two centers of rotation with respect to the bearing load direction in every mechanical condition.

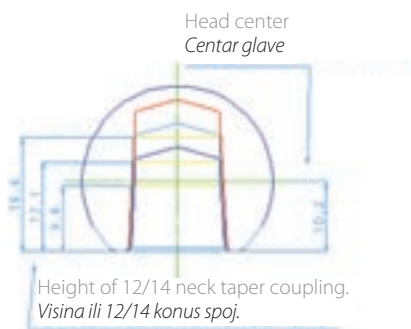
Pozitivna ekscentričnost unutarnje artikulacijske glave omogućava automatsko poravnanje dvaju rotacijskih centara u odnosu na pravac snošenja opterećenja, pod bilo kakvim mehaničkim uvjetima.

A distributed progression for the shell sizes, facilitates the anatomical choice.

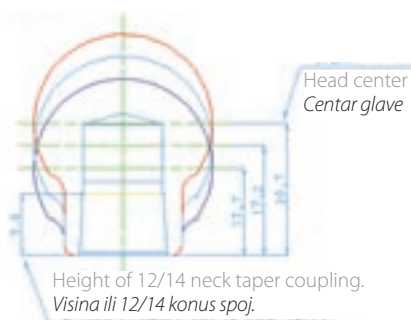
Distribuirana progresija veličine školjke olakšava anatomske izbor.

Moreover, 6 different lengths of the inner head allow the user to re-establish the optimal tissue balancing.

Štoviše, 6 različitih duljina unutarnje glave omogućavaju korisniku ponovno uspostavljanje optimalnog balansa tkiva.



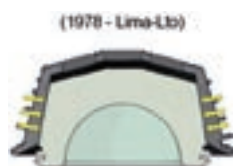
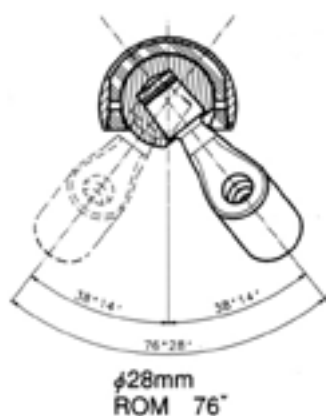
Height of 12/14 neck taper coupling.
Visina ili 12/14 konus spoj.



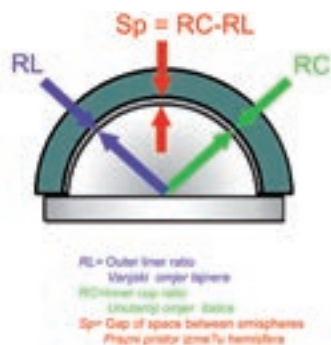
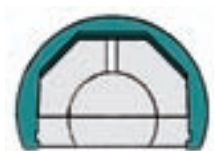
Height of 12/14 neck taper coupling.
Visina ili 12/14 konus spoj.

Product characteristics

Karakteristike proizvoda



Conical coupling.
Konični spojevi



Hemispherical coupling
Hemisferni spojevi

The inner head size is of 28mm of diameter.

Such a geometry allows a range of motion beyond 75° with respect to the equatorial edge of the outer shell (NB: possible values with Lima-Lto femoral stems).

The mechanical connection between liner and shell is self-locking and possible by Morse cone design. This method, originally introduced in 1978 by Lima-Lto, totally avoids any risks of micro-movement and consequent back side wear phenomena at the liner-shell interface, reported for the snap hemispherical coupling.

Shell, liner and ring are in unique packaging and suitable for a fast intra-operative assemblage. Sizing and implanting can be performed with the support of a simple and efficient instrumentation.

Unutarnja glava je promjera 28mm.

Takva geometrija omogućava domet kretanja veći od 75° u odbosu na ekvatorni rub vanjske školjke (NB: moguće vrijednosti s Lima-Lto femoralnim stemom).

Mehanička veza između umetka i školjke automatski se postiže Morse konusnim dizajnom. Ova metoda, koju je 1980. uvela tvrtka Lima-Lto, u cijelosti uklanja rizik mikro-kretanja i, time pojavu habanja stražnje strane na sučelju umetka-školjke koje se pojavljuje kod spojeva sa snap mehanizmom.

Školjka, umetak i prsten posebno su pakirani i odgovaraju brzom operacijskom montiranju. Određivanje veličine i implantacija vrši se pomoću jednostavnog i učinkovitog instrumentarija.

