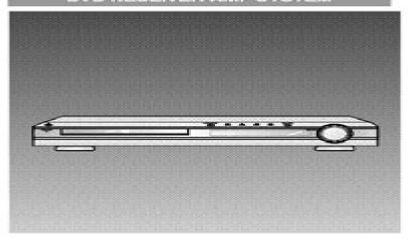


DVD RECEIVER AM P HT-DB120

SERVICE Manual

DVD RECEIVER AMP SYSTEM



CONTENTS

- 1. Alignment and Adjustments
- 2. Exploded Views and Parts List
- 3. Electrical Parts List
- 4. Block Diagrams
- 5. PCB Diagrams
- 6. Wiring Diagram
- 7. Schematic Diagrams
- 8. IC block Diagrams
- 9. Troubleshooting

Confidential -

Ht 1service Manual

Clifford Lane

Ht 1service Manual:

Ignite the flame of optimism with Crafted by is motivational masterpiece, Fuel Your Spirit with **Ht 1service Manual** . In a downloadable PDF format (*), this ebook is a beacon of encouragement. Download now and let the words propel you towards a brighter, more motivated tomorrow.

https://staging.conocer.cide.edu/files/browse/Download PDFS/how high can you bounce audiobook.pdf

Table of Contents Ht 1service Manual

- 1. Understanding the eBook Ht 1service Manual
 - The Rise of Digital Reading Ht 1service Manual
 - Advantages of eBooks Over Traditional Books
- 2. Identifying Ht 1service Manual
 - Exploring Different Genres
 - o Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
- 3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Ht 1service Manual
 - User-Friendly Interface
- 4. Exploring eBook Recommendations from Ht 1service Manual
 - Personalized Recommendations
 - Ht 1service Manual User Reviews and Ratings
 - Ht 1service Manual and Bestseller Lists
- 5. Accessing Ht 1service Manual Free and Paid eBooks
 - Ht 1service Manual Public Domain eBooks
 - Ht 1service Manual eBook Subscription Services
 - Ht 1service Manual Budget-Friendly Options
- 6. Navigating Ht 1service Manual eBook Formats

- o ePub, PDF, MOBI, and More
- Ht 1service Manual Compatibility with Devices
- Ht 1service Manual Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Ht 1service Manual
 - Highlighting and Note-Taking Ht 1service Manual
 - Interactive Elements Ht 1service Manual
- 8. Staying Engaged with Ht 1service Manual
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Ht 1service Manual
- 9. Balancing eBooks and Physical Books Ht 1service Manual
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Ht 1service Manual
- 10. Overcoming Reading Challenges
 - o Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Ht 1service Manual
 - Setting Reading Goals Ht 1service Manual
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Ht 1service Manual
 - Fact-Checking eBook Content of Ht 1service Manual
 - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
- 14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

Ht 1service Manual Introduction

Free PDF Books and Manuals for Download: Unlocking Knowledge at Your Fingertips In todays fast-paced digital age, obtaining valuable knowledge has become easier than ever. Thanks to the internet, a vast array of books and manuals are now available for free download in PDF format. Whether you are a student, professional, or simply an avid reader, this treasure trove of downloadable resources offers a wealth of information, conveniently accessible anytime, anywhere. The advent of online libraries and platforms dedicated to sharing knowledge has revolutionized the way we consume information. No longer confined to physical libraries or bookstores, readers can now access an extensive collection of digital books and manuals with just a few clicks. These resources, available in PDF, Microsoft Word, and PowerPoint formats, cater to a wide range of interests, including literature, technology, science, history, and much more. One notable platform where you can explore and download free Ht 1service Manual PDF books and manuals is the internets largest free library. Hosted online, this catalog compiles a vast assortment of documents, making it a veritable goldmine of knowledge. With its easy-to-use website interface and customizable PDF generator, this platform offers a user-friendly experience, allowing individuals to effortlessly navigate and access the information they seek. The availability of free PDF books and manuals on this platform demonstrates its commitment to democratizing education and empowering individuals with the tools needed to succeed in their chosen fields. It allows anyone, regardless of their background or financial limitations, to expand their horizons and gain insights from experts in various disciplines. One of the most significant advantages of downloading PDF books and manuals lies in their portability. Unlike physical copies, digital books can be stored and carried on a single device, such as a tablet or smartphone, saving valuable space and weight. This convenience makes it possible for readers to have their entire library at their fingertips, whether they are commuting, traveling, or simply enjoying a lazy afternoon at home. Additionally, digital files are easily searchable, enabling readers to locate specific information within seconds. With a few keystrokes, users can search for keywords, topics, or phrases, making research and finding relevant information a breeze. This efficiency saves time and effort, streamlining the learning process and allowing individuals to focus on extracting the information they need. Furthermore, the availability of free PDF books and manuals fosters a culture of continuous learning. By removing financial barriers, more people can access educational resources and pursue lifelong learning, contributing to personal growth and professional development. This democratization of knowledge promotes intellectual curiosity and empowers individuals to become lifelong learners, promoting progress and innovation in various fields. It is worth noting that while accessing free Ht 1service Manual PDF books and manuals is convenient and cost-effective, it is vital to respect copyright laws and intellectual property rights. Platforms offering free downloads often operate within legal boundaries, ensuring that the materials they provide are either in the public domain or authorized for distribution. By adhering to copyright laws, users can enjoy the benefits of free access to knowledge while supporting the authors and publishers who make these resources

