



PRODUCT CATALOG

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- primopoly
- primosplint
- primobase
- primotray
- metaconSystem
- metablue
- metalight
- phaser
- Joker
- quinto
- Twister

**ADVANCED
LABORATORY
SYSTEMS**

www.primogroup.de

PRODUCT
CATALOG

ADVANCED LABORATORY SYSTEMS

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primopattern

light cured universal modeling resin

primopattern is an advanced, ready to use
one-component-material that burns out cleanly and completely.

primopattern is available as modeling gel and modeling paste

efficient modeling made easy

indispensable light cured material for all cases – for every lab





primopattern

Gel or Paste



EFFICIENT MODELING MADE EASY

uses

• Implantology:

modellations for casting or scanning of

- implant abutments
- implant bars
- implant superstructures
- tertiary constructions over Galvano mesiostructures

production of

- transfer jigs
- individual abutments, etc.

as well as connecting or fixing of single implant parts or segments

• fixed restorations:

modellations for casting, scanning or pressing of

- crowns and bridges
- understructures for zirconium copy milling machines
- Inlays and Onlays
- understructures for Galvano or Captek bridges



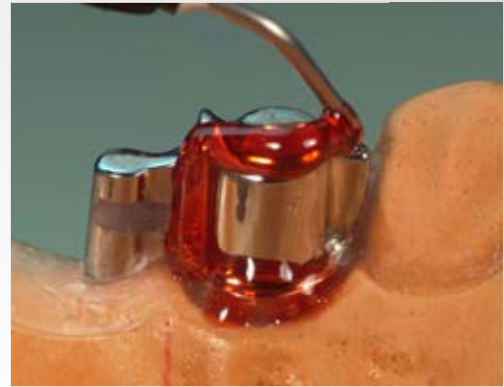
primopattern clear

• combined restorations

- primary and secondary telescopic or conus crowns
- individual attachments
- RSS secondary attachments, etc.

• further uses

- retaining single parts or parts that needed to be separated for welding or soldering
- fixing of attachments
- general retaining or fixing of single parts or segments



handling tip

When the syringe is used with a lightly vibrating motion, the material becomes more flowable, when the vibrating motion is stopped, the Gel will stay as placed (thixotropic behaviour).



advantages

primopattern Gel and Paste stand out due to the following product characteristics:

- ready to use one-component-material, light cured and thixotrop
- perfectly aligned viscosity of Gel and Paste for quick and precise application
- stays where placed – does not run – therefore very economical
- easy control of the applied thickness
- long working time (> 20 min.) – short curing time (< 5 min.)
- cures in most conventional light curing units (320nm-500nm)
- polymerisation neutral and absolutely dimensionally stable with great fitting properties
- no distortion, high surface hardness and great strength
- light cured cases can be lifted off easily and stress free
- easy to grind with carbide burs or rubber polishers
- burns out cleanly and completely
- can be used in conjunction with conventional waxes or light cured wax (metacon)
- does not contain MMA and peroxide and has no taste or smell

NEW

Also available
in clear!

primopattern clear

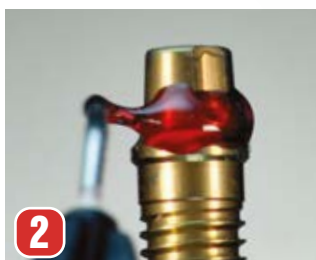


LIGHT CURED READY TO USE DIMENSIONALLY STABLE

working procedure



1 First primopattern LC Gel is used to build up, light cure and



2 finish the single copings over the implant posts. Attention: the screw channels need to be closed (wax)



3 The bar segments will be built up with primopattern LC Paste.



4 To do so, an equivalent amount of Paste is pre-shaped into bar form with the fingers and placed



5 between the copings. Then the complete modellation is light cured and afterwards the bar is milled.



6 Any corrections or re-enforcements will be done with the Gel.



7 These corrections can be stabilized by pre-polymerising the



8 relevant areas with a handheld lab light.



technical tips

• application

For applying larger amounts of material at a time efficiently (i.e. for bars, pontics, etc.) use primopattern LC Paste.

use primopattern LC Gel for the more delicate works that require less layer thickness. In cases with larger volumes of primopattern material, cover the outer surfaces with a thin layer of conventional modelling wax before investing.



• light curing

primopattern cures in most conventional light curing units that supply a wavelength spectrum of 320nm-500nm.

Most suitable are the Metalight light curing units (primotec), as they are equipped with a special cooling system for most gentle polymerisation.

average polymerisation times in light curing units equipped with:

- UV/UV-A lights (i.e. metalight): 3,5 – 5 minutes
- halogen lights: 2 minutes
- strobo lights (i.e. UniXS): 90 seconds

ORDERING INFO

Item #	Item	
PA100		primopattern LC Gel (5x 3 g) light cured universal modelling resin gel
PA200		primopattern LC Paste (30 g) light cured universal modelling resin paste
PA300		primopattern LC Gel Clear (5x 3 g) light cured universal modelling resin gel clear
PA501		PE-case insert for two models (without case and models)

primopoly

polyurethane model and die material kit

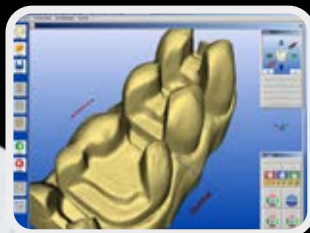
in general polyurethane is the most
accurate, strongest and cleanest
die material on the market.

[No more broken dies or dull edges]

extremely precise and strong die material



NO MORE BROKEN DIES OR DULL EDGES





primopoly

uses

- fabrication of models for long span bridges, superstructures and inlay, onlay preparations
- » excellent for scanning, no scanning spray needed
- shoulder and partial crown preparations
- duplicate dies to make porcelain butt margins
- dies that are very difficult to pour without breaking
- small lower anterior cases
- optimal for grinding on Zirconium because water does not effect the model

advantages

- no noticeable shrinkage or expansion
- more accurate than epoxy
- clean and easy to work with
- absolutely water resistant
- very thin in fluidity and easy to pour
- cures in only 1 hour
- easy to trim and saw, grinds more like a stone and not a plastic
- holds the sharpest edges and flows into the smallest cavities
- models are not as shiny - great for scanning
- three colors available



technical tips

For best results measure out base and hardener by weight instead of ml

For polyether and polyvinyl impression materials spray "Primopoly release agent" onto the impression and let it dry. This will prevent any sticking to the impression.

science

Primopoly is a polyurethane die material. In general polyurethane is the most accurate, strongest and cleanest die material on the market; much more so than traditional die stone and epoxy.



EXTREMELY PRECISE AND STRONG DIE MATERIAL

working procedure

Primopoly is a 2 component system, just mix the base material with the hardener and then you`re ready to pour.

The Primopoly base material is white. The color can be changed to blue or apricot by adding Primopoly coloring paste (included in the kit).

ORDERING INFO

Item #		Item
PY-KIT		primopoly Kit · primopoly base: 660 g (3 x 220 g) container, with an empty plastic bottle with lever cap · primopoly hardener: 100 g (1x) container, with an empty glass bottle with a spout · primopoly coloring paste: 8 g · accessories: 4 small and 2 large wooden spatulas, mixing bowls (3 x 30 ml + 1 x 50 ml) · indicate desired color – blue or apricot – when ordering
PR01		primopoly release agent - 2 oz. Spray bottle

