

SR Ivocap® Equipment System



Operating Instructions

CE

ivoclar
vivadent®
technical

**KONFORMITÄTSERKLÄRUNG
DECLARATION OF CONFORMITY
CERTIFICAT DE CONFORMITÉ
DICHIARAZIONE DI CONFORMITÀ
DECLARACIÓN DE CONFORMIDAD
DECLARAÇÃO DE CONFORMIDADE**

**ivoclar
vivadent**
BENDERERSTR. 2
FL-9494 LIECHTENSTEIN
TEL ++423 / 235 35 35
FAX ++423 / 235 33 60



Produkt / Product / Produit / Prodotto / Producto / Produto

SR Ivocap 3

- DE** Hiermit erklären wir in alleiniger Verantwortung, dass das oben aufgeführte Produkt den erwähnten Normen entspricht.
Gemäss den Bestimmungen der EU-Richtlinie(n):
- GB** We herewith declare that the product listed above complies with the mentioned standards.
Following the provisions of Directive(s):
- FR** Par la présente, nous déclarons que le produit ci-dessus indiqué est conforme aux normes énoncées.
Conformément aux dispositions de la (des) Directive(s) CE:
- IT** Con la presente dichiariamo sotto la nostra responsabilità, che il prodotto sopra menzionato corrisponde alle norme citate.
Secondo le disposizioni della/e Direttiva/e CEE:
- ES** Por la presente declaramos que el producto arriba indicado cumple con las normas citadas.
Siguiendo las indicaciones de la Directiva:
- PT** Declaramos que o produto citado cumpre as normas mencionadas.
De acordo com as especificações da(s) Diretriz(es):

89/392 EWG	EN 292-1	1991
	EN 292-2-A1	1995
	EN 294	1992
	EN 349	1993

Schaan, 02.12.2003

Dipl. Ing. Wolfgang Vogrin

Geschäftsleitung Produktion und Technik ⁽¹⁾
Ivoclar Vivadent AG, FL-9494 Schaan

Bürs, 02.12.2003

Markus Stadlmayr

Produktionsmanager ⁽²⁾
Ivoclar Vivadent GmbH, A-6706 Bürs
(Hersteller) ⁽³⁾

⁽¹⁾ Board of directors Production and Engineering / Membres du Directoire Production et Technique / Direzione Produzione e Tecnica / Miembro consejo administración, Director de Producción y D. Técnico / Diretoria de Produção e Tecnologia

⁽²⁾ Manager / Directeur / Amministratore / Director / Gerente

⁽³⁾ Manufacturer / Fabricant / Produttore / Fabricante / Fabricante

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Views of the Equipment System, List of Parts



A) Pressure apparatus "ID3"

- A1 = Locking valve
- A2 = Manometer
- A3 = Extrusion piston
- A4 = Vise shank
- A5 = Safety loop

