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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
61/737,932	12/17/2012		125	PRS-186USP		

CONFIRMATION NO. 9333

71158
RatnerPrestia
P.O. Box 980
Valley Forge, PA 19482

FILING RECEIPT



OC000000058457713

Date Mailed: 01/04/2013

Receipt is acknowledged of this provisional patent application. It will not be examined for patentability and will become abandoned not later than twelve months after its filing date. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Steven W. Goldstein, Delray Beach, FL;
Moises Perez, Miami, FL;

Applicant(s)

Steven W. Goldstein, Delray Beach, FL;
Moises Perez, Miami, FL;

Power of Attorney:

Deborah Grove--61091

If Required, Foreign Filing License Granted: 01/03/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 61/737,932**

Projected Publication Date: None, application is not eligible for pre-grant publication

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

METHODS AND MECHANISMS FOR INFLATING AN EARPIECE

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international

page 1 of 3

application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 1 of 2

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. _____

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Steven W.	Goldstein	Delray Beach, FL
Moises	Perez	Miami, FL

Additional inventors are being named on the _____ separately numbered sheets attached hereto.

TITLE OF THE INVENTION (500 characters max):
 METHODS AND MECHANISMS FOR INFLATING AN EARPIECE

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

☒ The address corresponding to Customer Number: 71158

OR

☐ Firm or Individual Name _____

Address _____

City	State	Zip
Country	Telephone	Email

ENCLOSED APPLICATION PARTS (check all that apply)

☐ Application Data Sheet. See 37 CFR 1.76	☐ CD(s), Number of CDs _____
☐ Drawing(s) Number of Sheets _____	☐ Other (specify) _____
☒ Specification (e.g. description of the invention) Number of Pages <u>28</u>	

Fees Due: Filing Fee of \$250 (\$125 for small entity). If the specification and drawings exceed 100 sheets of paper, an application size fee is also due, which is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

METHOD OF PAYMENT OF THE FILING FEE AND APPLICATION SIZE FEE FOR THIS PROVISIONAL APPLICATION FOR PATENT

☒ Applicant claims small entity status. See 37 CFR 1.27.	125.00 TOTAL FEE AMOUNT (\$)
☐ A check or money order made payable to the <i>Director of the United States Patent and Trademark Office</i> is enclosed to cover the filing fee and application size fee (if applicable).	
☒ Payment by credit card. Form PTO-2038 is attached.	
☒ The Director is hereby authorized to charge the filing fee and application size fee (if applicable) or credit any overpayment to Deposit Account Number: <u>18-0350</u>	

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 10 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PROVISIONAL APPLICATION COVER SHEET
Page 2 of 2

PTO/SB/16 (09-11)

Approved for use through 05/31/2015. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.



No.



Yes, the name of the U.S. Government agency and the Government contract number are: _____

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SIGNATURE _____

Date _____

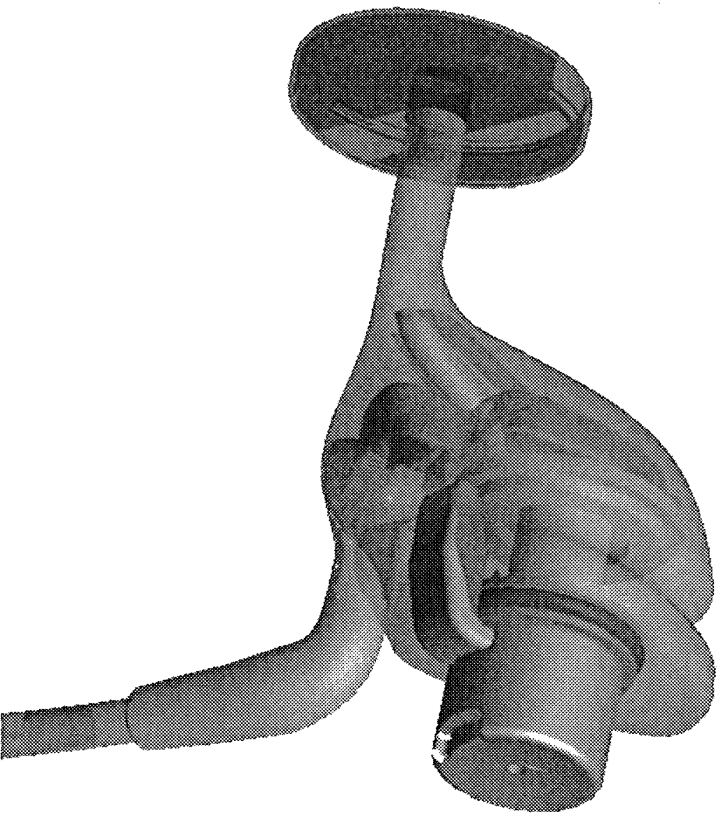
TYPED or PRINTED NAME Deborah M. Grove

REGISTRATION NO. 61091
(if appropriate)

TELEPHONE 610-407-0700

Docket Number: PRS-186USP

SmartBuds Inflation Mechanism

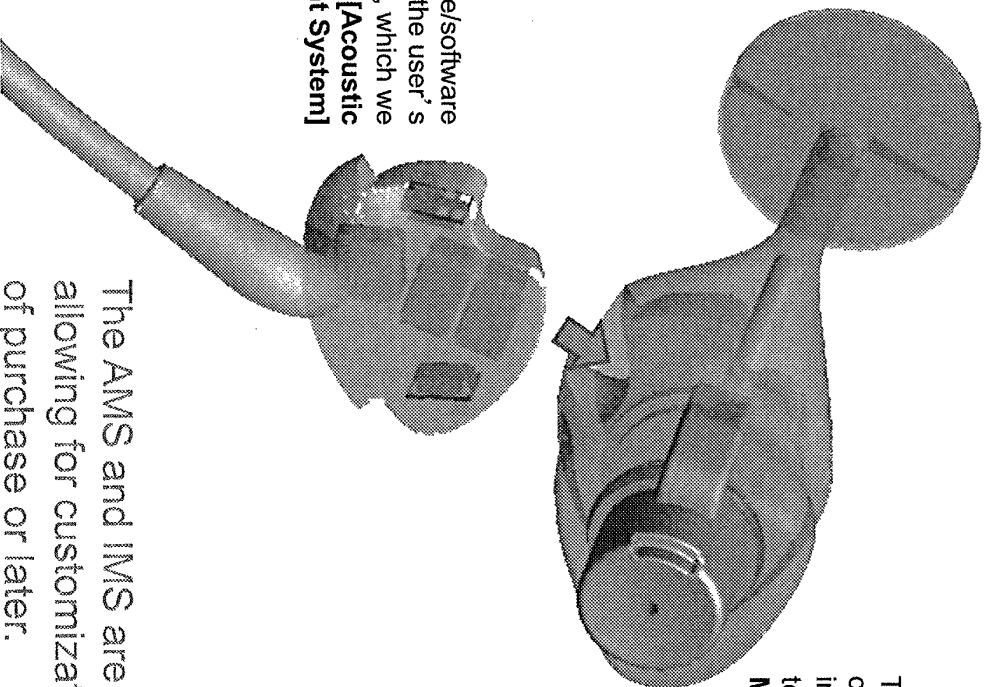


personics
Hear differently.®

SmartBuds Platform Definition

Our platform
is comprised
of 2 modules:

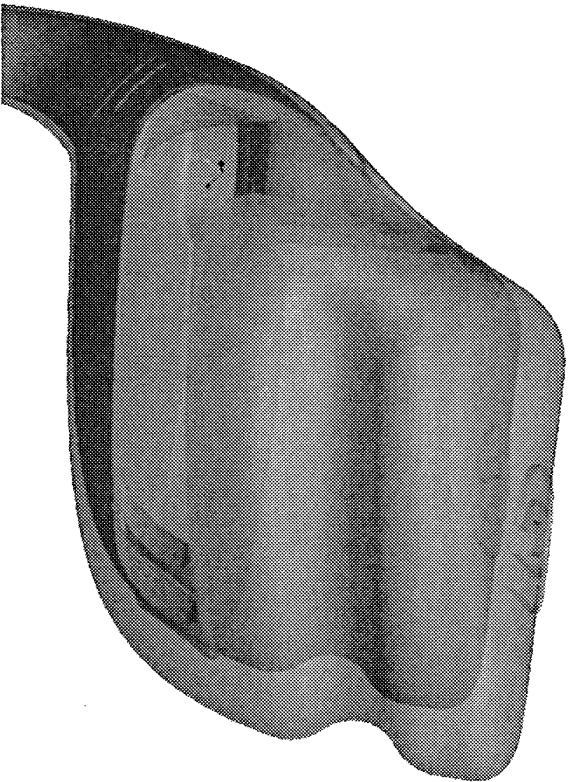
And the hardware/software
engine that controls the user's
acoustic experience, which we
term the **AMS [Acoustic
Management System]**



The physical interface, which is
comprised of a involuted balloon/
integrated reservoir, which we've
termed the **IMS [Inflation
Management System]**.

The AMS and IMS are field replaceable
allowing for customization or service, at time
of purchase or later.

Sleeve Liner

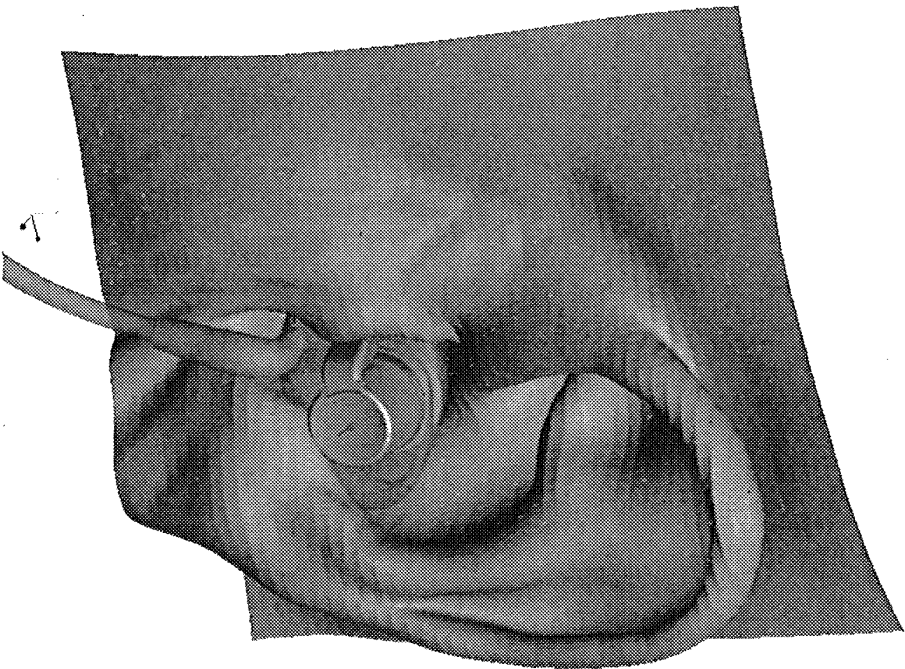


- High barrier sleeve liner provides fluid permeability protection within the entire body for active device. The material encloses and surrounds all pump and involuted balloon components.
- Two shot or over mold process during production.
- Liner thickness of 0.3mil or less

