

**stryker**



# Redefining what's possible

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**Q Guidance System with  
Spine Guidance Software**  
for surgical navigation

## See more, now do more with advanced planning capabilities

Through new optical tracking options, sophisticated software algorithms and instrumentation, today's Q Guidance System aims to deliver more surgical spine planning and navigation capability than ever before. And – when used in tandem with Airo TruCT – those abilities can be amplified even further. Their collective benefits can help make healthcare better.

### Together:

Q Guidance System and Airo® TruCT®

- ✓ Allow imaging and navigation to act as one
- ✓ Bring the benefits of surgical navigation to life
- ✓ Help maximize the potential of our sophisticated anatomical processing algorithms<sup>1</sup>

### Q Guidance System highlights

With custom components and technology innovated by our experts, the Q Guidance System is designed to deliver the reliability, performance and powerful platforms you want in a conveniently scalable solution.

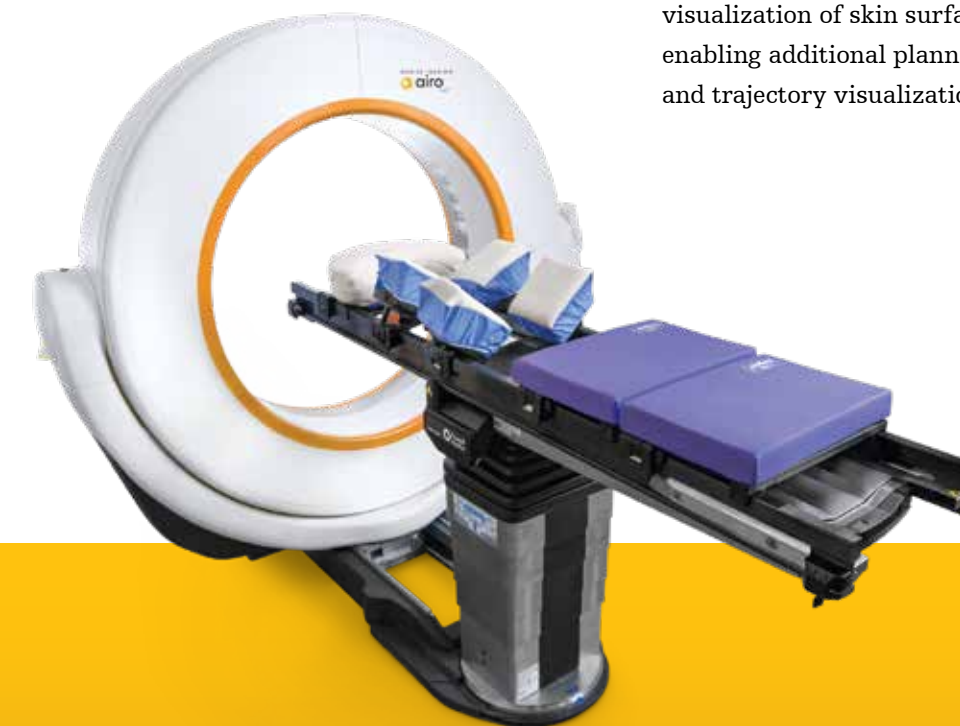
- Full-spectrum active/passive hybrid optical tracking
- Completely redesigned software applications
- Semi-automatic and automatic processing features
- Gesture recognition (no-touch validation, calibration and point digitization)
- Broad compatibility with various types of image sets



- |   |                                |    |                                       |
|---|--------------------------------|----|---------------------------------------|
| 1 | FP8000 Camera                  | 6  | Storage Drawer                        |
| 2 | Camera Arm                     | 7  | Computer System                       |
| 3 | Monitor Arm                    | 8  | Power Box (Power Supply)              |
| 4 | Drawer with Mouse and Keyboard | 9  | Big Touch Monitor                     |
| 5 | Connector Panel (IO-Panel)     | 10 | Small Touch Monitor                   |
|   |                                | 11 | Castors with brakes and cable pushers |

### Imaging matters: the value of Airo TruCT

- Seamless integration and automatic registration by selecting Airo as a "registration method"
- New Flat Stick-on Fiducials allow for automatic registration
- Fan beam technology for diagnostic quality intra-op CT scans
- Can intraoperatively scan a full meter of spine in one acquisition, reducing the need for multiple spins<sup>2</sup>
- Helps streamline workflow in complex cases
- When used with SpineMask, enables re-registration without Airo fiducials or point-to-point registration
- Large field of view includes visualization of skin surface, enabling additional planning and trajectory visualization