D) Capsule plunger

E) Investment aid

F) Funnel

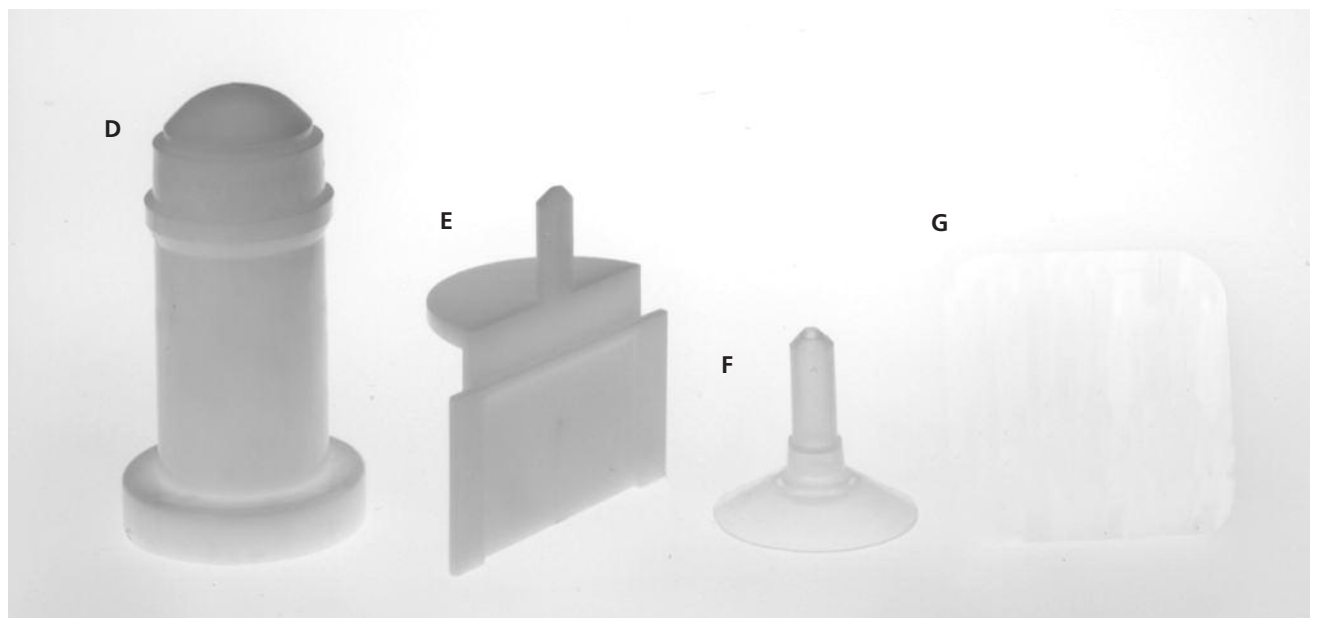
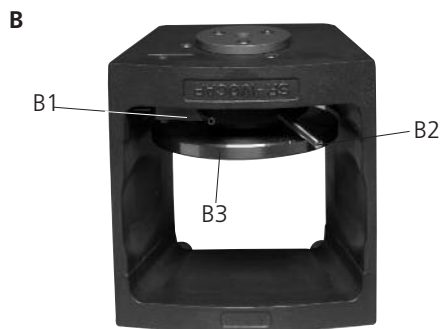
G) Timer

B) Clamping frame "JS4"

- B2 = Thrust collar with lever
- B3 = Pressing plate

C) Flask

- C1 = Flask half M
- C2 = Flask half W
- C3 = Flask lid
- C4 = Injection funnel



1. Introduction / Signs and Symbols

1.1 Introduction

The SR Ivocap System is an injection technique which has been especially developed to compensate curing shrinkage. Heat/pressure curing allows shrinkage of the acrylate during polymerization to be compensated by inflowing material.

The SR Ivocap injection technique, therefore, permits the fabrication of high quality products with excellent physical properties.

Indication

- Complete dentures
- Partial dentures
- Relines
- Orthodontic appliances
- Occlusal splints



Contraindication

Keep unpolymerized material away from intraoral areas. Do not use the material if the patient is known to be allergic to any of the ingredients listed.



The SR Ivocap System may only be operated by trained personnel.

1.2 Signs and symbols

The signs and symbols in these Operating Instructions facilitate the finding of important points and have the following meaning:



Risks and dangers



Important information



Contraindication

1.3 Notes regarding the Operating Instructions



These Operating Instructions must be read prior to working with the SR Ivocap System.

Equipment concerned:
SR Ivocap System Target group: Dental technologists

The Operating Instructions facilitate the correct and economic use of the SR Ivocap System.

These Operating Instructions are divided in several, clearly structured chapters. They should enable you to locate specific topics quickly and easily.

The SR Ivocap material is not described in these instructions. Please refer to the corresponding Instructions for Use of the Ivocap material.

