Global Prostate Solutions

Smart Stepper Stabiliser

Stepper Guided Prostate Biopsy

User Manual

Thank you for purchasing our product.

Please read this manual carefully before using it, and use it strictly in accordance with the requirements of the product manual. After reading, keep it in a safe place for future reference.

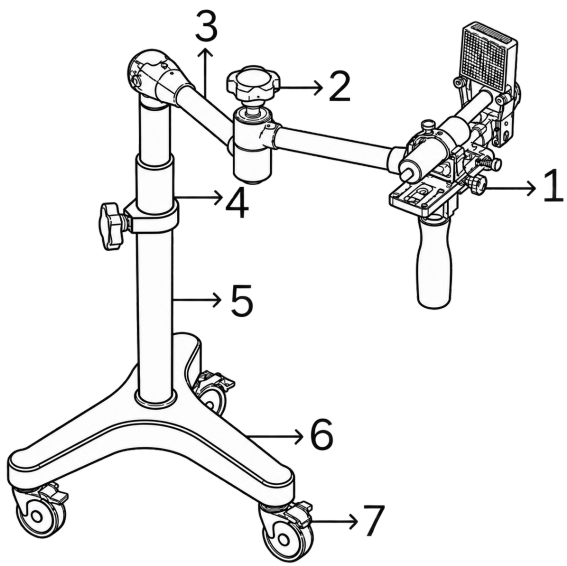
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Introduction 01

The Smart Stepper Stabiliser is a mechanical positioning system designed to support compatible ultrasound probes during ultrasound-guided prostate procedures. It provides stable probe support and controlled positioning, allowing clinicians to adjust and maintain the probe throughout the procedure.

The system combines a mobile base, height-adjustable column, articulated arm assembly, and stepper mechanism to provide smooth positioning and secure probe support. Its modular design allows efficient setup and reliable operation in the clinical environment.



SNo	Components
1	Stepper
2	Single Point Locking System
3	Articulated Arm
4	Height Column
5	Pole
6	Base
7	Wheel

1.1 Intended Use

The Smart Stepper Stabiliser is intended to support compatible ultrasound probes during ultrasound-guided prostate procedures. It provides controlled probe positioning and stabilisation throughout the procedure.

The device is intended for use with compatible ultrasound systems and associated accessories.

1.2 Clinical Applications

The Smart Stepper Stabiliser is intended for use during the following ultrasound-guided prostate procedures:

- Transperineal Prostate Biopsy
- Brachytherapy

1.3 Intended Users

The Smart Stepper Stabiliser is intended for use by qualified healthcare professionals trained in ultrasound-guided prostate procedures and familiar with the operation of compatible ultrasound equipment.

1.4 Operating Environment

- Intended for indoor clinical use.
- Store at room temperature in a clean, dry environment.
- Protect the device from excessive moisture and physical damage during storage and transportation.

Device Description 02

The Smart Stepper Stabiliser is designed to support controlled positioning of an ultrasound probe during prostate procedures. The system enables linear, rotational, and vertical probe adjustments while maintaining the selected position throughout the procedure.

The stabiliser consists of a mobile support system with adjustable positioning mechanisms that allow the probe to be aligned and secured before and during the procedure. Once positioned, the locking mechanisms help maintain probe stability while allowing repositioning whenever required.

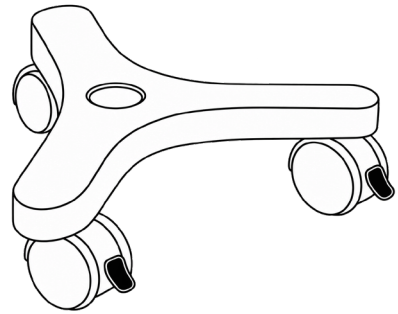
The modular construction enables quick assembly, straightforward operation, and convenient disassembly after use.

Product Components 03

The Smart Stepper Stabiliser comprises the following primary components. Each component is designed to support accurate positioning and stable operation during ultrasound-guided prostate procedures.

3.1 Base

The base provides a stable foundation for the system while allowing easy movement within the procedure room. Three lockable castor wheels enable the stabiliser to be positioned as required and secured before the procedure begins.