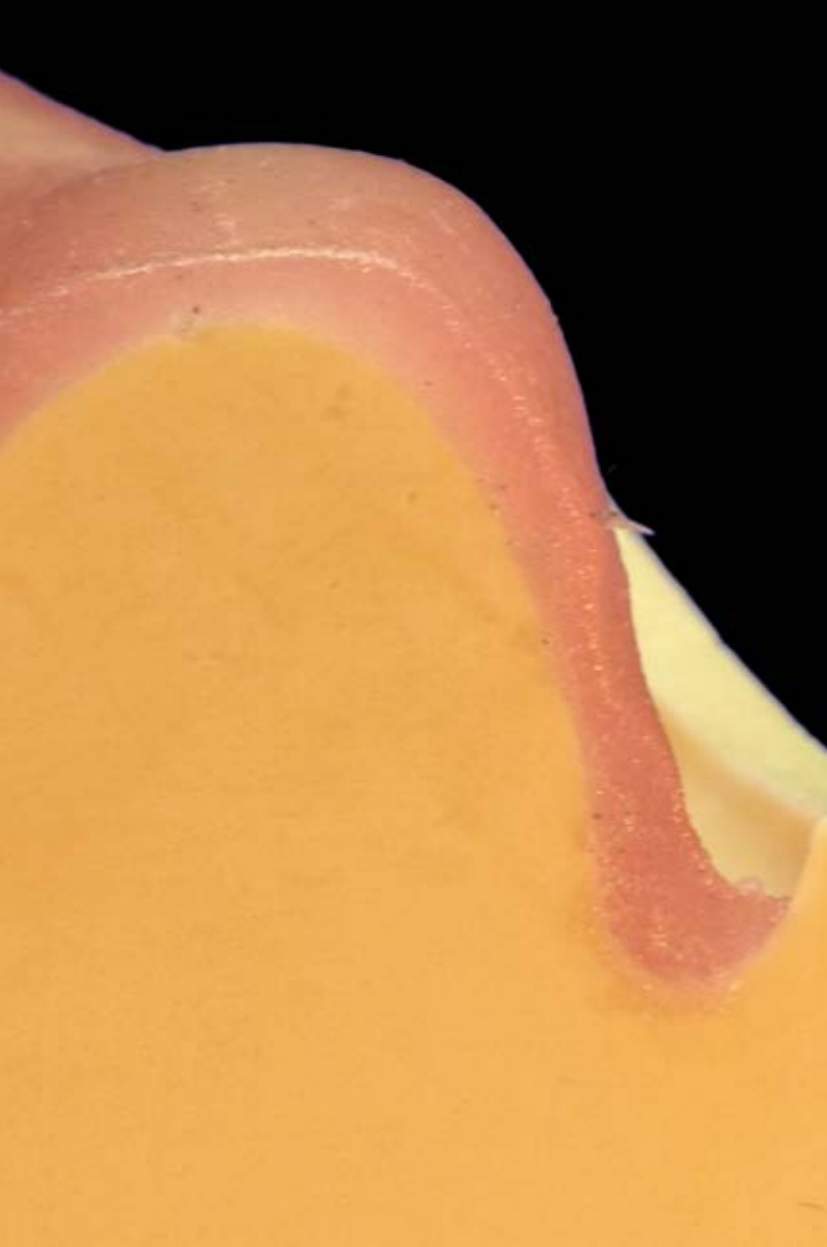
primobase

high strength light cured base plate material

the new chemical composition of primobase substantially
reduces the stickiness commonly known with this type
of materials and greatly increases the
curing and fitting properties

ONLY 1.2 MM THICK LIGHT CURED BASE PLATES





uses

- full and partial denture bite registration
- denture set up and try in
- temporary partials (flippers)

advantages

- only 1.2 mm thick, so hardly any need to adjust and/or shorten denture teeth to match the given vertical dimension during the set-up
- same strength as conventional double the thickness impression tray materials
- extremely precise – to an extent that the base plate with the set-up teeth “adheres” to the palate during the try-in (suction effect)
- does not require a second curing cycle off the model upside down
- cures in most conventional light curing units (do not use strobe lights!)

technical tips

Use a bit of Metatouch (IM200) finger and instrument separator on your fingertips to smoothen the primobase surface after adaptation

For the most precise fit use the Metavac vacuum suction device. This will ensure that the base plate is fully pressed against the model during the light curing process.

- **1.2 MM THICK**
- **EASY HANDLING**
- **NOT STICKY**
- **GREAT FIT**
- **EASY CURING**



working procedures



- 1** Apply separator to the model (preferably Metatouch IM200 – see “ordering info Metacon”).
- 2** Adapt the base plate to the model with your fingers and/or instrument .
- 3** For an even more precise fit use the Metavac suction device. This will ensure maximum precision. (see “ordering info Metacon”).
- 4** Cure for 6 minutes – no second curing cycle off the model needed.
- 5** Remove base plate and finish it..

ORDERING INFO

Item #		Item
TP100		primobase light cured base plate material, 50 pieces

primotray

light cured custom impression tray material

offers the same high end material quality as primobase

but in 2.2 mm thickness for custom impression trays

- **2.2 MM THICK**
- **EASY HANDLING**
- **NOT STICKY**
- **GREAT FIT**
- **EASY CURING**



ORDERING INFO

Item #		Item
TP200		primotray light cured custom impression tray material, 50 pieces

primosplint

light cured composite splint material

in general light cured composite is the most precise,
distortion-free and antiallergenic material for
night guards and more

[easy, precise, versatile, fast]

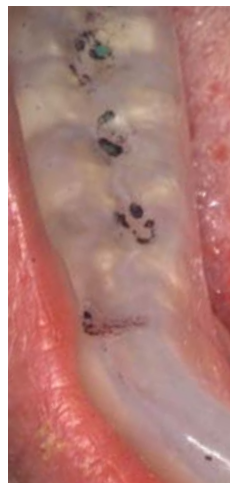
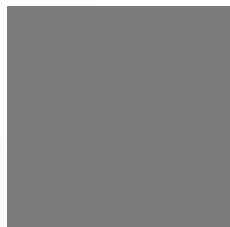
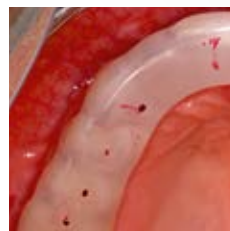
light cured composite rods, MMA and peroxide free –
for function therapy bite splints and many more applications.



EASY PRECISE VERSATILE FAST



light cured
composite
rods, MMA
and peroxide
free





primosplint

[uses]

- function therapy bite splints
- night guards
- verification indexes
- insertion guides
- transfer jigs

[advantages]

- very quick and easy to work with
- modelling playdough like consistency at room temperature – no heat needed
- cures reliably in most conventional light curing units
- extremely precise, no noticeable shrinkage, expansion or distortion
- abrasion-optimized, protects the tooth structure and the TMJ
- MMA and peroxide free – lowest allergic potential for technician and patient
- fully autoclavable – no distortion during steam sterilisation
- can be easily bonded to other materials (PMMA-acrylic or suck down matrix)
- no taste or smell and easy to repair

technical tips

When opening a new stick of Primosplint gently knead it for about 10 to 15 seconds to soften up the material. This will make the material softer and easier to work with.

For maximum clarity lightly sandblast the finished splint (approx. 110 micron aluminium oxide, 30 PSI) inside and outside. Then apply one thin layer of primoglaze on the inside, blow off any excess and apply two thin layers on the outside. Light cure according to the instructions.

If adding Primosplint to a suck down matrix, make sure that the surface is roughened well enough before applying Primostick bonder.

Do not use strong strobe lights for curing.

Any further technical questions –
please call **+49(0) 61 72 - 99 770 - 0**

background

Primosplint is a thixotropic material, meaning the more energy put into it, the softer and more pliable it gets.

Primosplint provides the highest strength without any brittleness because tensile strength and modulus of elasticity have been optimized for bite splint applications.

Splints made of primosplint have a very high accuracy of fit, meaning they are utmost dimensionally stable during and after polymerization. This prevents "rocking" or "seesawing" effects.

The mechanical properties of primosplint have been carefully tuned to relieve the temporomandibular joint and protect the tooth structure. With a flexural strength of > 70 MPa and a modulus of elasticity of > 1500 MPa, bite splints made of primosplint meet the mechanical requirements asked for by modern splint therapy.



JUST A FEW STEPS TO PERFECT RESULTS!!!



Finished Case

[working procedure]



1
primosplint - light cured composite in rod shape



2
easy adaptation at room temperature (no heat needed)



3
establish centric and disclusion



4
polymerisation in one of the metalight units...



...or in most conventional UV-A curing lights



5
lift-off the model



6
no shrinkage, no rocking, easy to finish and glaze



7
verify occlusion and glaze or polish

ORDERING INFO

primosplint Starter Kit

Item #	Item
PS-KIT	Primosplint PS-Kit1 – one each of: PS 100, box with 12 primosplint rods PS 202, bottle of light cure bonding material PS 203, bottle of stone model separator PS 204, bottle of light cure glaze lacquer PS 205, bottle of cleaning liquid IM 200, instruments and finger separator



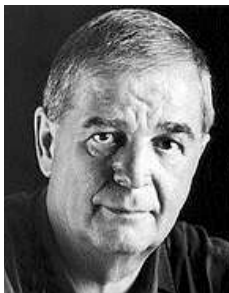
primosplint refill components

Item #	Item
PS 100 	Box with 12 rods of Primosplint  0124 – light cure composite material – 8.3 grams each per pack
PS 202 	10 ml bottle primostick  – light cure bonding material
PS 203 	50 ml bottle primosep – stone model separator
PS 204 	10 ml bottle primoglaze  – light cure glaze lacquer
PS 205 	50 ml bottle primoclean – cleaning liquid
IM 200 	Metatouch – Instruments and fingers separator, 43 g jar

publications

- **Implant Cases Made Easy**
by Christina Ketzinger CDT
and Andreas Hoffmann MDT
published in Spectrum dialogue
Vol. 7 No. 8
- **primosplint: for faster, easier splints**
by Andreas Hoffmann MDT
published in Dental Technologies No. 71

Find these and more publications as well as the Material Safety Data Sheets (MSDS) under www.primogroup.de or call primotec Germany at **+49(0) 61 72 - 99 770 - 0** for your free printed copy.



