

ASHRAE Handbook HVAC Systems and Equipment



2016

I-P and SI Editions

50+ Chapters of Expert Guidance for System Designers and Operators on

- 18 major HVAC system types, from small forced-air to steam, hydronic, and radiant systems
- Ducts, diffusers, grilles, coils, fans, air cleaners, humidifiers/dehumidifiers, and more
- Boilers, furnaces, vents, heat-distributing units/radiators, and solar devices
- Compressors, condensers, cooling towers, evaporative coolers, and liquid coolers
- Pumps, motors, piping and fittings, valves, and heat exchangers
- Packaged, unitary, and split-system equipment, including room air conditioners and heat pumps
- Specialized systems and equipment for thermal storage, combined heat and power (CHP), energy recovery, and ultraviolet energy application

Supported by ASHRAE Research

ISBN 978-1-939200-28-0

ISSN 1930-7713

© 2016 ASHRAE

1791 Tullie Circle NE/Atlanta, GA 30329-2305 USA

Telephone (404) 636-8400 worldwide

www.ashrae.org

Product code: 81162

06/2016

Ashrae Hvac Manual

SA Adler



Ashrae Hvac Manual:

Whispering the Secrets of Language: An Psychological Quest through **Ashrae Hvac Manual**

In a digitally-driven world wherever displays reign great and immediate transmission drowns out the subtleties of language, the profound secrets and mental nuances hidden within phrases frequently go unheard. However, located within the pages of **Ashrae Hvac Manual** a fascinating literary value pulsing with organic thoughts, lies a fantastic quest waiting to be undertaken. Composed by a skilled wordsmith, this marvelous opus encourages viewers on an introspective journey, delicately unraveling the veiled truths and profound influence resonating within the fabric of every word. Within the mental depths of this moving review, we can embark upon a genuine exploration of the book is primary subjects, dissect their captivating publishing style, and yield to the effective resonance it evokes serious within the recesses of readers hearts.

<https://stats.tinkerine.com/public/book-search/default.aspx/aim4aiims%20aiims%20mbbs%20entrance%20exam.pdf>

Table of Contents Ashrae Hvac Manual

1. Understanding the eBook Ashrae Hvac Manual
 - The Rise of Digital Reading Ashrae Hvac Manual
 - Advantages of eBooks Over Traditional Books
2. Identifying Ashrae Hvac Manual
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Ashrae Hvac Manual
 - User-Friendly Interface
4. Exploring eBook Recommendations from Ashrae Hvac Manual
 - Personalized Recommendations
 - Ashrae Hvac Manual User Reviews and Ratings

- Ashrae Hvac Manual and Bestseller Lists
- 5. Accessing Ashrae Hvac Manual Free and Paid eBooks
 - Ashrae Hvac Manual Public Domain eBooks
 - Ashrae Hvac Manual eBook Subscription Services
 - Ashrae Hvac Manual Budget-Friendly Options
- 6. Navigating Ashrae Hvac Manual eBook Formats
 - ePub, PDF, MOBI, and More
 - Ashrae Hvac Manual Compatibility with Devices
 - Ashrae Hvac Manual Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Ashrae Hvac Manual
 - Highlighting and Note-Taking Ashrae Hvac Manual
 - Interactive Elements Ashrae Hvac Manual
- 8. Staying Engaged with Ashrae Hvac Manual
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Ashrae Hvac Manual
- 9. Balancing eBooks and Physical Books Ashrae Hvac Manual
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Ashrae Hvac Manual
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Ashrae Hvac Manual
 - Setting Reading Goals Ashrae Hvac Manual
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Ashrae Hvac Manual
 - Fact-Checking eBook Content of Ashrae Hvac 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