**Q Guidance System also works with Ziehm Vision RFD 3D CMOSline**

## Designed to impress

4th generation FP8000 camera



### Speed...

**Up to 4x**  
faster than StealthStation<sup>1</sup>

**Up to 16x**  
faster than Excelsius<sup>1</sup>

### ...and flexibility

- Only guidance system with proprietary active technology and the non-invasive SpineMask Tracker
- Multiple tracking technologies; active/passive hybrid optical tracking technologies



### Dual PCs

Two PC systems housed in one PowerBox

- Application PC for operating system and apps
- Real-Time PC for patient data
- Enables consistent, low latency computation of position and orientation of tracked instruments – independent of workload running on Application PC<sup>1</sup>

### Dual monitors

#### Big Touch monitor

- 32" multi-touch monitor with graphical user interface (GUI) similar to a tablet
- Control by touch, enabled instruments, mouse and/or keyboard
- You select content and display format for clean, custom views of data most vital to you

#### Small Touch monitor

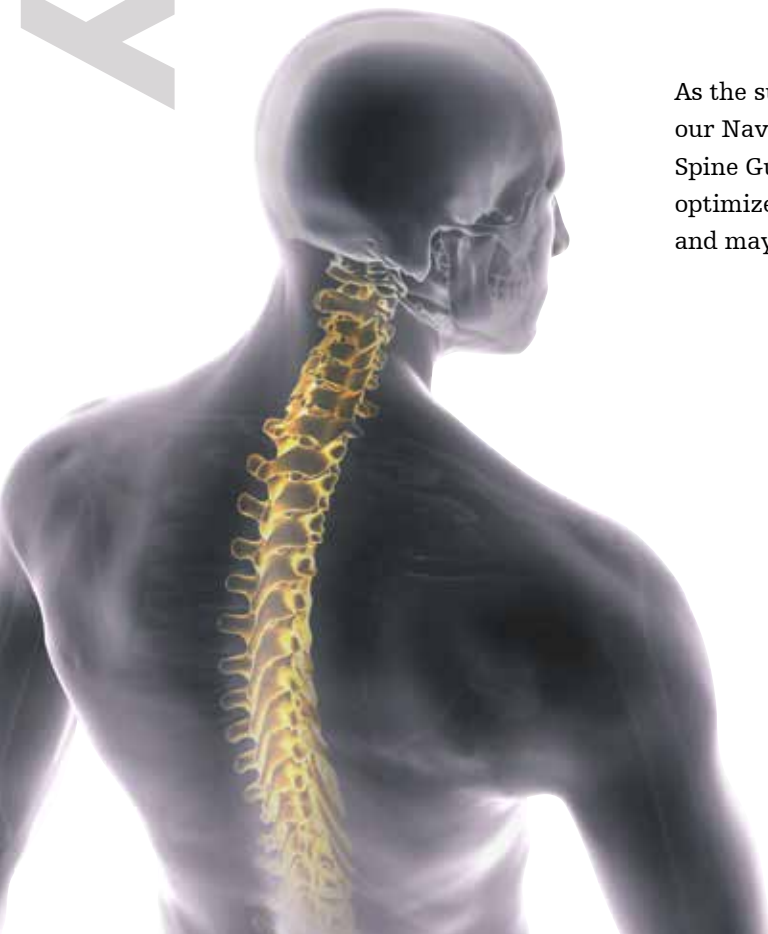
- For control outside the sterile field
- Displays same content and controls as Big Touch monitor



## Spine Guidance Software

New capability, new benefits.

As the successor to SpineMap 3D 3.1 running on our Nav3i platform, today's new and enhanced Spine Guidance Software is designed to help optimize your workflow and time in the O.R. and may help simplify complex clinical tasks.



### Software highlights

- ✓ Smart Segmentation with automatic screw planning
- ✓ Soft tissue stripping for enhanced visualization
- ✓ Reconstructed 3D x-ray views
- ✓ Dedicated k-wire visualization to support percutaneous screw placement
- ✓ Integration with multiple Spine fixation systems
- ✓ Gesture recognition (no-touch instrument calibration/validation and point digitization)
- ✓ Fast and accurate re-registration using rescue points



### Usability

- ✓ Modern, intuitive interface
- ✓ Clean, physician-customizable dashboards
- ✓ Multiple patient tracking options including the non-invasive SpineMask Tracker and conventional bone-fixated trackers like the nGenius Spine Clamp and the OrthoLock