Dr. Diether Reusch

Privatpraxis für Zahnmedizin,
Westerburg, Germany

"Especially for our CMD therapy patients, primosplint offers us the needed perfect passive fit to ensure best treatment results. To easily verify occlusal contacts and disclusion we prefer the primosplint surface finish with lesser translucency."



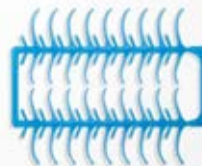
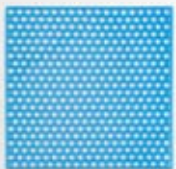
metacon

the light cured WAX

the very unique chemical formula of the Metacon wax ideally combines waxes, acrylics and photo-polymerising elements. Thus the material handles like wax before - and like acrylic after light curing.

speed up production

the Metacon light cured wax system offers substantial quality and time saving benefits for the full range of dental applications

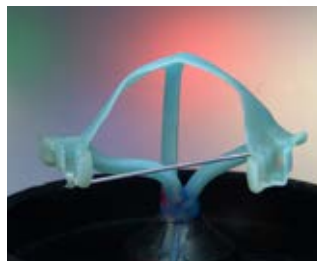




lower partial with clasps



upper combined case



upper partial with clasps



crown and bridgework



pressable ceramics



repairs, i.e. broken clasp



uses

the full range of dental applications, such as:

- combination cases with attachments
- partial dentures with clasps
- full upper palate plates
- crown and bridge restorations
- implant bars and implant bridges
- modellations for pressable ceramics

without duplicating material and refractory model

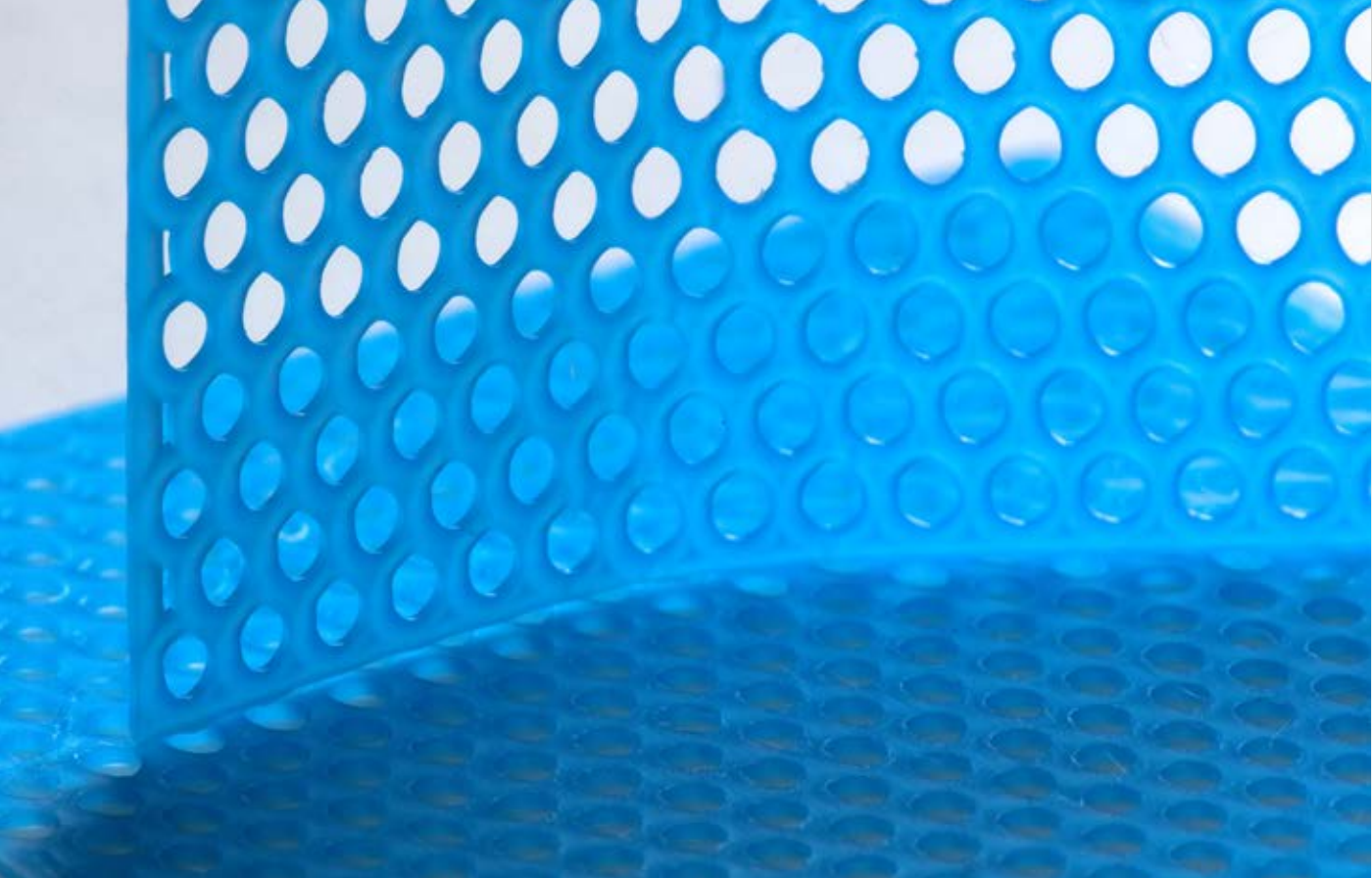


advantages

- eliminates refractory models
- no need for duplicating materials
- more precise than conventional waxing methods
- substantial time and cost saving
- handles like wax before it is cured
- after it is cured, it handles like acrylic
- does not show any shrinkage or distortion after curing
- the material is strong yet flexible
- polymerized Metacon wax has a physical memory
- can be trimmed before investing
- burns out cleanly and completely
- does not expand in the ring
- available as modelling wax and as preformed patterns

• metalight

light curing units
mini and trend (from left to right)
more information on page 11



technical tips

For best temperature control rather wax up with an electric wax spatula than with an instrument and Bunsen burner. Alternatively Metacon can be kneaded “cold” as it offers perfect modelling consistency just slightly above room temperature. This method is even more productive.

To easily lift partials off the model after light curing always use the Metacon system separators and follow the instructions.

Do not try to wax up all details. It is much more productive to light cure the material first, then create the final shape details in the acrylic stage with grinding tools.

For best results always light cure the material in primotec’s metalight curing units. Do not use any light curing units that generate heat inside the curing chamber and/or any strobe lights.

science

The Metacon light cured wax is a unique chemical composition of cracked carbon chains (acrylic) with photo initiators attached to both ends of the carbon chain pieces. These conditioned acrylic parts

are then mixed with specially formulated waxes. Metawax modelling wax and Metaform preformed wax patterns are chemically equal but have a different density.