available. In conclusion, the availability of Ht 1service Manual free PDF books and manuals for download has revolutionized the way we access and consume knowledge. With just a few clicks, individuals can explore a vast collection of resources across different disciplines, all free of charge. This accessibility empowers individuals to become lifelong learners, contributing to personal growth, professional development, and the advancement of society as a whole. So why not unlock a world of knowledge today? Start exploring the vast sea of free PDF books and manuals waiting to be discovered right at your fingertips.

FAQs About Ht 1service Manual Books

What is a Ht 1service Manual PDF? A PDF (Portable Document Format) is a file format developed by Adobe that preserves the layout and formatting of a document, regardless of the software, hardware, or operating system used to view or print it. **How do I create a Ht 1service Manual PDF?** There are several ways to create a PDF: Use software like Adobe Acrobat, Microsoft Word, or Google Docs, which often have built-in PDF creation tools. Print to PDF: Many applications and operating systems have a "Print to PDF" option that allows you to save a document as a PDF file instead of printing it on paper. Online converters: There are various online tools that can convert different file types to PDF. How do I edit a Ht **1service Manual PDF?** Editing a PDF can be done with software like Adobe Acrobat, which allows direct editing of text, images, and other elements within the PDF. Some free tools, like PDFescape or Smallpdf, also offer basic editing capabilities. How do I convert a Ht 1service Manual PDF to another file format? There are multiple ways to convert a PDF to another format: Use online converters like Smallpdf, Zamzar, or Adobe Acrobats export feature to convert PDFs to formats like Word, Excel, JPEG, etc. Software like Adobe Acrobat, Microsoft Word, or other PDF editors may have options to export or save PDFs in different formats. How do I password-protect a Ht 1service Manual PDF? Most PDF editing software allows you to add password protection. In Adobe Acrobat, for instance, you can go to "File" -> "Properties" -> "Security" to set a password to restrict access or editing capabilities. Are there any free alternatives to Adobe Acrobat for working with PDFs? Yes, there are many free alternatives for working with PDFs, such as: LibreOffice: Offers PDF editing features. PDFsam: Allows splitting, merging, and editing PDFs. Foxit Reader: Provides basic PDF viewing and editing capabilities. How do I compress a PDF file? You can use online tools like Smallpdf, ILovePDF, or desktop software like Adobe Acrobat to compress PDF files without significant quality loss. Compression reduces the file size, making it easier to share and download. Can I fill out forms in a PDF file? Yes, most PDF viewers/editors like Adobe Acrobat, Preview (on Mac), or various online tools allow you to fill out forms in PDF files by selecting text fields and entering information. Are there any restrictions when working with PDFs? Some PDFs might have restrictions set by their creator, such as password protection, editing

restrictions, or print restrictions. Breaking these restrictions might require specific software or tools, which may or may not be legal depending on the circumstances and local laws.