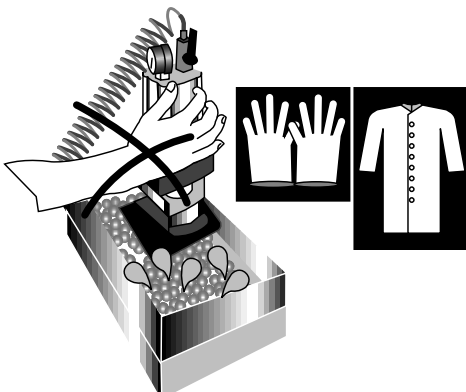
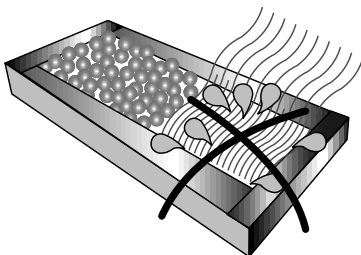
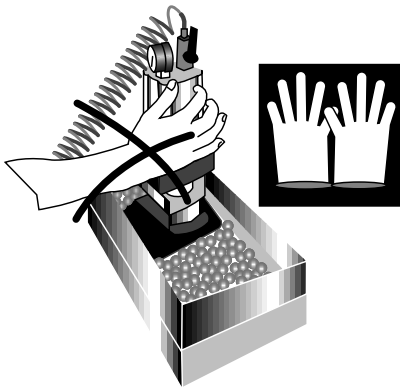
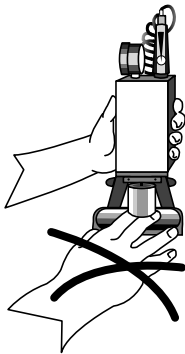
To inform you about risks/dangers, important information, and contraindications, these Instructions contain corresponding signs/symbols (pictographs) to mark important paragraphs.

We recommend keeping the Instructions in a safe place near the equipment to have immediate access to the information if necessary.

Should you lose the Operating Instructions, extra copies can be ordered at a nominal fee from your local Ivoclar Vivadent Service Center.

2. Safety First

This chapter is especially important for personnel who work with the SR Ivocap System or who have to carry out maintenance or repair work. This chapter must be read and the corresponding instructions followed.



2.1 Indications

The SR Ivocap System must only be used for injecting the SR Ivocap material and it should be used for this purpose only. Other uses than the ones stipulated, i.e. injecting other materials, etc. are contraindicated. The manufacturer does not assume any liability for damage resulting from misuse. The user is solely responsible for any risk resulting from failure to observe these Instructions.

Further instructions to assure proper use of the system:

- The instructions, regulations, and notes in these Operating Instructions must be observed.
- The system must be operated under the indicated environmental and operating conditions (Chapter 9).
- The SR Ivocap System must be properly maintained (Chapter 7).

2.1.1



Risk of crushing

Do not reach between pressing plunger and safety loop with your fingers. There is a risk of crushing when air is compressed.

2.1.2



Burn hazard

Use protective thermo-gloves to touch hot metal parts.

2.1.3



Burn hazard

Do not use the water bath without the plastic floaters. Splash water presents a burn hazard.

2.1.4



Burn hazard

Wear protective clothing to protect yourself from splash water.

3. Product Description

3.1 Components

The SR Ivocap basic assortment consists of the following components:

- Pressure apparatus
- Flask
- Clamping frame
- Capsule plunger
- Investment aid
- Funnel
- Compression spring
- Allen key

Furthermore, the following accessories are required (not contained in the assortment):

- Cap Vibrator (Ivoclar Vivadent)
- Polymerization bath (various manufacturers)
- Hydraulic press (various manufacturers)
- Plastic floaters (Ivoclar Vivadent)

3.2 Hazardous areas and safety equipment

Description of the risk areas of the SR Ivocap System:

Hazardous area	Type of risk
Flask and clamping frame	There is a burn hazard if the equipment is removed from the boiling water without protective gloves.
Splash water from the polymerization bath	There is a burn hazard if no protective clothing and gloves are worn.

See also Chapter 2.