Indications



Traumatic pathology of the head and the femoral neck in elder patients.

Degenerating pathologies of the hip with peculiar effect mostly to the femoral head such as a-vascular necroses disease.

Special use for selected case of revision hip arthroplasty whereas a serious acetabular deficiency still allow the maintenance of an adequate articulation congruency.

Indikacije

Traumatološka patologija glave i femoralnog vrata kod starijih pacijenata.

Degeneracijske patologije kuka s posebnim učinkom uglavnom na femoralnu glavu kao što je to a-vaskularna nekroza.

Specijalna uporaba kod izabranih slučajeva revizije artroplastike kuka gdje ozbiljna acetabularna deficijencija još uvijek omogućava adekvatnu kongruenciju artikulacije.

Sizes

The Lock bipolar heads are available in 14 sizes, increasing of millimeter in millimeter, from the diameter 41mm to the diameter 54mm. Upon request 3 bigger sizes of diameters 55mm, 56mm and 57mm.

Those shell are combined with 28mm inner articulation.

Veličine

Lock bipolarne glave na raspolaganju su u 14 veličina, s povećanjem od po milimetar, od promjera 41mm do promjera 54mm. Na zahtjev se mogu isporučiti i promjeri 55mm., 56mm i 57mm.

Lock glave se kombiniraju s unutarnjim glavama dia. 28mm.

Product Codes

Šifre proizvoda



Bipolar Head
Bipolarna glava

each single package contains:
a head, a liner and a retaining ring
*svako pojedino pakiranje sadrži: jednu glavu,
jedan umetak i jedan retencijski prsten*

Bipolar Heads for dia. 28 mm Heads *Bipolarne glave za glave promjera 28mm*

AISI 316/L (Heads / Glave) - UHMWPE (Liners / Umetci)

	diameter promjer
5527.05.410	41 mm
5527.05.420	42 mm
5527.05.430	43 mm
5527.05.440	44 mm
5527.05.450	45 mm
5527.05.460	46 mm
5527.05.470	47 mm
5527.05.480	48 mm
5527.05.490	49 mm
5527.05.500	50 mm
5527.05.510	51 mm
5527.05.520	52 mm
5527.05.530	53 mm
5527.05.540	54 mm
■ 5527.05.550	55 mm
■ 5527.05.560	56 mm
■ 5527.05.570	57 mm
■	upon request / na zahtjev



Bipolar Head
Bipolarna glava

each single package contains:
a head, a liner and a retaining ring
*svako pojedino pakiranje sadrži: jednu glavu,
jedan umetak i jedan retencijski prsten*

Bipolar Heads for dia. 28 mm Heads
Bipolarne glave za glave promjera 28mm

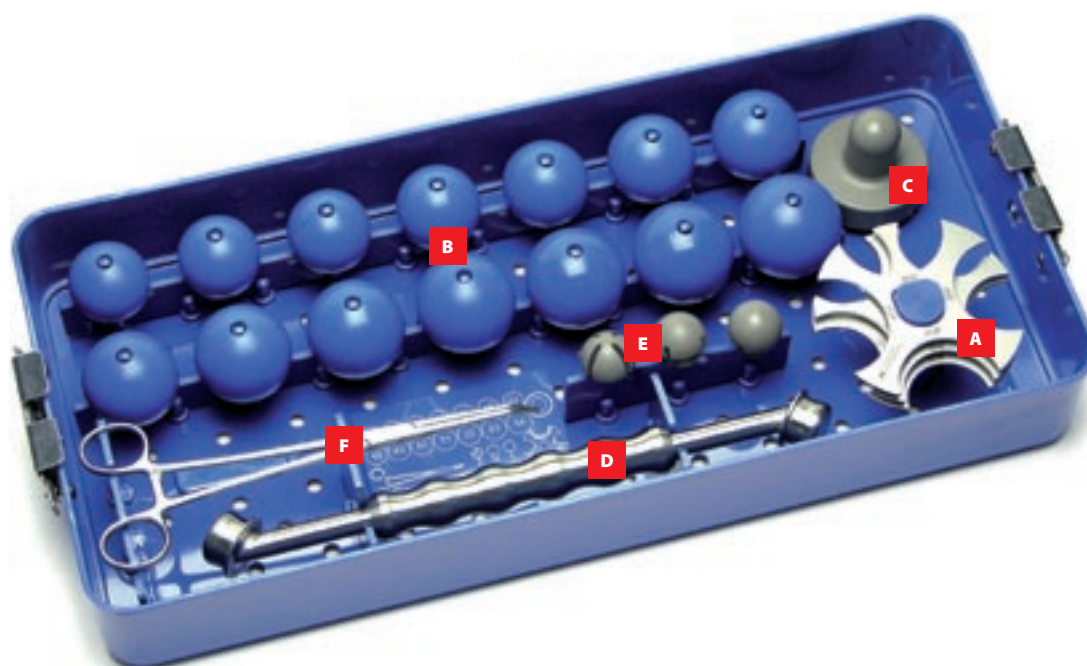
CoCrMo (Heads / Glave) - UHMWPE (Liners / Umetci)

