

Instructions for Use

NRG™ Transseptal Needle

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Carefully read all instructions prior to use. Observe all contraindications, warnings and precautions noted in these instructions. Failure to do so may result in patient complications.

CAUTION: FEDERAL (USA) LAW RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A PHYSICIAN

Hemorrhage	Vascular thrombosis	Perforation of the myocardium
Hematoma	Allergic reaction to contrast medium	Ventricular Tachycardia
Pain and Tenderness		Pericardial Effusion
Thermal damage to tissue	Arteriovenous fistula	

VII. EQUIPMENT REQUIRED

Intracardiac puncture procedures should be performed in a specialized clinical setting equipped with appropriate imaging equipment and compatible examination table, physiologic recorder, emergency equipment and instrumentation for gaining vascular access. Ancillary materials required to perform cardiac Puncture include:

- BMC Radiofrequency Puncture Generator
- Baylis Connector Cable (RFP-102 or RFP-103 (model dependent for NRG Transseptal needle) for use with RFP-100 Generator, or RFX-BAY-TS or RFX-SLIM for use with RFP-100A Generator).
- Transseptal Sheath/Dilator kit, such as the Baylis Medical Company *TorFlex™* Transseptal Guiding Sheath.
- Disposable Indifferent (dispersive) Patch (DIP) electrode must meet or exceed IEC 60601-2-2 requirements for electrostimulation electrodes.
- DuoMode Cable™ for use with electroanatomic mapping systems

VIII. INSPECTION PRIOR TO USE

Prior to use of the Baylis Medical Radiofrequency Puncture System, the individual components including the BMC Radiofrequency Puncture Generator, NRG Transseptal Needle, and the BMC Connector Cable should be carefully examined for damage or defects, as should all equipment used in the procedure. Do not use defective equipment.

IX. DIRECTIONS FOR USE

- All instructions for equipment required should be carefully read, understood, and followed. Failure to do so may result in complications.
- The NRG Transseptal Needle is supplied sterile. Use aseptic technique when opening the package and handling the product in the sterile field.
- Thoroughly flush the NRG Transseptal Needle with heparinized saline solution prior to use.
- A Transseptal Sheath and Dilator are usually inserted through the right femoral vein and are then advanced over a guidewire to be positioned into the superior vena cava (SVC) under image guidance. The Baylis Medical *TorFlex™* Transseptal Guiding Sheath is recommended for this purpose.
- Insert the NRG Transseptal Needle through the sheath/dilator set until the tip of the needle is just within the dilator. Ensure the needle is free to twist and/or rotate without resistance, as it is advanced to this position.
- If using a pressure monitoring system, connect the NRG Transseptal Needle to it by joining its luer connector on the handle to a luer lock and rotating the connector to ensure a secure connection.
- Connect the NRG Transseptal Needle to the BMC Connector Cable. Make sure that the Connector Cable is plugged into the appropriate port on the BMC Radiofrequency Puncture Generator. Be sure to carefully follow the Instructions for Use provided with the Generator and Cable.
- Position the tip of the transseptal assembly (NRG Transseptal Needle, sheath, dilator) in the right atrium against the fossa ovalis under appropriate imaging guidance including but not limited to fluoroscopic, echocardiographic and/or electroanatomic mapping guidance using standard technique.
- If using electroanatomic mapping guidance it is recommended to confirm tip placement on the fossa ovalis and septal tenting before RF puncture with echocardiographic imaging or another imaging modality.
- Deliver radiofrequency power via the BMC Radiofrequency Puncture Generator and advance the NRG Transseptal Needle through the septum into the left atrium. Please refer to the Generator Instructions for Use before using the Generator.
- NOTE:** It is recommended that the user use the least amount of energy to achieve the desired puncture.
- For RFP-100: A power setting of 10 Watts has been experimentally determined to be sufficient for successful puncture.
- For RFP-100A: An initial RF setting between one (1) second on "PULSE" mode to two (2) seconds on "CONSTANT" mode has been shown to be sufficient for successful puncture.
- Radiofrequency power delivery can be terminated by pressing the RF ON/OFF button on the Generator if the timer has not expired.
- Entry into the left atrium can be confirmed using appropriate imaging guidance. Further confirmation can be obtained by either observing a left atrial pressure tracing, by injecting a small amount of contrast media through the needle, or by aspiration of blood.
- If septal puncture is not successful after five (5) radiofrequency power applications, it is advised that the user proceed with an alternate method for the procedure.
- Once successful puncture into the left atrium is confirmed, the NRG Transseptal Needle may be carefully advanced without any radiofrequency power.
- The transseptal dilator can be advanced over the needle to enlarge the puncture.
- Remove the NRG Transseptal Needle slowly.