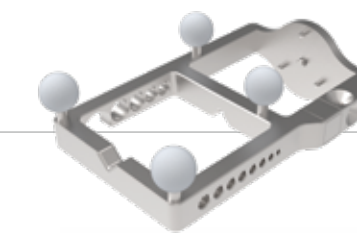
### New instrumentation

- Passive registration pointer
- Passive calibration body to calibrate and validate instruments
- Airo TruCT Flat Disc Stick-On Fiducials (only disposable every 12 months) enable automatic registration

Registration pointer



Calibration body



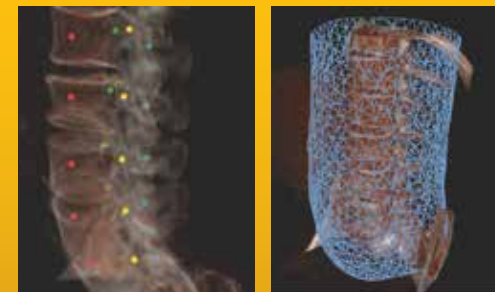
Flat Disc Stick-On Fiducials



## Enabling new norms for **spinal surgery**

### Smart Segmentation: Vital planning insights

- Sophisticated algorithms segment the spine to the bone surface level
- Leverages Hounsfield units (HUs) from fan beam CT technology to capture detailed, diagnostic-quality images as the foundation for our algorithms
- Identifies and auto segments vertebral key points (body, posterior elements, left/right pedicles)
- Defines a coordinate system for each vertebra
- Refines the x-y plane to be as parallel as possible to the vertebra endplate



• body      • left pedicle  
• posterior    • right pedicle

### Automatic screw suggestion: Tailored per patient

- Once you select vertebrae to be instrumented, the software uses the fan beam CT of the patient to calculate:
  - Average pedicle transverse angle, based on level
  - Narrowest part (isthmus) of pedicle
  - Length/depth (based on 85% of insertion depth)
  - Diameter (based on 70% width of the isthmus, including 7.5mm upper limit)
  - Length/width calculated to fit exact or next smallest screw size
- Automatically recommends screw size and placement; you can “verify” or adjust
- Intuitively guides you through screw planning and placement via onscreen data, visuals and navigational guidance



### Screw systems simplified

The system works with a wide variety of our screw systems whose specifications are pre-programmed. Simply select a screw system from the convenient drop down menu, and the software recommends a screw size and placement based on the CT image of your patient’s pedicle/anatomy.

### May help simplify complex tasks

- Designed to tailor screw planning to patient pedicles; suggests screw size and placement
- Allows “virtual screw placement” prior to real insertion
- Multiple options for integration with our Spine screw systems allow for individual choice of screw for screw planning
- Provides tangible measurements and visuals for decision making

## A powerful pair for spinal navigation

Paired together for the first time, the combination of Q Guidance System with Airo TruCT delivers potential advantages that may help simplify surgical planning and navigation. Here's a look at potential benefits when used together.



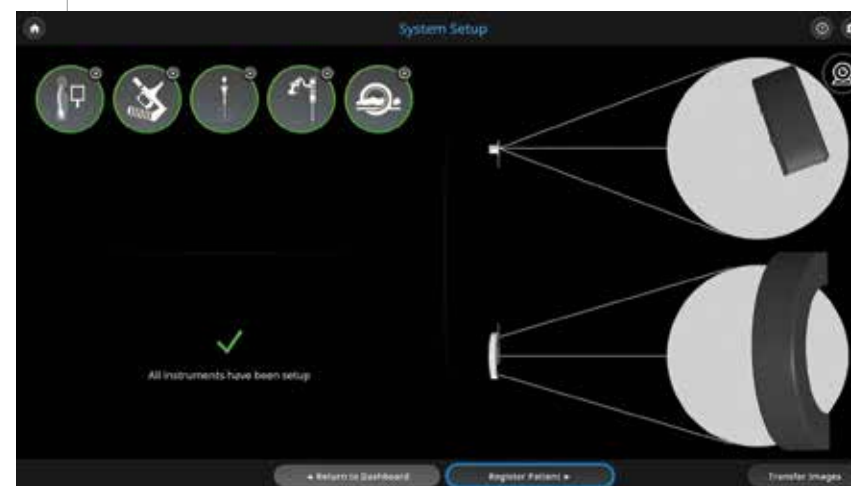
**One full meter of scan range**  
(up to 51.2cm x 100cm scan volume)

**Long spine constructs captured in a single scan**  
executed in as low as 43 seconds<sup>3</sup>

**Utilize the high quality CT imaging from Airo**  
to take advantage of Smart Segmentation and automatic screw suggestion with Spine Guidance powered by Q

Integration and calibration between Airo TruCT and Q Guidance System must be performed by authorized Stryker Service personnel.