3.3 Functional description

The SR Ivocap System is an injection technique which has been especially developed to compensate curing shrinkage. Controlled polymerization allows shrinkage of the material during polymerization to be compensated by inflowing material. The SR Ivocap injection technique, therefore, permits the fabrication of high quality products with outstanding physical properties.

3.4 Accessories

- Cap Vibrator (Ivoclar Vivadent)
- Wall bracket for 4 pressure apparatus (e.g. from BDT)
- Polymerization bath (e.g. from BDT)
- Hydraulic press (various manufacturers)
- Various accessories (BDT)

Address of BDT:
BDT GmbH, Industriestrasse 27,
D-77656 Offenburg
(Germany)

4. Installation

4.1 Unpacking and checking the contents

Remove system components from their packaging and place them on a suitable table.

Check the delivery for completeness (see delivery form in Chapter 9) and transportation damage. If certain parts are damaged or missing, contact your local Ivoclar Vivadent Customer Service. We recommend keeping the original packaging for future transportation purposes.

4.2 Selecting the location

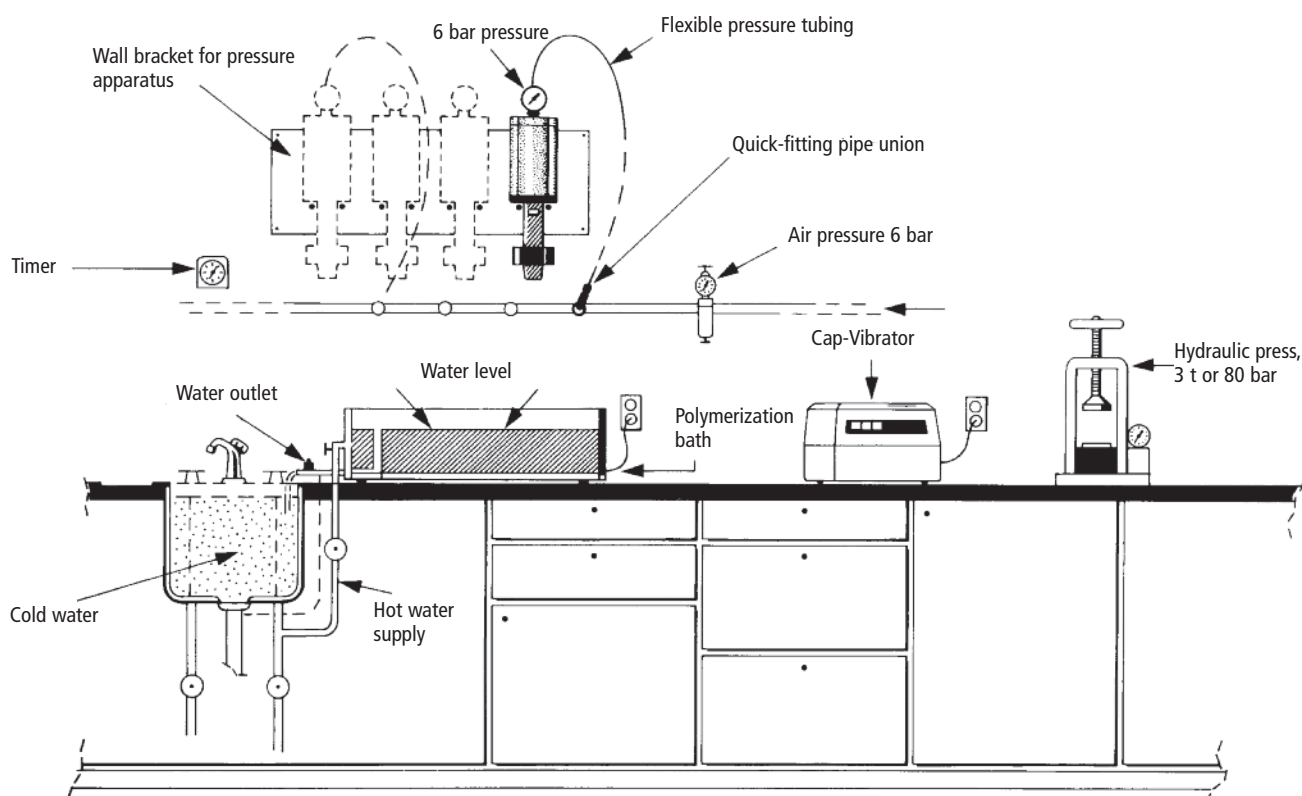
The diagram below depicts one possible installation.