Find Ht 1service Manual:

how high can you bounce audiobook

how does a czar eat potatoes

how mrs. monkey missed the ark

how big is a foot

how switzerland is governed

how to be a super camp counselor

how has it changed rigby literacy

hove in old photographs britain in old photographs s.

how great our joy

how age comes and how to avoid it

how shareholder reform can pay f

how baking works exploring the fundamentals of baking science

how much to buy a foodservice purchasing workbook

how architecture works

hover car racer

Ht 1service Manual:

how far can you go my 25 year quest to walk again - Nov 05 2022

web yet he longed for one more victory to walk on the beach with his family holding his wife s hand through a radical therapy he retrained his mind and challenged conventional

how far can you go my 25 year quest to walk again - Jul 01 2022

web an inspirational memoir by a man who became an elite wheelchair athlete after suffering a catastrophic spinal injury and who finally walked again 25 years after his accident

how far can you go my 25 year quest to walk again - Apr 29 2022

web find helpful customer reviews and review ratings for how far can you go my 25 year quest to walk again at amazon com

read honest and unbiased product reviews from

how far can you go my 25 year quest to walk again audio - Jul 21 2021

how far can you go my 25 year quest to walk again - Oct 04 2022

web find many great new used options and get the best deals for how far can you go my 25 year quest to walk again by john maclean 2016 hardcover at the best online

how far can you go my 25 year quest to walk again - Feb $08\ 2023$

web my 25 year quest to walk again ebook written by john maclean read this book using google play books app on your pc android ios devices download for offline reading

an armored train and a dangerous new alliance the new - Oct 24 2021

web it wasn t until he discovered a radical therapy that john was able to reach his full potential by retraining his mind and body to unlock new neural responses and stand walk and

how far can you go my 25 year quest to walk again - Jul 13 2023

web mar 29 2016 yet he longed for one more victory to walk on the beach with his family holding his wife s hand through a radical therapy he retrained his mind and challenged

how far can you go my 25 year quest to walk again - Dec 06 2022

web oct 1 2020 if you look up mental toughness in the dictionary you ll find a picture of john maclean steve waugh ao br br walking on the beach and holding hands with a

how far can you go my 25 year quest to walk again - Aug 14 2023

web 114 ratings21 reviews an inspirational memoir by a man who became an elite wheelchair athlete after suffering a catastrophic spinal injury and who finally walked again 25 years after his accident

starfield tips to know before starting polygon - Jan 27 2022

web sep 11 2023 the 10 week trial amps up efforts to rein in big tech by targeting the core search business that turned google into a 1 7 trillion behemoth a federal judge said

what is the timed 25 foot walk clinicspeak com - Dec 26 2021

web sep 14 2023 the meeting between president vladimir v putin of russia and north korea s leader kim jong un could have malign consequences for the world sept 14

how far can you go my 25 year guest to walk again overdrive - Mar 29 2022

web sep 5 2023 23 things you should know before starting starfield starfield is a whole lot of game there are ships to fly stuffed animals to smuggle outposts to build and oh yeah

editions of how far can you go my 25 year quest to walk - Apr 10 2023

web mar 29 2016 an inspirational memoir by a man who became an elite wheelchair athlete after suffering a catastrophic spinal injury and who finally walked again 25 years after

u s v google the new york times - Nov 24 2021

web sep 7 2023 but in 2004 when a promising h i v treatment emerged gilead sciences decided to slow walk its release to maximize profit on the company s existing patents

amazon com customer reviews how far can you go my 25 - May 31 2022

web oct 1 2020 it wasn t until he discovered a radical therapy that john was able to reach his full potential by retraining his mind and body to unlock new neural responses and

amazon com customer reviews how far can you go my 25 - Feb 25 2022

web measure out 25 feet and stand at one end walk as quickly but as safely as possible to the other end start the stopwatch as soon as the lead foot crosses the start line stop the

how far can you go my 25 year quest to walk again by - Aug 02 2022

web find helpful customer reviews and review ratings for how far can you go my 25 year quest to walk again at amazon com read honest and unbiased product reviews from

how far can you go my 25 year quest to walk again kindle edition - Aug 22 2021

web how far can you go my 25 year quest to walk again maclean sir john tabb mark amazon com au books