Connections (pg.18)

X. CLEANING AND STERILIZATION INSTRUCTIONS

The NRG Transseptal Needle is intended for single use only. Do not clean or re-sterilize the NRG Transseptal Needle.

XI. STORAGE AND HANDLING INSTRUCTIONS

Keep out of sunlight.

XII. TROUBLESHOOTING

The following table is provided to assist the user in diagnosing potential problems.

PROBLEM	COMMENTS	TROUBLESHOOTING
Generator Error Messages	In order to successfully puncture tissue using RF energy, the entire system must be connected and all devices must be in good working order.	Ensure that all connections are made: - needle to connector cable - connector cable to generator - generator to power outlet - generator to grounding pad Visually inspect the needle or cable for damage. Immediately discard any damaged equipment. If the problem persists discontinue use. For error messages encountered while attempting radiofrequency puncture, refer to the operator's manual that accompanies the Generator.

I. DEVICE DESCRIPTION

The NRG Transseptal Needle delivers radiofrequency (RF) power in a monopolar mode between its distal electrode and a commercially available external Disposable Indifferent (Dispersive) Patch (DIP) Electrode, which is in compliance with IEC 60601-2-2. The NRG Transseptal Needle is loaded through a Transseptal Sheath/Dilator set, and is connected at its proximal end to the BMC Radiofrequency Puncture Generator via the BMC Connector Cable and optionally to an external pressure monitoring system via a luer connection. Detailed information concerning the BMC Radiofrequency Puncture Generator is contained in a separate manual that accompanies the Generator (entitled "BMC Radiofrequency Puncture Generator Instructions for Use"). Generators compatible with the NRG Transseptal Needle include the RFP-100A (CE marked) and the RFP-100 (not CE marked).

The dimensions for the NRG Transseptal Needle can be found on the device label. The distal end of the needle contains a hole to facilitate injection of contrast solution and the monitoring of cardiac pressures. As well, the active tip is specially shaped to be atraumatic to the cardiac tissue unless RF energy is applied.

II. INDICATIONS FOR USE

The NRG Transseptal Needle is used to create an atrial septal defect in the heart. Secondary indications include monitoring intracardiac pressures, sampling blood, and infusing solutions.

III. CONTRAINDICATIONS

The NRG Transseptal Needle is not recommended for use with any conditions that do not require cutting or coagulation of soft tissue.

IV. WARNINGS

- Only physicians with a thorough understanding of angiography and percutaneous interventional procedures should use this device.
- Do not alter this device in any way.
- The NRG Transseptal Needle is supplied STERILE using an ethylene oxide process. Do not use if the package is damaged.
- Laboratory staff and patients can undergo significant x-ray exposure during radiofrequency puncture procedures due to the continuous usage of fluoroscopic imaging. This exposure can result in acute radiation injury as well as increased risk for somatic and genetic effects. Therefore, adequate measures must be taken to minimize this exposure.
- The NRG Transseptal Needle is intended for single patient use only. Do not attempt to sterilize and reuse the needle. Reuse can cause the patient injury and/or the communication of infectious disease(s) from one patient to another. Failure to do so may result in patient complications.
- The NRG Transseptal Needle must be used with the BMC Connector Cable. Attempts to use it with other connector cables can result in electrocution of the patient and/or operator injury.
- For RFP-100: Do not attempt to puncture with an initial power setting of greater than 10 Watts. The initial attempt should be made with a setting of 10 Watts. In subsequent punctures, the power setting can be increased, if necessary.
- The pressure transducer system used with the NRG Transseptal Needle must comply with the electrical safety requirements of IEC 60601. Failure to use compliant pressure transducers may result in patient or operator injury.