Engineering Direction & Goals

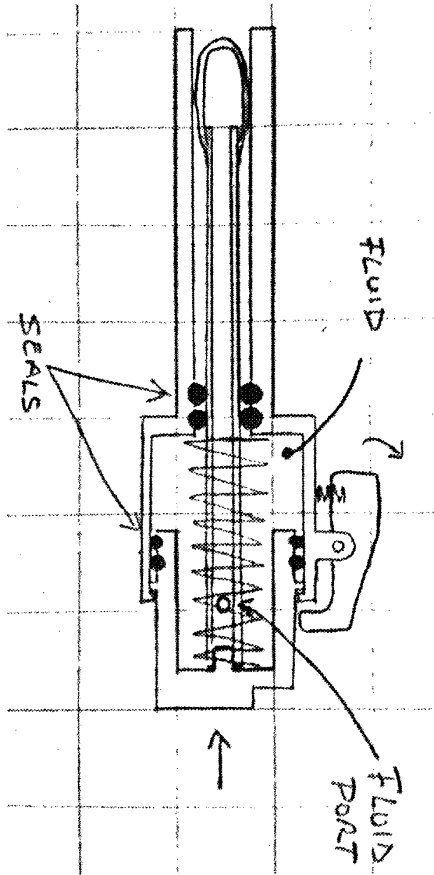
Goals:

- Validate through the use of a simplified pump mechanism the ability to mount and dismount an internally stored involuted balloon deployment mechanism.
- Validate the scale and volume metrics necessary for the success of item 1 and provide packaging considerations and suggestions for the production SmartBud.

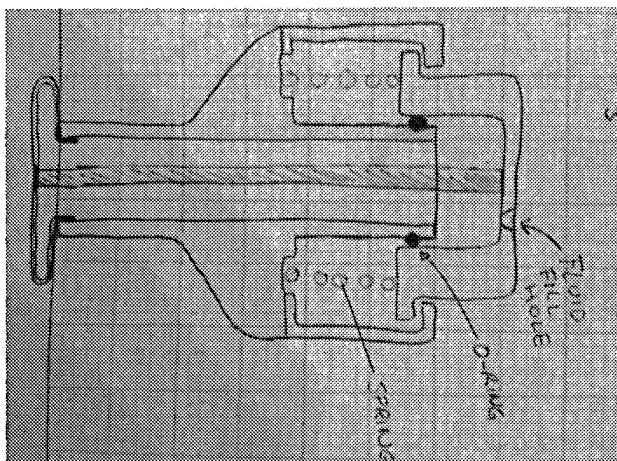


Initial Sketches

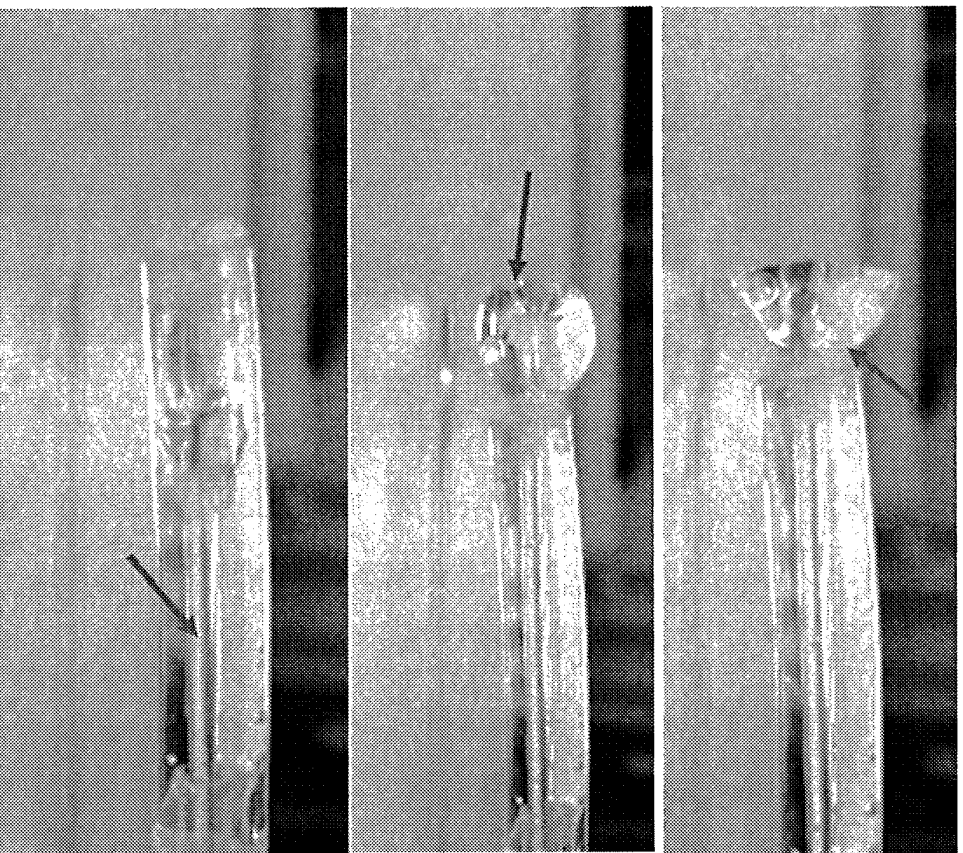
Concept 1



Concept 2



Involuted Balloon design operated by syringe



1. The balloon is permanently attached to the outside tube. This allows for involution during withdrawal and is expected to function in the control (mitigation) of Cerumen in to the transducer package.

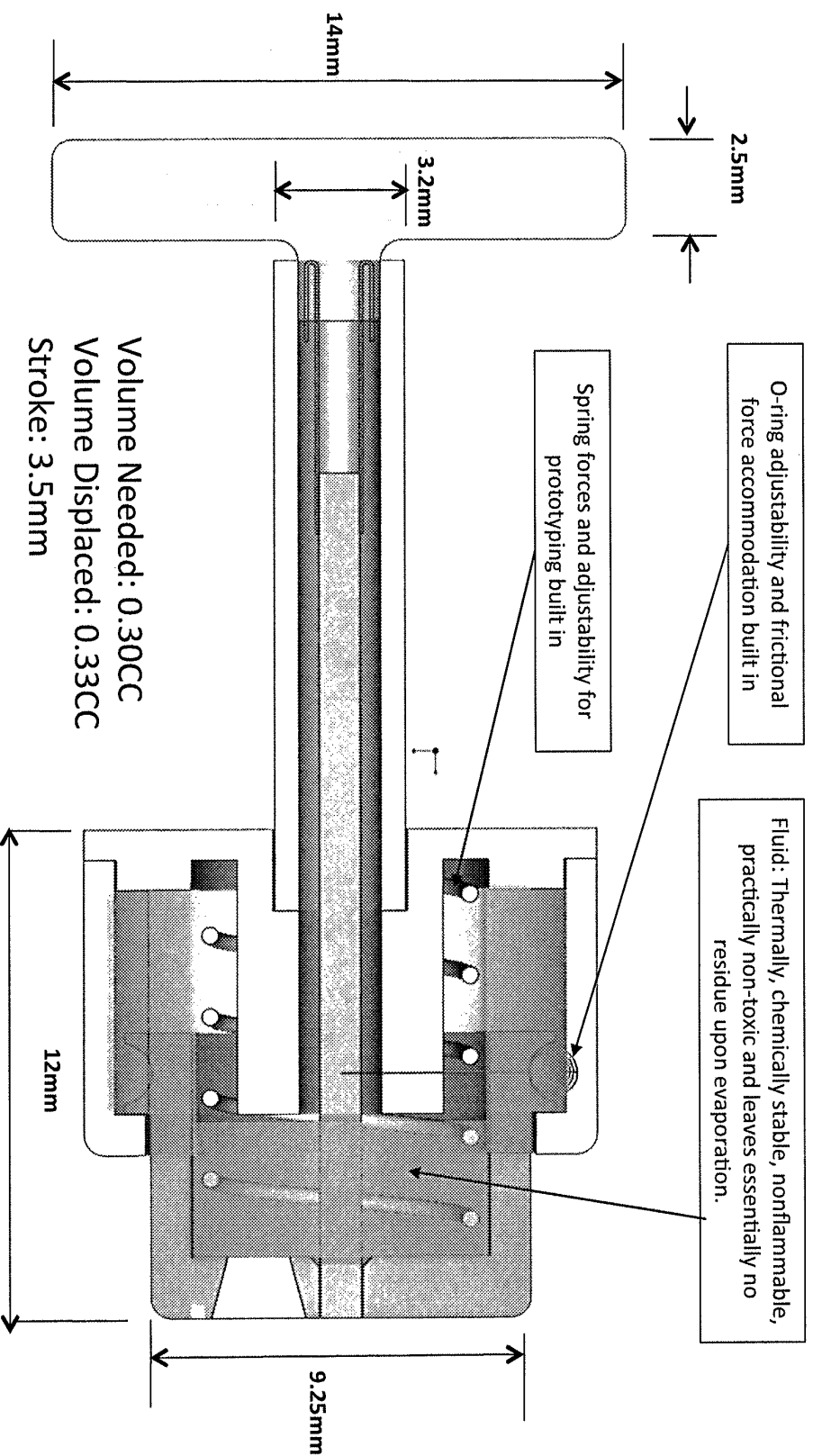
2. The "guide tube" is physically attached to the end of the balloon

