

DR. B.R.A.INSTITUTE ROTARY CANCER HOSPITAL
ALL INDIA INSTITUTE OF MEDICAL SCIENCES
ANSARI NAGAR, NEW DELHI -110029.
(STORES SECTION)

Dated: 12/11/2015

Ref. No.- 06/Stores (DR. B.R.A.I.R.C.H.)/R.T. & ANESTH/Proprietary Equipment/2015-16/FSC

Subject: Purchase of Image guided Treatment Planning and Robotic Needle placement system with accessories -1 No. on proprietary basis.

The Institute is in the process to purchase **of Image guided Treatment Planning and Robotic Needle placement system with accessories -1 No. on proprietary basis.**

The proposal submitted by M/s. Perfint Healthcare Pvt. Ltd. with PAC & Patent certification.

The above documents are being uploaded for open information to submit objections, comments, if any, from any manufacturer regarding proprietary nature of the item within issue of 15 days giving reference **06/Stores (DR. B.R.A.I.R.C.H.)/R.T. & ANESTH/Proprietary Equipment/2015-16/FSC**. The comments should be received by office of Stores Officer (Dr. B.R.A.I.R.C.H.), Store Section, Room No. 18, G.F. (Dr. B.R.A.I.R.C.H. Building, AIIMS) on or before 01/12/15 upto 12.30 p.m., failing which it will be presumed that any other vendor is having no comment to offer and case will be decided on merits.

Yours faithfully,

Stores Officer
Dr. B.R.A.I.R.C.H.
A.I.I.M.S.

Encl. : Related documents enclosed

1. Proforma Invoice of M/s. Perfint Healthcare Pvt. Ltd.
2. Proprietary & Patent Certificate
3. Technical detail of the equipment

S No	Item	Quantity	Price
1	MAXIO® with All new Ver 2.5 with 1.1 Electromechanical axis of stereotactic device with planning station including InstaRegMat , power and communication cables with specifications as mentioned in the technical bid. 1.2 All new latest Ver 2.5 Software features	1 no	
2	Accessories		
a	Breath Hold Monitor System (BHMS)	1 no	
b	Patient Immobilizer (PI)	1 no	
c	RF Ablation Generator for Pain Management	1 no	
3.	Disposables		
A	Sterile Drapes(Sterile)	5nos	
B	Needle Bushes/guides in gauge sizes: 11,13,14,16,17,18,19,20,21,22,23–(Sterile)	10 noseach size	
c	Cannulas/Needles for Pain Management RF ablation procedures	50 nos	
4.	Other items		
	User Manual hardcopy/CD	1 no	
	Comprehensive warranty(<i>Software upgrade included</i>)	5 yrs	
	Start – up training at site	Upto 5 days	
	Comprehensive Annual Maintenance Contract <i>Includes periodic preventive maintenance and breakdown maintenance as needed (covers parts and labor) following warranty period offered at additional price from the 6th Year and with an 10% per annum from the previous year for every subsequent year.</i>		

For Perfint Healthcare Pvt Ltd



Guruswamy K
Director - Sales

PROPRIETARY CERTIFICATE

This is to confirm that MAXIO™ is a proprietary product of M/s Perfint Healthcare Pvt. Ltd., 3rd Floor, No.16, South West Boag Road, T.Nagar, Chennai – 600 017, TN, India.

We, M/s Perfint Healthcare Pvt. Ltd, declare that MAXIO™ is an image-guided, physician controlled stereotactic accessory to a Computed Tomography (CT) system. MAXIO™ is intended for stereotactic accessory spatial positioning and orientation of an end effector and instrument guide to assist in manual advancement of one or more (up to 6) instruments for CT guided procedures such as Ablation, Biopsy, Drainage, FNAC, Etc.

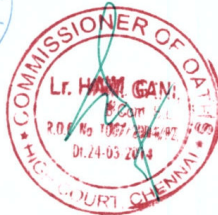
We hold the following patents issued by the United States Patent and Trademark office.