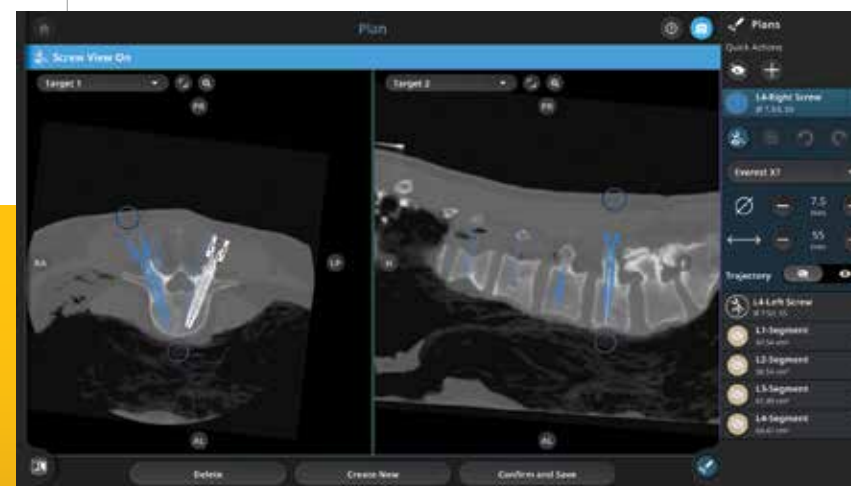
### 1 Set-up instruments and complete Airo Scan



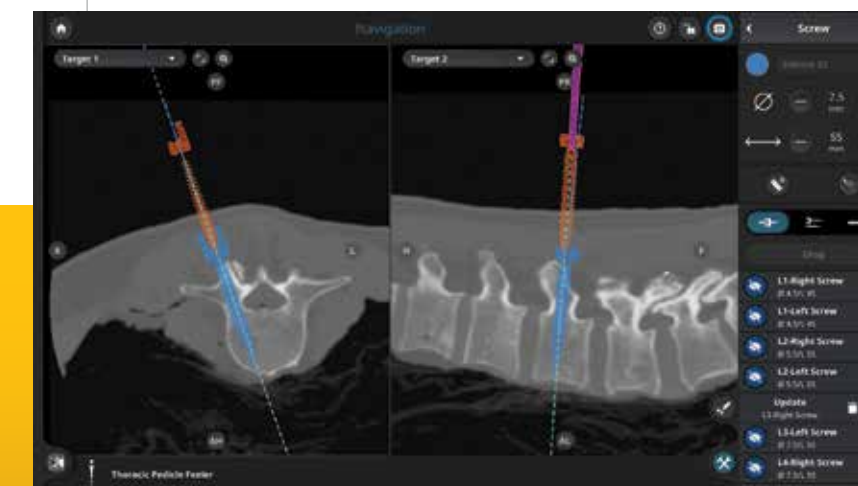
### 2 Select levels from Smart Segmentation



### 3 Confirm and save planned screws



### 4 Navigate to planned screw



# New capability. New benefits.

We designed the Q Guidance System, Spine Guidance Software and Airo TruCT to help you see, and now do more. To meet your clinical and budgetary needs, we offer a variety of flexible purchase options.

To trial or learn more, contact your Spine Enabling Technologies representative, **call 866 526 4171** or visit **stryker.com/QGuidance**.

## Part number

## Product name

Guidance System and Software	
8900-100-000	Q Guidance System
6002-710-000	Spine Guidance Software
Supported imaging devices	
MobiCT-32	Airo TruCT Scanner
7800-000-300	Ziehm RFD 3D CMOS w/ Articulating Arm
Passive Instruments	
8000-060-003	Calibration Body
8000-050-009	Registration Pointer
8000-100-004	Navigation Spheres (100 pack)
6002-710-050	Flat Disc Stick-On Fiducials

## References

1. Stryker data on file
2. Stryker test report: MI-48-0492 Rev 1 AIRO - Preclinical Imaging Study 2021
3. MI-19-0030 AIRO Design Verification Procedure

## Spine

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of specific products before using them in surgery.

The information presented is intended to demonstrate the breadth of Stryker product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

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