3. The balloon's "guide line" is also independent from the outside tube Which could be responsible for filling if chosen

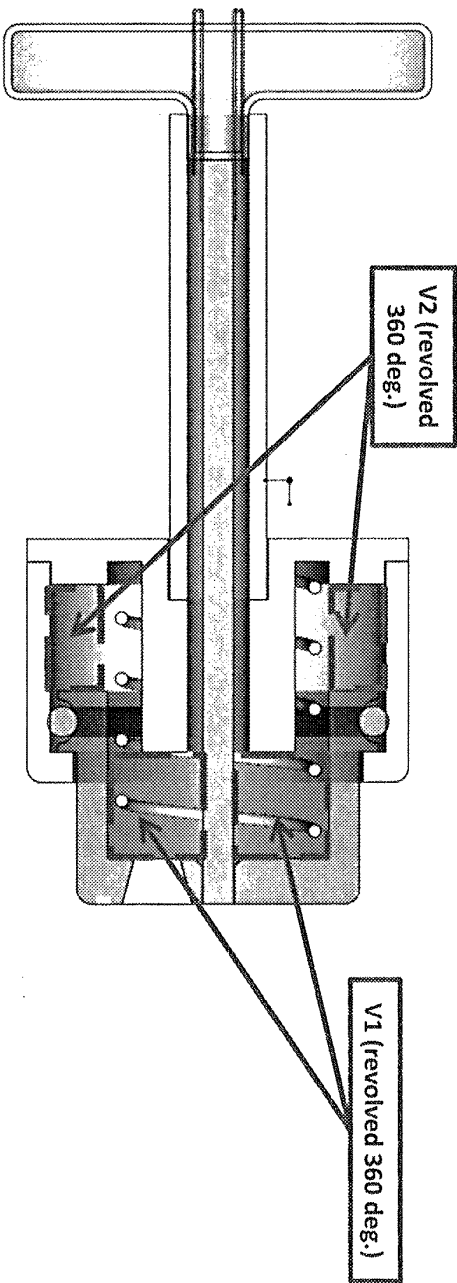
DESIGN VALIDATION PROTOTYPE

Mechanism Design

All Parts Fabricated at Micro-Machine Shop for Pump Validation



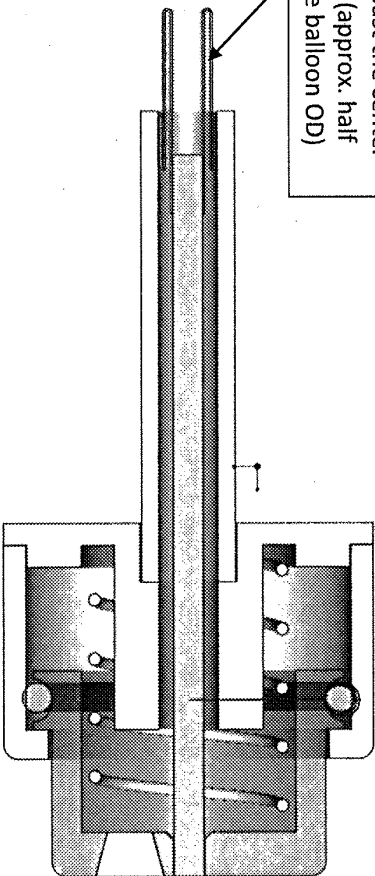
Mechanism Volume Refinement



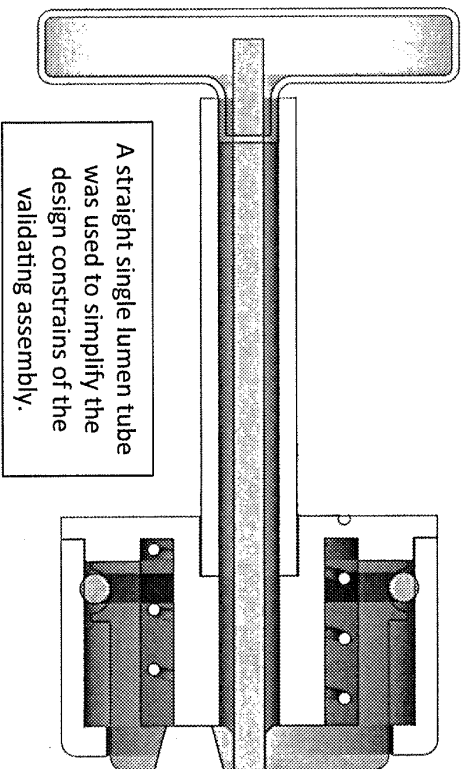
Component	Volume (cc)	Volume (mm ³)
Button Cavity (V1)	0.142	142
Body Cavity (V2)	0.188	188
TOTAL	0.33	330
DISPLACEMENT		

Mechanism Design Refinement

Notice that the stroke (3.5mm) means that the stowed balloon is projected to stick past the center lumen by 3.5mm (approx. half stowed due to the balloon OD)



Dismounted

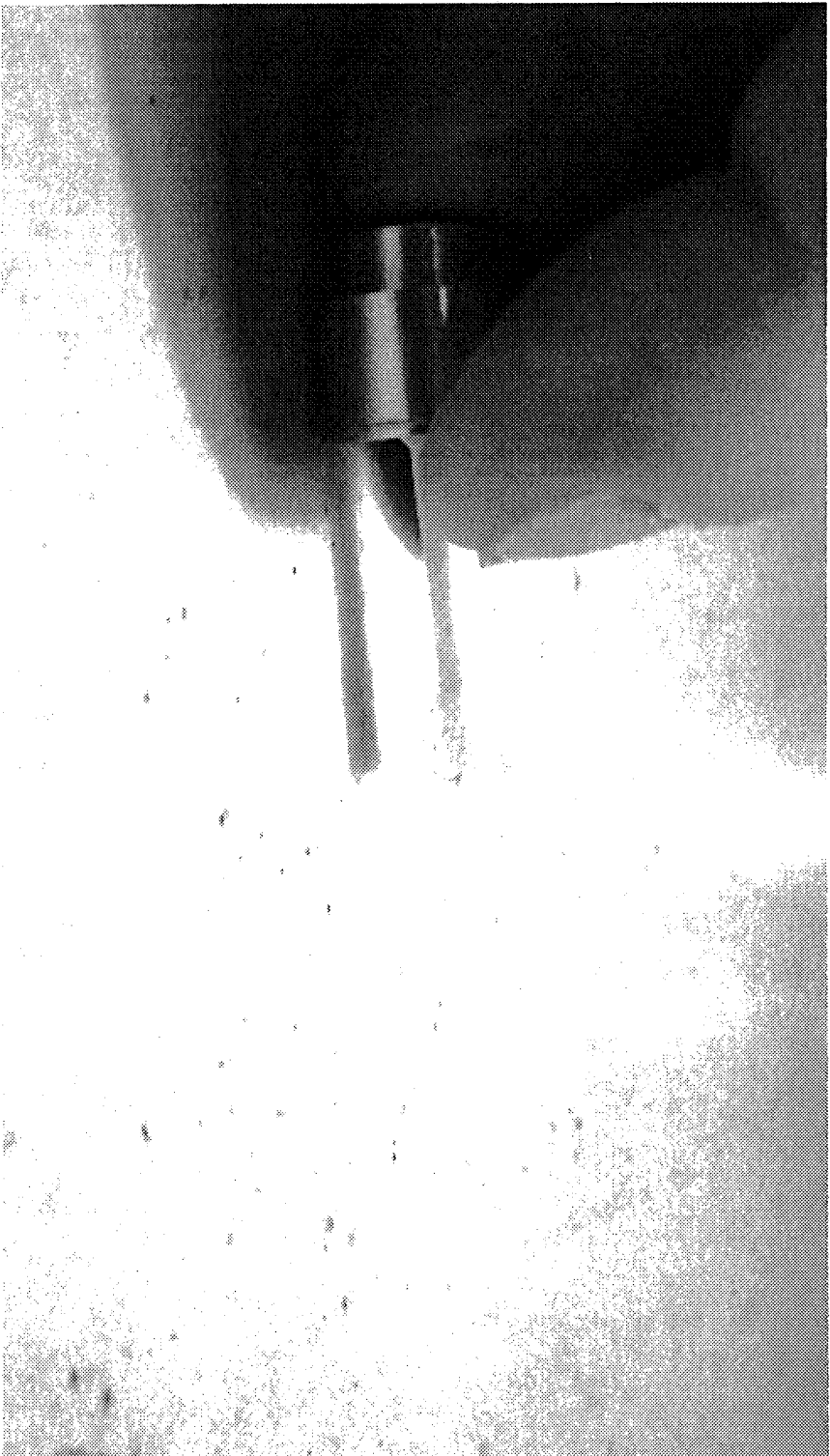


Mounted

A straight single lumen tube was used to simplify the design constraints of the validating assembly.