SPEED UP PRODUCTION

working procedure



1
after survey, design and block out apply the Metaseal separator



2
Metaform preformed patterns are available as clasps, stipple sheets, retentions, bars, etc.



3
for perfect adaptation the Metavac device is used



4
after light curing to acrylic the Metacon material can be trimmed



5
wax up completed, ready for sprueing and investing



6
when using the Metaring investing system three partials can easily be cast in one ring



7
for best fitting the investment material expansion needs to be adjusted 10 % up



8
three partials, one button and minimum investment material used

ORDERING INFO

metaconSystem – Starter Set

Item #	Item
MC Starter Set Basic	metaconSystem Starter Set Basic BP 300 Metaform lingual bar straight drop shape (8 g) GK 300 Metaform sprues - 3,5 mm (10 g) KP 100 Metaform premolar clasp (1 sheet) PP 301 Metaform stipple sheet – 0,55 x 67 x 130 mm (1 sheet) RP 200 Metaform mesh retentions (1 piece) RP 400 Metaform retention hole shape (1 piece) IM 200 Metatouch - finger and instrument separator (43 g) IM 300 Metaseal - stone model and die separator (43 g)

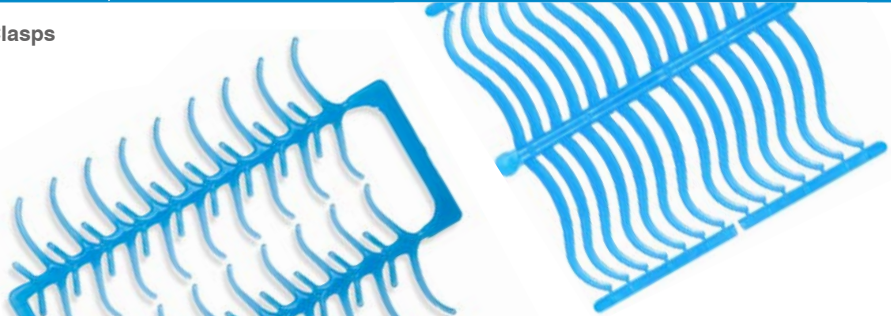
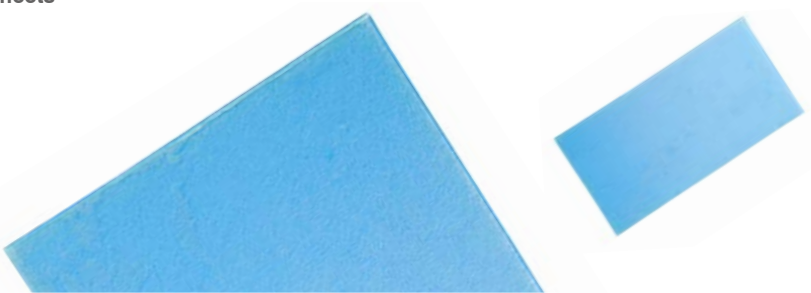


metaconSystem preformed patterns

Item #	Item
RP200	Metaform mesh retention for toothless jaws (5 sheets)
RP350	Metaform double comb shape retention (5 sheets, 40 pieces)
RP400	Metaform retention hole shape (3 sheets)
Sprues 	
GK100	Metaform sprue sticks round – 1,5 mm (12 g)
GK200	Metaform sprue sticks round – 2,5 mm (30 g)
GK300	Metaform sprue sticks round – 3,5 mm (53 g)
Rods and half round sticks 	
GK400	Metaform rods – 6 mm (60 g)
GK500	Metaform half round sticks – 1,6 mm (9 g)
GK600	Metaform half round sticks – 2,2 mm (14 g)

ORDERING INFO

metaconSystem preformed patterns

Item #	Item
Clasps 	
KP100	Metaform premolar clasp (5 sheets, 90 pieces)
KP200	Metaform molar clasp (5 sheets, 70 pieces)
Sheets 	
PP301	Metaform stipple sheet – 0,50 x 75 x 150 mm (5 sheets)
PP305	Metaform rougher stipple sheet – 0,55 x 67 x 130 mm (5 sheets)
PP151	Metaform smooth sheet – 0,55 x 67 x 130 mm (5 sheets)
PP251	Metaform smooth sheet – 0,80 x 67 x 130 mm (5 sheets)
Lingual bars 	
BP100	Metaform lingual bar swung (5 sheets, 40 pieces)
BP300	Metaform lingual bar straight drop shape (34 g)
BP400	Metaform lingual bar straight trapezium shape (40 g)

BESTELLINFORMATION

metaconSystem – Peripherieprodukte

Item #	Item
MW100 	Metawax modelling wax (20 g)
IM200 	Metatouch finger and instrument separator (40 g)
IM300 	Metaseal stone model and die separator (40 g)
ES100 	Metacool ice spray (two cans at 150 ml each)
MV100 	Metavac vacuum-suction device
MP100 	Metapump hand vacuum pump
MG100 	Metagran clear acrylic grains (120 g)
KD100 	Metatex latex covers latex covers (36 pieces)
TZ-KIT 	Vacuum-Suction kit KD 100 Metatex - latex covers (1 pack, 36 pieces) MG 100 Metagran - clear acrylic grains (120 g) MP 100 Metapump - hand vacuum pump MV 100 Metavac - vacuum-suction device not suitable for metalight mini

publications

- **There are simpler ways ...**
by Joachim Mosch CDT
and Andreas Hoffmann MDT
published in Spectrum Dialogue
Vol.8 No.9
- **The Metacon System – Part 1/2**
by Bettina Cortés CDT
published in Spectrum Dialogue
Vol.6 No.8 & Vol.6 No.9
- **Distortion Free Modeling Using the “cold” Technique – Heat-free-modeling**
by Joachim Mosch, CDT and
Andreas Hoffmann, MDT
Published in Spectrum Dialogue
Vol. 9 No. 2

Find these and more publications as well as the Material Safety Data Sheets (MSDS) under www.primogroup.de or call primotec Germany at +49(0) 61 72 - 99 770 - 0 for your free printed copy.

training courses

- **MetaconSystem – Partial dentures made easy**
In this course learn how to fabricate partial dentures on the master model without needing to make a refractory model or use duplicating materials.
- **MetaconSystem – Implants made easy**
In this course learn how to fabricate single unit to full arch implant cases easily, precisely and quickly using Metacon light cured wax.

On a regular basis, various metaconSystem training courses are organized in primotec's teaching facilities in Germany and in the USA. In addition, many primotec distribution partners worldwide offer different courses with their domestic specialists. For more information, please contact primotec Germany or call your local primotec partner.



metablue

light cured Metacon system modeling composite

metablue is a light cured modeling composite gel from the syringe,
that burns out cleanly and completely and is aligned specifically
to be used with the metacon light cured wax system.

quick modeling directly from the syringe

with metablue the metacon system becomes even easier in handling with even more perfect results



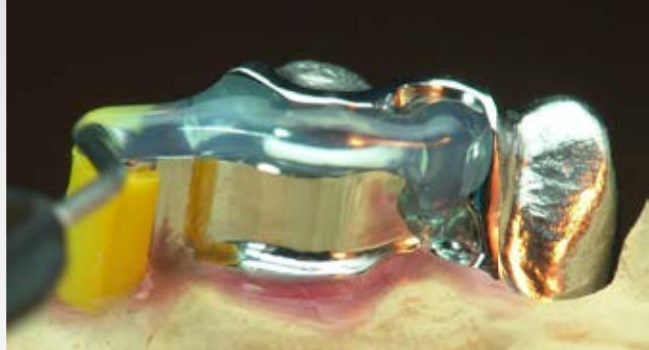
QUICK MODELING DIRECTLY FROM THE SYRINGE

uses

- individual implant abutments
- secondary parts of combined cases, such as telescopic or conus crowns, interlocks, RSS, millings, individual attachments, etc.
- tension free connection of Metacon implant bars, bridges or partial segments
- smoothing and/or sealing of ground Metacon surfaces
- fixing of retention beads on secondary telescopic or conus crowns
- easy attaching of the Metacon sprues to the modelled case

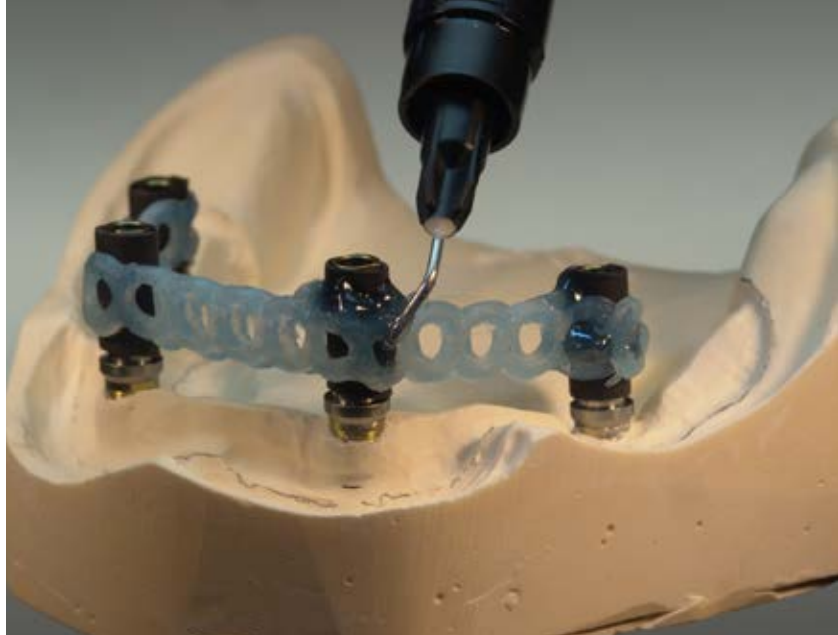


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advantages

- ready to use, one component material from the syringe
- burns out cleanly and completely
- very good and precise modeling characteristics
- connects directly to the light cured Metacon wax
- is processed "cold" – no danger of thermal tension when connecting Metacon segments
- no separator needed on zirconium, metal or porcelain surfaces
- no danger of "melting through" on the block-out or relief wax (in case of partials)
- long working time (> 20 min.), short light curing time (< 5 min.)
- absolutely precise after polymerisation – no noticeable shrinkage or distortion
- secondary parts can be lifted off without any problem
- easy to grind with conventional carbide burs or universal rubber polishers