1. US 8,401,620 B2 – NEEDLE POSITIONING APPARATUS AND METHOD
(Positioning system for all products)
2. US 8,613,748 B2 - APPARATUS AND METHOD FOR STABILIZING THE NEEDLE
(2 Disposables one for holding the needle after placement and the other for assisting in holding the needle guide for insertion)
3. US 8,774,901 B2 - NEEDLE POSITIONING APPARATUS AND METHOD
(Workflow and method for using a mobile positioning system for intervention outside the CT imaging field)
4. US 8,958,913 B2 - ELECTRONIC DOCKING SYSTEM AND METHOD FOR ROBOTIC POSITIONING SYSTEM (Motorized docking and use of sensors for docking – no obstruction in the floor)

Yours Faithfully,

For Perfint Healthcare Pvt. Ltd

Authorized Signatory
Dated: 01-10-2015



Lr. HNM. GANI, B.Com.,B.L.,
Advocate & Commissioner of OATHS
Office: Law Association,
Saidapet Court, Little Mount,
Chennai-600 015. Cell: 9380903886

Perfint Healthcare Pvt Ltd

CIN No. U51507TN2005PTC065950

Registered Office : 3rd Floor, No.16, South West Boag Road, T Nagar, Chennai - 600 017, India
Tel: +91-44-45506412, Fax: +91-44-24345911, email: info@perfinttech.com, www.perfinthealthcare.com



(12) **United States Patent**
Velusamy et al.

(10) **Patent No.:** **US 8,401,620 B2**
(45) **Date of Patent:** **Mar. 19, 2013**

(54) **NEEDLE POSITIONING APPARATUS AND METHOD**

(75) **Inventors:** **Gnanasekar Velusamy**, TamilNadu (IN); **Kannan Neelakanta Sarma**, TamilNadu (IN); **Kasi Viswanathan Agilandam**, Karnataka (IN); **Roy Santosham**, TamilNadu (IN)

5,590,655 A 1/1997 Hussman
5,628,327 A 5/1997 Unger et al.
5,734,384 A 3/1998 Yanof et al.
5,769,086 A 6/1998 Ritchart
5,823,993 A 10/1998 Lemelson
5,834,759 A 11/1998 Glossop
5,957,933 A 9/1999 Yanof et al.
6,021,342 A 2/2000 Brabrand
6,035,228 A 3/2000 Yanof et al.
6,052,611 A 4/2000 Yanof et al.

(Continued)

(73) **Assignee:** **Perfint Healthcare Private Limited** (IN)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 954 days.

EP 1524626 A2 4/2005
EP 1 791 070 A2 5/2007

(Continued)

FOREIGN PATENT DOCUMENTS

OTHER PUBLICATIONS

Joachim Kettenbach, Robot-Assisted Biopsy Using Computed Tomography-Guidance, Investigative Radiology, Apr. 2005, p. 219, vol. 40, No. 4, Lippincott Williams & Wilkins, Philadelphia.

(Continued)

Primary Examiner — Long V. Le
Assistant Examiner — Angela M Hoffa

(21) **Appl. No.:** **11/682,375**

(22) **Filed:** **Mar. 6, 2007**

(65) **Prior Publication Data**

US 2008/0091101 A1 Apr. 17, 2008

(30) **Foreign Application Priority Data**

Oct. 16, 2006 (IN) 1903/CHE/2006

(51) **Int. Cl.**
A61B 5/055 (2006.01)
A61B 19/00 (2006.01)

(52) **U.S. Cl.** **600/427**; 600/424; 606/130

(58) **Field of Classification Search** None
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,583,538 A 4/1986 Onik et al.
4,883,053 A 11/1989 Simon
5,078,140 A * 1/1992 Kwoh 600/417
5,201,742 A 4/1993 Hasson
5,371,778 A 12/1994 Yanof et al.

(57) **ABSTRACT**

Apparatus for accurate positioning of a needle guide is disclosed. The apparatus provides a means for taking as input the position vector for the point of insertion of the needle into the body. This point of insertion can be selected from images produced by a Computer Tomography system. Similarly, the apparatus has a means for taking as input the point of target. A controller determines the directional vector between point of insertion and point of target. A guide manipulator accurately positions the needle in line with the directional vector, such that the needle can easily be inserted through the guide to the point of target. The positioning of the guide manipulator in accordance with the directional vector is done with the help of motors.

26 Claims, 13 Drawing Sheets





US008613748B2

(12) **United States Patent**
Velusamy et al.

(10) **Patent No.:** **US 8,613,748 B2**
(45) **Date of Patent:** **Dec. 24, 2013**

(54) **APPARATUS AND METHOD FOR STABILIZING A NEEDLE**

(75) Inventors: **Gnanasekar Velusamy**, Tamilnadu (IN);
Alan Bachman, Milford, CT (US)

(73) Assignee: **Perfint Healthcare Private Limited**
(IN)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 23 days.