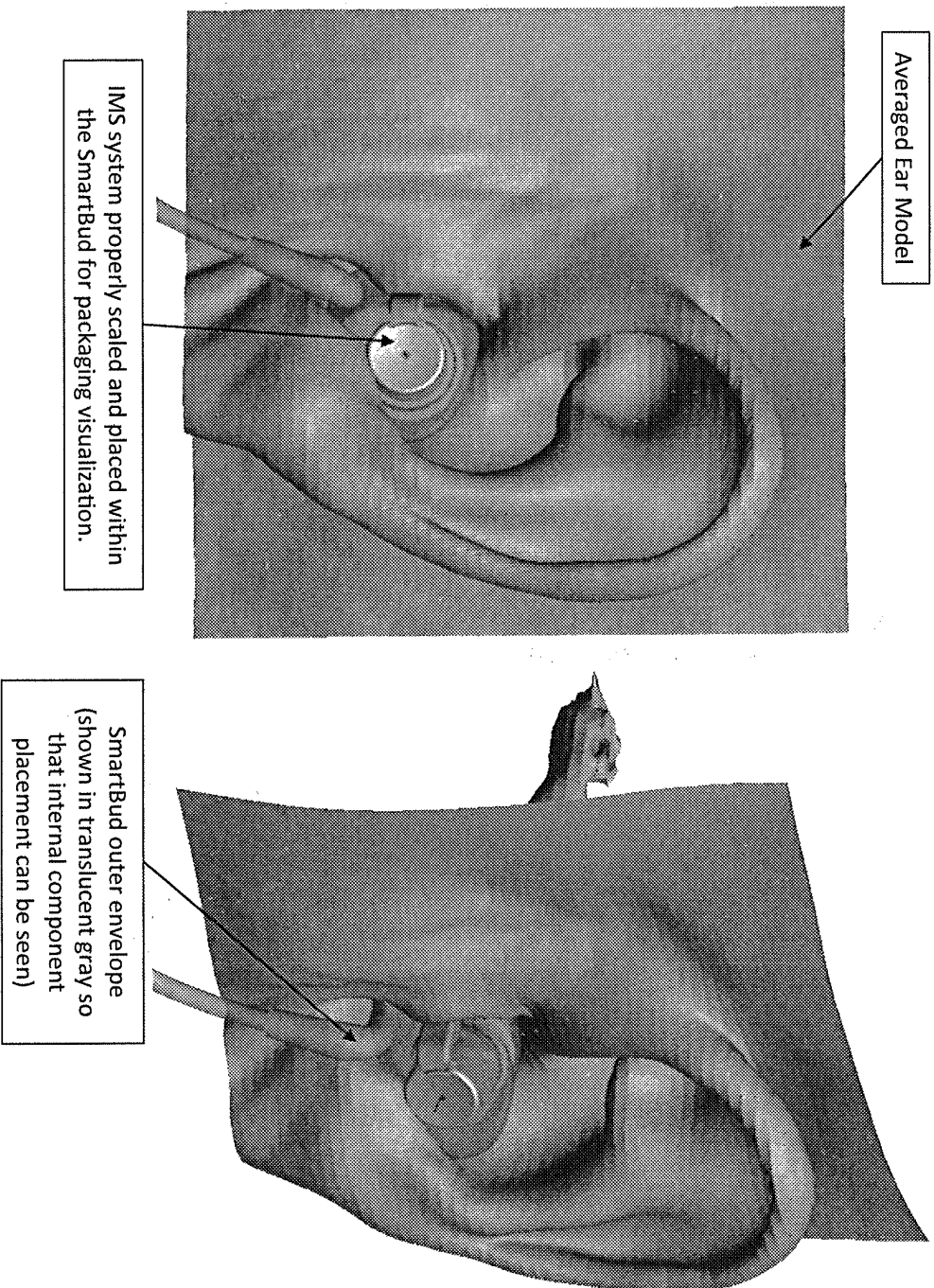
Personics

PROOF OF DESIGN VALIDATION

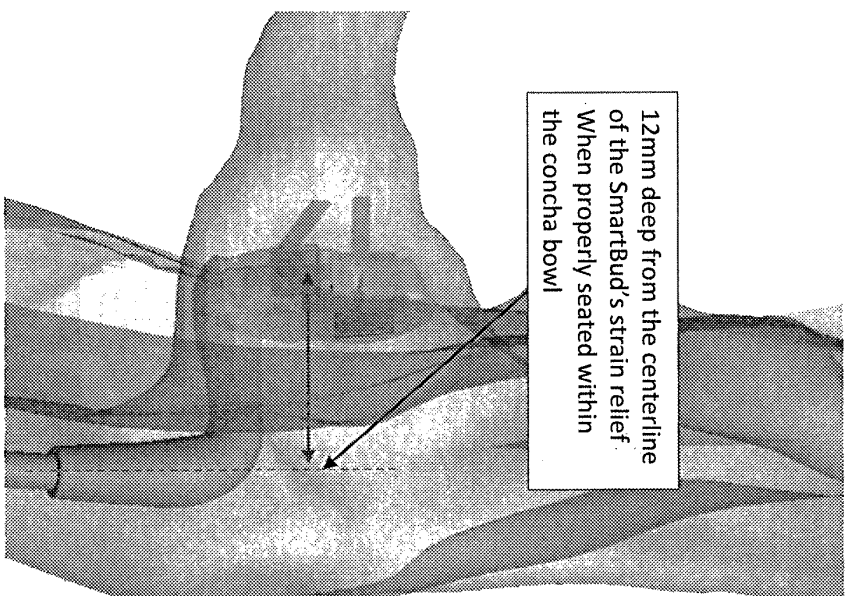
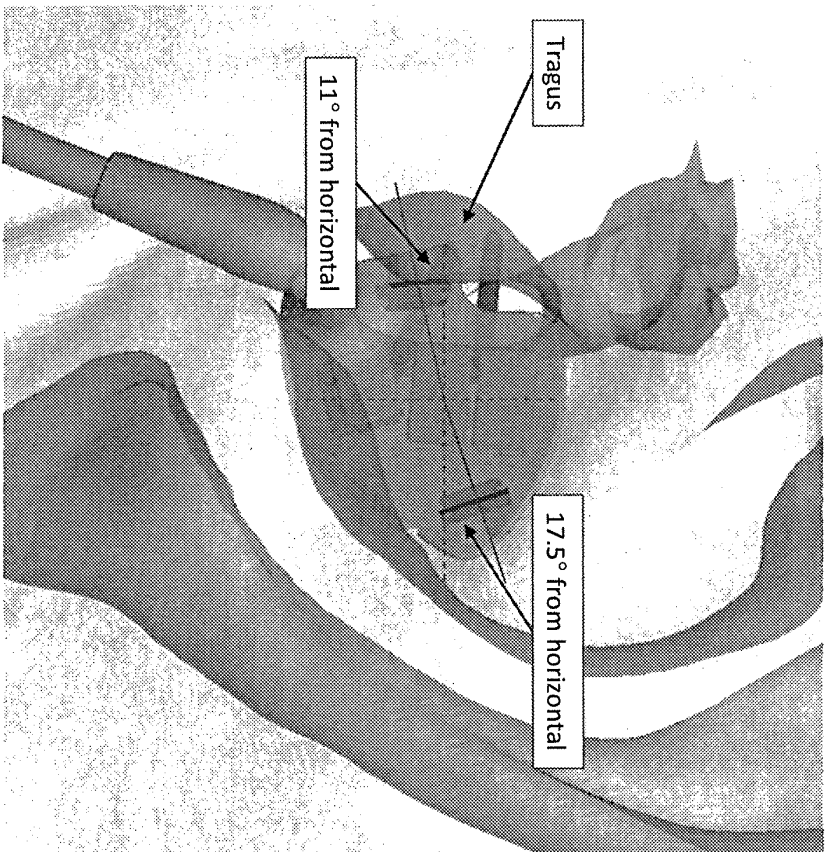


SMARTBUD PACKAGING

SmartBud Packaging of IMS

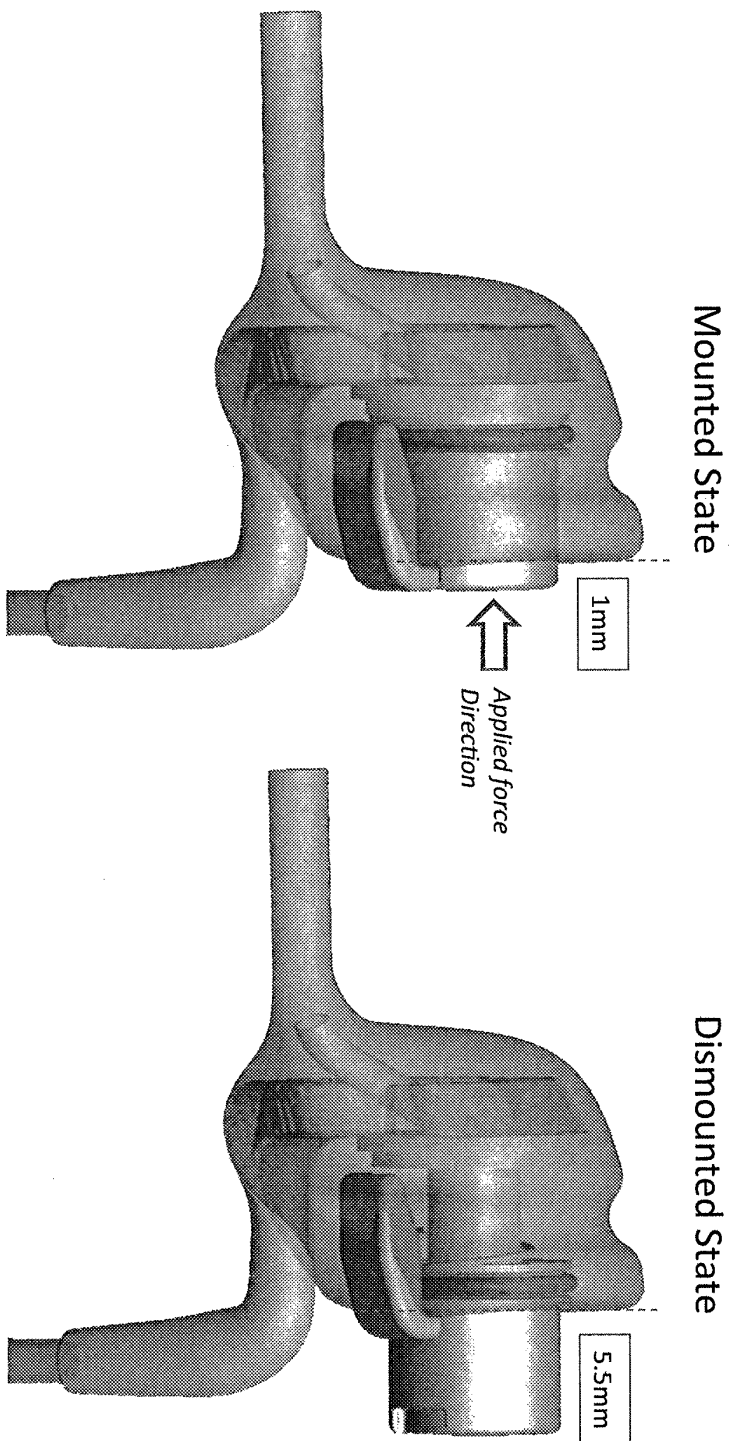


Ambient MIC Locations



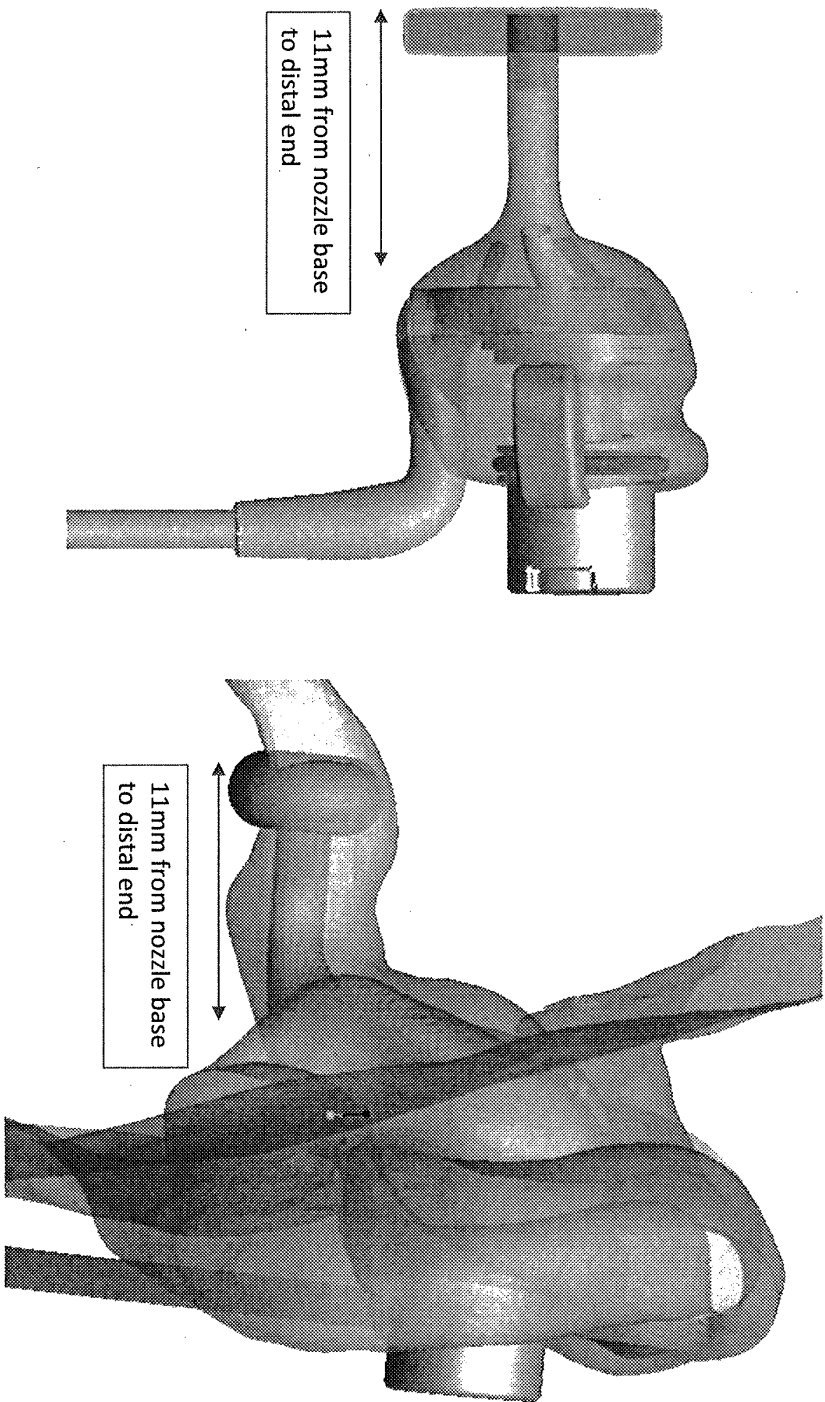
NOTE: Ambient microphones to be placed at least 10 mm apart from each other