ORDERING INFO

Item #		Item
MB100		metablue light cured Metacon System modeling composite, 4 syringes at 3 g / each, 12 hollow needle tips

metalight

broadband light curing units

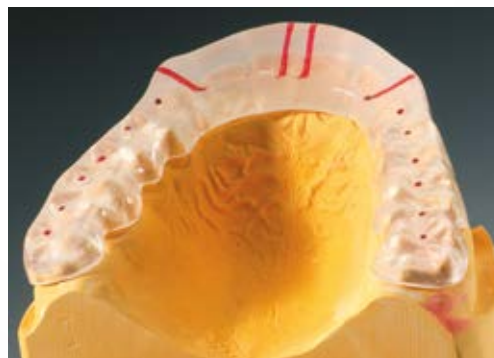
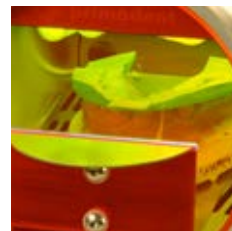
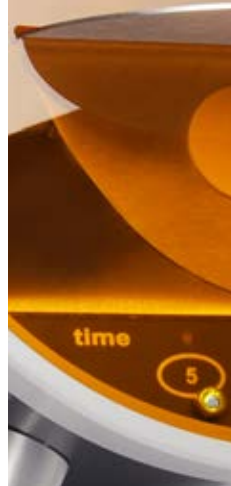
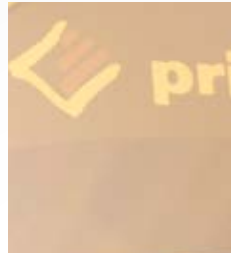
Gentle and distortion free polymerisation of all
light cured dental materials was the defined goal
for developing the metalight curing units



distortion free light curing units

innovative cooling system for stress free light curing

DISTORTION FREE LIGHT CURING





Uses

The metalight units cure all primotec light cured materials, including:

- **Metacon** light cured wax
- **primopattern** light cured universal modeling resin
- **primosplint** composite material for night guards and more
- **primobase** light cured base plate material
- **primotray** custom impression tray material

and most other light cured dental materials

Advantages

- gentle light curing due to constantly low polymerization temperature
- innovative cooling system with fine dust filter
- comfortable and easy to use
- UV filters allow direct observation of the light curing process
- advanced Alutec Design with highest quality materials and components
- stainless steel inside, multi color coated V2A steel housing, laser cut and CAD/CAM milled aluminium parts for long lasting durability
- Made in Germany with two years warranty (excluding bulbs)



metalight trend

- **Metalight trend** is more spacious than the metalight mini, yet still perfect to use right at the work bench, the metalight trend is equipped with an "easy-touch" operating panel. On this panel three easy touch buttons for 5, 10 and 15 minutes polymerization cycles allow quick selection of the desired program.

Lighting and cooling system are microprocessor controlled and switch on and off automatically. An acoustic signal indicates the end of light curing cycle.

The chamber provides sufficient space for the metavac suction device, up to 4 models and taller models with plaster bases.

Consequently the metalight trend is the perfect light curing unit for making all possible cases with the metacon light cured wax system or primobase base plates. The polymerisation spectrum covers the complete range from 320 to 500 nm.

The fully removeable front lid with UV filter and magnet switch allows easy access to the light curing chamber and direct observation of the light curing process from outside.





metalight mini

Metalight mini is the smallest and most cost effective Metalight model.

It is perfect for use directly at the work bench, which increases efficiency and avoids waiting times at the central laboratory light curing unit.

Due to its two special lamps, the metalight mini is applicable for the light curing of most dental materials with a polymerisation spectrum between 320 and 500 nm.

The polymerisation chamber of the metalight mini accommodates up to two stone models. Its stainless steel drawer makes it easy to place the stone models in the unit while the combined UV filter allows direct observation of the light curing process.



primotec Germany +49(0) 61 72 - 99 770 - 0





Technical tips

Since light curing in the metalight units takes place gently and without heat generation, an extended light curing time has no negative influence on the material quality of the polymerized cases.

To achieve optimally reproducible light curing times and results, the metalight bulbs should be replaced after approx. 1,000 hours of operation.

Background

All metalight units use an innovative, technically advanced cooling system that provides a low and stable polymerization temperature (only slightly above room temperature).

This ensures a uniform, gentle and tension-free curing of most light-curing dental materials. The metalight bulbs cover the entire polymerization spectrum from 320 – 500 nm.



DISTORTION FREE LIGHT CURING



ORDERING INFO

Item #	Item
ML120 	metalight mini Broadband light curing device with cooling system · two UV special lamps · UV spectrum: 320 nm - 500 nm · 230/115 V / 50 Hz · Dimensions: L=310 mm, Ø=120 mm, H=162 mm · Internal dimensions: L=150 mm, W=90 mm, H=60 mm to 35 mm · Weight: 2.7 kg
ML110 	metalight trend Broadband light curing device with cooling system · three adjustable polymerization times · four UV special lamps · UV spectrum: 320 nm - 500 nm · 230/115 V / 50 Hz · Dimensions: L=330 mm, Ø=180 mm, H=230 mm · Internal dimensions: L=160 mm, W=124 mm, H=120 mm to 80 mm · Weight: 4.3 kg
ML800 	metalight UV-lamp 9 W/78/G23 Spectral range 320 to 400 nm
ML801 	metalight UV-lamp 9 W/71/G23 Spectral range 400 to 500 nm

phaser

pulsed micro arc welding unit

the primotec phaser welders based on pulsed micro arc technology are optimized for easy, fast and reliable welding of all types of dental welding jobs

laser quality welding at a fraction of the cost

able to weld ALL dental alloys, including Palladium-Silver,
even easier, even more gentle and even more versatile.





R & D keeps going; by introducing the fourth generation of phaser micro arc welding units since 2003, a new milestone in dental welding technology is set.



Easiest operation for best results – the new phaser welders define the “gold standard” in dental welding – no matter if it is for new restorations or for repairs.



LASER QUALITY WELDING AT A FRACTION OF THE COST

- **dental world convinced**

originally developed to make dental welding accessible to a wide range of users. Due to its, compared to laser welders, considerably less costly pulsed micro arc technology, phaser welding has meanwhile become **the** dental joining technique of choice world-wide.

- **newly designed platform**

latest developments in electronics and control engineering helped designing a completely new device platform to further optimize phaser welding in all regards. This new device platform virtually allows any manipulation of the electric arc that brings the energy to the workpiece, thus creating the welding spot.

- **even better results**

the impulse modulation could be further refined and combined with a high-frequency overlapping that functions like a micro vibration. Comparable to dental stone on a vibrator,

this high frequency overlapping provides a higher density in the welding spot combined with a smoother welding surface, thus increasing the welding quality. By applying this new technology, micro cracks when welding critical alloys have become a thing of the past.

- **explicitly extended uses**

due to the application of these latest technologies the spectrum of uses could be explicitly extended, pin welding and micro welding for orthodontic applications are some of the key words. In addition now even the electric arc diameter can be constricted in order to obtain the best welding results especially in very tight and hard to get to areas.

- **easiest operation**

the operation concept is designed in a way that only the alloy type that shall be welded and the energy level (fine, medium, strong) need to be chosen. So, even an inexperienced user can weld safely from the start. The phasers naturally still provide a multitude of individual adjustment possibilities, which experienced technicians like to use to bring their welding results to perfection. Still, even with the standard settings very good results can be obtained.



orthodontics



margin extension



hole in crown



contact point



bridge



hybrid welding



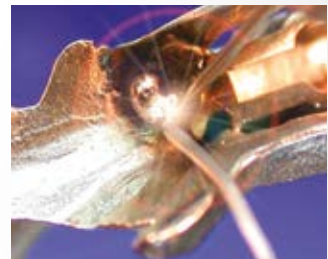
cast bridge element to Captek or electroformed coping



implant cases



secondary crown to partial



attachment to partial



partial extension



repair of broken clasp



repair of broken sublingual bar

wide spectrum of uses

The primotec phaser pulsed micro arc welding units can weld

- all dental welding jobs, no matter if it is for new restorations or for repairs
- all dental alloys and mono metals such as Titanium
- different alloy combinations such as precious to cobalt-chrome (Hybrid)
- many welding tasks on orthodontic appliances

easily, safely and most reliably.