Important information

For safety reasons, the installation of the pressure, power, and water connections may only be carried out by qualified technicians (electricians, plumbers).

Furthermore, the national installation requirements of the corresponding country must be observed.

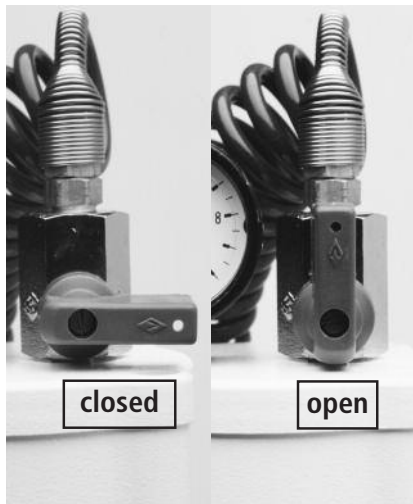


5. Operation

5.1 Operating elements on the pressure apparatus

Compressed air locking valve (A1)

This locking valve is used to close or open the pressure cylinder for the compressed air.



Operation:

Locking valve open:
perpendicular position

Locking valve closed:
horizontal position

Safety loop (A5)

The safety loop is used to secure the vise shanks.



Operation:

Safety loop open:
Towards the pressure cylinder

Safety loop closed:
Towards the clamping frame

5.2 Operating elements on the clamping frame

Thrust collar with lever (B2)



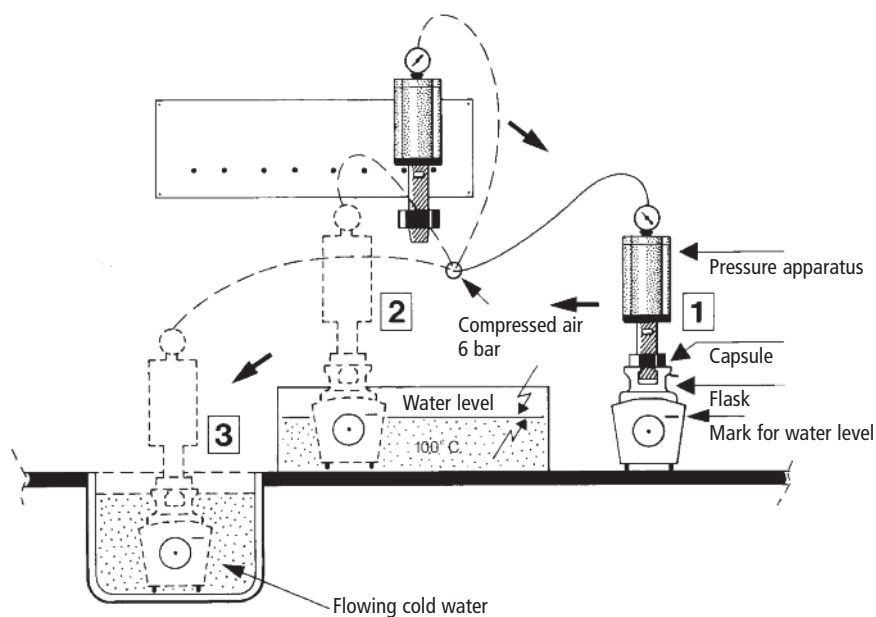
Operation:

- 1) Thrust collar with lever closed
(push to the right until it stops)
- 2) Thrust collar with lever open
(push to the left)

Pressure onto the clamping frame:
3 tons

6. Procedure

6.1 Practical use



The most important steps:

- 1 Injection - 5 minutes
- 2 Polymerization – 35 minutes in boiling water (as of the beginning of boiling)
- 3 Cooling in a cold-water bath – at least 30 minutes; the injection pressure must be maintained for at least 20 minutes thereof

i For information on how to process the material please refer to the material Instructions for Use of the SR Ivocap System.