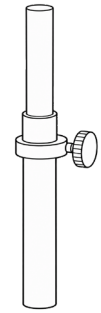
Base with Wheel

Features

- Stable three-wheel design
- Lockable castor wheels
- Easy Movement
- Hospital-grade finish

3.2 Height Column

The height column provides smooth vertical adjustment of the stabiliser, allowing the system to be positioned at a comfortable working height. Once adjusted, the locking mechanism secures the selected position throughout the procedure.

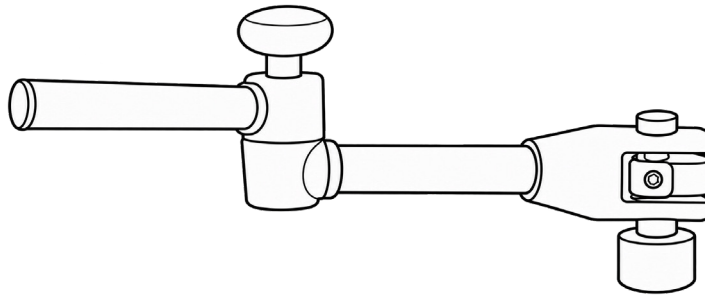


Height Column with Pole

- Smooth height adjustment
- Spring-assisted lifting
- Secure locking mechanism
- One-handed operation

3.3 Articulated Arm Assembly

The articulated arm assembly provides flexible positioning of the stepper while maintaining stability after locking. Independent joints allow the clinician to position the probe accurately without unwanted movement.



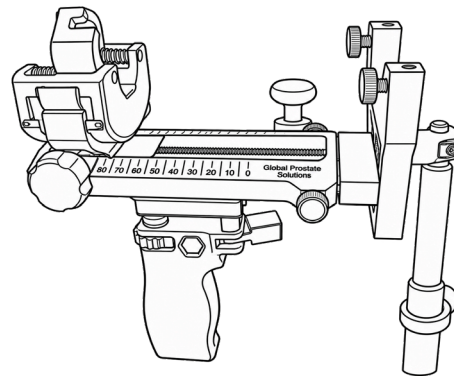
Articulated with Arm Assembly

Features

- Multi-axis positioning
- Smooth articulation
- Independent joint locking
- Stable positioning after locking
- Anodised finish for durability

3.4 Stepper Assembly with Holder

The stepper assembly supports the ultrasound probe and provides controlled linear and rotational movement during ultrasound-guided procedures. The adjustment controls allow the probe to be positioned accurately while maintaining the selected orientation.



Stepper Assembly with Holder

Features

- Controlled linear movement
- Rotational adjustment
- Stable probe support
- Secure probe alignment

Materials 04

The Smart Stepper Stabiliser is manufactured using materials selected for strength, durability, and repeated clinical use.

Component Material	Application
CNC-machined aluminium	Structural components
Stainless steel	Mechanical components and fasteners
Medical-grade polymers	Functional and protective components
Anodised finish	Corrosion resistance and durability
Hospital-grade coating	External protective finish

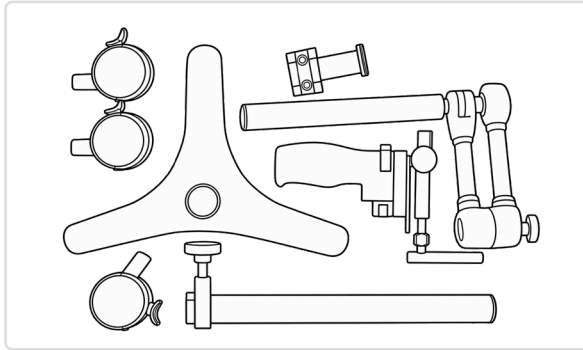
Device Assembly 05

Assemble the Smart Stepper Stabiliser before positioning the patient. Ensure all components are clean, correctly installed, and free from visible damage before use.

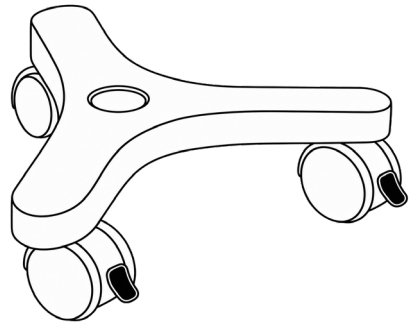
5.1 Attach the Stepper Assembly

Assemble the Smart Stepper Stabiliser before the procedure by following these steps:

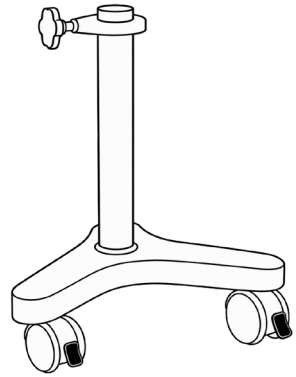
(a) Unpack the unit and verify that all components are present, including the base, wheels, pole, articulated arm, stepper, and probe holder.