(21) Appl. No.: **13/435,963**

(22) Filed: **Mar. 30, 2012**

(65) **Prior Publication Data**
US 2012/0184956 A1 Jul. 19, 2012

Related U.S. Application Data

(63) Continuation of application No. 13/292,186, filed on Nov. 9, 2011.

(30) **Foreign Application Priority Data**

Nov. 10, 2010 (IN) 3363/CHE/2010

(51) Int. Cl. **A61B 19/00** (2006.01)

(52) U.S. Cl. USPC **606/130**

(58) **Field of Classification Search**
USPC 606/130
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,583,538 A 4/1986 Onik et al.
4,883,053 A 11/1989 Simon
5,078,140 A 1/1992 Kwoh

5,201,742 A 4/1993 Hasson
5,263,939 A * 11/1993 Wortrich 604/174
5,269,305 A * 12/1993 Corol 600/429
5,371,778 A 12/1994 Yanof et al.
5,590,655 A 1/1997 Hussman

(Continued)

FOREIGN PATENT DOCUMENTS

EP 1103223 A2 5/2001
EP 1524626 A2 4/2005

(Continued)

OTHER PUBLICATIONS

International Search Report and Written Opinion for PCT/IN08/00507, mailed on Mar. 23, 2009; 7 pages.

(Continued)

Primary Examiner — Gary Jackson

Assistant Examiner — Eric Blatt

(74) **Attorney, Agent, or Firm** — Cooley LLP

(57) **ABSTRACT**

Apparatus and methods for use in an image-guided interventional procedure are described herein. In one embodiment, an apparatus includes a base configured to be releasably coupled to a patient's skin. A support portion extends from the base at an angle transverse to a longitudinal axis defined by the base. The support portion has a first end portion and a second end portion. The first end portion is disposed adjacent the base. A holder portion extends from the second end portion of the support portion. The holder portion defines an opening and is configured to be moved between a first configuration in which the opening defined by the holder portion has a first size and is configured to movably receive an interventional tool there-through, and a second configuration in which the opening defined by the holder portion has a second size different than the first size.

21 Claims, 25 Drawing Sheets





US008774901B2

(12) **United States Patent**
Velusamy et al.

(10) **Patent No.:** **US 8,774,901 B2**
(45) **Date of Patent:** ***Jul. 8, 2014**

(54) **NEEDLE POSITIONING APPARATUS AND METHOD**

(2013.01); *A61B 2019/507* (2013.01); *A61B 2019/52.38* (2013.01); *A61B 2019/467* (2013.01)

(71) Applicant: **Perfint Healthcare Private Limited,**
Chennai (IN)

USPC **600/427; 600/424**

(72) Inventors: **Gnanasekar Velusamy, TamilNadu**
(IN); **Kannan Neelakanta Sarma,**
TamilNadu (IN); Kasi Viswanathan
Agilandam, Karnataka (IN); Roy
Santosham, TamilNadu (IN)

(58) **Field of Classification Search**
None
See application file for complete search history.

(73) Assignee: **Perfint Healthcare Private Limited,**
T Nagar, Chennai (IN)

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,583,538 A 4/1986 Onik et al.
4,883,053 A 11/1989 Simon

(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

FOREIGN PATENT DOCUMENTS

EP 1524626 A2 4/2005
EP 1 791 070 A2 5/2007

(Continued)

(21) Appl. No.: **13/743,960**

OTHER PUBLICATIONS

Barrett, S. et al., "A Remote Needle Guidance System for Percutaneous Biopsies," Proceedings of IDETC/CIE 2005, Sep. 2005, 9 pages

(22) Filed: **Jan. 17, 2013**

(Continued)

(65) **Prior Publication Data**

US 2013/0184572 A1 Jul. 18, 2013

Primary Examiner — Long V. Le

Assistant Examiner — Angela M Hoffa

Related U.S. Application Data

(62) Division of application No. 11/682,375, filed on Mar. 6, 2007, now Pat. No. 8,401,620.

(57) **ABSTRACT**

Apparatus for accurate positioning of a needle guide is disclosed. The apparatus provides a means for taking as input the position vector for the point of insertion of the needle into the body. This point of insertion can be selected from images produced by a Computer Tomography system. Similarly, the apparatus has a means for taking as input the point of target. A controller determines the directional vector between point of insertion and point of target. A guide manipulator accurately positions the needle guide in line with the directional vector, such that the needle can easily be inserted through the guide to the point of target. The positioning of the guide manipulator in accordance with the directional vector is done with the help of motors.