Ashrae Hvac Manual Introduction

In the digital age, access to information has become easier than ever before. The ability to download Ashrae Hvac Manual has revolutionized the way we consume written content. Whether you are a student looking for course material, an avid reader searching for your next favorite book, or a professional seeking research papers, the option to download Ashrae Hvac Manual has opened up a world of possibilities. Downloading Ashrae Hvac Manual provides numerous advantages over physical copies of books and documents. Firstly, it is incredibly convenient. Gone are the days of carrying around heavy textbooks or bulky folders filled with papers. With the click of a button, you can gain immediate access to valuable resources on any device. This convenience allows for efficient studying, researching, and reading on the go. Moreover, the cost-effective nature of downloading Ashrae Hvac Manual has democratized knowledge. Traditional books and academic journals can be expensive, making it difficult for individuals with limited financial resources to access information. By offering free PDF downloads, publishers and authors are enabling a wider audience to benefit from their work. This inclusivity promotes equal opportunities for learning and personal growth. There are numerous websites and platforms where individuals can download Ashrae Hvac Manual. These websites range from academic databases offering research papers and journals to online libraries with an expansive collection of books from various genres. Many authors and publishers also upload their work to specific websites, granting readers access to their content without any charge. These platforms not only provide access to existing literature but also serve as an excellent platform for undiscovered authors to share their work with the world. However, it is essential to be cautious while downloading Ashrae Hvac Manual. Some websites may offer pirated or illegally obtained copies of copyrighted material. Engaging in such activities not only violates copyright laws but also undermines the efforts of authors, publishers, and researchers. To ensure ethical downloading, it is advisable to utilize reputable websites that prioritize the legal distribution of content. When downloading Ashrae Hvac Manual, users should also consider the potential security risks associated with online platforms. Malicious actors may exploit vulnerabilities in unprotected websites to distribute malware or steal personal information. To protect themselves, individuals should ensure their devices have reliable antivirus software installed and validate the legitimacy of the websites they are downloading from.

In conclusion, the ability to download Ashrae Hvac Manual has transformed the way we access information. With the convenience, cost-effectiveness, and accessibility it offers, free PDF downloads have become a popular choice for students, researchers, and book lovers worldwide. However, it is crucial to engage in ethical downloading practices and prioritize personal security when utilizing online platforms. By doing so, individuals can make the most of the vast array of free PDF resources available and embark on a journey of continuous learning and intellectual growth.

FAQs About Ashrae Hvac Manual Books

What is a Ashrae Hvac 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 Ashrae Hvac 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 Ashrae Hvac 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 Ashrae Hvac 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 Ashrae Hvac 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 Ashrae Hvac Manual :

aim4aiims aiims mbbs entrance exam

airborne assault three of the best airborne forces commando comic book adventures

ai game programming wisdom ai game programming wisdom wcd

ains 21 study guide

ai no kusabi the space between volume 6 metamorphose yaoi novel v 6

aircraft refueling natops manual navair 00 80t 109

airbus a320 landing gear manual

aidaluna port call to norfolk va sept 23

aicpa released questions 2014 becker

~~aha acls study manual 2013~~

air flo spreader controller manual

aha acls instructor manual

aim c saire aim c saire

airbus pilot guide

aguilas negras cuadernos ratita sabia

Ashrae Hvac Manual :

visit previous year papers of botany b sc hons du delhi - Jun 23 2022

web 1st semester 2 2nd semester 3 3rd semester 4 4th semester 5 5th semester 6 6th semester

bsc botany syllabus and subjects 2023 semester wise - Feb 17 2022

web jul 5 2023 the bsc botany subjects include the study of plant anatomy physiology cellular biology biochemistry genetics ecology etc b sc botany syllabus is structured according to the industry requirements which helps in training the graduates for their career the b sc botany job scope expands to areas such as medical healthcare research