V. PRECAUTIONS

- Do not attempt to use the NRG Transseptal Needle or ancillary equipment before thoroughly reading the accompanying Instructions for Use.
- Radiofrequency puncture procedures should be performed only by physicians thoroughly trained in the techniques of radiofrequency powered puncture in a fully equipped catheterization laboratory.
- The sterile packaging should be visually inspected prior to use to detect any compromise. Ensure that the packaging has not been damaged. Do not use the equipment if the packaging has been compromised.
- Visually inspect the needle prior to use. Do not use the needle if there is any damage or visibly exposed metal on the shaft where it connects to the handle.
- Do not use the NRG Transseptal Needle after the "Use By" date indicated on the label.
- The NRG Transseptal Needle is intended for use with only those devices listed in section VII "Equipment Required"
- Read and follow the manufacturer's instructions for use of the Disposable Indifferent (Dispersive) Patch (DIP) electrode. Always use DIP electrodes that meet or exceed IEC 60601-2-2 requirements.
- Placement of the dispersive electrode on the thigh or hip could be associated with higher impedance.
- In order to prevent the risk of ignition make sure that flammable material is not present in the room during RF power application.
- Take precautions to limit the effects that the electromagnetic interference (EMI) produced by the Generator may have on the performance of other equipment. Check the compatibility and safety of combinations of other physiological monitoring and electrical apparatus to be used on the patient in addition to the Generator.
- Adequate filtering must be used to allow continuous monitoring of the surface electrocardiogram (ECG) during radiofrequency power applications.
- Careful needle manipulation must be performed to avoid cardiac damage, or tamponade. Needle advancement should be done under image guidance. If resistance is encountered, DO NOT use excessive force to advance or withdraw the needle.
- Do not attempt to puncture until firm position of the active tip has been achieved against the atrial septum.
- It is not recommended to exceed five (5) radiofrequency power applications per NRG Transseptal Needle.
- Do not bend the NRG Transseptal Needle. Excessive bending or kinking of the needle shaft may damage the integrity of the needle and may cause patient injury. Care must be taken when handling the needle.
- The Generator is capable of delivering significant electrical power. Patient or operator injury can result from improper handling of the needle and DIP electrode, particularly when operating the device.
- During power delivery, the patient should not be allowed to come in contact with ground metal surfaces.
- Apparent low power output or failure of the equipment to function properly at normal settings may indicate faulty application of the DIP electrode, failure to an electrical lead, or poor tissue contact at the active tip. Check for obvious equipment defects or misapplication. Attempt to better position the tip of the needle against the atrial septum. Only increase the power if low power output persists.
- Baylis Medical Company relies on the physician to determine, assess and communicate to each individual patient all foreseeable risks of the Baylis Medical Radiofrequency Puncture System.
- Ensure the distal tip is protruding the dilator/sheath assembly when visualizing on electroanatomic mapping systems. Visualization of the distal tip of the NRG Transseptal Needle may be lost when retracted within the dilator/sheath assembly.

VI. ADVERSE EVENTS

Adverse events that may occur while using the Baylis Medical Radiofrequency Puncture System include:

Tamponade	Sepsis/Infection	Thromboembolic episodes
Vessel perforation	Atrial Fibrillation	Mycardial Infarction
Vessel spasm	Sustained arrhythmias	Atrial Flutter

PROBLEM	COMMENTS	TROUBLESHOOTING
Inaccurate Pressure Readings	In order to accurately monitor pressure, the entire system must be properly connected and all devices must be in good working order.	Ensure that the following connections are made: -needle to pressure transducer -pressure transducer to monitoring system • Ensure that the transducer is zeroed. • Ensure that the transducer is leveled with the phlebostatic axis • Perform a "fast-flush test" to determine the dynamic response. • Visually inspect the needle for any damage. If there are any breaks or kinks, discard immediately
Needle breaks or kinks.	Breaks and kinks in the needle are a potential cause of patient injury.	Discard immediately

XIII. DISPOSAL OF WASTE

Treat the used device(s) as biohazardous waste and dispose of in compliance with standard hospital procedures.

XIV. CUSTOMER SERVICE AND PRODUCT RETURN INFORMATION

If you have any problems with or questions about Baylis Medical Equipment contact our technical support personnel.

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NOTES:

- In order to return products you must have a return authorization number before shipping the products back to Baylis Medical Company.
- Baylis Medical will not accept any piece of used equipment without a sterilization certificate. Ensure that any product being returned to Baylis Medical has been cleaned, decontaminated and sterilized as indicated in the user instructions before returning it for warranted service.