(30) **Foreign Application Priority Data**

Oct. 16, 2006 (IN) 1903/CHE/2006

(51) **Int. Cl.**
A61B 6/03 (2006.01)
A61B 19/00 (2006.01)

(52) **U.S. Cl.**
CPC . *A61B 6/032* (2013.01); *A61B 6/03* (2013.01);
A61B 19/201 (2013.01); *A61B 19/22*

24 Claims, 13 Drawing Sheets





US008958913B2

(12) **United States Patent**
Velusamy et al.

(10) **Patent No.:** US 8,958,913 B2

(45) **Date of Patent:** Feb. 17, 2015

(54) **ELECTRONIC DOCKING SYSTEM AND METHOD FOR ROBOTIC POSITIONING SYSTEM**

(58) **Field of Classification Search**
USPC 700/259; 600/424; 702/95, 150, 94;
606/130
See application file for complete search history.

(71) **Applicant:** Perfint Healthcare Private Limited,
Chennai, TamilNadu (IN)

(56) **References Cited**

(72) **Inventors:** Gnanasekar Velusamy, Chennai (IN);
Cregg K. Cowan, Mountain View, CA
(US); Thomas P. Low, Belmont, CA
(US); Annjoe Wong-Foy, Pacifica, CA
(US)

U.S. PATENT DOCUMENTS

(73) **Assignee:** Perfint Healthcare Private Limited,
T Nagar (IN)

7,182,083	B2 *	2/2007	Yanof et al.	128/204.23
7,660,623	B2 *	2/2010	Hunter et al.	600/424
7,742,801	B2 *	6/2010	Neubauer et al.	600/411
7,751,868	B2 *	7/2010	Glossop	600/426
7,871,406	B2 *	1/2011	Nields et al.	606/27
7,962,193	B2 *	6/2011	Edwards et al.	600/407
8,150,495	B2 *	4/2012	Edwards et al.	600/424
8,774,901	B2 *	7/2014	Velusamy et al.	600/427
2002/0156376	A1 *	10/2002	Wang et al.	600/439
2004/0152970	A1 *	8/2004	Hunter et al.	600/424
2011/0251815	A1 *	10/2011	Bar-Tal et al.	702/95
2013/0096575	A1 *	4/2013	Olson	606/130

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 145 days.

* cited by examiner

(21) **Appl. No.:** 13/834,751

Primary Examiner — Ronnie Mancho

(22) **Filed:** Mar. 15, 2013

(74) *Attorney, Agent, or Firm* — Cooley LLP

(65) **Prior Publication Data**

US 2014/0222205 A1 Aug. 7, 2014

(30) **Foreign Application Priority Data**

Feb. 2, 2013 (IN) 458/CHE/2013

(51) **Int. Cl.**
A61B 5/05 (2006.01)
A61B 8/00 (2006.01)
A61B 19/00 (2006.01)
A61B 6/03 (2006.01)

(52) **U.S. Cl.**
USPC 700/259; 600/424; 702/150; 702/94;
606/130

(57) **ABSTRACT**

An apparatus includes a robotic positioning device and a locating mat. The locating mat includes a location pattern and can be disposed on a floor at a desired position relative to a movable cradle of an imaging system. The robotic positioning device is configured to be disposed, at least partially, above the locating mat. The robotic positioning device includes a docking device that includes an optical device and a guide manipulator supported on the docking device. The guide manipulator can be positioned relative to the movable cradle based, at least partially, on image data associated with the optical device and the location pattern of the locating mat. The guide manipulator can position an instrument guide relative to a patient disposed on the movable cradle.

29 Claims, 14 Drawing Sheets



Lr. HNM. GANI, B Com B.L.,
Advocate & Commissioner of OATHS
Office: Law Association,
Saidapet Court, Little Mount,
Chennai-600 015. Cell: 9380903886

2



17

TECHNICAL BID

Image guided Treatment Planning and Robotic Needle placement system with Accessories

Submitted To

Chief, DR. BRAIRCH
AIIMS, New Delhi

29th September 2015

*Proprietary & Confidential • Perfint Healthcare Private Limited, © 2015. All Rights Reserved
The contents of this document are confidential and are meant for the review of only the person who is the recipient of the same. All logos are trademarks of their respective owners and have been used in this proposal for representational purposes only.*

Perfint Healthcare Pvt Ltd

CIN No. U51507TN2005PTC065950

Registered Office : 3rd Floor, No.16, South West Boag Road, T Nagar, Chennai - 600 017, India
Tel: +91-44-45506412, Fax: +91-44-24345911, email: info@perfinttech.com, www.perfinthealthcare.com



Dear Doctor,

SUB: Technical Proposal for Image guided Treatment Planning Robotic Needle placement system with Accessories- MAXIO®

Reference: Discussion during the meeting held on 18 September 2015

In reference to the discussion that we had with you, we are pleased to present to you the technical proposal for the MAXIO® – Planning and Targeting for CT guided procedures.