how far can you go my 25 year quest to walk again - May 11 2023

web editions for how far can you go my 25 year quest to walk again 0316262854 hardcover published in 2016 kindle edition published in 2016 kindle e

how far can you go my 25 year quest to walk again - Jun 19 2021

amazon com how far can you go my 25 year quest to walk - Sep 03 2022

web jan 1 2016 it wasn t until he discovered a radical therapy that john was able to reach his full potential by retraining his mind and body to unlock new neural responses and

how far can you go my 25 year quest to walk again hardcover - Mar 09 2023

web it wasn t until he discovered a radical therapy that john was able to reach his full potential by retraining his mind and body to unlock new neural responses and stand walk and

how far can you go my 25 year quest to walk again - Jun 12 2023

web mar 29 2016 an inspirational memoir by a man who became an elite wheelchair athlete after suffering a catastrophic

spinal injury and who finally walked again 25 years after

how far can you go my 25 year quest to walk again - Jan 07 2023

web an inspirational memoir by a man who became an elite wheelchair athlete after suffering a catastrophic spinal injury and who finally walked again 25 years after his accident

why one drug company held back a better drug the new - Sep 22 2021

web how far can you go my 25 year quest to walk again audio download john maclean mark tabb mark englhardt simon schuster australia amazon com au books

my family travel map europe lingua inglese pdf uniport edu - Sep 04 2022

web aug 9 2023 you could buy guide my family travel map europe lingua inglese or acquire it as soon as feasible you could quickly download this my family travel map europe lingua inglese after getting deal

my family travel map europe lingua inglese - Jan 08 2023

web my family travel map europe lingua inglese the world today jan 10 2021 anyone interested in learning about geographic concepts will appreciate this concise book that highlights the most important concepts the fifth edition presents authoritative content currency and outstanding cartography

my family travel map europe lingua inglese pdf uniport edu - Feb 26 2022

web jun 6 2023 my family travel map europe lingua inglese 1 7 downloaded from uniport edu ng on june 6 2023 by guest my family travel map europe lingua inglese as recognized adventure as with ease as experience approximately lesson amusement as without difficulty as covenant can be gotten by just checking out a book my family

lonely planet kids my family travel map europe paperback - Feb 09 2023

web apr 13 2018 my family travel map europe is a new regional and more detailed version of lonely planet s original my family travel map it s now easier to plan trips and children can mark their dream must visit destinations to create an ultimate wishlist

my family travel map europe lingua inglese by lonely planet - Mar 10 2023

web stickers to mark their family s travels and favourite places but that s not all flipping the map over reveals lots of fun facts to learn along the way my family travel map europe is a new regional and more detailed version of lonely planet s original my family travel map it s now easier to plan trips and

my family travel map europe lingua inglese pdf uniport edu - Oct 05 2022

web jun 13 2023 my family travel map europe lingua inglese 2 8 downloaded from uniport edu ng on june 13 2023 by guest 20th century and the use and abuse of the english language was one of his principal concerns this guide alphabetically arranged provides a concise readable and entertaining guide to using english

my family travel map lingua inglese copertina flessibile - Jun 13 2023

web my family travel map lingua inglese kids lonely planet baxter nicola mansfield andy amazon it libri

my family travel map europe lingua inglese uniport edu - Jan 28 2022

web connections if you direct to download and install the my family travel map europe lingua inglese it is definitely easy then back currently we extend the belong to to purchase and make bargains to download and install my family **mytravelmap** - Mar 30 2022

web log in welcome to mytravelmap create your own travel map and share it with your friends english

my family travel map europe lingua inglese poster amazon it - Jul 14 2023

web my family travel map europe lingua inglese fullman joe fullman joe mansfield andy amazon it libri

my family travel map europe lingua inglese pdf - Nov 06 2022

web bordering to the message as competently as perception of this my family travel map europe lingua inglese pdf can be taken as skillfully as picked to act my family travel map europe lingua inglese by lonely web my family travel map europe lingua inglese by lonely planet kids bee an au pair in abroad and find a host family today may 25th 2020

my family travel map europe lingua inglese pdf download only - Aug 03 2022

web jun 30 2023 my family travel map europe lingua inglese pdf pdf web apr 29 2023 web my family travel map europe lingua inglese by lonely planet kids introduce kids to europe and help them plan their next family trip with this giant fold out my family travel map europe lingua inglese by lonely web fun facts to learn along the way my family travel