3 bsc 5th semester botany core 12 question paper 2022 youtube - Nov 28 2022

web 3 bsc 5th semester botany core 12 question paper 2022 berhampur universityjay jagannath friends welcome to our educational universe channel in th

bs botany all past paper 2022 5th semester 2023 - Sep 26 2022

web oct 8 2023 bs botany all past paper 5th semester download last year s semester 5 question papers of pune university b sc botany question papers and answers are designed to help you in every way the question paper will be prepared in proportion to the entire syllabus 6

gauhati university question papers all courses all semester - Apr 21 2022

web ms msc mcom m ed llm mphil phd mtech diploma bsc selected semester system 1 semester 2 semester 3 semester 4 semester 5 semester 6 semester bsc 1 semester papers bsc 1 sem hons zoology principles of ecology zoo hc 1026 2022 bsc 1 sem physics mechanics phy hg 1016 2022 bsc 1 sem

bsc books notes 2023 free download pdf 1st 2nd 3rd year - Mar 01 2023

web aug 2 2023 however we have not shared the exact pdf file but linked it to them so as to give proper credit to the original author bsc books notes 2023 edition for 1st 2nd 3rd year students are available for free to download in pdf format download books notes for 10 bsc subjects

botany ba bsc 5th pu previous years question papers - Oct 08 2023

web our website provides solved previous year question paper for botany from 2017 to 2021 doing preparation from the previous year question paper helps you to get good marks in exams from our botany question paper bank students can download solved previous year question paper

5 semester model syllabus for b sc in botany - Apr 02 2023

web government of karnataka model curriculum of b sc in botany 5thsemester karnataka state higher education council karnataka state higher education council listing of courses from v and vi semesters for the undergraduate program in botany

bsc botany semester 5 question papers mumbai university mu - Sep 07 2023

web download mumbai university mu question papers of science bsc botany semester 5 mumbai university mu you can download papers in less than 10 seconds

plant ecology b a b sc botany 5th sem previous year question paper - Jul 05 2023

web english español plant ecology b a b sc botany 5th sem previous year panjab university question paper 2020

bsc 5th sem botany question paper 2019 youtube - Jan 31 2023

web examidea examtips exampaper bscquestionpaperhello students my website examtips onlineexam tips and more please don t for get subscribe

previous year question paper for ba bsc 5th semester year - Aug 06 2023

web the solutions to these previous year question paper are very easy to understand download free solved previous year question paper for biochem botany chemistry cs math physics zoology ca dss economics education english fa geography

history hs icd music pa philosophy phy edu ps psychology punjabi sanskrit sociology

b sc botany semester 5 tybsc shaalaa com - Jun 04 2023

web semester 5 tybsc university of pune question papers with solutions from 2009 to 2024 are also available as pdf files on the shaalaa mobile app students can use these university of pune 10th board solved previous year question paper pdfs for

delhi university bsc botany question papers download all - Jul 25 2022

web here you can download the du university bsc botany previous year question papers all semesters with just a single click if you have any others delhi university bsc botany previous year question papers then please email us to help others delhi university bsc botany 1st semester previous question papers

bsc botany 5th semester question papers - May 23 2022

web this bsc botany 5th semester question papers as one of the most in force sellers here will enormously be among the best options to review botany for bsc students sem i nep ka pandey b p this textbook has been designed to meet the needs of b sc third semester students of botany as per common minimum syllabus

b sc botany semester 5 tybsc shaalaa com - May 03 2023

web download university of mumbai previous year question papers semester 5 tybsc pdfs with solutions for b sc botany get last year question paper for semester 5 tybsc and solved answers for practice in your board and university exams

botany bsc 5th sem question paper 2022 pdf in description - Aug 26 2022

web botany bsc 5th sem question paper 2022 pdf in description pdf file drive google com file d 1r666klbejfbqknhgkctmfbfvo9udre s view usp drivesdkbot

gauhati university question papers 2022 pdf download free previous paper - Oct 28 2022

web go to the official website gauhati ac in click on the examination section select gu previous year s question paper finally choose your subjects after that download your previous years question paper with subject code download gauhati university old question papers ug pg free download gauhati university question papers

bsc 5th sem botany question paper guahati university 2021 - Mar 21 2022

web bsc 5th sem botany question paper guahati university 2021 bsc botany 5th semesterbsc 5th sem botany question paperbsc 5th sem botany notesbsc 5th sem botany

botany ba bsc 1st pu previous years question papers - Dec 30 2022

web previous year question paper with solutions for botany from 2017 to 2021 our website provides solved previous year question paper for botany from 2017 to 2021 doing preparation from the previous year question paper helps you to get good marks in exams