MAXIO® will enable physicians to offer a wide variety of CT guided Interventional procedures like

- Tumor Ablation : MAXIO supports ablation with all energy sources viz, RF, Microwave, Cryo and IRE (Irreversible Electroporation)
- Biopsy, FNAC & Drainage procedures
- Pain management procedures – Facet joint/Nerve root/Various Ganglion injections and RF ablation procedures
- Fiducial Marker placement for targeted radiation therapy
- Iodine I125 Seeds placement

We thank you once again for the interest that you have shown in our technology and we now look forward to your valuable PO

With best regards,



Guruswamy K

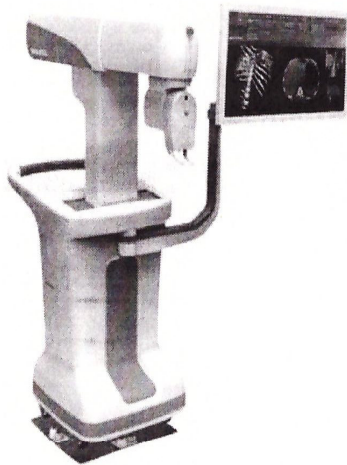
Director – Sales



ITEM 1

MAXIO® - Planning and Targeting for CT guided procedures

MAXIO® is an image-guided, physician controlled stereotactic accessory to a Computed Tomography (CT) system, intended for the stereotactic spatial positioning and orientation of an end effector and instrument guide (*Patents-US 8,401,620 B2, US 8,774,901 B2*) to assist in manual advancement of one or more instruments such as rigid straight needles and probes during CT guided percutaneous procedures on organs and anatomical structures in the thorax, abdomen and pelvis.



MAXIO® System provides pre-operative planning assistance to the physician by creating a reconstructed 3D image model of received CT data and by visually representing the planned instrument path and position(s) (*Patents-US 8,401,620 B2, US 8,774,901 B2*) of one or more instruments on the model, along with performance data provided by the instrument manufacturer or as specified by the user.

MAXIO® permits physician verification of patient position prior to needle advancement and monitoring of respiratory for levels during the procedure. Image registration and overlay tools available in MAXIO® are intended to provide guidance to the user during planning and instrument placement.

MAXIO® consists of a stereotactic device and its accessories, software loaded on a computer, and a respiratory gating system. The accessories include a patient immobilizer and skin-markers. MAXIO® System uses single use sterile disposables viz, end effector, instrument guide and drapes.

MAXIO® is intended to be used by physicians trained for CT procedures.



Key features of the MAXIO®

- Pre-operative image registration
- Tools for volumetric visualization and segmentation of multiple VOI
- Multi-probe placement plan on one or more targets
- Tools to verify patient position and respiratory levels
- Stereotactic assistance for multi-probe placement, without fluoroscopic radiation
(Patents-US 8,401,620 B2, US 8,774,901 B2)
- Ability to perform compound angle probe placement (Patents-US 8,401,620 B2, US 8,774,901 B2)
- Tools for post procedure verification

New features in the Latest Version V2.5

- Intuitive User interface, Faster & Optimised Workflow for faster procedures
- New & Faster Trajectory planning for IRE (Irreversible Electrophoresis) Procedures
- Platform for Offline Planning
- New Procedure workflow for faster Single needle procedures
- Patient movement Detection
- User controlled Robotic Arm positioning for Simultaneous Multi needle placement
- Ablation Volume Edit facility for high accurate estimation
- RoHS Compliance
- Device Self Check- Single click Device readiness





Key benefits of the MAXIO®

Today, physicians plan interventional procedures by combining 2D images with their understanding of human anatomy. Physicians are then expected to manually advance one or more instruments to reach the target, without causing damage to vital structures, while accounting for organ and patient movement. It is, therefore, not surprising that these procedures are limited to the most skilled and experienced physicians.

- Now, MAXIO® assists physicians to visualize and plan an interventional procedure, in 3D. Multiple VOI, Multiple instruments, Placement sequencing can all be planned before advancing a single instrument.
- Once the plan, patient position and respiratory levels are confirmed, MAXIO's stereotactic arm, combined with intra-operative registration, assists the physician to carefully advance one or more instruments to reach the target.
- MAXIO's post-operative image registration helps physicians verify and extend the treatment if needed. MAXIO's reporting tool then helps generate required reports.



