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# LDR Prostate Brachytherapy

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**Dedicated solutions for real-time prostate seed implants**



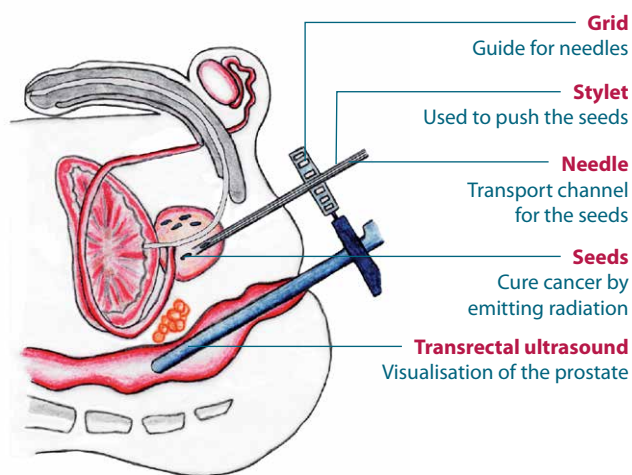
# LDR Prostate Brachytherapy

## Effective Treatment of Prostate Cancer

Prostate seed implantation, also called LDR (Low Dose Rate) prostate brachytherapy or permanent brachytherapy, is an effective and well-tolerated minimally invasive treatment option for early stage prostate cancer.

In this treatment, small radioactive iodine-125 sources, also known as seeds, are placed inside the prostate. Each seed has a length of 4.5 mm and a diameter of 0.8 mm and emits a specific low dose of radiation to the surrounding prostate tissue by placing the seeds homogeneously throughout the organ. Since irradiation is mainly localized around the radioactive source, neighboring tissues are spared unnecessary damage.

The cure rates of LDR brachytherapy are comparable to those of external beam radiation therapy and prostatectomy for early stage prostate cancer. In the group of low risk patients, outcomes were even superior<sup>1</sup>.



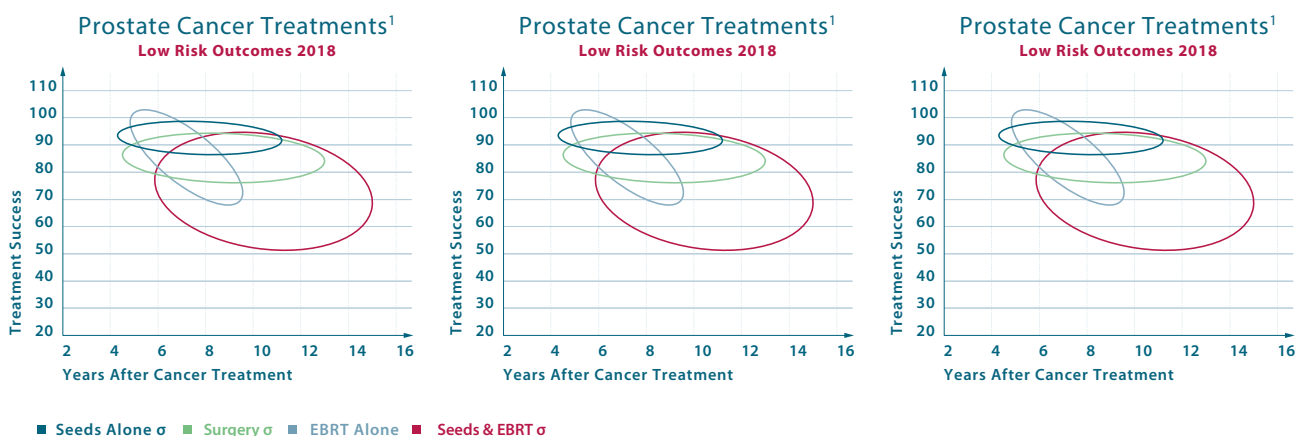
## Patient Selection Criteria<sup>2</sup>

LDR brachytherapy is known to have a favorable side effect profile with regard to both incontinence and impotence compared to prostatectomy, as well as with regard to gastrointestinal secondary effects compared to EBRT<sup>3,4</sup>.