7. Maintenance, Cleaning, and Diagnosis

This chapter describes the maintenance and cleaning procedures which can be carried out by dental professionals. All other tasks must be performed by qualified service personnel at a certified Ivoclar Vivadent Service Center.

7.1 Monitoring and maintenance

The time for these maintenance procedures depends on the frequency of use and working habits of the users. For that reason, the recommended times are only approximates.



Disconnect power and compressed air connection before maintenance and cleaning.



The insulation shoulder of the flask must only be replaced by a certified Service Center, since remounting requires a special mounting assembly and a special material. Only the correct mounting procedure ensures sound function of the flask.

What:	Part:	When:
Check all compressed air connections for correct fit	Compressed air connections	Before use
Check the components for mechanical damage	Pressure apparatus Flask Clamping frame	Before use
Check the plastic parts of the flask for correct fit	Plastic parts of the flask	Before use
Clean contaminated clamping frame (wax), e.g. by boiling out	clamping frame	in case of contamination

7.2 Cleaning

Metal parts can be cleaned with warm water and a cleaning brush. After cleaning, the flask may be treated with Vaseline to facilitate the removal of plaster residue.

7.3 Changing the Compression spring

Please take note of the informational sheet added to the 'spring washers' set.

The Compression spring are to be changed by a certified Ivoclar Vivadent Service Center.

8. What if...?

This chapter will help you to recognize malfunctions and take appropriate measures or, if possible, to perform some repairs.

8.1 Error messages

List of possible error messages and their meaning:

Error	Description	Notes for users
1	Flasks do not close. The flask covers do not sit on the flask margins.	Flask margins are not clean; plaster residue on the injection funnel.
2	The model to be invested does not fit in the flask.	The model should be trimmed prior to investment.
3	The pressure is difficult to be transferred to the flask and/or clamping frame.	Clamping frame is not correctly positioned, i.e. in the centre of the press.
4	Pressure in the clamping frame fluctuates.	Compression spring in the clamping frame are old or dirty and cannot transfer the pressure. Replace the compression spring or clean the clamping frame (see Error 12).
5	Injection plunger enters the capsule and deforms the bottom of the capsule. The material is extruded at the wrong end of the capsule.	The injection plunger is not correctly placed on the capsule. There is an empty space between the injection plunger and capsule bottom. Avoid empty space and place the injection plunger evenly on the capsule bottom.
6	The rod of the injection plunger cannot be moved, even if the connection to the compressed air source is interrupted. It seems to be stuck.	Negative pressure in the pressure cylinder may prevent the plunger from moving, open valve
7	Injection plunger does not move. The SR Ivocap material is not injected.	<ul style="list-style-type: none">– No compressed air present– Capsule cover was not removed– There is plaster residue or the funnel is blocked, e.g. by plaster residue– The injection channels are too narrow.– The flow properties of the resin are poor because of incorrect storage
8	The resin flows out of the flask during polymerization.	<ul style="list-style-type: none">– Leaks as a result of incorrect investment.– Flask defective.– Inadequate clamping pressure on the frame.– A foreign object is stuck between the two flask halves.
9	The locking mechanism is blocked.	The mechanical components are damaged as a result of improper handling. In case of considerable damage, the mechanical components must be replaced.
10	The locking mechanism is contaminated with wax.	Wax residue in the water bath has contaminated the clamping frame. Boil out clamping frame with clean, hot water.
11	Capsule reservoir has polymerized after 35 minutes.	<ul style="list-style-type: none">– Water level surpasses the marking on the clamping frame.– An unsuitable polymerization bath was used.– The system was not placed in cold water immediately after polymerization.– Reduce polymerization time by 1–2 minutes if necessary

8.2 Repairs

Repairs may only be carried out by a certified Ivoclar Vivadent Service Center. Please refer to the addresses in Chapter 10.