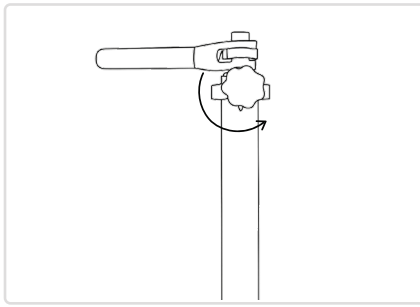
(b) Attach the three wheels securely to the base.

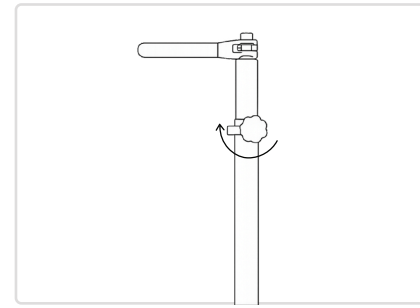


(c) Fix the pole to the base using the provided nut.

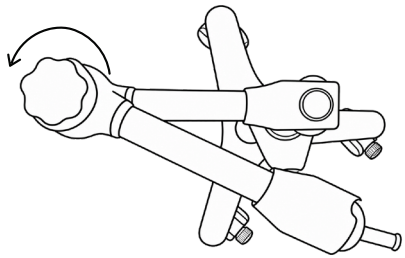


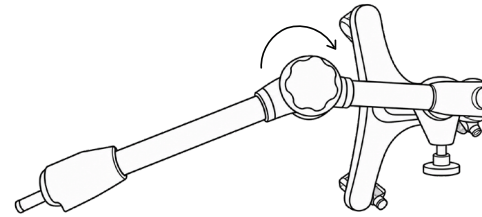
(d) Slide the height column onto the pole and ensure that the slot aligns with the alignment screw (Knob) before tightening.



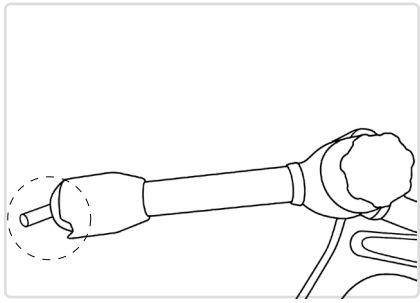


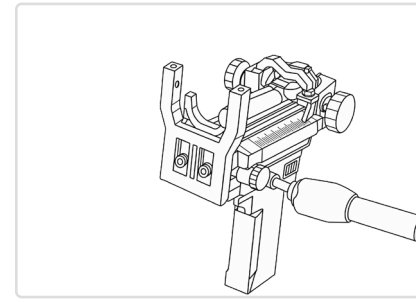
(e) Position the articulated arm as required for the intended procedure.



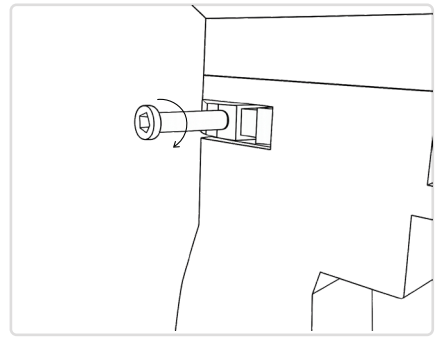


(f) Attach the stepper to the knob provided.

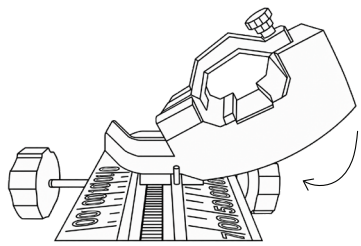


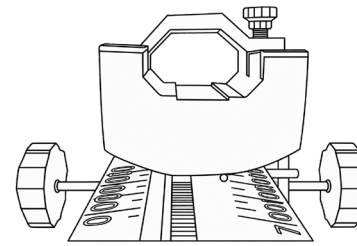


(g) Secure the stepper using the Allen screw.