Prostate seed implantation is especially suitable for patients with early stage prostate cancer. The cancerous tissue should be limited to the prostate gland. T1 and T2 tumors are designated as locally confined prostate carcinoma that can be classified as low-, intermediate- or high risk tumors.

Guideline	Low	Intermediate	High
EAU	x	x	with EBRT
NCCN	x	x	with EBRT
ABS	x	x	with EBRT
DGU	x		with EBRT

Guidelines recommending the use of LDR brachytherapy



<sup>1</sup> Grimm et al, Comparative analysis of prostate-specific antigen free survival outcomes for patients with low, intermediate and high risk prostate cancer treatment by radical therapy. *BJU Int.* 2012 Feb; 109 Suppl 1: 22-9

<sup>2</sup> EAU guidelines on prostate cancer, update 2013: *Eur Urol.* 2014 Jan; 65(1): 124-37

<sup>3</sup> Ferrer et al, Health-related quality of life 2 years after treatment with radical prostatectomy, prostate brachytherapy, or external beam radiotherapy in patients with clinically localized prostate cancer. *Int J Radiat Oncol Biol Phys.* 2008 Oct 1; 72(2): 421-32

<sup>4</sup> Pardo, Y. et al, Quality-of-Life Impact of Primary Treatments for Localized Prostate Cancer in Patients Without Hormonal Treatment. *J Clin Oncol.* 2010 Nov 1; 28(31): 4687-96



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## Expertise in LDR Prostate Brachytherapy

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### **Eckert & Ziegler BEBIG – My Partner in Brachytherapy and Radiation Therapy**

*“We strongly believe in LDR brachytherapy as a safe and effective treatment for prostate cancer. It better preserves urinary continence, erectile and rectal function, in comparison with other treatment options and therefore results in an enhanced quality of life. Our company has established itself as a leading European LDR prostate brachytherapy provider with over 4 million seeds sold and 55,000 patients treated. Besides Europe, we have been selling our LDR prostate products throughout North and South America, Africa, Asia and Australia. “Made in Germany” quality combined with fast product delivery and reliable service defines our demand of being a full service LDR prostate brachytherapy provider.”*

Dr. Harald Hasselmann  
Managing Director Eckert & Ziegler BEBIG

Eckert & Ziegler BEBIG offers a wide range of LDR prostate brachytherapy products with different types of sources, treatment planning software, on-site service, a comprehensive range of consumables and accessories, ultrasound and OR equipment, as well as tools for calibration and seed assay:

- Loose Seeds in Mick® Magazines
- Stranded Seeds
- Treatment planning software
- Consumables
- Ultrasound equipment
- Equipment for calibration and seed assay

# IsoSeed®: Well-established Seed Models

## IsoSeed® Loose Seed Placement with the Mick® TP/TPV Applicator

The real-time brachytherapy implantation technique allows for seed placement adjustments during implant to adapt changes of prostate size and position. IsoSeed® is a loose seed for use with the Mick® TP/TPV Applicator and available in two sealed source model designs.

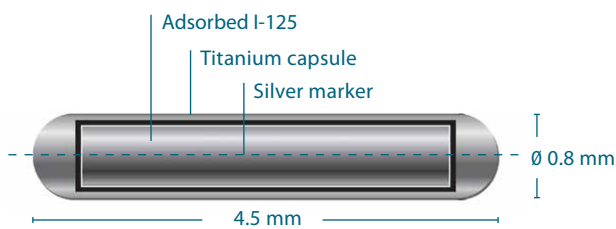
IsoSeed® is manufactured to unparalleled quality standards. Available with either a gold (IsoSeed® I25.S06) or silver (IsoSeed® I25.S17plus) radiographic marker, Eckert & Ziegler BEBIG's I-125 sealed source model designs provide visibility under ultrasound, fluoroscopy, CT or MRI.