If repairs during the warranty period are not carried out by a certified Ivoclar Vivadent Service Center, the warranty will expire immediately.

Please also read the safety information in Chapter 2.

9. Product Specifications

This chapter contains all relevant product specifications.

9.1 Delivery form

- 1 Pressure apparatus
- 1 Clamping frame
- 2 Flasks
- 1 Timer
- 1 Compression spring
- 1 Capsule plunger
- 2 Investment aids
- 1 Allen key

9.2 Technical data

Weight:

Flask	1.3 kg
Clamping frame JS4	2.3 kg
Pressure apparatus ID3	2.0 kg
Total	5.6 kg

Max. operating pressure:

Pressure apparatus	6.5 bar
Clamping frame	3 tons

Noise emissions:

< 70 dB (A)

9.3 Acceptable operating conditions

Acceptable humidity range

Maximum relative humidity at 31 °C (87 °F) gradually decreasing to 50% at 40 °C (104 °F), condensation excluded.

Acceptable ambient pressure

The unit is tested for altitudes of up to 2000 m above sea level.

9.4 Acceptable transportation and storage conditions

Acceptable temperature range

-20 °C to 50 °C (-4 °F to 122 °F)

Acceptable humidity range

Maximum relative humidity at 31 °C (87 °F) gradually decreasing to 50% at 40 °C (104 °F), condensation excluded.

Acceptable ambient pressure

500 mbar to 1060 mbar

Use only original packaging together with the respective foam material for shipping purposes.

Ivoclar Vivadent – worldwide

Ivoclar Vivadent AG

Bendererstrasse 2
FL-9494 Schaan
Liechtenstein
Tel. +423 235 35 35
Fax +423 235 33 60
www.ivoclarvivadent.com

Ivoclar Vivadent Pty. Ltd.

1 – 5 Overseas Drive
P.O. Box 367
Noble Park, Vic. 3174
Australia
Tel. +61 3 979 595 99
Fax +61 3 979 596 45
www.ivoclarvivadent.com.au

Ivoclar Vivadent GmbH

Bremschlstr. 16
Postfach 223
A-6706 Bürs
Austria
Tel. +43 5552 624 49
Fax +43 5552 675 15
www.ivoclarvivadent.com

Ivoclar Vivadent Ltda.

Rua Geraldo Flausino Gomes,
78 – 6.º andar Cjs. 61/62
Bairro: Brooklin Novo
CEP: 04575-060 São Paulo – SP
Brazil
Tel. +55 11 3466 0800
Fax +55 11 3466 0840
www.ivoclarvivadent.com.br

Ivoclar Vivadent Inc.

2785 Skymark Avenue, Unit 1
Mississauga
Ontario L4W 4Y3
Canada
Tel. +1 905 238 5700
Fax +1 905 238 5711
www.ivoclarvivadent.us

Ivoclar Vivadent Marketing Ltd.

Rm 603 Kuen Yang
International Business Plaza
No. 798 Zhao Jia Bang Road
Shanghai 200030
China
Tel. +86 21 5456 0776
Fax +86 21 6445 1561
www.ivoclarvivadent.com

Ivoclar Vivadent Marketing Ltd.