	diameter <i>promjer</i>
5527.09.410	41 mm
5527.09.420	42 mm
5527.09.430	43 mm
5527.09.440	44 mm
5527.09.450	45 mm
5527.09.460	46 mm
5527.09.470	47 mm
5527.09.480	48 mm
5527.09.490	49 mm
5527.09.500	50 mm
5527.09.510	51 mm
5527.09.520	52 mm
5527.09.530	53 mm
5527.09.540	54 mm
■ 5527.09.550	55 mm
■ 5527.09.560	56 mm
■ 5527.09.570	57 mm

■ upon request / *na zahtjev*

Instrument set

Set instrumentata





9050.37.000 Instrument Set for Lock Bipolar Heads
Set instrumenata za Lock bipolarnu glavu

ref.		description	opis	quant./kol.
9050.10.001	A	Femoral Head Gauge Dia. 41-45mm	probna glava - prom. 41-45mm	1
9050.10.002	A	Femoral Head Gauge Dia. 46-50mm	probna glava - prom. 46-50mm	1
9050.10.003	A	Femoral Head Gauge Dia. 51-54mm	probna glava - prom. 51-54mm	1
9050.10.510	B	Trial Head - Dia. 41mm	probna glava - prom. 41mm	1
9050.10.520	B	Trial Head - Dia. 42mm	probna glava - prom. 42mm	1
9050.10.530	B	Trial Head - Dia. 43mm	probna glava - prom. 43mm	1
9050.10.535	B	Trial Head - Dia. 44mm	probna glava - prom. 44mm	1
9050.10.545	B	Trial Head - Dia. 45mm	probna glava - prom. 45mm	1
9050.10.550	B	Trial Head - Dia. 46mm	probna glava - prom. 46mm	1
9050.10.555	B	Trial Head - Dia. 47mm	probna glava - prom. 47mm	1
9050.10.565	B	Trial Head - Dia. 48mm	probna glava - prom. 48mm	1
9050.10.570	B	Trial Head - Dia. 49mm	probna glava - prom. 49mm	1
9050.10.575	B	Trial Head - Dia. 50mm	probna glava - prom. 50mm	1
9050.10.580	B	Trial Head - Dia. 51mm	probna glava - prom. 51mm	1
9050.10.585	B	Trial Head - Dia. 52mm	probna glava - prom. 52mm	1
9050.10.595	B	Trial Head - Dia. 53mm	probna glava - prom. 53mm	1
9050.10.600	B	Trial Head - Dia. 54mm	probna glava - prom. 54mm	1
9055.27.010	C	Pusher Liner	umetak za glavu	1
9050.10.201	D	Head Inserter	aplikator inserata	1
9095.10.511	E	Trial Head Low Taper 12/14 Dia. 28mm S	Probna glava niski konus 12/14 prom. 28 mm S	1
9095.10.512	E	Trial Head Low Taper 12/14 Dia. 28mm M	Probna glava niski konus 12/14 prom. 28 mm M	1
9095.10.513	E	Trial Head Low Taper 12/14 Dia. 28mm L	Probna glava niski konus 12/14 prom. 28 mm L	1
9050.35.150	F	Ring Pincer	podložak za instrumentea	1
9050.37.920		Sterilizable Box	kutija za sterilizaciju	1

'Lock Bipolar Head' Surgical Technique

Lock bipolarna glava - Kirurška tehnika



[1]

Using the desired surgical technique, expose the acetabulum so as to view it adequately, then remove possible osteophytes and soft tissues surrounding the cotyloid rim.

1. Sizing the bipolar head

A suitable size for the bipolar head can be chosen by comparing the main overalls of the articular ends.