my family travel map europe lingua inglese pdf uniport edu - Jul 02 2022

web mar 19 2023 to begin getting this info get the my family travel map europe lingua inglese join that we have enough money here and check out the link you could purchase guide my family travel map europe lingua inglese or acquire it as soon as feasible you could quickly download this my family travel map europe lingua inglese after getting my family travel map europe lingua inglese full pdf - Apr 30 2022

web my family travel map europe lingua inglese 1 my family travel map europe lingua inglese lonely planet my family travel map europe 1st edn my family travel map europe lonely planet kids online europe travel my family travel zone my family travels trusted family vacation resource mapyourtravels com home of

the family travel map media lonelyplanet com - Apr 11 2023

web the family travel map check the number of your destination below then find it on the map biggest country russia 17 1 million sq km 6 6 million sq mi 143 4 million people smallest country vatican city 0 44 sq km 0 27 sq mi 800 people highest mountain mt elbrus russia 5 642m 18 510ft

my family travel map europe lingua inglese abebooks it - Aug 15 2023

web my family travel map europe lingua inglese di kids lonely planet fullman joe su abebooks it isbn 10 1787013219 isbn 13 9781787013216 lonely planet kids 2018 brossura

my family travel map europe lingua inglese by lonely planet - May 12 2023

web map europe is a new regional and more detailed version of lonely planet s original my family travel map it s now easier to plan trips and children can mark their dream must visit destinations to create an ultimate wishlist

my family travel map europe lingua inglese pdf - Dec 27 2021

web my family travel map europe lingua inglese 5 5 travel map it s now easier to plan trips and children can mark their dream must visit destinations to create an ultimate wishlist my family travel map europe lonely planet kids my family travel map europe my family travel map europe is a new regional and more detailed version of lonely my family travel map lonely planet kids paperback - Dec 07 2022

web apr 1 2016 buy my family travel map lonely planet kids 1 by kids lonely planet baxter nicola mansfield andy isbn 9781760341015 from amazon s book store everyday low prices and free delivery on eligible orders my family travel map europe lingua inglese pdf - Jun 01 2022

web my family travel map europe lonely planet travel guide europe trip planner multi city itinerary builder my family travel map europe lonely planet kids amazon

physics in anaesthesia second edition scion publishing - Jul 16 2023

web jun 13 2021 physics in anaesthesia gives a complete and structured overview explanations start from first principles simple everyday examples are used to illustrate core concepts clinical examples highlight the applications of physics in anaesthesia worked examples and helpful diagrams develop understanding physics in anaesthesia springer - Mar 12 2023

web 123 1162 m e bourke electrical shocks and safety and electrocardiography pacing and defibrillation are comprehensive the topics in chapters 23 26 on ultrasound lasers magnetic resonance imaging and nuclear physics and radiation are impressive the principles are clear and the concepts are up to date

physics in anaesthesia 1st edition amazon com - Oct 07 2022

web apr 1 2012 physics in anaesthesia covers the core physics knowledge required by anyone working in anesthesiology it assumes only limited prior knowledge and has been written especially for those who consider themselves non physicists **physics in anaesthesia for frca candidates odps and nurse** - Jul 04 2022

web buy physics in anaesthesia for frca candidates odps and nurse anaesthetists oxon ed by ben middleton simon stacey rik thomas justin phillips isbn 9781904842989 from amazon s book store everyday low prices and free delivery on eligible orders physics in anaesthesia bja british journal of anaesthesia - Apr 13 2023

web sep 1 2013 overall this is an effective textbook that takes the physics first and applies it to anaesthesia it is all the better for putting the physics first and promoting understanding before dealing with the key pieces of equipment **physics in anaesthesia british journal of anaesthesia** - Sep 18 2023

web the initial chapters cover the basic physics of atoms simple mechanics energy and power temperature and heat waves and pressure these are all easily understandable with an appropriate level of simple supporting equations and explanation **physics in anaesthesia 2nd edition 2nd edition amazon com** - Jun 03 2022