The 10 preset programs of the new phaser welding units cover all current types of alloys and welding tasks in the dental field. Alloys, commonly known as difficult to weld, such as Palladium-Silver are now perfectly preprogrammed and no longer critical.

advantages

Operation and control

easiest operation due to

- turn-push controller with joy-stick function
- just one main menu
- 10 preset welding programs
- three preset energy levels plus micro mode

This means:

just select the alloy type and energy level and start welding safely and reliably. So, very good welding results can be achieved almost automatically, even with critical alloys.

For experienced welders:

Power and pulse duration are freely adjustable for a perfect control of the welding spot diameter and penetration depth.



The primotec phaser is the most sold pulsed micro arc welding unit for dental technology worldwide

advantages

phaser-technology

- The only dental welding unit that combines three different welding modes: pulse arc, micro arc and pin welding
- Further improved pulse shaping technology for even stronger and cleaner welds
- First time applied for dental welding: high frequency pulse overlapping for even smoother and denser welds
- Three different ignition modes = soft – normal – deep for optimized welding spot size
- Most reliable ignition in the micro level. At the same time high power reserve at the high end
- A high pulse frequency of 2 Hertz allows fast welding where it makes sense
- Very clean and oxide free welds due to the Argon gas being led precisely to the welding area right through the handpiece
- Maximum flexibility as the handpiece can be either free to move or fixed in the handpiece holding arm
- High power LED light provides a perfect shadow- and glare free illumination without heat development

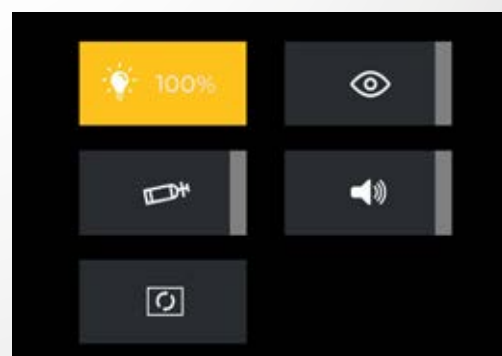
phaser-characteristics

- maintenance free
- super low running costs (just Argon gas and tungsten electrodes)
- very low gas consumption of only 2 L/min
- compact dimensions, small space requirements, low weight
- no audible noise during operation (no fan or pump)
- fast analysis – the service menu permanently
- checks all phaser functions
- extremely reliable
- Made in Germany
- two years full warranty

economical aspects

phaser welding helps to:

- increase quality and profits
- generate new business
- speed up turnaround time





innovations for a perfect workflow

- **The welding energy quality - pulse shape and HF overlapping**

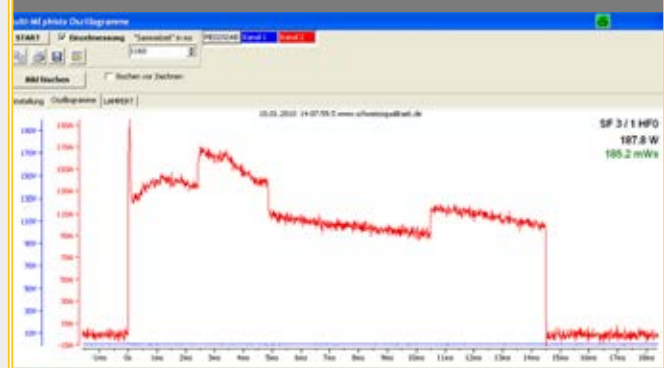
With the greatly improved, new phaser pulse shaping technology the operational sequence of the welding impulse can be modified in steps as small as one millisecond. This way the welding power can be adjusted i.e. to slowly increase, to softly fade, or to sharply increase or decrease in defined steps during the set impulse duration.

The high-frequency overlapping of the welding impulse functions like a micro vibration. Comparable to dental stone on a vibrator, this high frequency overlapping provides a higher density in the welding spot combined with a smoother spot surface, thus increasing the welding quality.

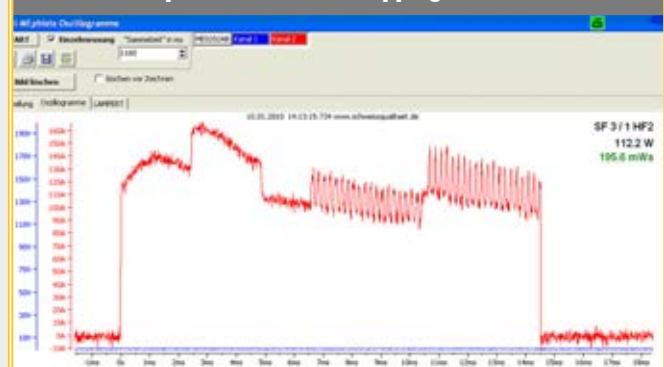
The result: The combination of individually modulated pulse shape with high frequent overlapping vibrations guarantees gentle welding in accordance with the specific requirements of each alloy type. The welding energy no longer strikes the alloy abruptly and with full force, but just right. Critical alloys like Palladium-Silver, Cobalt-Chrome (depending on the carbon content) and other eutectic alloys, are now easy to weld, even for beginners. Solidification (micro) cracks inside the welding spot can easily be avoided. At the same time an even better penetration of the welding energy into the alloy is achieved.



pulse shaped welding impulse



the same impulse with HF overlapping



Down to the smallest detail. The high precision 10 x stereo microscope ensures the best possible viewing for every welding task.



- **Pin welding**

Typical cases for pin welding are i.e. to directly weld a retention wire to a partial for an extension of one tooth, or to position a holder pin for the connecting clamp, if it can't be fixed to the case otherwise. For pin welding the handpiece is modified in a way that the pin can be shot right onto the case.

The result: pin welding is a very expedient completion of dental welding techniques, which is, at present, not available in any other kind of dental welding apparatus..

- **Power and time**

Due to the latest energy storage technology applied, the maximum power of the phaser could be increased by 30%. At the same time the new machine is even more accurately adjustable not only over the full power range, but especially in the lower power regions. The time (impulse duration) can be adjusted very precisely in half a millisecond steps.

The result: Both main energy parameters "power" and "time" can now be adjusted even more accurately. The effort to finish the welding area is further reduced.

- **The micro range**

The advanced electronics of the phaser mx3 makes sure that the arc is reliably ignited in the micro range even if minimal power and time settings are chosen.

The result: Even in the lowest energy areas, needed i.e. for thin crown margin extensions, small holes or orthodontic wires, continuously identical, fine spot welds can be created. At the same time the tungsten electrode lasts longer as, due to the refined power control, an accidental pre-ignition with too much energy is no longer possible.





• The pulse frequency

... or also called "welding speed", can be preselected in three stages – slow, medium and fast. The "fast" setting allows maximum welding speed depending on the set energy parameters, where it is appropriate.

The "slow" setting is useful if only a few selected "shots" are to be made on advanced and/or complicated cases.

The result: the new phasers offer the adequate speed for every welding job.



• The ignition mode

Changing the ignition mode to "soft" makes the arc slightly wider. When mode is set on "deep", the arc is tied up and the arc pressure is increased.



soft



deep

The result: The ignition mode "soft" makes sure that the electrode stays pointed and lasts longer. At the same time "soft" is gentler to the alloy. The setting "deep" is the best for welding in deep areas such as between two crown margins from below. The ignition of the arc is placed directly in the depth and doesn't revolve to the outer banks of the crowns on the left and right side.

• The handpiece

The handpiece has been newly designed to react even faster than before. As a result possible differences in the welding spot diameters are virtually eliminated. The chance of the electrode clinging to the work piece is almost none.

In addition the hand piece nozzle is now equipped with a special ceramic insert. This insert allows an even more precise and pointed gas jet to the welding area and helps reducing the Argon gas consumption to only 2 litres/minute.