IMS System for SmartBud Packaging

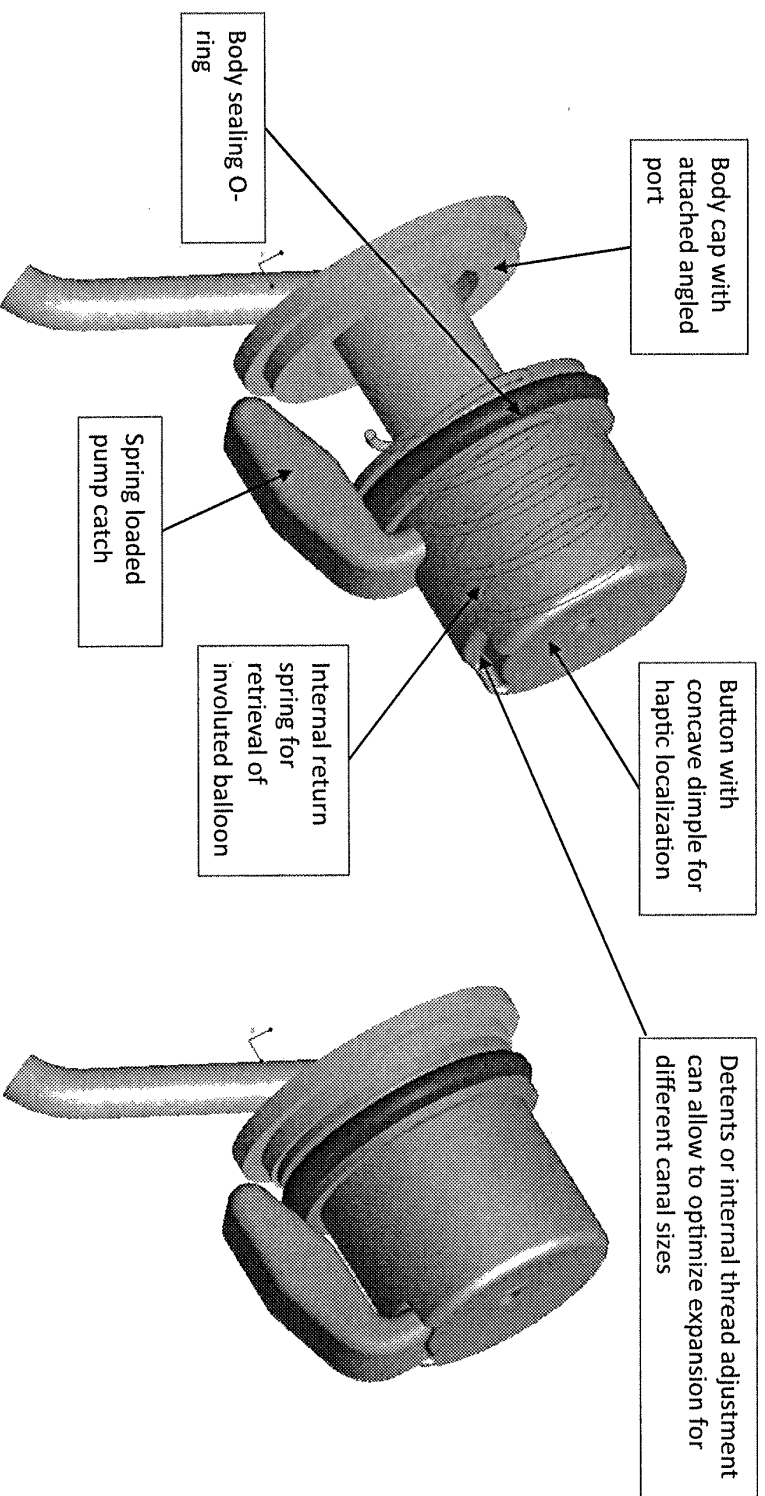


Note: Dimensions provided refer to the profile height of the button in both states referenced from the top of the body

IMS System for SmartBud Packaging



IMS System for SmartBud Packaging

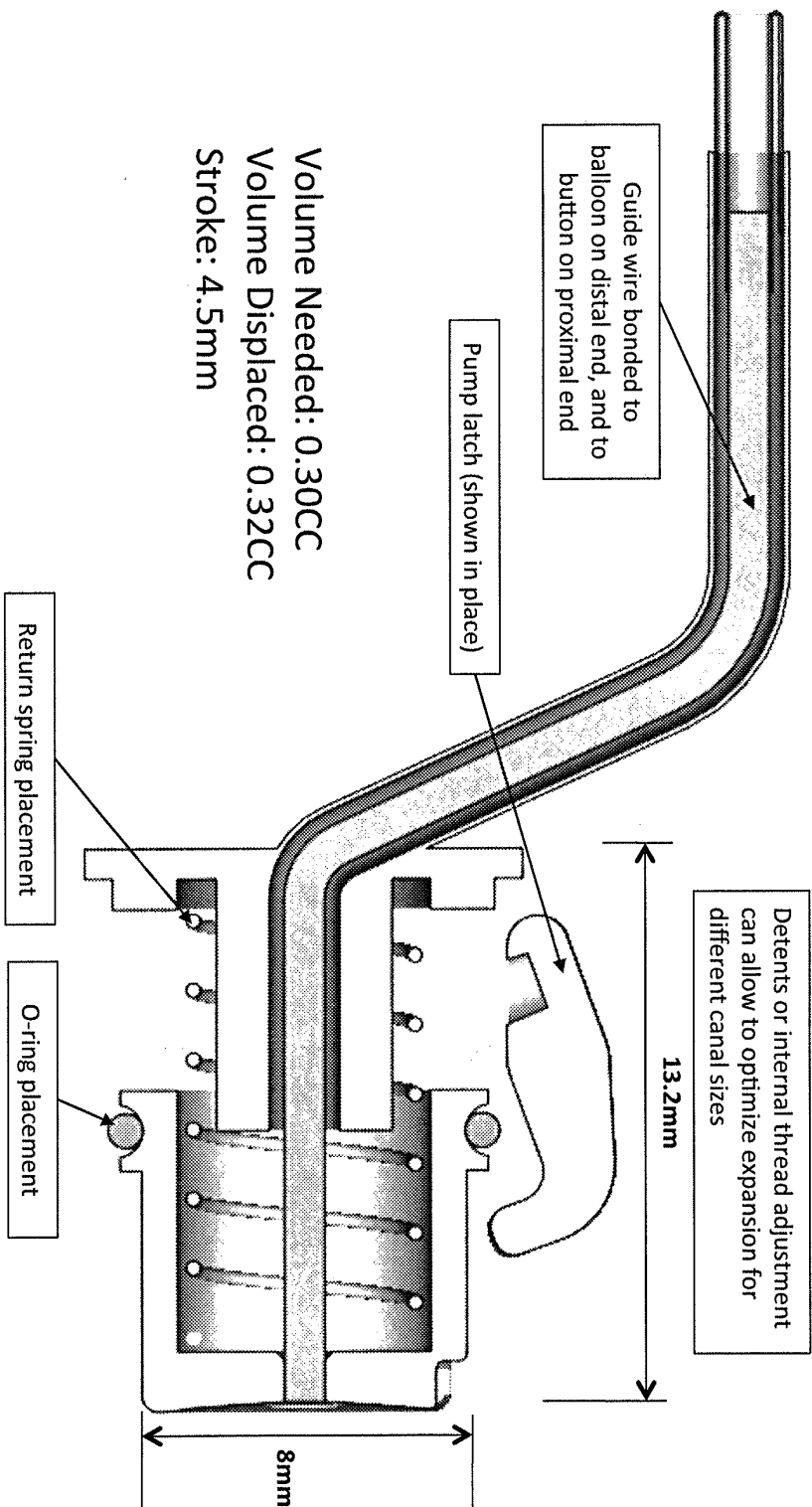


Mounted State

Dismounted State

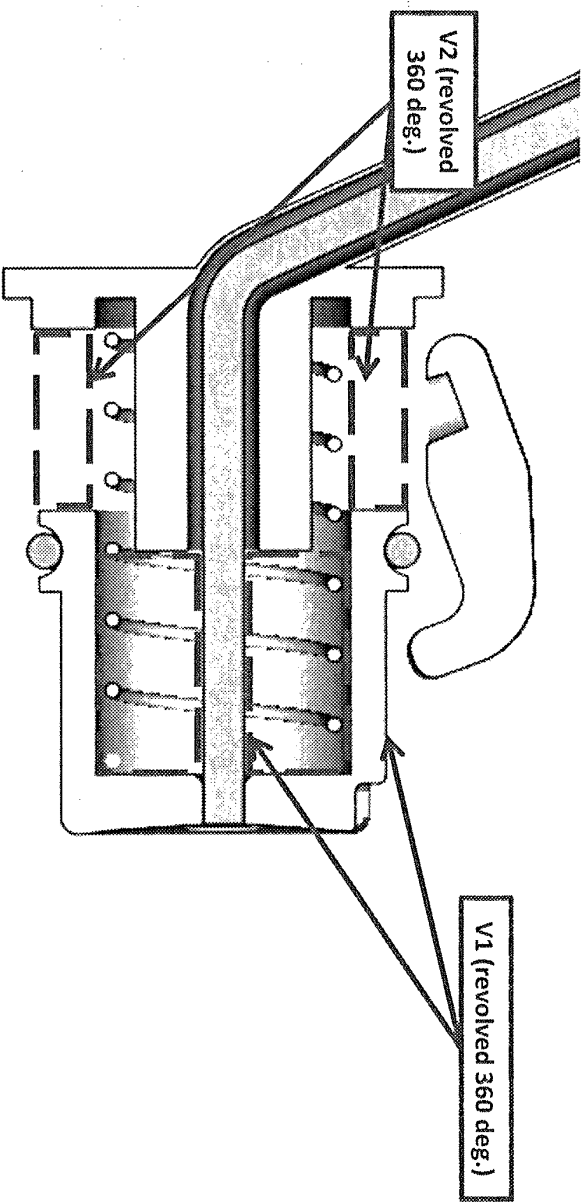
Note: The body of the SmartBud will complete the pump mechanism allowing for fluid storage between itself and the button

IMS Packaging Dimensions



Note: Previously critical dimensions regarding involuted balloon deployment have not changed. Sole changes were made to stroke & the outer diameter of the actuating button.