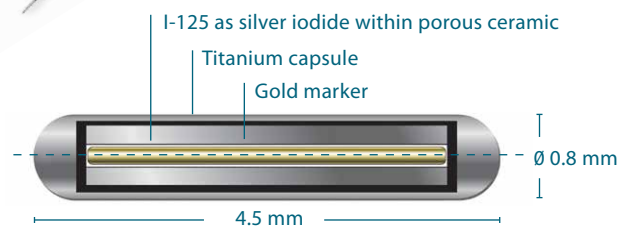
Loose IsoSeeds



Mick® TP/TPV Applicator with loose IsoSeeds in the Mick® Magazine



IsoSeed® I25.S17plus features a silver marker for imaging under fluoroscopy and MR



IsoSeed® I25.S06 contains a thin gold marker specifically designed for artifact-free visibility in CT imaging

Class number	Air kerma strength in $\mu\text{Gy m}^2/\text{h}$	Apparent activity in mCi	Apparent activity in MBq
1	0.391 – 0.423	0.308 – 0.333	11.40 – 12.32
2	0.424 – 0.459	0.334 – 0.361	12.36 – 13.36
3	0.460 – 0.498	0.362 – 0.392	13.39 – 14.50
4	0.499 – 0.540	0.393 – 0.425	14.54 – 15.73
5	0.541 – 0.586	0.426 – 0.461	15.76 – 17.06
6	0.587 – 0.637	0.462 – 0.501	17.09 – 18.54
7	0.638 – 0.690	0.502 – 0.543	18.57 – 20.09
8	0.691 – 0.749	0.544 – 0.590	20.13 – 21.83
9	0.750 – 0.813	0.591 – 0.640	21.87 – 23.68
10	0.814 – 0.882	0.641 – 0.694	23.72 – 25.68
11	0.883 – 0.958	0.695 – 0.754	25.72 – 27.90
12	0.959 – 1.039	0.755 – 0.818	27.94 – 30.27
13	1.040 – 1.127	0.819 – 0.887	30.30 – 32.82
14	1.128 – 1.223	0.888 – 0.963	32.86 – 35.63

Activity classes IsoSeed® I25.S17plus for Prostate Cancer Treatment

Class number	Air kerma strength in $\mu\text{Gy m}^2/\text{h}$	Apparent activity in mCi	Apparent activity in MBq
1	0.357 – 0.386	0.281 – 0.304	10.38 – 11.26
2	0.387 – 0.419	0.305 – 0.330	11.27 – 12.21
3	0.420 – 0.455	0.331 – 0.358	12.22 – 13.25
4	0.456 – 0.493	0.359 – 0.388	13.26 – 14.38
5	0.494 – 0.535	0.389 – 0.421	14.39 – 15.61
6	0.536 – 0.581	0.422 – 0.457	15.62 – 16.94
7	0.582 – 0.630	0.458 – 0.496	16.95 – 18.38
8	0.631 – 0.684	0.497 – 0.539	18.39 – 19.94
9	0.685 – 0.742	0.540 – 0.584	19.95 – 21.64
10	0.743 – 0.806	0.585 – 0.634	21.65 – 23.48
11	0.807 – 0.874	0.635 – 0.688	23.49 – 25.48
12	0.875 – 0.949	0.689 – 0.747	25.49 – 27.65
13	0.950 – 1.029	0.748 – 0.811	27.66 – 30.00
14	1.030 – 1.117	0.812 – 0.880	30.01 – 32.56