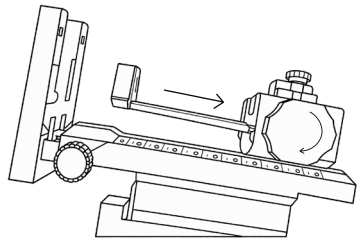


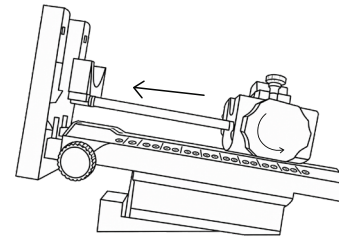
(h) Fix the probe holder with the knob onto the stepper.



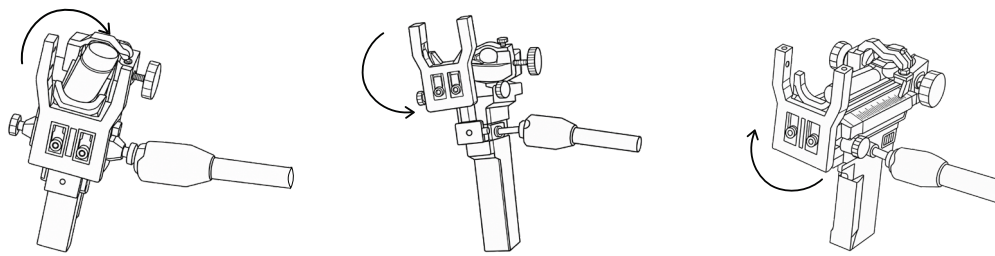


(i) Use the carriage knob to move the probe holder forward and backward as required.

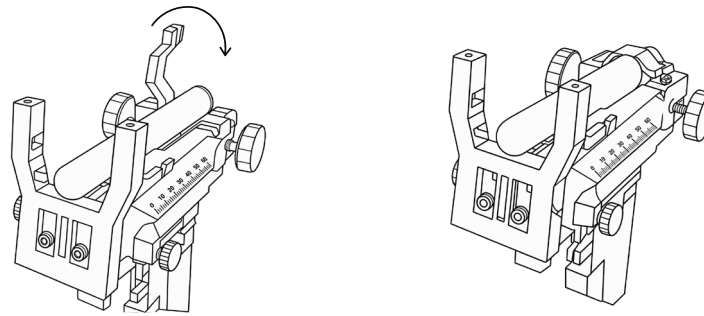




(j) Adjust the position during the procedure using the left and right movers.



(k) Place the compatible ultrasound probe into the probe holder and secure it using the Probe Tightener.



Before use, ensure that all nuts, knobs, locking screws, Allen screws, and the probe tightener are securely fastened and that all moving parts operate smoothly.

5.2 Pre-use Check

Before commencing the procedure, verify that:

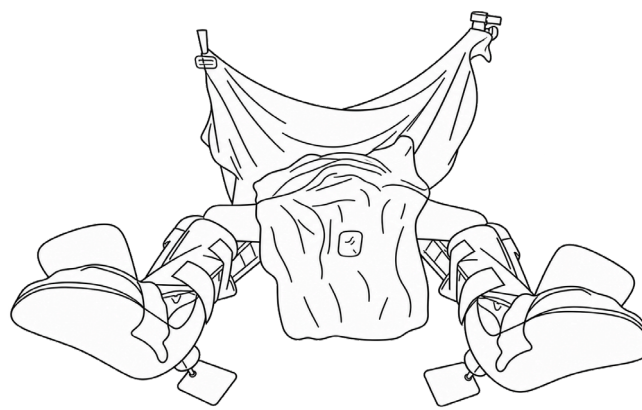
- The stepper assembly is securely attached.
- The ultrasound probe is correctly installed.
- All locking mechanisms are fully tightened.
- The carriage moves smoothly through its adjustment range.
- The wheel brakes are engaged.

The Smart Stepper Stabiliser is now ready for use.