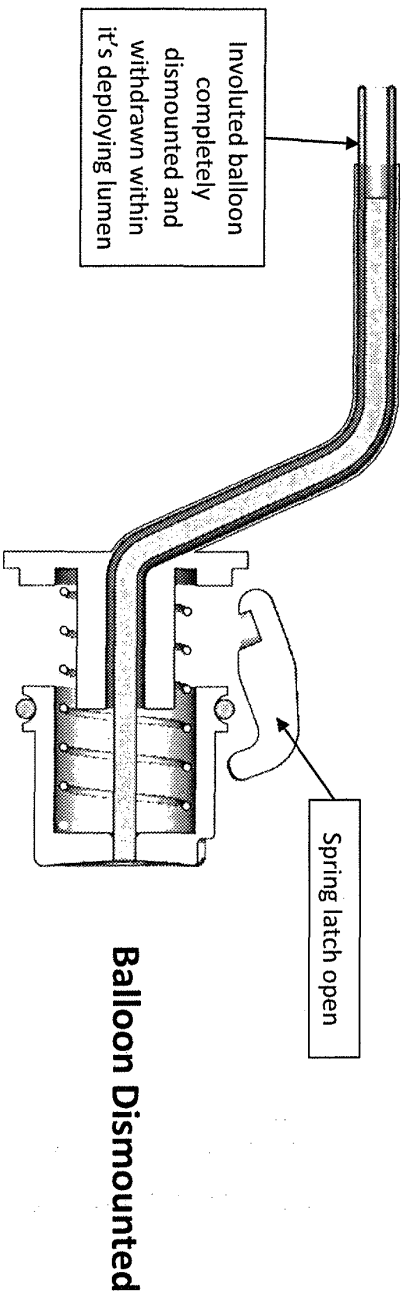
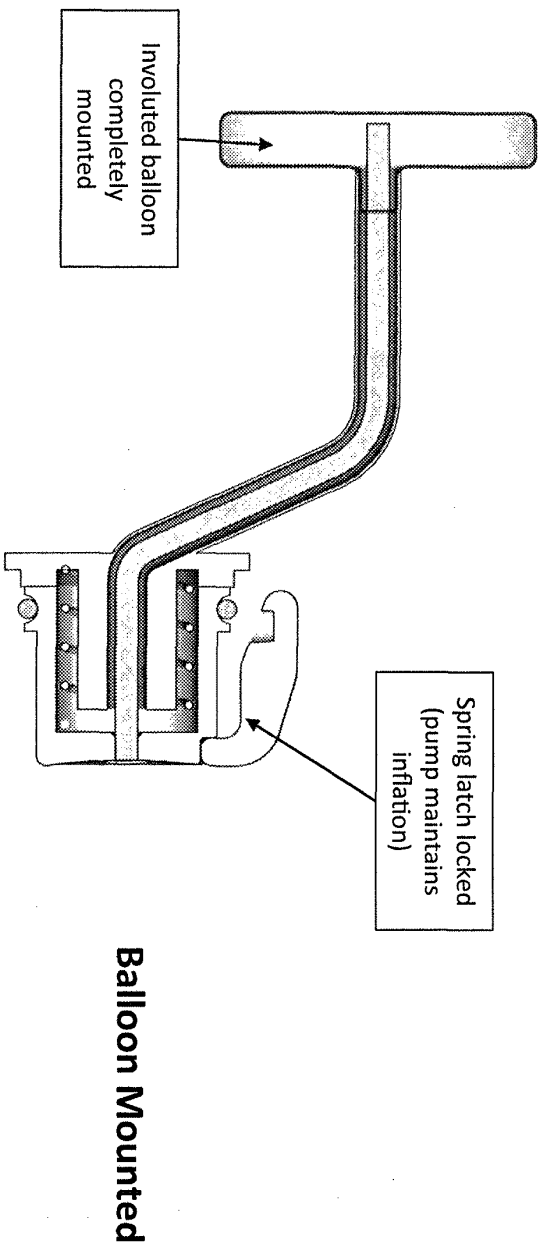
IMS Volume Displacement



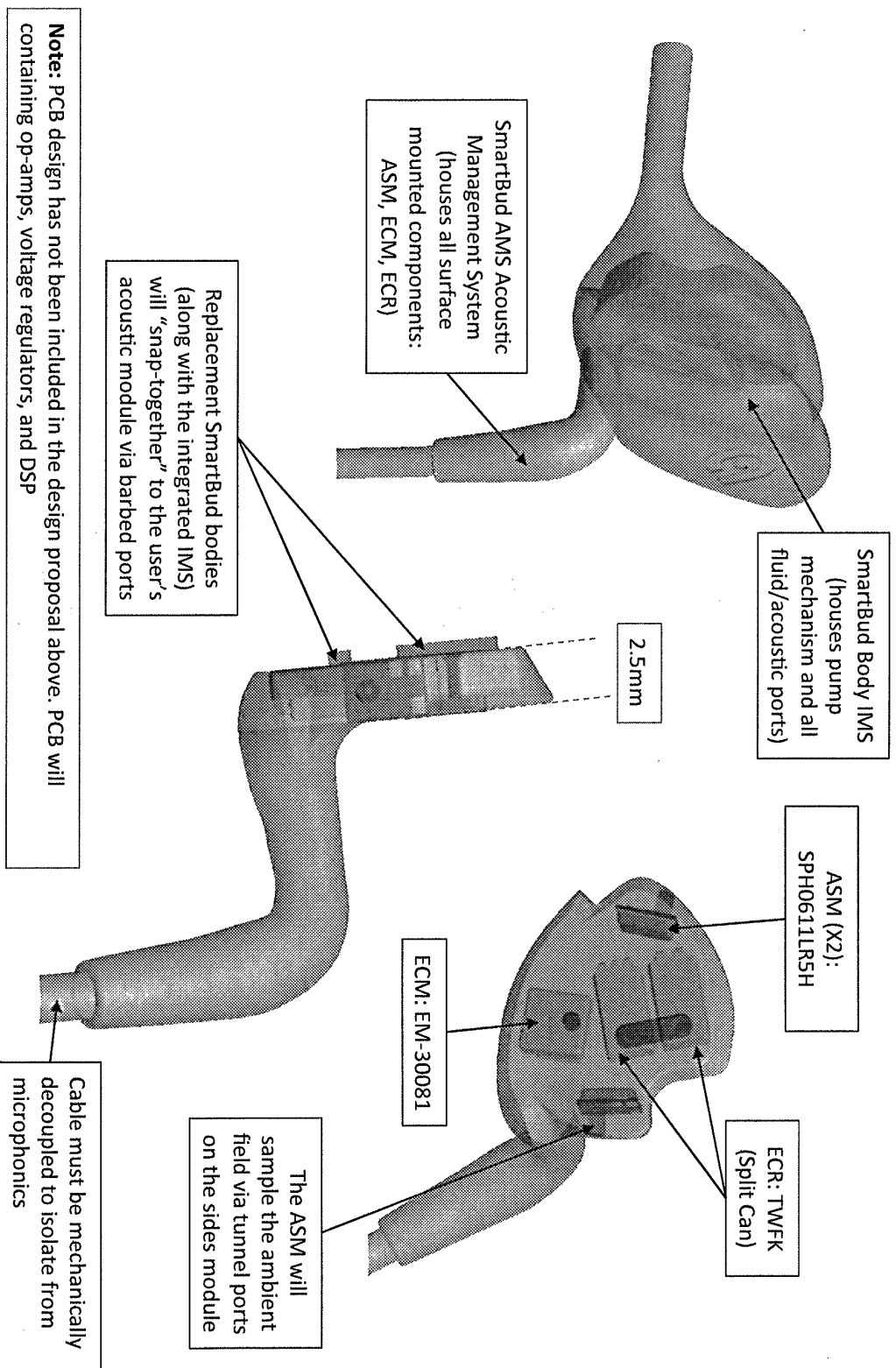
Component	Volume (cc)	Volume (mm³)
Button Cavity (V1)	.152	152
Body Cavity (V2)	.165	165
TOTAL DISPLACEMENT	0.317	317

Note: IMS volume displacement is sufficiently large enough to deploy and mount the involuted balloon

