

## **Instructions for use for RayPilot® HypoCath® 1004**

### **Introduction**

Please read these instructions carefully before using the device. The instructions contain important information for correct handling of the RayPilot® HypoCath®.

### **Limitations**

The RayPilot® HypoCath® is a Prescription Device (Rx only) and may only be inserted and removed by educated healthcare professionals.

RayPilot® HypoCath® is only intended for use with the RayPilot® System.

RayPilot® HypoCath® 1004 can be connected to the RayPilot® System 2020.

### **Manufacturer and identification**

Micropos Medical AB  
Adolf Edelsvärd's gata 11  
SE-414 51 Gothenburg  
Sweden  
[www.micropos.se](http://www.micropos.se)  
tel. +46 (0) 31 - 760 80 05

### **Classification and compliance**



The product complies with directive 93/42/EEC

**IP57**

The product is IP classed according to IEC 60601

## **Intended use and Intended purpose**

The RayPilot® System is intended for use as an adjunct in treatment planning and radiation therapy, to align and monitor the patient's position relative to the isocenter of a linear accelerator. The RayPilot® System provides accurate, precise, and continuous localization of a treatment isocenter by using RayPilot® HypoCath®, a transmitter located within one lumen of a urinary catheter, for prostate localization and tracking, and for automatic patient identification.

The device is limited for use to patients who both have prostate cancer and that would also be reasonably expected to require a urinary catheter for the duration of the radiation treatment, for example due to bladder outlet obstruction or patients who require a chronic indwelling Foley catheter.

## **Device description**

The RayPilot® HypoCath® is a sterile single-use product. It is a three-lumen Foley catheter made of silicone with a transmitter inserted in one of the lumens. The RayPilot® HypoCath® has a drainage lumen, which also permits reproducibility of the bladder filling, and a balloon inflation channel. It has an integrated balloon towards the tip of the catheter and a funnel with an inflation valve at the bottom of the catheter.

The RayPilot® HypoCath® with its integrated transmitter is an essential part of the RayPilot® System. The transmitter in RayPilot® HypoCath® transmits a signal to the RayPilot® receiver. The position of the transmitter is determined and displayed in the user interface of the RayPilot® software. The RayPilot® HypoCath® is equipped with an electrical jack that connects to the RayPilot® Receiver. The jack contains an ID chip that provides a unique ID number to be assigned to one patient for every RayPilot HypoCath®. This jack must not be connected to anything else.

## **Product Specification**

Balloon fill volumes are 10-40 ml and the shaft size is 16 French (Fr.), Charrière (Ch.), which is indicated on the funnel of each catheter. The length of the RayPilot® HypoCath® is approximately 42 cm. The RayPilot HypoCath® contains a radioopaque barium line that permits identification of the urethra when inserted in a patient.

RayPilot® HypoCath® has been sterilized by Ethylene Oxide (EtO). The expiry date can be found on the sterile pouch and on the outer box. Each RayPilot® HypoCath® is individually supplied in a sterile pouch.

## **Clinical benefit and clinical performance**

The Raypilot system including Raypilot Hypocath and Raypilot Viewcath includes following clinical performance;

- accurate, precise, and continuous real-time localization of a target (prostate localization) during radiotherapy, the system display that the target stays within predefined tolerances and alert if the target moves outside the tolerances to let health care professionals stop the radiation and reposition the patient.
- the possibility to perform urethra sparing plans and minimize the dose to the urethra due to the radio-opaque barium line in the catheters,
- the possibility to repeat the bladder filling for a repeatable patient setup before treatment by being designed from an ordinary urinary catheter

The clinical benefits of using the Raypilot system with Raypilot Hypocath utilizing target monitoring, urethra outlining, and bladder filling repeatability is that the intended target receives treatment as planned as well as enabling the choice to plan with tighter margins and higher dosage. This can lead to improved dose coverage for potential increased curability and minimized radiation to healthy tissue for lower risk of gastrointestinal and genitourinary toxicity.

## Use

### *Catheter insertion*

1. RayPilot® HypoCath® insertion should always be carried out in accordance with local and national best practice policies. Specific attention must be paid to hand hygiene, aseptic techniques for site preparation, equipment and supplies.
2. Check that the package of Raypilot HypoCath is intact before opening. Open the RayPilot® HypoCath® package at the end of the connector without removing the whole RayPilot® HypoCath® from its sterile package.
3. Check the function of the RayPilot® transmitter with the transmitter tester. Note that the transmitter tester cannot be sterilized. Protection of the sterile RayPilot® Hypocath® must be taken in consideration prior to the insertion.
4. Prior to insertion, test the balloon inflation and use sterile water or solution of sterile water with glycerine 9:1 for inflation.
5. Lubricate the RayPilot® HypoCath® with a suitable water-soluble lubricant.
6. Pass the deflated catheter (with care) through the urethra and into the bladder. The Raypilot HypoCath should be inserted with care due to the transmitter placed in one of the catheter lumens being delicate.
7. Guide the catheter gently 5-8 cm beyond the point at which urine begins to flow. The rationale for inserting the RayPilot® HypoCath® further into the bladder ensures the balloon of the RayPilot® HypoCath® is beyond the neck of the bladder.
8. Connect a syringe containing sterile media to the Luer of the inflation lumen of the RayPilot® HypoCath®.
9. Use the syringe to fill the balloon.
10. Retract the catheter until you feel resistance of the balloon against the bladder wall. During treatment the RayPilot® HypoCath® shall be fixed according to clinical procedure at the urethra opening, for example on the patient leg.