The result: The handpiece reacts even faster and more precise, the Argon gas jet to the welding spot is optimized and the gas consumption could be further reduced.



phaser

publications

- **Lightning in a bottle - Soldering and welding are not the same**

by Joachim Mosch CDT,
Andreas Hoffmann MDT
and Dr. Michael Hopp
published in dental dialogue USA

- **Plasma vs. Laser - Comparison of the material quality of welded dental alloys**

by Prof. Dr Wolfgang Lindemann,
Tübingen/Germany
published in dental dialogue USA

Find these and other publications at
www.primogroup.de or ask for a free special
print by calling +49(0) 6172 - 99 77 0 - 0



training courses

- **Advanced phaser welding course**

On a regular basis, various phaser welding training courses are organized in primotec's teaching facilities in Germany and in the USA. In addition, many primotec distribution partners worldwide offer different phaser courses with their domestic specialists.

For more information, please contact primotec Germany or call your local primotec partner.



**Mark Stueck
CDT**

**Drake Dental Lab
Charlotte, NC**

"We have been using the phaser mx everyday for many years now. It sits right next to our laser welder. Both machines are great but we find that the phaser gives us better welds on our partials and also for bridge work. Not to mention that it's maintenance free!"

technical tips

Especially Palladium-Silver alloys and Cobalt-Chrome alloys with relatively high carbon content are said to be difficult to weld. Because of the almost eutectic behavior of these alloy types, micro cracks in the welding spot tend to appear easily.

Due to the specially developed pulse shapes with HF overlapping for these alloy types this problem can now be considered as solved. However, if material needs to be added, the welding wire for Palladium-Silver alloys has to be of high gold content. As for Cobalt-Chrome alloys, it is a must to use machined carbon free wires only.

Titanium can only be welded to Titanium.

Always remember that the weld or arc comes from the work back to the hand piece. The hand piece does not “shoot” a weld. When adding metal back always keep the welding wire between you and the electrode.

background

Only the latest high-performance electronics are used in the manufacture of primotec phaser micro-pulse welders. Combined with precise and reliable precision mechanics, this results in welding equipment of the highest durability.

The phaser welded connection is also extremely durable and biocompatible, as only the same type of alloy is used when adding material. By avoiding problematic solders, material mixes and the associated potential differences and crevice corrosion, as well as the resulting health hazards for the patient, are avoided from the outset.

working procedures

One of the great advantages of phaser welding over soldering is the very small heat affected zone which allows welding right next to porcelain or acrylic.



cut



weld



finished workpiece

ORDERING INFO

micro arc welding units & welding accessories

Item #	Description
mx3-1152 	primotec phaser mx3 main controller unit with power cable 230/115 Volt, integrated operating panel with turn and push controller with joy-stick function, handpiece with integrated gas flow and ceramic insert, gas hose (300 cm), 10 pieces special tungsten electrodes, diamond disc with mandrel, brass brush, connecting cable with „alligator“ clamp, black 100 cm, pin welding adapter set Stereo microscope with 10x magnification, fully automatic LCD-Shutter, with table stand and front support, handpiece holding arm with high power LED lighting, protective pane for shutter, cover
mx0-0900 	Gas connecting set pressure reducer for Argon Grade 5 including pressure gauge and gas flow meter (l/min.), quick coupling for gas hose connection --> absolutely necessary accessory
fs0-0600 	Foot pedal cable length: 185 cm --> recommended accessory
mx0-0100 	Special tungsten electrodes 10 pieces (0.6 mm in diameter)

ORDERING INFO

welding accessories

Item #	Description
mx0-0330 	Joker welding assistant Precision tool for distortion-free welding Includes: • two cast Co-Cr tips • 12 plastic tips • phaser connection cable with plug • User manual
mx0-0152 	Diamond-Drive Diamond disc grinding motor including diamond disc for sharpening the tungsten electrodes for phaser model mx1 and mx2 (115V/230V)
mx0-0153 	Diamond-Drive Diamond disc grinding motor including diamond disc for sharpening the tungsten electrodes for phaser model mx3 (115 V/230 V)
mx0-0244 	Pin welding set Includes: • 1x mx0-0249 pin welding adapter • 1x mx0-0247 10 welding pins (1,3 mm in diameter)
mx0-0247 	Pin welding pins 10 pieces (1,3 mm in diameter)
mx0-0210 	Flexcontact connecting cable black, cable length 100 cm
mx0-0250 	Solder cross tweezers cable length 70 cm
mx0-0300 	Flat pointed pliers cable length 70 cm

Joker

the welding assistant

the Joker is a unique special steel tool
designed to increase every day welding
productivity and quality

[no more distortion or stress in weldings]

perfect passive fit for all welded cases at any time



NO MORE DISTORTION OR STRESS IN WELDINGS

advantages

- eliminates the chance of distortion
- takes stress out of the weld
- improves the alloy grain structure in the welding zone
- eliminates laborious alternate welding and its constant side changing
- saves time and increases productivity
- individually adjustable to fit all restorations
- once the initial fixing spots are placed, the welding can be finished off the model
- provides more relaxed working conditions and better results automatically
- can be used with any dental welder (phaser or laser)
- supplied with two already cast cobalt-chrome tips plus 12 plastic tips

uses

eliminates distortion when welding

- sectioned implant borne bars
- bridges of any size
- extensions on cobalt chrome partials
- broken sub lingual bars
- any other cases that require perfect passive fit
- can be used on any dental alloy
- fixing any parts to be welded in a stable position

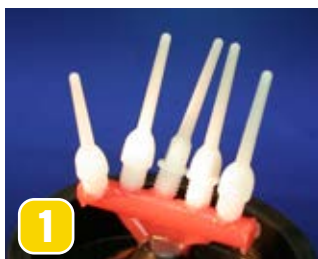
science

Without the sectioned parts to be welded being firmly secured, the molten alloy welding spot, when cooling down, will always shrink towards the center of the mass, thus pulling the sectioned parts inwards and up.

When the parts are secured with the Joker, the direction of shrinkage is guided downwards, which is the only direction that does not negatively influence the fit.



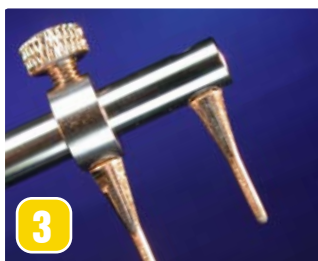
working procedure



1
cast the provided plastic tips in the alloy you use. This ensures that no other metal...



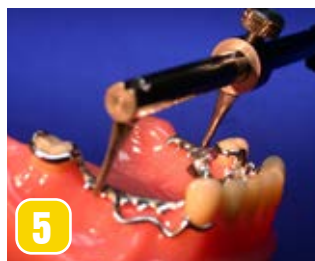
2
...impregnates the parent metal. Already cast CoCr tips are included.



3
screw the tips made of the same alloy as the work piece into the Joker



4
adjust the tips to either side of the case.



5
fix the tips with 1-2 spot welds each to the workpiece.



6
now go ahead and weld the joint distortion free.

ORDERING INFO

Item #		Item
MX0-0330		Joker - Joker - 2 cast cobalt-chrome tips - 12 plastic tips - phaser connection cable with plug - Instruction manual

quinto

the third hand

the quinto is a very precise yet simple
solution for fixing even the most complex
dental restoration on the model