Activity classes IsoSeed® I25.S06 for Prostate Cancer Treatment

# IsoCord® & IsoStrand®: Full Radiation Protection

## IsoCord® Stranded Seeds in a Convenient Magazine

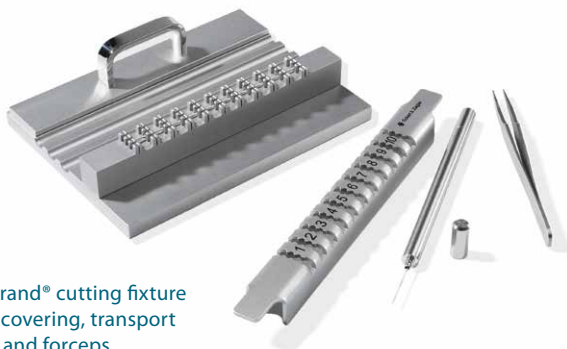
IsoCord® is a seed chain with up to 70 seeds packaged in a radioprotective magazine. It consists of seeds and hourglass-shaped spacers in standard seed-spacer configuration, embedded in braided monofilament suture. This special design enables reliable fixation within prostate tissue and helps to reduce seed migration. IsoCord® is available with either I25.S06 or I25.S17plus source model designs.



IsoCord® Magazine for the insertion in the Needle Loading Station

## IsoStrand® and IsoStrand® Cutting Fixture Facilitating Seed Assay

IsoStrand® consists of 10 IsoSeed® spaced 1.0 cm apart. The hourglass design of the bioabsorbable spacers and the braided suture carrier ensure reliable strand placement. IsoStrand® is cut under radiation protection using the cutting fixture.

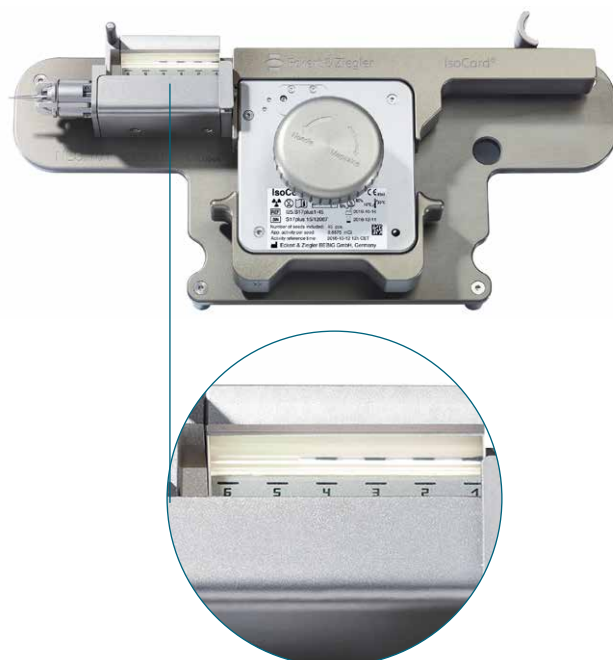


IsoStrand® cutting fixture with covering, transport tube and forceps

## IsoCord® Needle Loading Station Strand Cutting under Full Radiation Protection

With the IsoCord® Needle Loading Station, the desired amount of seeds is moved out of the magazine into the illuminated positioning unit. IsoCord® is then cut into the desired length and subsequently loaded into the attached implantation needle with the integrated mandrel. The process of strand cutting and needle loading is performed under full radiation protection, without the need to handle strands manually.

- Reliable fixation of strands in prostate tissue
- Up to 70 stranded seeds in a convenient magazine
- Fast intra-operative strand cutting under full radiation protection



Clear visibility of seeds and spacers in the illuminated mirrors of the positioning unit of the Needle Loading Station

Braided suture and hourglass shaped spacers of IsoCord® and IsoStrand®, designed to enhance strand fixity in tissue

# Needles and Accessories

## Needles for Use with the Mick® TP/TPV Applicator



Applicator Needle 17G/18G x 20 cm – hollow needle with 5.0 mm markings, trocar tip stylet, and slim needle hub

## Needles for Prostate Stabilization



Prostate Stabilization Needle 18G x 20 cm



Pajunk Delta-Fix Fixation Needle 18G x 20 cm

## Needles for Use with IsoCord® and IsoStrand®



IsoCord® Needle 18G x 20 cm – steerable, bevel-shaped needle tip



Post Loading Needle 18G x 20 cm – steerable, bevel-shaped needle tip, cone-shaped needle hub for easy accommodation of postloading transfer tubes