XIV. LABELING AND SYMBOLS		Rx ONLY	Caution: Federal (U.S.A.) law restricts this device to sale by or on the order of a physician.
	Manufacturer		Single Use – Do not reuse
	EU Authorized Representative		Lot Number
	Sterile using ethylene oxide		Only for EU member states: Use of this symbol indicates that the product must be disposed of in a way that complies with local and national regulations. For questions regarding recycling of this device please contact your distributor
	Use By		Do Not Use if Packaging is Damaged
	Caution		Keep Away from Sunlight
	Follow Instructions for Use		Non-pyrogenic
	Model number		
	Do not sterilize		

XV. LIMITED WARRANTY – DISPOSABLES AND ACCESSORIES

Baylis Medical Company Inc. (BMC) warrants its Disposable and Accessory products against defects in materials and workmanship. BMC warrants that sterile products will remain sterile for a period of time as shown on the label as long as the original package remains intact. Under this Limited Warranty, if any covered product is proved to be defective in materials or workmanship, BMC will replace or repair, in its absolute and sole discretion, any such product, less any charges to BMC for transportation and labor costs incidental to inspection, removal or restocking of product. The length of the warranty is: (i) for the Disposable products, the shelf life of the product, and (ii) for the Accessory products, 90 days from shipment date. This limited warranty applies only to new original factory delivered products that have been used for their normal and intended uses. BMC's Limited Warranty shall not apply to BMC products which have been re-sterilized, repaired, altered, or modified in any way and shall not apply to BMC products which have been improperly stored or improperly cleaned, installed, operated or maintained contrary to BMC's instructions.

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ИНФОРМАЦИИ ИЛИ ПОМОЩИ, ПРЕДОСТАВЛЯЕМОЙ ПРОДАВЦОМ, НО НЕ ТРЕБУЕМОЙ ОТ ПРОДАВЦА В ДАННОМ СЛУЧАЕ. ЛЮБОЙ ИСК В ОТНОШЕНИИ ПРОДАВЦА ДОЛЖЕН БЫТЬ ПРЕДЪЯВЛЕН В ТЕЧЕНИЕ ВОСЕМНАДЦАТИ (18) МЕСЯЦЕВ С ДАТЫ СОБЫТИЯ, ПОСЛУЖИВШЕГО ПРИЧИНОЙ ИСКА. НАСТОЯЩИЕ ОТКАЗЫ ОТ ОТВЕТСТВЕННОСТИ И ОГРАНИЧЕНИЯ ОТВЕТСТВЕННОСТИ ПРИМЕНЯЮТСЯ НЕЗАВИСИМО ОТ ЛЮБЫХ ДРУГИХ ПРОТИВОРЕЧИВЫХ ПОЛОЖЕНИЙ И НЕЗАВИСИМО ОТ ФОРМЫ ИСКА, ВКЛЮЧАЯ ИСКИ ПО ПОВОДУ КОНТРАКТОВ, ПРАВОНАРУШЕНИЙ (ВКЛЮЧАЯ НЕБРЕЖНОСТЬ И СТРОГУЮ ОТВЕТСТВЕННОСТЬ) ИЛИ ИНЫЕ ИСКИ, И ТАКЖЕ РАСПРОСТРАНЯЮТСЯ НА ПОСТАВЩИКОВ ПРОДАВЦА, НАЗНАЧЕННЫХ ДИСТРИБЬЮТОРОВ И ДРУГИХ УПОМОЩЕННЫХ ТОРГОВЫХ ПРЕДСТАВИТЕЛЕЙ КАК СТОРОННИХ БЕНЕФИЦИАРОВ. КАЖДОЕ ПОЛОЖЕНИЕ НАСТОЯЩЕГО ЗАЯВЛЕНИЯ ОБ ОГРАНИЧЕНИИ ОТВЕТСТВЕННОСТИ, ОТКАЗЕ ОТ ГАРАНТИЙ ИЛИ УСЛОВИЯХ ИЛИ ИСКЛЮЧЕНИЯХ ВОЗМЕЩЕНИЯ УБЫТКОВ, ЯВЛЯЕТСЯ ОТДЕЛИМЫМ И НЕЗАВИСИМЫМ ОТ ЛЮБЫХ ДРУГИХ ПОЛОЖЕНИЙ И ДОЛЖНО ПРИМЕНЯТЬСЯ В ДАННОМ КАЧЕСТВЕ.