Stepper Guided Procedure 06

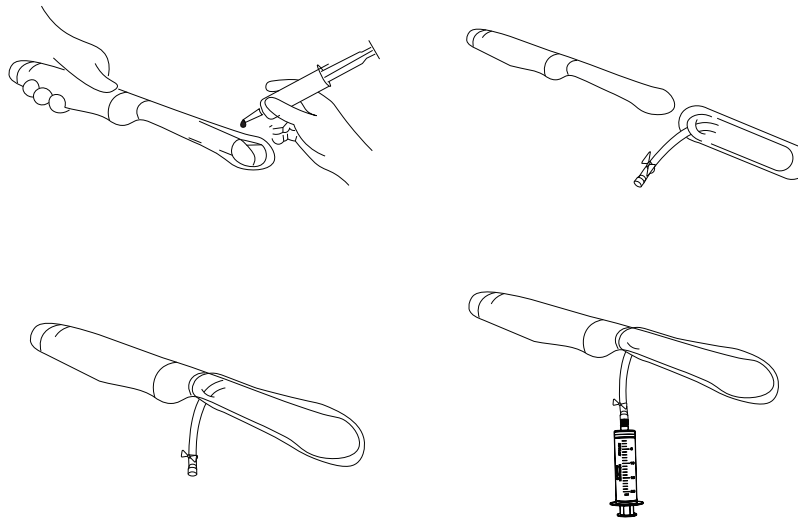
Step 1 – Patient Preparation

Position the patient in the lithotomy position. Prepare the perineal area using sterile technique.



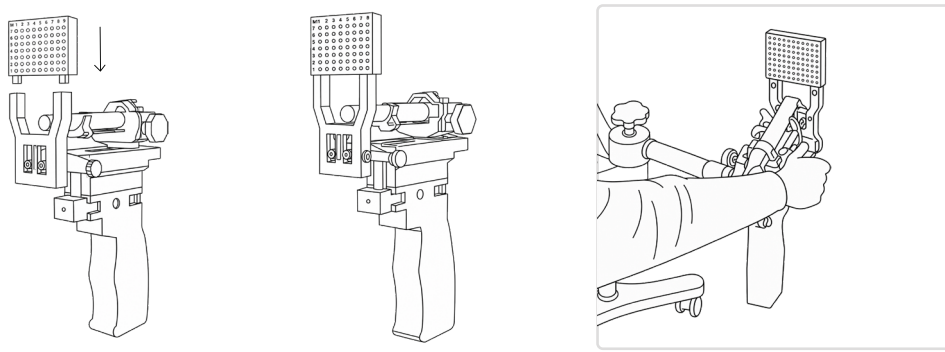
Step 2 – Ultrasound Probe Preparation

- Apply ultrasound gel to the ultrasound probe.
- Fit the Brachy Balloon over the probe and fill the balloon with sterile water or saline (as per manufacturer's instructions).



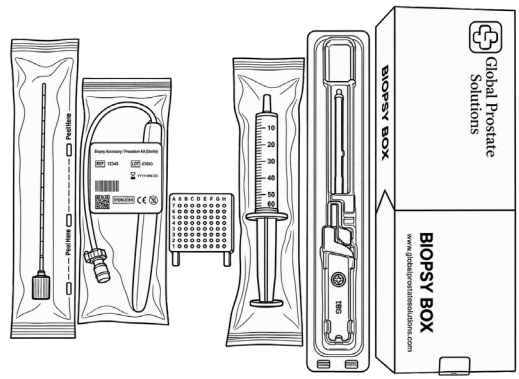
Step 3 – Mount the Stepper & Brachy Grid

- Secure the ultrasound probe onto the stepper stabiliser.
- Attach the Brachy Grid to the stepper, ensuring the grid aligns axially with the probe.



Step 4 – Open the Biopsy Box

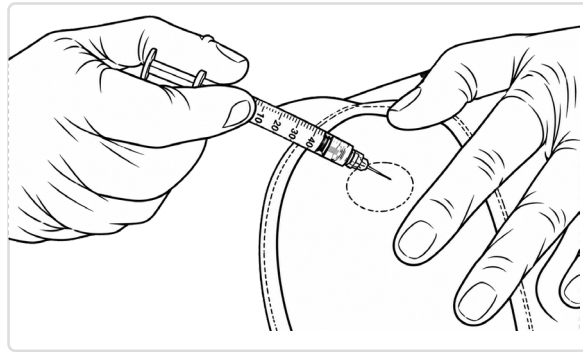
Open the sterile biopsy box specially designed for stepper guided biopsy procedure and arrange all components. This includes Biopsy Gun, Syringe with Gel, Spinal Needle, Brachy Grid and Brachy Balloon.