## Needles for IsoCord® and IsoStrand® Implantation, pre-waxed



Bevel shaped, echogenic pre-waxed needle tip with length markings on the silicone coated cannula and a blue hub marking for needle steering



Bevel shaped, echogenic pre-waxed needle tip with length markings on the silicone coated cannula and a blue hub marking for needle steering

## Transfer Tube for IsoCord® Needle Loading Station



For safe and easy transfer of strands from the Needle Loading Station to the needle

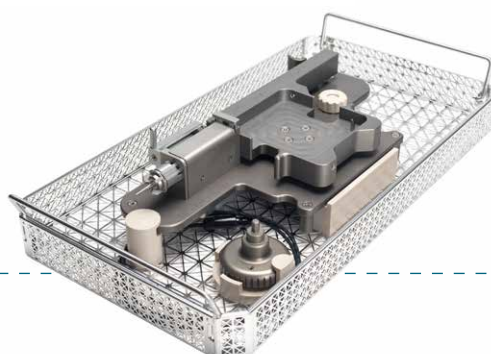
## Needle Rack for IsoCord® and IsoStrand®



Storage solution for needles loaded in advance with easy distinction of loaded needles and practical handle for transport to the operating room

## Sterilization Tray for IsoCord® Needle Loading Station

Sterilization cassette to protect and prevent loss of delicate instruments, ideal for steam sterilization



# Equipment and Consumables

## Ultrasound Systems

BK Ultrasound – Flex Focus<sup>1</sup>  
Other ultrasound systems available upon request



## Transducers/TRUS Probe

BK Ultrasound<sup>1</sup> – Endocavity Biplane 8848  
Other transducers available upon request



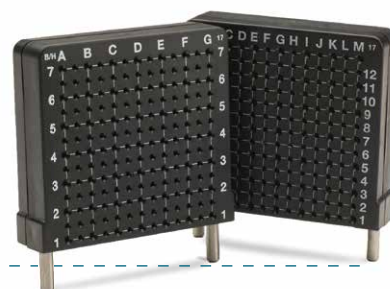
## Steppers

CIVCO<sup>2</sup> – Classic Stepper  
CIVCO – EX<sup>3</sup> Stepper  
DK<sup>3</sup> – Stepper



## Grids/Templates

Mick<sup>®</sup> – Reusable Template, 17G or 18G  
Mick<sup>®</sup> – Disposable Template, 17G or 18G  
DK<sup>3</sup> – Reusable Template  
Other grids/templates available upon request



## Endocavity Balloon

CIVCO<sup>2</sup> – Latex-Free Endocavity Balloon



## Products for Calibration and Seed Assay

PTW-Freiburg – UNIDOS<sup>®4</sup> E Universal Dosemeter  
PTW-Freiburg – SOURCECHECK<sup>4</sup> 4 pi Type 33005  
Standard Imaging<sup>5</sup> – HDR 1000 Plus Well Chamber and IVB 1000 Well Chamber  
Other products for calibration and seed assay available upon request



## Drapes

CIVCO<sup>2</sup> – Sterile Disposable System Drapes

<sup>1</sup> BK Ultrasound, Flex Focus and Pro Focus are trade names/trademarks of Analogic Corporation or its affiliated companies.

<sup>2</sup> CIVCO and EX<sup>3</sup> are trade names/trademarks of CIVCO Medical Instruments Co., Inc.

