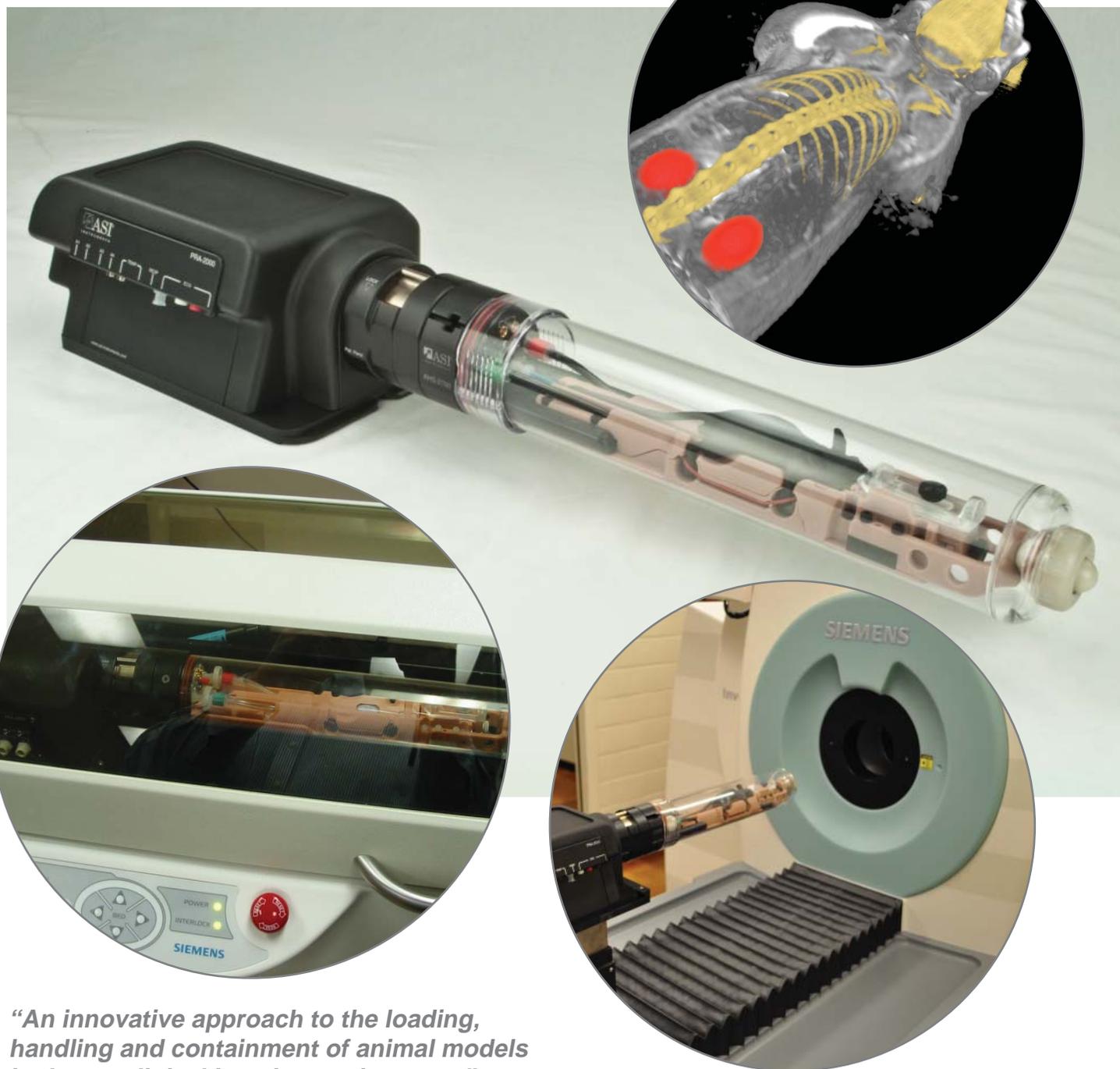


Preclinical Imaging Instruments

Models used with:
SIEMENS Inveon Imaging Solutions



“An innovative approach to the loading, handling and containment of animal models in the preclinical imaging environment”

Life Sciences Research Tools, “Designed by Scientists for Scientists”

ASI[®]
I N S T R U M E N T S

Animal Management System (AMS)

This device is a two component system, (U.S. Pat. #7,865,226) the first being a machine specific Positioning Receiver Assembly(PRA) which is semi permanently mounted to the scanner. The second component is the Animal Handling System (AHS) which holds the animal in a predetermined body position, has a complete pre configured physiological support bed and allows the animal bed to interface to the machine.(via the male coupling unit). The PRA has the receiving half of the coupling system positioned to interface the AHS in the correct orientation with the center line of the scanner bore. All connections interface thru the docking connector, for quick animal interface. The engagement of the AHS with the PRA positions the animal correctly and allows all active support items (i.e. anesthesia gas, ECG, Respiration) to start communicating to the animal bed, we call this our "Plug and Scan"[™] system. This technology gives the end user true unparalleled imaging throughput. With two AHS units being used, one animal can be staging at the bench while the other animal is being process on the scanner. All components are fabricated from none magnetic materials. The units will work in CT, SPECT, PET, and MRI modalities. Each system is shipped with a BENCH GAS CONNECTOR (BGC) which allows for the loading and unloading of the animal to be accomplish off the scanner. The system provides a workflow technology for the integration of single/dual modality scanners to create mechanically registered multi-modality images, with a high degree of precision and throughput.