Biopsy Box for Stepper Guided Procedure

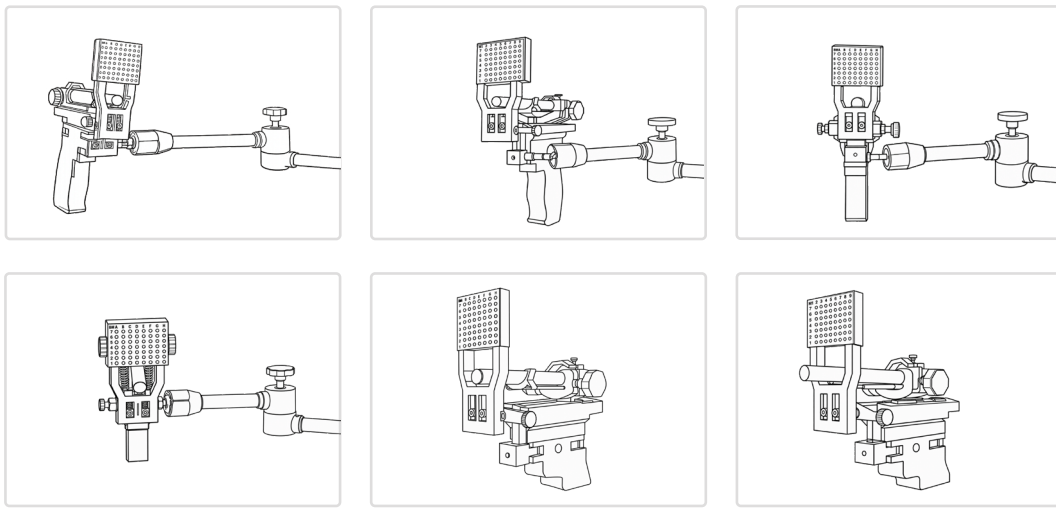
Step 5 – Local Anaesthesia

Use a Spinal Needle to infiltrate local anaesthetic into the perineal skin. Allow 5–10 minutes for the anaesthetic to take effect.



Step 6 – Accessing the targeted location

- Moves the probe forward and backward in precise increments to scan the prostate from the base to the apex, ensuring complete gland coverage.
- Allowing probe rotation, obtaining optimal views and accurately targeting different areas of the prostate.



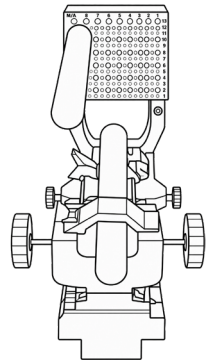
Step 7 – Plan Biopsy Targets

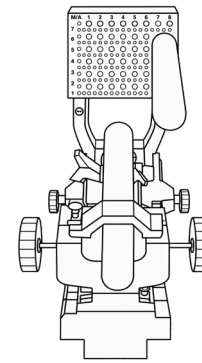
Scan the prostate and identify systematic biopsy zones.



Step 8 – Needle Placement

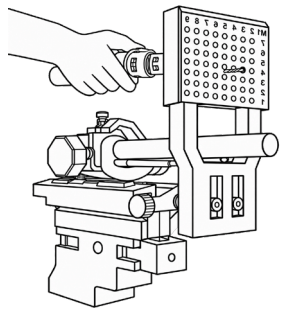
Insert the biopsy needle through the selected Brachy Grid coordinate.

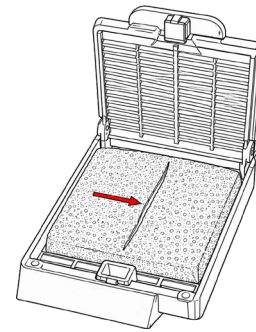




Step 9 – Tissue Sampling

- Load the Biopsy Gun and fire the gun to obtain the tissue core.
- Place each specimen into labelled tissue cassettes.





Step 10 – Repeat Sampling

Adjust the stepper position as needed. Repeat the procedure through different grid coordinates until all planned cores are collected.

Safety Information 07

Read this manual before assembling or operating the Smart Stepper Stabiliser. Before each procedure:

- Inspect the device to ensure all components are clean and free from visible damage.
- Position the stabiliser on a stable, level surface.
- Engage all wheel brakes before use.
- Ensure the ultrasound probe is correctly installed and securely locked in the probe cradle.
- Verify that all locking mechanisms are fully secured before commencing the procedure.

Do not use the device if any component is damaged or does not function as intended.