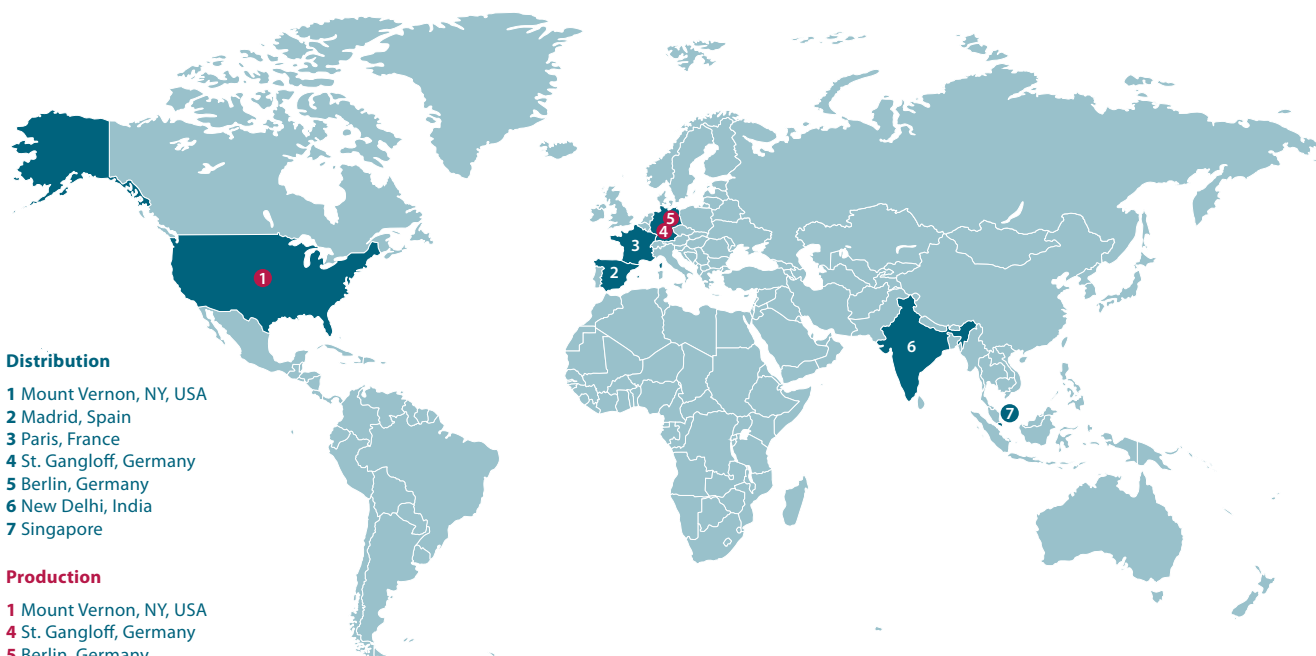
<sup>3</sup> DK is a trade name/trademark of D&K Technologies GmbH.

<sup>4</sup> PTW and SOURCECHECK are trade names/trademarks of PTW Freiburg GmbH. UNIDOS is a registered trademark of PTW Freiburg GmbH.

<sup>5</sup> Standard Imaging is a trade name/trademark of Standard Imaging Inc.

# Eckert & Ziegler BEBIG

Eckert & Ziegler BEBIG is a global provider of radiotherapy products and a brachytherapy leader in Europe. The company's offices and subsidiaries are located throughout Europe, Asia and the United States. In addition, Eckert & Ziegler BEBIG has a worldwide network of distributors and agents to support the international marketing and distribution of its product lines. In recent years, Eckert & Ziegler BEBIG grew through the acquisitions of US-based Mick Radio-Nuclear Instruments, Inc. and the x-ray devices manufacturer WOLF-Medizintechnik GmbH (Womed). Eckert & Ziegler BEBIG belongs to the Medical Segment of the Eckert & Ziegler Group. The Eckert & Ziegler Group is one of the world's largest providers of isotope technology for medical, scientific and industrial use. The core businesses of the Group are cancer therapy, industrial radiometry and nuclear-medical imaging.



## Distribution

- 1 Mount Vernon, NY, USA
- 2 Madrid, Spain
- 3 Paris, France
- 4 St. Gangloff, Germany
- 5 Berlin, Germany
- 6 New Delhi, India
- 7 Singapore

## Production

- 1 Mount Vernon, NY, USA
- 4 St. Gangloff, Germany
- 5 Berlin, Germany

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