ПРИ ЛЮБЫХ ПРЕТЕНЗИЯХ ИЛИ СУДЕБНЫХ ПРОЦЕССАХ О ВОЗМЕЩЕНИИ УЩЕРБА, СВЯЗАННЫХ С ПРЕДПОЛАГАЕМЫМ НАРУШЕНИЕМ ГАРАНТИИ, НАРУШЕНИЕМ ДОГОВОРА, НЕБРЕЖНОСТЬЮ, ОТВЕТСТВЕННОСТЬЮ ЗА КАЧЕСТВО ПРОДУКЦИИ ИЛИ ЛЮБОЙ ДРУГОЙ ПРАВОВОЙ ИЛИ ИМЕЮЩЕЙ ЗАКОННУЮ СИЛУ ТЕОРИЕЙ, ПОКУПАТЕЛЬ ПРЯМО СОГЛАШАЕТСЯ С ТЕМ, ЧТО КОМПАНИЯ ВМС НЕ НЕСЕТ ОТВЕТСТВЕННОСТИ ЗА УЩЕРБ ИЛИ УПУЩЕННУЮ ВЫГОДУ ДЛЯ ПОКУПАТЕЛЯ ИЛИ КЛИЕНТОВ ПОКУПАТЕЛЯ. ОТВЕТСТВЕННОСТЬ КОМПАНИИ ВМС ОГРАНИЧИВАЕТСЯ СТОИМОСТЬЮ ПРИОБРЕТЕНИЯ ПОКУПАТЕЛЕМ УКАЗАННЫХ ТОВАРОВ, ПРОДАННЫХ КОМПАНИЕЙ ВМС ПОКУПАТЕЛЮ, В ОТНОШЕНИИ КОТОРЫХ ВОЗНИКАЕТ ТРЕБОВАНИЕ ОБ ОТВЕТСТВЕННОСТИ.

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Гарантийные сроки на продукцию компании Baylis Medical следующие:

Одноразовые изделия	В течение срока годности изделия
Принадлежности	90 дней с даты отгрузки

English	Pressure Monitoring System	DIP grounding pad	Foot switch (optional)
Français	Système de Surveillance De Pression	Électrode de retour (DIP)	Interrupteur Au pied (En option)
Deutsch	Druckwächter-System	Disposable Indifferente (dispersive) Patch elektrode	Fußschalter (optional)
Nederlands	Drukbeveiligingssysteem	Aardingskussen voor wegwerpbare indifferente (dispersieve) (DIP) elektrode	Voetschakelaar (optioneel)
Italiano	Sistema di monitoraggio delle pressioni	Tappetino di messa a terra dell'elettrodo indifferente (dispersivo) adesivo monouso	Interruttore a pedale (facoltativo)
Espanol	Sistema de control de la presión	Electrodo Parche Indiferente (Dispersivo) desechable (DIP)	Pedal (opcional)
Portugués	Sistema de Monitorização de Pressões	Placa Terra (DIP)	Interruptor de pé (alternativo)
Slovensky	Systém na monitorovanie tlaku	Uzemňovacia elektroda DIP	Nožný spínač (voliteľné)
Cestina	Systém monitorování tlaku	Uzemňovací elektroda DIP	Nožní spínač (volitelný)
Dansk	Trykovervågningssystem	Uzemňovací podložka pro jednorázovou indifferntní (dispersní) (DIP) elektrodu	Fodkontakt (valgfri)
Suomi	Paineenvälvontajärjestelmä	Maadoitusalusta kertakäyttöiselle välivirtanättömälle (dispersiviselle) (DIP) elektrodille	Jalkakytkin (valinnainen)
Norsk	Trykkoovervåkningssystem	Jordingspute for engangs likegyldig (dispersiv) (DIP) elektrode	Fotbryter (valgfritt)
Svenska	Tryckövervakningssystem	Jordningsplatta för engångsindifferent (DIP) - elektrod (DIP)	Fotbrytare (tillval)
Română	Sistem de monitorizare a presiunii	Placă de împământare DIP	Comutatorul de picior (opțional)
Hrvatski	Sustav za praćenje tlaka	DIP podloga za uzemljenje	Nožni prekidač (neobavezno)
Magyar	Nyomásgyélő rendszer	Földelő DIP-táppancselektroda	Lábkapcsoló (opcionális)
Türkçe	Basınç izleme sistemi	DIP Topraklama Padi	Ayak Pedali (isteğe bağlı)
Ελληνικά	σύστημα παρακολούθησης πίεσης	Επίπεδο γείωσης DIP	Ποδοκόμπος (Προαιρετικός)
Русский	системы мониторинга давления	Прокладка заземления DIP	Педаль (дополнительно)