[2]

In fact, if the head of the femur is still in good conditions, a femoral caliper can be used to size its diameter (Fig. 1-2).

A trial bipolar head (Fig. 3-4) can also be used by a special inserter to size the acetabular site (Fig. 5-6).



[3]

To make it a fast maneuver of sizing the inserter is designed to offer two clamping ends.



[4]

Upotrijebite željenu kiruršku tehniku, otkrijte acetabulum kako bi ga dobro pogledali. Tada uklonite eventualne osteofite i meko tkivo koje okružuje kotiloidni rub.

1. Odredite veličinu bipolarne glave

Umetnite probnu školjku na umetak glave (sl. 1), tada prekontrolirajte je li veličina adekvatna i uniformno u kontaktu s hondralnom površinom (sl. 2)

Ako je glava femura još uvijek dobro sačuvana, upotrijebite femoralni mjerač i odredite dia. glave (Fig.1-2). Probna bipolarna glava (Fig. 3-4) Se također može upotrijebiti za određivanje veličine acetabuluma.

Kako bi se ubrzalo određivanje veličine aplikator je dizajniran s dva kraja za umetanje.



[5]

2. Trial reduction

Insert a trial femoral head onto the femoral stem (use only Lima Lto femoral prosthetic implantable devices) then insert the trial bipolar head provide to reduce the articulation (Fig. 7-8).



[6]

The trial bipolar heads are designed to self-retain the femoral trial heads, as enough as to allow a feasible and reliable trial reduction, without altering the range of motion and tissue balancing.

The joint is reduced.



[7]

Check the length of the trial femoral head is adequate to compensate tissue balancing and range of motion in the way to avoid the dislocation (Fig. 9).



[8]



[9]

2. Probna redukcija

Umetnite probnu femoralnu glavu na femoralno tijelo (upotrijebite samo Lima uređaje za femoralne protetske implantate) I osigurajte redukciju artikulacije (sl. 7-8) Prekontrolirajte duljinu femoralne glave kako bi izbjegli dislokaciju (sl. 9).

Probne bipolarne glave su napravljene tako da omogućavaju sigurnu probnu redukciju bez pomicanja okolnog tkiva i većeg broja pokreta.

Postavite glavicu.

Provjerite da li je dužina femoralne glave dovoljna da kompenzira pomicanje tkiva i pokrete kako ne bi došlo do dislokacije (Fig. 9).

3. Bipolar head assembling

Read on the packaging label the sizes of the chosen component.

Metal shell and liner. Preserve apart the retentive ring.

Insert the liner by hand into the metal shell (Fig. 10)

Using a gauze during the maneuver (Fig. 11) adjust the liner in deepest position with the pusher liner by a slight pressure (Fig. 12).

Warning: The first maneuver is always insert the inner femoral head onto the femoral stem, than hang the metal shell onto the femoral head with the snapping ring (use only Lima Lto femoral prosthetic implantable devices).

Having already coupled the inner femoral head to the metal shell it is very dangerous to hang the bipolar head onto the femoral stem taper. In fact there is a risk of misalignment because it is not possible to keep the orientation of inner head taper relatively to the direction of maneuver

3. Montaža bipolarne glave

Pročitajte na etiketi ambalaže veličinu izabrane komponente.

Metalna školjka i umetak. Nemojte ih čuvati skupa s retencijskim prstenom.

Umetnite umetak ručno u metalnu školjku.

Uporabom gaze tijekom tog postupka (sl. 11) adaptirajte umetak tako da ga uvučete u najdublju poziciju pomoću aplikatora umetaka, blagim pritiskom (s. 12).

Upozorenje: prvi postupak je uvijek umetanje unutarnje femoralne glave na femoralno tijelo. Nako toga se metalna školjka objesi na femoralnu glavu pomoću prstena sa zatvorom (upotrijebite samo Lima uređaje za protetske implantate).

S obzirom na to da ste već spojili unutarnju femoralnu glavu na metalnu školjku, vrlo je opasno vješati bipolarnu glavu na konus femoralnog tijela. Ustvari, dolazi do rizika kvarenja poretka jer nije moguće zadržati orijentaciju konusa unutarnje glave u odnosu na pravac postupka.





The ring should already have been connected on the femoral neck before the femoral head (Fig. 13). Check that the two holes at the chink extremity of the ring are towards the femoral side and not towards the acetabulum (Fig. 14).