Innovative coupling system (U.S. Pat #7,534,067) for quick and precision placement of the AHS on to the scanner. All panel features are routed through the receiver coupling and are terminated with a custom docking connector system. A cap is provide for sealing and protection of the connector terminals during animal transportation to the device.



Animal Handling System for Mouse (AHS-2750-M1)

Contoured Animal bed (patent pending) for repeatable body and limb placement. The bed design, allows for quick, precision, animal loading, and physiological support interface. (usually within 2 minutes). The mouse bed accommodates an animal body weight range of 15 g – 45 g. The pre-configured physiological monitoring, anesthesia gas (In, Evac) thermal management, ECG leads, and respiration exit through the union coupling and automatically interface when the device is plugged into the PRA. The headstock position (front) of the bed has an adjustable incisor bar and nose cone system. Additionally, the bed can be optionally configured with standard stereotaxic ear bar mounting techniques. The AHS can be used with or without the containment vessel. When used with the Bench Gas Connector the loading of the animal can be accomplished away from the scanner, allowing for higher throughput rates on the scanner. It also facilitates BSL-2 protocols for loading the a specimen within the controlled environment of a hood system.



Containment vessel, facilitates imaging in BL-2, BL-3 environments. The unit doubles as a transportation device for moving the animal from scanner to scanner or bench to scanner. All that is required is to decouple the AHS from the first scanner walk over to the second scanner and re-engage the AHS in the coupling of the PRA mounted in the second scanner. The AHS is submersible with protective end cap on for decontamination protocols that involve dunking the system in and out of laboratory spaces.

Positioning Receiver Assembly (PRA-2000)

This is a scanner specific interface system which quickly and semi permanently mounts to the Inveon type single modality microCT (with SPECT), and the micro PET. The patent system allows the AHS to quickly and repeatably interface to the scanner via the quick lock coupling system. The system has animal repeatable body placement of better than 50 microns (Holdsworth, et al, SPIE 2011). External connection panels allow for pre-routing all connections associated with the supports instruments. These connection are internally plumbed to the female docking connector for the quick interface of all the support features when the AHS is engaged to the PRA.



The connections routed to the panels form the coupling are as follows:

- (3) 1.5mm standard, non-touch type, medical grade leads, color coded red, white and black for ECG leads
- (2) 1.5mm standard, sockets, color coded blue for temperature probe, 2 leads
- (2) 1.5mm standard, sockets, color coded green for auxiliary connection, 2 leads
- (2) Fiber-optic connector
- (1) Luer type connection, color coded blue to connect the respiratory pillow
- (2) Fluidic connectors for anesthesia gas in, EVAC gas circuit out.
- (2) Fluidic connectors with shut - off for re-circulating warm water heating or re-circulating warm air for heating.



Ordering Information

Model Numbers and Pricing:

PRA-2000

Positioning Receiver Assembly for SIEMENS Inveon CT, Inveon Dedicated PET and Inveon SPECT • CT scanners
70 mm coupling system, unit ships with cables to connects to all physiological monitoring and support.

Price: \$6,300.00

PRA-9000

Positioning Receiver Assembly for SIEMENS Inveon DockedPET • SPECT • CT, Inveon PET • SPECT • CT, Inveon
DockedPET • CT, and Inveon PET • CT scanners,

70 mm coupling system, unit ships with cables to connects to all physiological monitoring and support.

Price: \$8,740.00 (available fall of 2011)

AHS-2750-M1

Animal Handling System, 70mm coupling system, mouse bed # 1 with containment system,
unit ships with filters for BSL-2 containment protocols, replacement o-ring kit, bench top gas connector.

Price: \$5,560.00

AHS-2750-R1

Animal Handling System, 70mm coupling system, rat bed # 1 with containment system,
unit ships with filters for BSL-2 containment protocols, replacement o-ring kit, bench top gas connector.

Price: \$5,560.00 (available fall 2011)

Typical Orders:

SIEMENS Inveon CT:

- (1) PRA-2000, Positioning Receiver Assembly
- (1) AHS-2750-M1, Animal Handling System

SIEMENS Inveon Dedicated PET:

- (1) PRA-2000, Positioning Receiver Assembly
- (1) AHS-2750-M1, Animal Handling System

SIEMENS Inveon DockedPET • SPECT • CT:

- (1) PRA-9000, Positioning Receiver Assembly
- (1) AHS-2750-M1, Animal Handling System

Note: multiple Animal Handling Systems (AHS) maybe preferred

Contact Information

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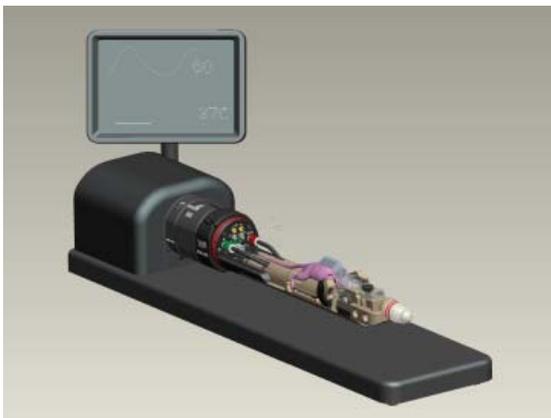


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Future Models: PRA-9000, Positioning Receiver Assembly for multi-modality scanners configurations.



Future Models: Technologies for high throughput staging work flows of specimens in the preclinical imaging environment.



“The AMS design was partially funded by a Phase I, STTR grant, #R41-NS050141-01, NIH, NINDS”

Life Sciences Research Tools, “Designed by Scientists for Scientists”

Models, Technologies for MRI applications:



Future Models: Technologies for image guided surgical procedures in the preclinical environment.