Instructions for Use 08

After assembly, position the Smart Stepper Stabiliser adjacent to the procedure table and adjust the system to obtain the required ultrasound imaging plane.

8.1 Positioning the System

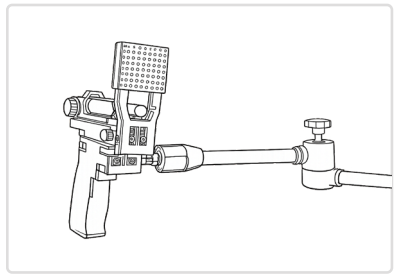
Adjust the height of the stabiliser and position the articulated arm to align the ultrasound probe with the required anatomical region. Once the desired position has been achieved, secure all locking mechanisms before making fine adjustments.

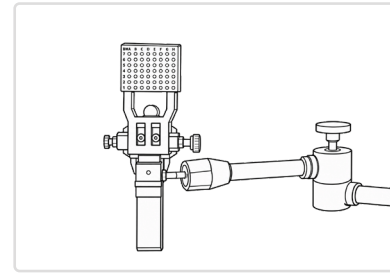
8.2 Probe Adjustment

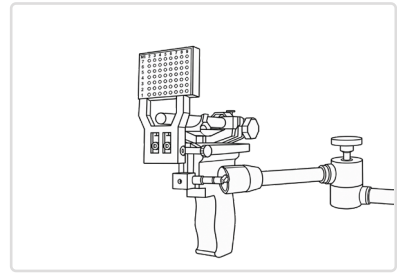
The stepper assembly allows controlled positioning of the ultrasound probe throughout the procedure.

The probe may be adjusted using:

- Linear movement to advance or retract the probe.
- Rotational movement to adjust probe orientation.
- Vertical adjustment using the height column.







Make gradual adjustments while observing the ultrasound image until the required imaging plane is achieved.

If a template grid is used, align it with the ultrasound imaging plane before commencing the procedure.

8.3 During the Procedure

The Smart Stepper Stabiliser maintains the selected probe position while allowing controlled adjustments when required.

If repositioning is necessary:

- Release the required locking mechanism.
- Reposition the probe using the stepper controls.
- Secure the locking mechanism before continuing.

Repeat these adjustments as required to maintain the desired probe position throughout the procedure

Device Dismantle 09

After completion of the procedure, remove the ultrasound probe and dismantle the Smart Stepper Stabiliser in the reverse order of assembly.

Dismantling Procedure

- Return the carriage to a neutral position.
- Release the probe locking knob.
- Open the cradle latch and carefully remove the ultrasound probe.
- Loosen the quick-connect knob.
- Detach the stepper assembly from the stabiliser interface plate.
- Return the articulated arm to a compact position for storage or transport.

Clean the device before storing it or preparing it for the next procedure.

Cleaning 10

Clean the Smart Stepper Stabiliser before each procedure and after use.

Using a clean, lint-free cloth or wipe moistened with ethanol, wipe all accessible external surfaces of the device. Pay particular attention to surfaces that are handled during operation and the probe cradle.

Allow all components to dry completely before assembly, storage, or subsequent use.

Storage 11

Store the Smart Stepper Stabiliser in a clean and dry environment at room temperature.

Ensure the device is protected from excessive moisture, dust, direct sunlight, and physical impact. Store the articulated arm in a secured position to minimise the risk of accidental damage.

Troubleshooting 12

Issue	Possible Cause	Corrective Action
Stepper assembly is not securely attached	Quick-connect knob is loose	Reattach the stepper assembly and tighten the quick-connect knob.
Ultrasound probe is not securely retained	Probe is not correctly seated	Reinstall the probe and tighten the cradle locking knob.
Probe movement is restricted	Locking mechanism remains engaged	Release the required locking mechanism before adjusting the probe.
Probe position cannot be maintained	Locking mechanisms are not fully tightened	Secure all locking points after positioning the probe.
Stabiliser moves during use	Wheel brakes are not engaged	Engage all wheel brakes before commencing the procedure.

For product enquiries, technical support, or additional information, please contact:

Global Prostate Solutions

27 Duke Street,
Saxon House, Chelmsford,
Essex, CM1 1HT, United Kingdom

+44 77803 98198
contactus@globalprostatesolutions.com

B- Block, BHIVE Premium HSR Campus Front,
Bengaluru, Karnataka-560068,India

+91 85473 02216, 80738 51840