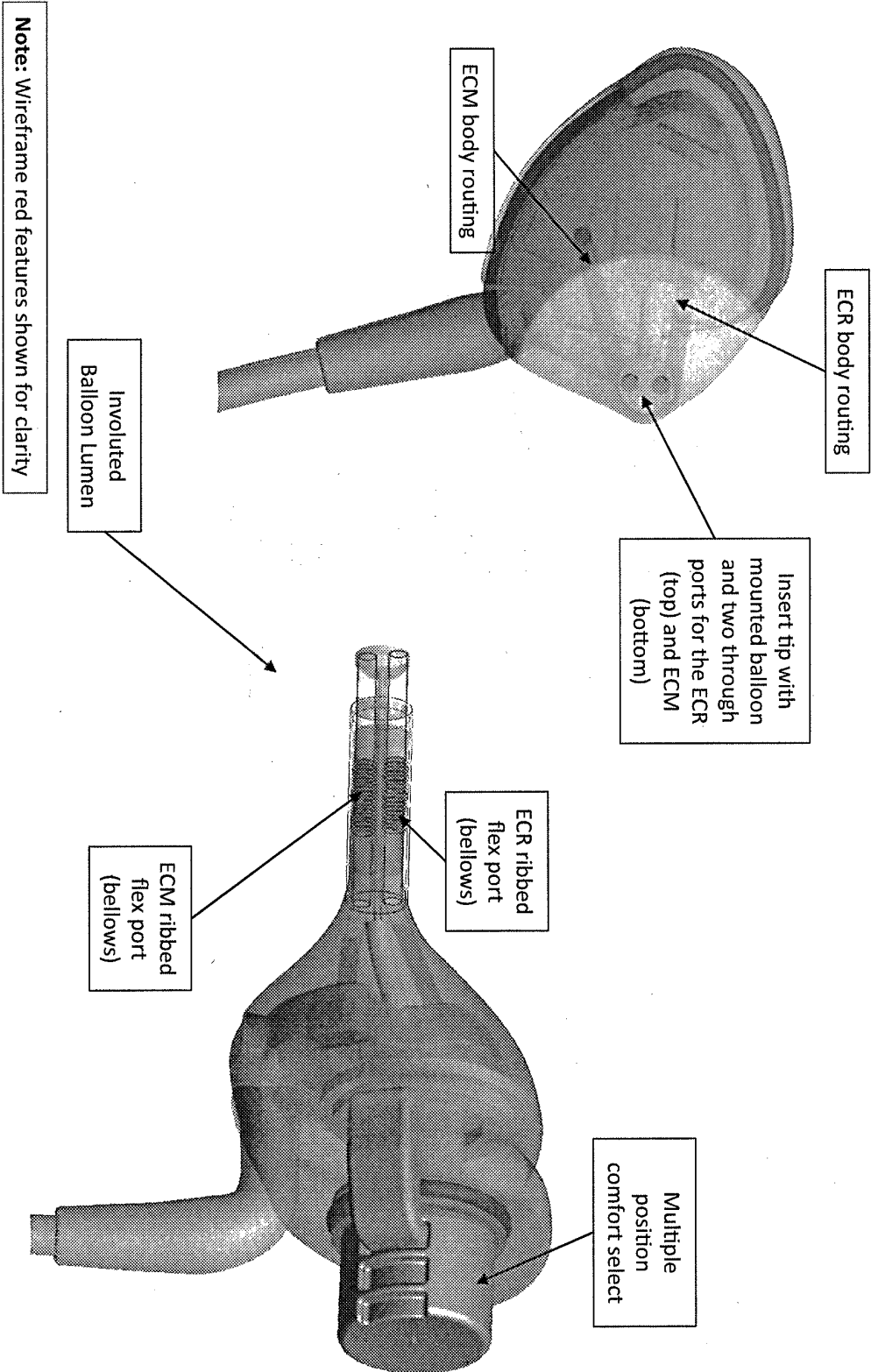
IMS System States



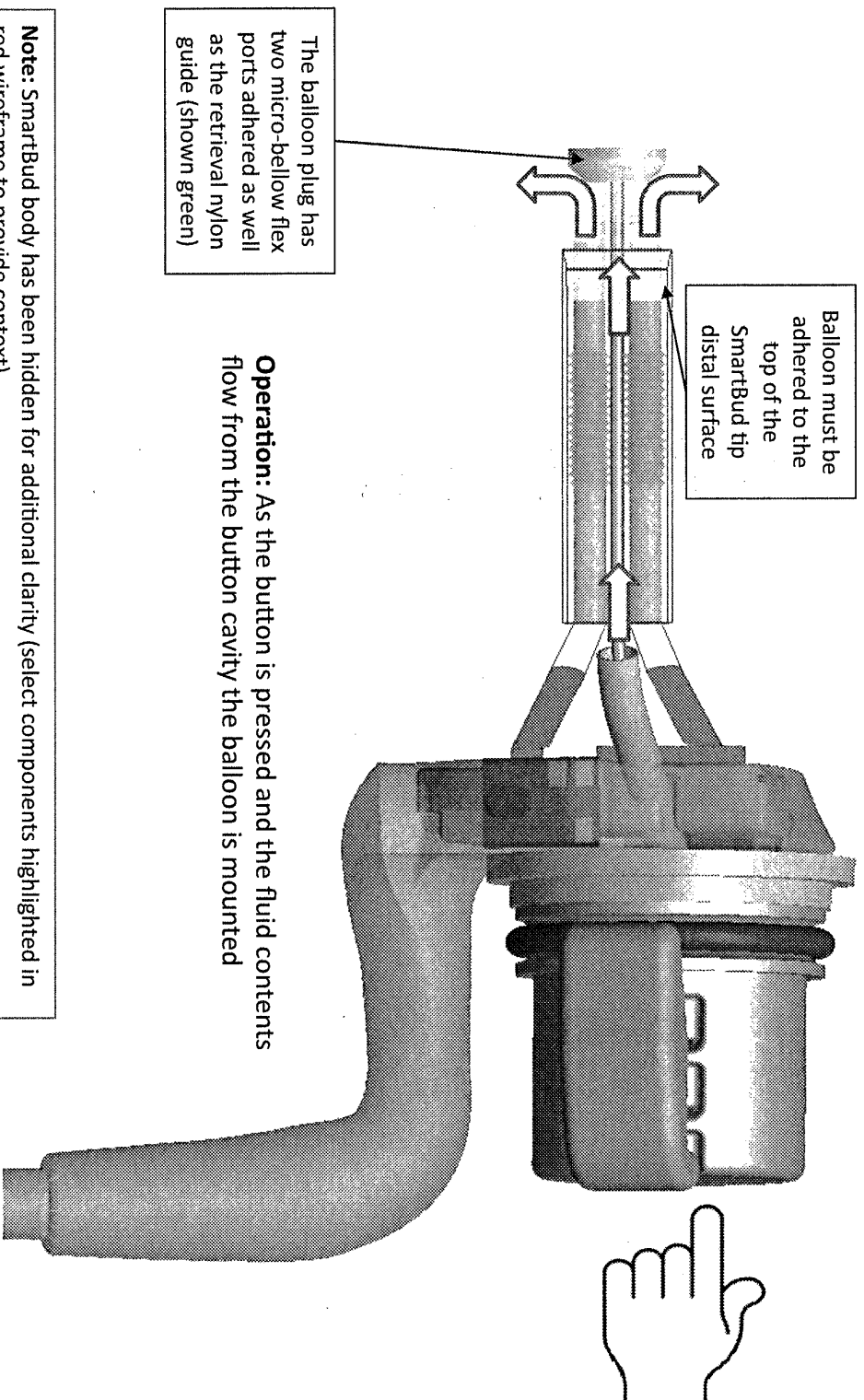
SmartBud Packaging Constrains



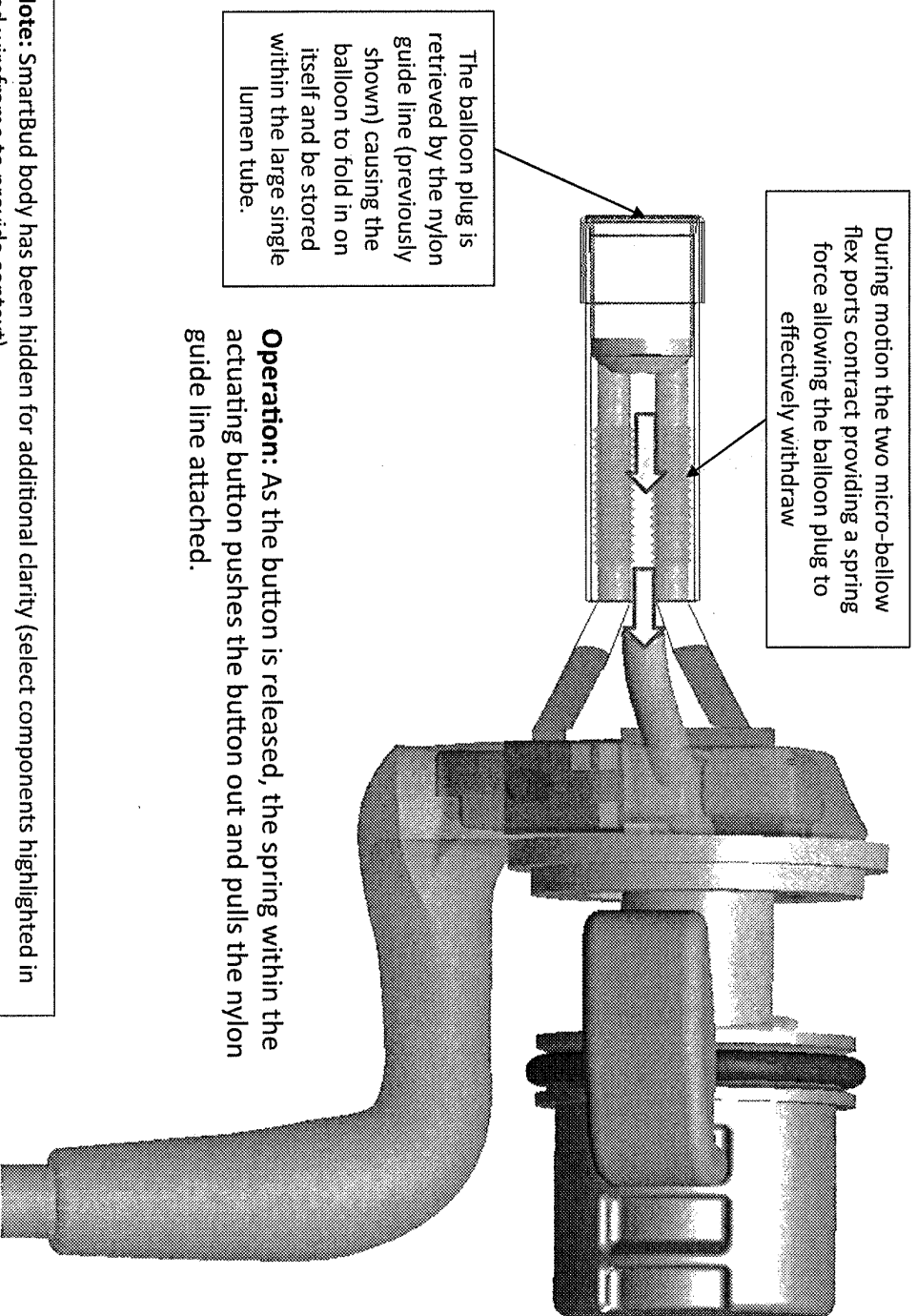
Multi-Lumen Tube Routing Provisions



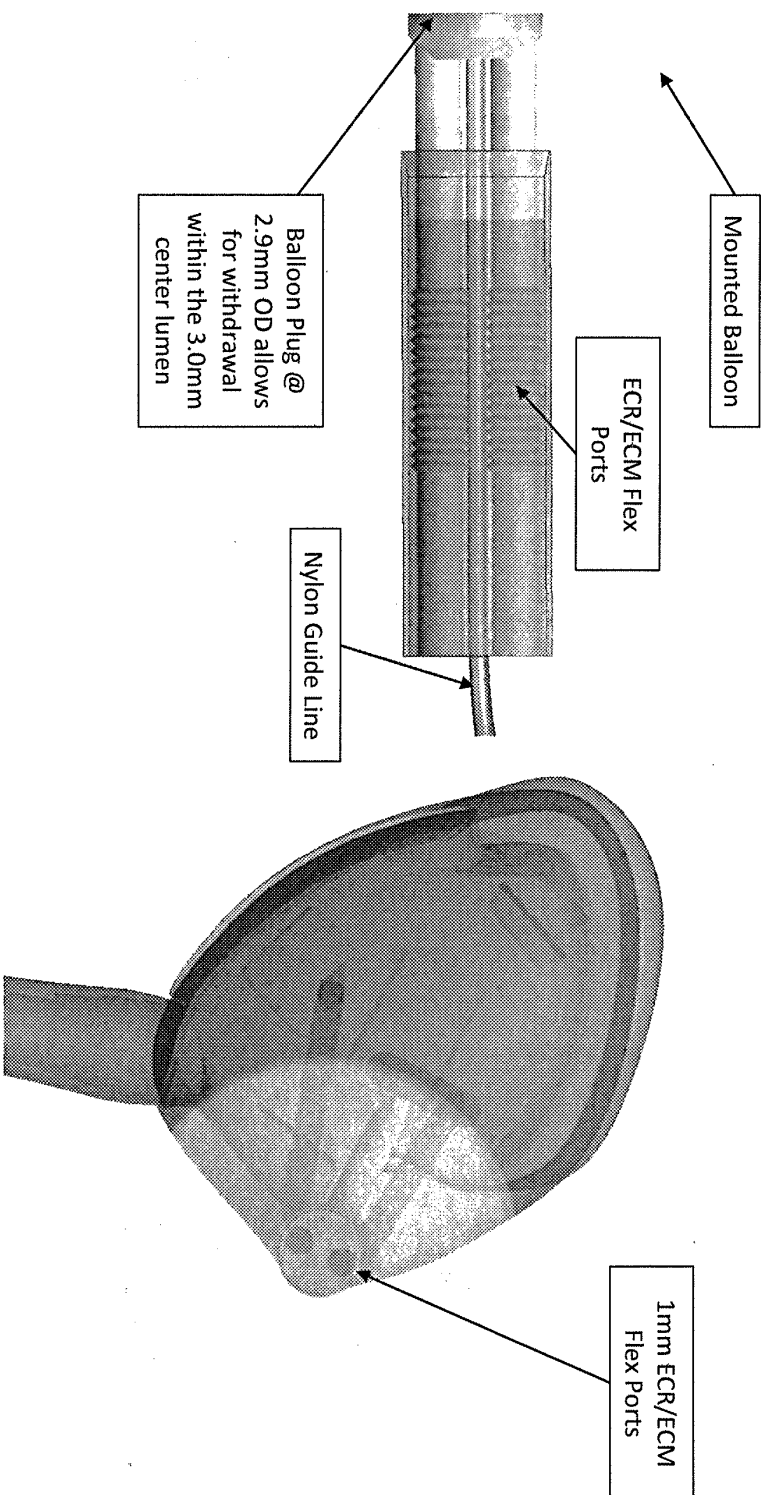
Detail of Balloon to SmartBud Tip Interface



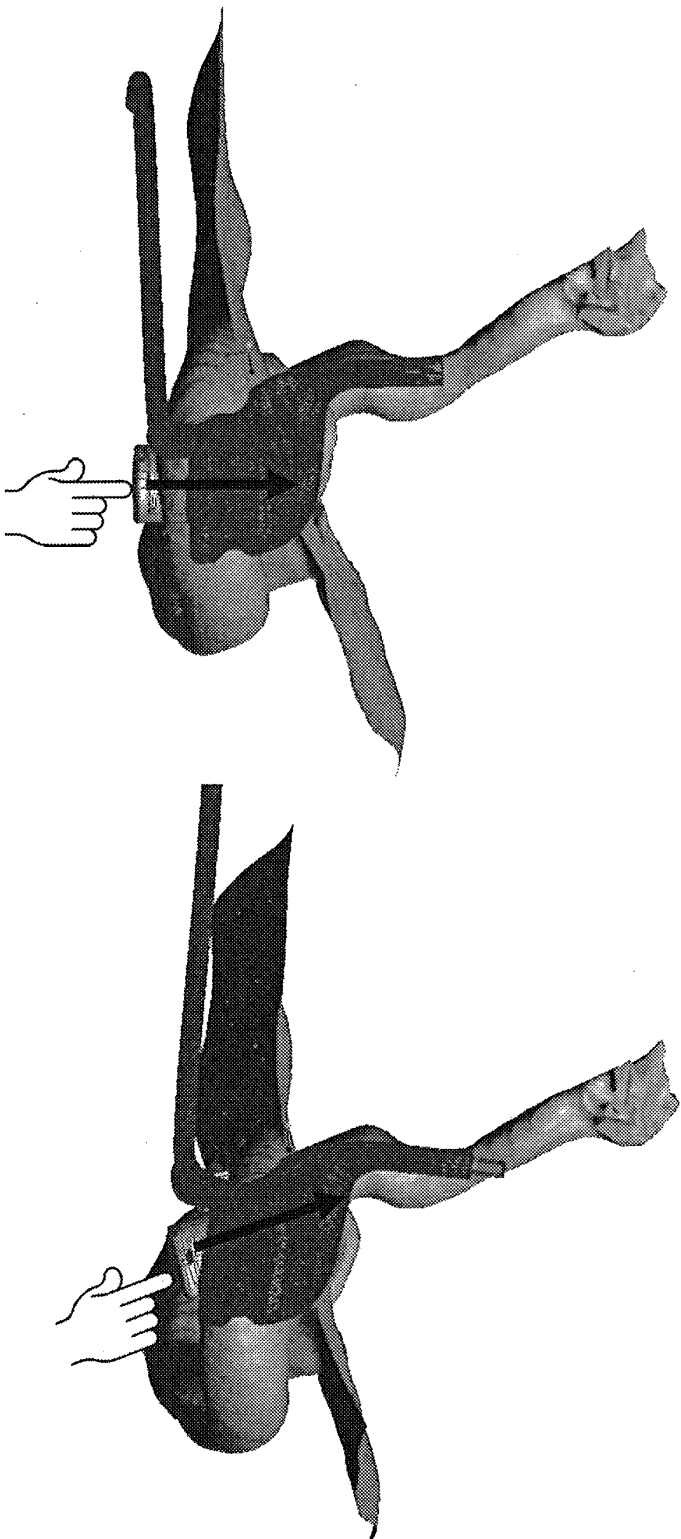
Detail of Balloon to SmartBud Tip Interface



Detail of Balloon to SmartBud Tip Interface

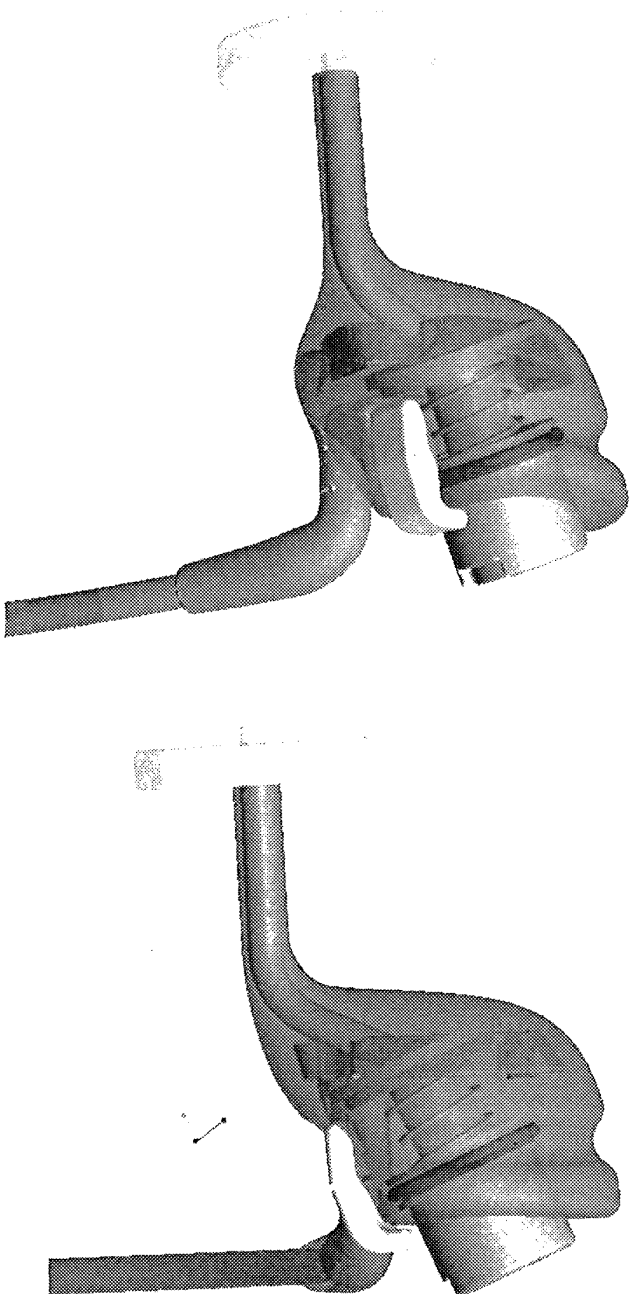


Alternative IMS Packaging Consideration



Note: IMS angled packaging would reduce the off-axis push force and thus minimize movement or rotation of the SmartBud product within the ear canal.

Alternative IMS Packaging Consideration



Note: IMS angled packaging would reduce the off-axis push force and thus minimize movement or rotation of the SmartBud product within the ear canal.

Abstract

Methods and mechanisms for inflating an earpiece are provided. A self-contained fluid filled involuted balloon earpiece system is provided. The system can be used without an ambient sound microphone (ASM) as a passive hearing protection system. The involuted system can be integrated into a hearing aid.

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		METHODS AND MECHANISMS FOR INFLATING AN EARPIECE		
First Named Inventor/Applicant Name:		Steven W. Goldstein		
Filer:		Deborah M. Grove/Edna Phelan		
Attorney Docket Number:		PRS-186USP		