11. For final adaptations of the transmitter position the filling of the balloon can be adjusted by inflating the balloon differently. This allows the user to position the transmitter more proximal to the bladder by inflating the balloon within the specified volumes.
12. Connect the funnel drainage lumen to a drainage bag and assure good drainage of the catheter.
13. The RayPilot® HypoCath® is now ready to use.
14. For further information about the use of the RayPilot® system, see the IFU for the RayPilot® system.

### ***RayPilot® HypoCath® catheter maintenance throughout treatment***

The health care provider shall check for signs and symptoms of infection regularly, at least every radiation therapy fraction.

Hand hygiene shall be performed immediately before and after any manipulation of the RayPilot® HypoCath®.

Retract RayPilot® HypoCath® to ensure the balloon against the bladder wall prior to each treatment.

Replacement of urine collection system shall be performed according to local and national best practice policies.

Health care provider must ensure patient is instructed on the relevant content for catheter care, maintenance and potential complications according to this Instructions for use and in accordance with local and national best practice policies.

Check the RayPilot® HypoCath® at all treatment sessions to ensure that the balloon volume is maintained.

1. Completely drain/aspirate the sterile medium from the balloon while the RayPilot® HypoCath® is held in position in the bladder.
2. Replace the required volume with new sterile medium to the balloon lumen.
3. Remove the RayPilot® HypoCath® immediately at the completion of the patient's total treatment.

In case the treatment is longer than 30 days, the RayPilot® HypoCath® needs to be replaced.

The RayPilot® HypoCath® is MR Unsafe. Please note that MRI scans during use of the RayPilot® HypoCath® may introduce local artefacts.

### ***Reproducibility of bladder filling during treatment***

During treatment the bladder can be filled with specified amount of liquid in order to reproduce the bladder filling that was present at the time of the planning CT. This is performed by first emptying the bladder, and thereafter filling with sterile water. The flow rate should be 100 - 150 ml/min. The filling before the urge of emptying occurs, varies a lot between patients and depending on patient age. The filling should not exceed 300 ml.

### ***Catheter removal***

1. The balloon must be completely deflated before RayPilot® HypoCath® removal.
2. Do not cut the RayPilot® HypoCath® or inflation channel to deflate the balloon.
3. Deflate the balloon by inserting the Luer tip of an empty syringe into the valve and aspirating the solution completely.

4. Remove the RayPilot® HypoCath® following accepted medical techniques.
5. Discard the RayPilot® HypoCath® according to hospital policy considering microbiological hazards.

The length of time of the RayPilot HypoCath patient indwelling should be limited by the treatment protocol and it should be removed as soon as the treatment with RayPilot system is finalized.

## **Environmental conditions**

The environmental conditions are only relevant for use and storage since the HypoCath® function is tested after transport, before use.

### ***Temperature***

The device is considered safe at temperature, +10°C to +40°C.

### ***Humidity***

The device is considered safe at relative humidity level of 30% to 75%.

### ***Pressure***

The device is considered safe at an atmospheric pressure range of 70,00 kPa to 106,0 kPa.

If the conditions are not met it could influence the measurement precision, and the Raypilot system would give a measurement quality warning.

## **Contraindications**

The RayPilot® HypoCath® should not be used for patients with known allergy to silicone, or if the patient is oversensitive to gold.



### **Warnings**

- Do not use the RayPilot® HypoCath® if sterile packaging is breached or damaged.
- The RayPilot® HypoCath® is single use only. Do not re-sterilize or reuse after removal. It could result in urinary tract infection.

## **Cautions**

The RayPilot® HypoCath® is a Prescription device (Rx only) and must only be used by trained and experienced professionals.

A medical doctor must evaluate the suitability for the patient to be treated with radiation and the use of the RayPilot® System and RayPilot® HypoCath®.

The indwelling of the RayPilot® HypoCath® shall be as short as permitted by the radiation therapy treatment protocol in order to reduce the likelihood of infection.

The RayPilot® HypoCath® must be lubricated with a water-soluble lubricant prior to insertion using accepted medical techniques.

Caution should be taken when the RayPilot® HypoCath® is difficult to insert (e.g. patients with urethral stricture)

A Luer syringe must be used to inflate the balloon.

Do not overinflate the balloon.

If the catheter or transmitter is mechanically broken, make sure all material is removed.










Do not clamp the catheter shaft, this may damage the inflation lumen.










The RayPilot® HypoCath® is MR Unsafe. Keep it outside the MRI scanner room.

## Potential complications

The patient can get urinary tract infection.

## Symbols on the package

	Intended for single-use
	Sterilized with ethylene oxide. Single sterile barrier system with protective packaging inside.
	Manufacturing batch
	Expiry date (YYYY-MM-DD)
	Read the user instructions
	Manufacturer
	Country of manufacture. If date adjacent to symbol, it signifies date of manufacture.
	Item number
	Do not use this product, if the packaging is damaged

	This product complies with the WEEE directive
	Keep away from moisture
	Protect against sunlight
	Applied part type CF
	The RayPilot® HypoCath® is MR Unsafe. Keep it outside the MRI scanner room.
	Unique device identifier
	Medical device
	Translation performed by Semantix: Adress: Box 10059, 100 55 Stockholm, Sweden
	Prescription use only (term applicable in US)

## Technical assistance

If you have any problems with the device please contact Micropos Medical at:  
[support@micropos.se](mailto:support@micropos.se)

## Incident reporting

To report any patient incident when using the device please contact Micropos Medical at:  
[support@micropos.se](mailto:support@micropos.se)

If the incident is regarded a serious incident according to MDR 2017/745 it has also to be reported to the competent authority in your country according to attached list “*List of Competent Authorities*”.