92

Technical Specification

S No	Parameter	Value/Specification/Description
1	Compatible Modality	CT
2	Imaging Interface	DICOM 3.0
3	Needle positioning accuracy at delivery point <i>Patents(US 8,401,620 B2, US 8,774,901 B2)</i>	*2mm radius sphere at a needle length of 120 mm on specific non-moving phantom * = RMS
Electrical		
4	Mains Voltage	100 - 240 Vac
5	Line frequency	50 / 60 Hz
6	Length of power cable	8 Meters maximum
7	Power usage	300Watts
8	Max. Current Rating	3.15 Amps
9	Mains Isolation External: done by the user	Power supply cord shall be plugged where both poles (L & N) are isolated simultaneously.
10	User Interface	Computer Monitor display
Mechanical		
11	Mobility	4 Castor wheels with Locks
12	x range	600 +20 / - 0 mm
13	y range	450 +20 / - 0 mm
14	z range	180 +20 / - 0 mm
15	a range	± 95° +10 / -0°
16	b range	± 95° +10 / -0°
17	Positioning of the device with respect to CT system <i>Patents(US 8,958,913 B2)</i>	InstaReg®
18	Weight	Approx :250 Kgs
19	Mechanical Dimensions	~H 1310 x D 850 x W 775 mm
20	Max. Allowable floor incline during mobility – during procedure – during installation <i>Patents(US 8,958,913 B2)</i>	10° 5°

23

21	Device controls	Control panel switches and foot switch for procedure functionality.
Planning Console Patents(US 8,401,620 B2, US 8,774,901 B2)		
22	Operating system	Windows 8.1 professional
23	System configuration	Intel Core i7 or above 8 GB RAM (min) 320 GB Hard disk (min) 22 inch wide monitor with 1920 x 1080 pixels resolution (FULL HD) Speaker – External or Built in monitor
Needles supported by the Device		
24	Type	Rigid – Straight,
25	Sizes (Gauge)	11,13,14,16,17,18,19,20,21,22.
26	Needle Length	60 to 250mm
Needle Guide		
27	Compatible needle gauge	11,13,14,16,17,18,19,20,21,22.
	Sterilization	Single use- disposable
Procedure Verification		
28	Patient Position confirmation module	
Operating Conditions		
29	Operating temperature range	15 to 40°C
30	Transport and storage temperature range	0 to 50°C
31	Relative Humidity range	50% to 95% RH non-condensing
Safety		
32	Wheels with Lock	
33	Detachable Needle bush / Needle guide	
34	Emergency Switch	
Conformance to Standards		
35	MDD (93/42/EEC)	Yes
36	IEC 60601-1, IEC 60601-1-2, IEC 60601 -1- 6, IEC 60601 -1- 8, ISO 14971, IEC 62304, IEC 62366, BS EN 980, ISO 10993, ISO 14155	

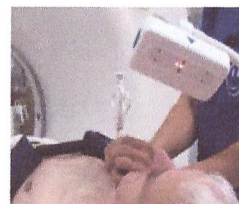
24

ITEM 2

Accessories

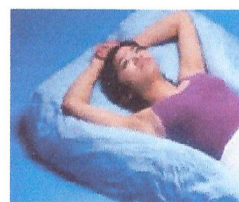
a Breath Hold Monitor System (BHMS) – 1 no

Developed by physicians at Mayo Clinic, the device enables patients to accurately self-monitor their own breath-holds or controlled shallow breathing based on biofeedback provided by an easy-to-read display. The device provides efficient, convenient and affordable respiratory motion control that also has been shown to save time of many procedures.



b Patient Immobilizer (PI) – 1 no

A reusable vacuum cushion with small polystyrene beads inside that hardens on its held position and immobilize the patient. The device hardens around the patient when deflated and immobilize the patient.



c Sterile Drape – 1 no

Sterile drapes are used to cover the electromechanical arm to prevent contact by physicians during the procedure.
Not re-usable



d Needle Bush 11G, 13G, 14G, 16G-22G – 10 each

A single unit sterilized pack consists of "needle bush". The needle bush is held between the grippers and used to guide various sizes of needles or probes during the procedure. Each unit comes in a sterile pack and has various sizes.



**e Radiofrequency Generator System for Pain Management – 1 no
with 50 nos Cannulas/Needles**

K. G. G.