Calle 134 No. 7-B-83, Of. 520
Bogotá
Colombia
Tel. +57 1 627 33 99
Fax +57 1 633 16 63
www.ivoclarvivadent.com

Ivoclar Vivadent SAS

B.P. 118
F-74410 Saint-Jorioz
France
Tel. +33 450 88 64 00
Fax +33 450 68 91 52
www.ivoclarvivadent.fr

Ivoclar Vivadent GmbH

Dr. Adolf-Schneider-Str. 2
D-73479 Ellwangen, Jagst
Germany
Tel. +49 (0) 79 61 / 8 89-0
Fax +49 (0) 79 61 / 63 26
www.ivoclarvivadent.de

Ivoclar Vivadent Marketing Ltd. (Liaison Office)

503/504 Raheja Plaza
15 B Shah Industrial Estate
Veera Desai Road, Andheri(West)
Mumbai, 400 053
India
Tel. +91 (22) 2673 0302
Fax +91 (22) 2673 0301
www.ivoclarvivadent.com

Ivoclar Vivadent s.r.l. & C. s.a.s

Via Gustav Flora, 32
39025 Naturno (BZ)
Italy
Tel. +39 0473 67 01 11
Fax +39 0473 66 77 80
www.ivoclarvivadent.it

Ivoclar Vivadent K.K.

1-28-24-4F Hongo
Bunkyo-ku
Tokyo 113-0033
Japan
Tel. +81 3 6903 3535
Fax +81 3 5844 3657
www.ivoclarvivadent.jp

Ivoclar Vivadent S.A. de C.V.

Av. Mazatlán No. 61, Piso 2
Col. Condesa
06170 México, D.F.
Mexico
Tel. +52 (55) 5062-1000
Fax +52 (55) 5062-1029
www.ivoclarvivadent.com.mx

Ivoclar Vivadent Ltd.

12 Omega St, Albany
PO Box 5243 Wellesley St
Auckland, New Zealand
Tel. +64 9 914 9999
Fax +64 9 814 9990
www.ivoclarvivadent.co.nz

Ivoclar Vivadent

Polska Sp. z o.o.
ul. Jana Pawla II 78
PL-00175 Warszawa
Poland
Tel. +48 22 635 54 96
Fax +48 22 635 54 69
www.ivoclarvivadent.pl

Ivoclar Vivadent Marketing Ltd.

Derbenevskaja Naberezhnaya 11, Geb. W
115114 Moscow
Russia
Tel. +7 495 913 66 19
Fax +7 495 913 66 15
www.ivoclarvivadent.ru

Ivoclar Vivadent Marketing Ltd.

171 Chin Swee Road
#02-01 San Centre
Singapore 169877
Tel. +65 6535 6775
Fax +65 6535 4991
www.ivoclarvivadent.com

Ivoclar Vivadent S.L.U.

c/ Emilio Muñoz N° 15
Entrada c/ Albarracin
E-28037 Madrid
Spain
Tel. + 34 91 375 78 20
Fax + 34 91 375 78 38
www.ivoclarvivadent.es

Ivoclar Vivadent AB

Dalvägen 14
S-169 56 Solna
Sweden
Tel. +46 (0) 8 514 93 930
Fax +46 (0) 8 514 93 940
www.ivoclarvivadent.se

Ivoclar Vivadent Liaison Office

Ahi Evran Caddesi No 1
Polaris Is Merkezi Kat: 7
80670 Maslak
Istanbul
Turkey
Tel. +90 212 346 04 04
Fax +90 212 346 04 24
www.ivoclarvivadent.com

Ivoclar Vivadent Limited

Ground Floor Compass Building
Feldspar Close
Warrens Business Park
Enderby
Leicester LE19 4SE
United Kingdom
Tel. +44 116 284 78 80
Fax +44 116 284 78 81
www.ivoclarvivadent.com

Ivoclar Vivadent, Inc.

175 Pineview Drive
Amherst, N.Y. 14228
USA
Tel. +1 800 533 6825
Fax +1 716 691 2285
www.ivoclarvivadent.us

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This apparatus has been developed solely for use in dentistry. Start-up and operation should be carried out strictly according to the Instructions for Use. Liability cannot be accepted for damage resulting from misuse or failure to observe the Instructions.

The user is solely responsible for testing the apparatus for its suitability for any purpose not explicitly stated in the Instructions. Descriptions and data constitute nor warranty of attributes and are not binding.

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