Filed as Small Entity				
Provisional Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Provisional Application filing fee	2005	1	125	125
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				125

Electronic Acknowledgement Receipt	
EFS ID:	14482942
Application Number:	61737932
International Application Number:	
Confirmation Number:	9333
Title of Invention:	METHODS AND MECHANISMS FOR INFLATING AN EARPIECE
First Named Inventor/Applicant Name:	Steven W. Goldstein
Customer Number:	71158
Filer:	Deborah M. Grove/Edna Phelan
Filer Authorized By:	Deborah M. Grove
Attorney Docket Number:	PRS-186USP
Receipt Date:	17-DEC-2012
Filing Date:	
Time Stamp:	12:10:51
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$125
RAM confirmation Number	11509
Deposit Account	180350
Authorized User	GROVE, DEBORAH
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Provisional Cover Sheet (SB16)	provisionalcoversheet.pdf	123852	no	2
			f1bd60b69b5d919c42f5290618bd1345c22d4879		
Warnings:					
This is not a USPTO supplied Provisional Cover Sheet SB16 form.					
Information:					
2	Specification	specificaton.pdf	3578970	no	28
			90871a7ee06c1217b8c4c7e1754fa8376bd4a9a		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	29665	no	2
			c23d7346cd752197aacc771a3456d319f08a98f4		
Warnings:					
Information:					
Total Files Size (in bytes):			3732487		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					