web sep 15 2021 physics in anaesthesia 2nd edition 9781911510802 medicine health science books amazon com books new used rental textbooks medicine health sciences enjoy fast free delivery exclusive deals and award winning movies tv shows with prime try prime and start saving today with fast free delivery buy new 50 20

basic physics and measurement in anaesthesia sciencedirect - Dec 09 2022

web chapter 1 pressure pages 1 13 publisher summary this chapter discusses pressure measurements both in patients and on the anesthetic machine pressure is the force applied or distributed over a surface and it is expressed as force per unit area the pressure developed in the syringe depends on the force and the area over which it is applied physics.ni.org/physics.ni.org/<a href="https://phys

web sep 19 2012 an interested student cannot complete a chapter without knowing the essential material to learn the details in chapters 1 5 contain the usual basic information required atoms and matter ch 1 simple mechanics ch 2 energy and power ch 3 temperature and heat ch 4 and waves ch 5

physics in anaesthesia second edition scion publishing - Jan 10 2023

web jun 13 2021 physics in anaesthesia gives a complete and structured overview explanations start from first principles simple everyday examples are used to illustrate core concepts clinical examples highlight the applications of physics in anaesthesia worked examples and helpful diagrams develop understanding physics in anaesthesia second edition for frca candidates - Apr 01 2022

web physics in anaesthesia gives a complete and structured overview explanations start from first principles simple everyday examples are used to illustrate core concepts clinical examples highlight the applications of physics in anaesthesia worked examples and helpful diagrams develop understanding

physics in anaesthesia second edition paperback waterstones - May 02 2022

web jun $14\ 2021$ buy physics in anaesthesia second edition by ben middleton justin phillips from waterstones today click and collect from your local waterstones or get free uk delivery on orders over 25

physics in anaesthesia wilkes 2012 wiley online library - Feb 11 2023

web jun 1 2012 physics in anaesthesia b middleton j phillips r thomas s stacey scion publishing banbury uk 2012 isbn 978 1

904842 98 9 384 pp price 29 99 this is the first edition of a book based around the physics included in the frca syllabus although it is aimed not just at anaesthetists but also nurses operating department physics in anaesthesia second edition summary wob - Nov 08 2022

web jun 14 2021 physics in anaesthesia covers the subject in an informative and accessible way from the very basics catering especially for those who consider themselves non physicists this new edition has been comprehensively updated but the content remains aligned with the frca syllabus

physics for anesthesiologists from daily life to the operat lww - Aug 17 2023

web obviously physics is everywhere in our daily lives as well as in our clinical routine and that is why the book physics for anesthesiologists from daily life to the operating room written by antoni pisano provides a lot of useful information about physics in general and applied physics in anesthesia and critical care in specific

physics for anaesthesia bja education - Oct 19 2023

web mar 3 2018 this article will discuss the applied physics relevant to anaesthetic practice in four areas some of which are of relatively recent application in anaesthesia and medicine these are magnetism and magnetic resonance lasers depth of anaesthesia monitoring and light spectroscopy

physics and its laws in anaesthesia ppt slideshare - Feb 28 2022

web jun 18 2013 1 of 108 physics and its laws in anaesthesia jun 18 2013 156 likes 35 095 views download now download to read offline health medicine technology business this is a presentation about the basic laws in physics for anesthesiologist and its application in day to day practice

physics in anaesthesia second edition amazon com - Aug 05 2022

web jun 14 2021 physics in anaesthesia gives a complete and structured overview explanations start from first principles simple everyday examples are used to illustrate core concepts clinical examples highlight the applications of physics in anaesthesia worked examples and helpful diagrams develop understanding

physics in anaesthesia by ben middleton b sc s o p g b i - May 14 2023

web overall physics in anaesthesia succeeds in providing a concise and easy to read review text covering what has historically been a dry and difficult to present topic the book is easy to understand and sufficiently covers most topics one would expect from such a book

physics of anaesthesia made easy lupine publishers - Sep 06 2022

web feb 6 2019 fundamental physics is must for a clear of us as anesthesiologists liquids and gases simplified way through the review article working principle we have tried to simplify relationships of anesthesia are apparatus simple measurable the basic physics related to of we knowledge anesthesia understanding fundamental introduction basic concepts