Prsten je trebao već biti spojen na femoralni vrat prije femoralne glave (sl. 13). Prekontrolirajte jesu li dvije rupe na krajnjem dijelu prstena okrenute prema femoralnoj strani a ne prema acetabulumu (sl. 14).



If the head were ceramic (mind to clean and dry the neck taper) fix it by pushing and rotating it along the neck axis (Fig. 15-16).

Ukoliko su glave bile keramičke (pazite da je vratni konus očišćen i osušen) fiksirajte ih tako da ih gurnete i rotirate uzduž vratne osi. (sl. 15-16).



The metal shell is coupled onto the head and the ring is drawn. Push the shell against the head and at the same time pull the ring until obtaining a fast elastic expansion, which indicates the ring snapped into the bipolar seat (Fig. 17).

Metalna školjka spojena je na glavu a prsten je povučen. Gurnite školjku prema glavi i istodobno vucite prsten sve dok niste doбили elastičnu ekspanziju koja ukazuje na to da je prsten skočio u bipolarno sjedište (sl. 17).





[18]

4. Final reduction and removal of the components

Reduce the articulation and check for the correct ratios (Fig. 18).

If necessary, the various prosthetic components can be disassembled and removed. The metallic shell can be disconnected from the inner femoral head by removing the retentive ring with the pliers (Fig. 19-20).

To remove the inner femoral head, just beat the head base axially with a punch (not provided with the instrument set).

Warning!

In case of head removal only, never use a ceramic head on the same taper. In this case, the stem must be replaced as well.



Ring Pincer
Kliješta za prsten
cod. 9050.35.150

[19]



[20]

4. Konačna redukcija i uklanjanje komponenti

Reducirajte artikulaciju i provjerite daljnje pravilne proporcije (sl.18).

Ukoliko je potrebno, razne se protetske komponente mogu demontirati i ukloniti. Metalna školjka se može otpojiti od unutarnje femoralne glave uklanjanjem retencijskog prstena kliještima (sl. 19-20).

Unutarnja femoralna glava ukloniti će se tako da se udari po bazi glave, aksialno (nije dio seta instrumenata)

Upozorenje!

Ako uklanjate samo glavu nikada nemojte upotrijebiti keramičku glavu s istim konusom. U takvom se slučaju mora zamijeniti i tijelo.

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M. Agamennone - P.La Floresta

2nd BIOLOX® Symposium, Proceedings 1997

UHMWPE for Arthroplasty

UHMWPE za artroplastiku

L. Costa - E.M. Brach del Prever

Ed. Minerva Medica

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Ovu dokumentaciju ispostavila je tvrtka Lima-Lto, Odsjek za prodaju & Tehnički odsjek

Lima Implantés sl

Entenza 95- 3^a- 1a
08015 Barcelona - SPAIN
T. +34 93 228 9240
F. +34 93 426 1603

lima@limaimplantés.com

Lima France sas

E. Space Bat C
45 Allée des Ormes
Parc de Sophia Antipolis
06250 Mougins - FRANCE
T. +33 492 28 7161
F. +33 492 28 7259

info@limafrance.com

Lima Japan kk

Shinjuku YS Building 5F
6-11-2 Nishi-shinjuku, Shinjuku
Tokyo 160-0023 - JAPAN
T. +81 3 5339 1688
F. +81 3 5339 1689

info@lima-japan.com

Lima Suisse sa

En Chamard 55
CH-1442 Montagny/Yverdon (VD) SWITZERLAND
T. +41 24 4450611
F. +41 24 4450613

clients@limasuisse.ch

Lima O.I. doo

Maksimirska, 103
10000 Zagreb - CROATIA
T. +385 1 23 617 40
F. +385 1 23 617 45

lima-oi@lima-oi.hr

Lima CZ sro

U. Kanalky 7/1441
12000 Praha 2 - CZECH REPUBLIC
T. +42 0 222720011
F. +42 0 222723568

info@limacz.cz

Lima Deutschland GmbH

Kapstadtring 10
D-22297 Hamburg
T. +49 040 6378464 0
F. +49 040 6378464 9

info@lima-deutschland.com

Lima-Lto spa
Medical Systems

Via Nazionale, 52
33030 Villanova
San Daniele del Friuli
Udine - Italy

T. +39 0432 945511
F. +39 0432 945512
www.lima.it
info@lima.it

www.lima.it



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