no more rocking or seesaw-effects

5 differently angled arms allow for holding any type of case perfectly in place



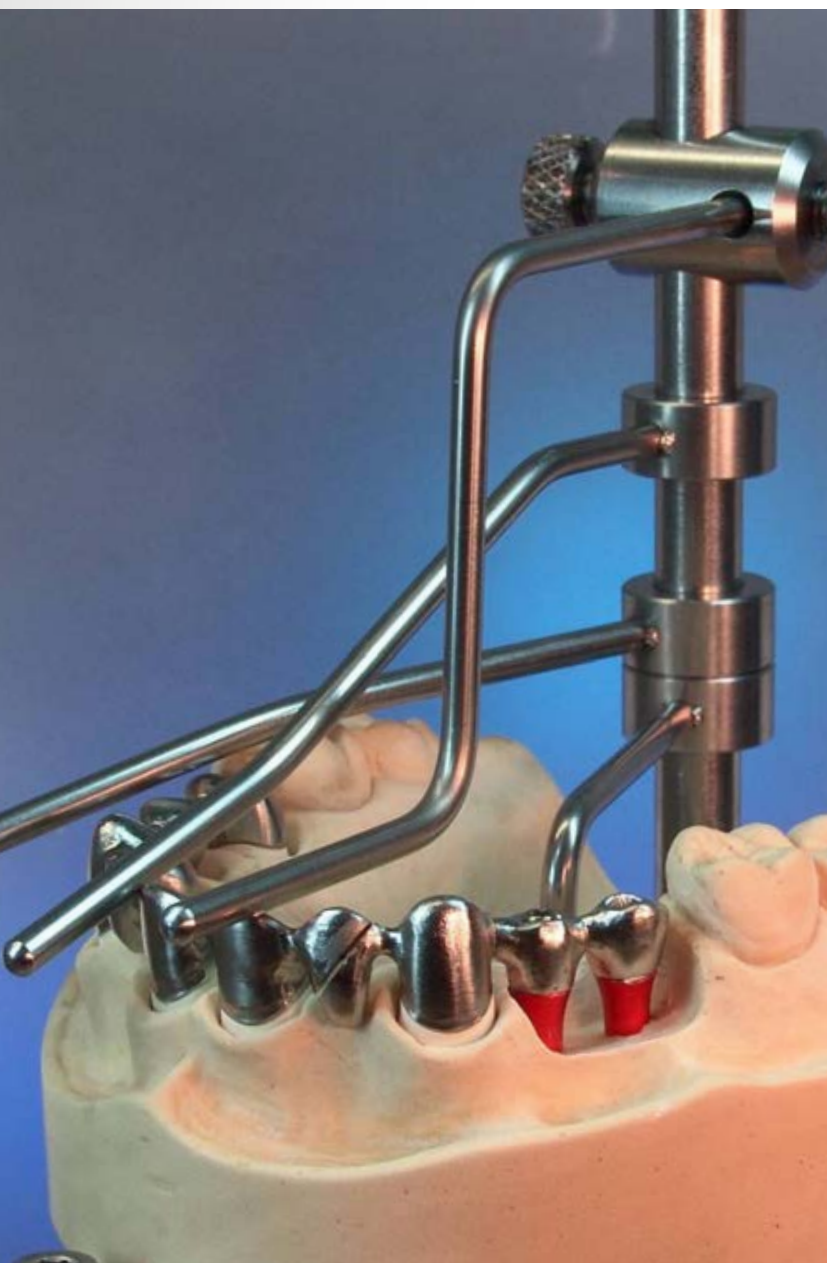
NO MORE ROCKING OR SEESAW- EFFECTS

uses

- secures even the most complex restorations simply and precisely on the model
- holds multiple pieces of a sectioned bridge in place for welding
- helps adhering an electroformed gold structure produced over an implant bar to the tertiary superstructure of the denture base
- makes it easy to position a cobalt chrome denture base extension
- ensures centric fixing of a pair of models before mounting on an articulator

advantages

- eliminates the chance of rocking or seesawing on all different cases
- keeps both hands free for holding or adjustments
- distortion-free uniform hardening of sticky wax or hot melt adhesive
- no problems with mounting on an articulator
- no waiting while materials set, the technician is free for other tasks.
- saves time and increases productivity
- individually adjustable to fit all types of restorations
- can be directly grounded with the phaser welding unit

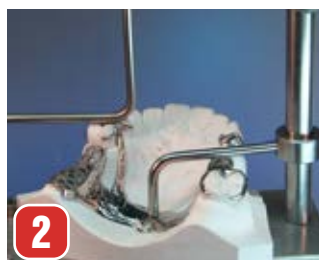




working procedure



1 place the model on the Quinto base and press the small 90° angle arm against the model securing the model to the base



2 depending on the type of restoration, use any of the other arms to secure the sections on the model



3 now you can weld, glue or do anything with the case and have both hands free.

ORDERING INFO

Item #		Item
QU100		Quinto - model base with vertical holder bar - clip-arm 1, fixing the model - clip-arm 2, one flat angle - clip-arm 3, two flat angles - screw-joint-arm 1, one 90 angle - screw-joint-arm 2, two 90 angles

Twister

the “hands-free” air gun

compressed air passed through the Twister’s flexible stainless steel hose cools both, restorations and grinding tools. At the same time, Twister keeps the workbench clean and dust-free.

[no more overheating]

of restorations, grinding tools or fingers





cutting Titanium
– Twister OFF



cutting Titanium
– Twister ON



preparing stone dies



constant free sight

background

At low pressure, the Twister is ideal for use when exposing preparation margins on stone dies. Also it speeds up drying and spreads liquids evenly.

When cutting off sprues or finishing/polishing inlays, the Twister is adjusted to high pressure, thereby cooling restoration, cutting disc or polisher and the technicians fingers.

Used with the workbench suction unit, the Twister provides a significant health benefit, as the dust is blown directly into the suction vent. The Twister is Made in Germany with the highest quality, specially coated aluminium and stainless steel components.

uses

- adjustable compressed air directly on the spot
- ideal for exposing preparation margins on stone dies
- speeds up drying and spreads liquids evenly
- cools restorations during the grinding process

advantages

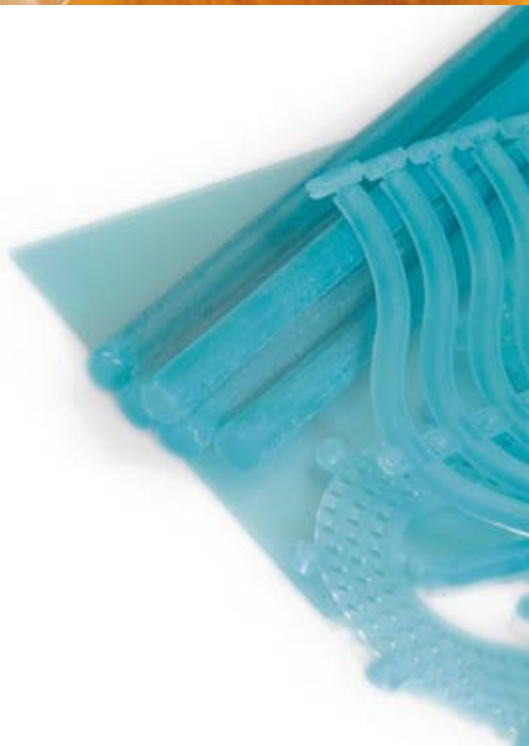
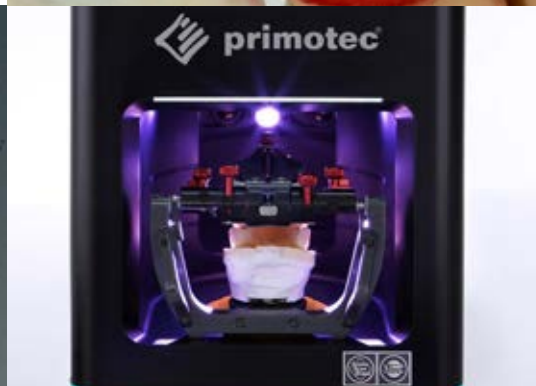
- continuously adjustable air flow
- flexible stainless steel hose keeps air perfectly on the working spot
- no more overheating of restorations, grinding tools and fingers
- no more “water dipping” for cooling needed
- constantly clear view of the working area
- dust is blown directly into the suction vent providing significant health benefit and also keeps the workbench clean and dust free.
- save space on the work bench

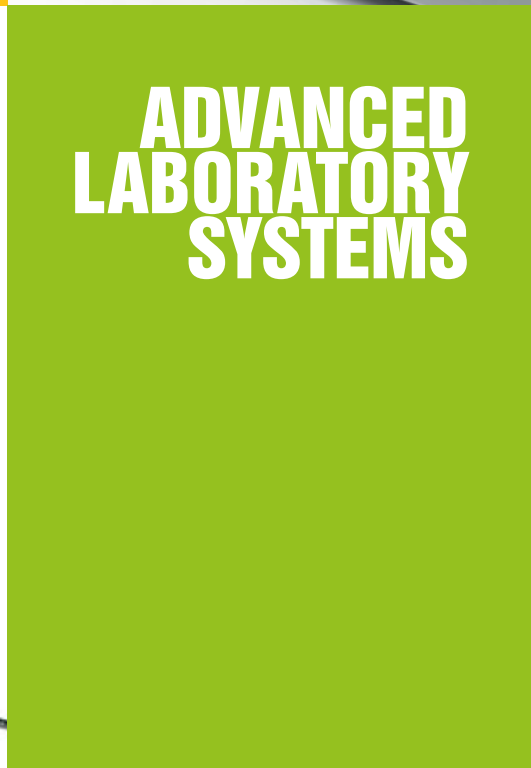
SIMPLY CONNECT THE TWISTER TO COMPRESSED AIR AND YOU`RE READY TO WORK. NO OVER- HEATING OF RESTORATIONS OR BURS

ORDERING INFO

Item #		Item
TW100		Twister ONE Manual, continuous adjustment of compressed air through a ball valve







ADVANCED LABORATORY SYSTEMS



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