l onda scarlatta barbara risoli 9781517767501 blackwell s - Feb 25 2023

web jan 24 2013 l onda scarlatta italian edition kindle edition by risoli barbara federici paolo download it once and read it on your kindle device pc phones or

l onda scarlatta italian edition softcover abebooks - Jun 19 2022

web watch home live

l onda scarlatta risoli barbara amazon sg books - Sep 03 2023

web select the department you want to search in

londa scarlatta abebooks - Dec 14 2021

onda food and restaurant magazine - Apr 17 2022

web bart violet song 2020

l onda scarlatta by barbara risoli goodreads - Oct 04 2023

web hello sign in account lists returns orders cart

casaÈ affiliato l onda s r l idealista - Feb 13 2022

web l onda scarlatta italian edition ebook risoli barbara federici paolo amazon in kindle store

l onda scarlatta risoli barbara amazon in books - Aug 02 2023

web buy l onda scarlatta by risoli barbara online on amazon ae at best prices fast and free shipping free returns cash on delivery available on eligible purchase

buy l onda scarlatta books by barbara risoli at bookswagon - Nov 24 2022

web fishpond australia l onda scarlatta by barbara risolibuy books online l onda scarlatta 2015 fishpond com au l onda scarlatta italian barbara risoli shop

l onda scarlatta italian paperback risoli barbara flipkart - Jul 21 2022

web feroz misterioso e ultimo dei pirati dall abbigliamento barocco e dal volto celato governa l inquietante onda scarlatta antico galeone dalle vele rosse come il sangue versato dai

l onda scarlatta risoli barbara 9781517767501 books - Apr 29 2023

web oct 17 2015 l onda scarlatta by barbara risoli 2015 10 17 on amazon com free shipping on qualifying offers l onda scarlatta by barbara risoli 2015 10 17

l onda scarlatta buy online at best price in ksa souq is now - Aug 22 2022

web l onda scarlatta by risoli barbara from flipkart com only genuine products 30 day replacement guarantee free shipping cash on delivery

l onda scarlatta paperback 17 oct 2015 amazon co uk - May 31 2023

web select the department you want to search in

[l onda scarlatta by i romanzi di barbara risoli facebook](#) - May 19 2022

web location 369 the embarcadero san francisco ca 94105 phone 415 369 9955 1 2 3 next onda is a food restaurant and dining magazine which brings you the latest trends

l onda scarlatta italian edition kindle edition - Dec 26 2022

web buy l onda scarlatta books online by barbara risoli from bookswagon com upto 50 off 30 day replacement guarantee free shipping cash on delivery

l onda scarlatta italian edition kindle edition amazon in - Jan 15 2022

web l onda scarlatta by barbara risoli and a great selection of related books art and collectibles available now at abebooks com

l onda scarlatta italian edition kindle edition - Jan 27 2023

web l onda scarlatta italian edition ebook risoli barbara federici paolo amazon com au kindle store

[l onda scarlatta italian barbara risoli shop online for books](#) - Oct 24 2022

web l onda scarlatta paperback by barbara risoli and a great selection of related books art and collectibles available now at abebooks com

londa scarlatta by risoli barbara abebooks - Sep 22 2022

web l onda scarlatta buy online at best price in ksa souq is now amazon sa risoli barbara books

l onda scarlatta by barbara risoli 2015 10 17 paperback - Mar 29 2023

web oct 17 2015 your basket the rrp is the suggested or recommended retail price of a product set by the publisher or manufacturer view basket your basket is empty

[l onda scarlatta by risoli barbara amazon ae](#) - Jul 01 2023

web buy l onda scarlatta by risoli barbara isbn 9781517767501 from amazon s book store everyday low prices and free delivery on eligible orders

[la onda song and lyrics by bart violet spotify](#) - Mar 17 2022

web case e appartamenti in vendita di casaÈ affiliato l onda s r l case e appartamenti annunci di privati e di agenzie immobiliari

[piaggio carnaby service repair workshop manuals](#) - Jan 09 2023

web our carnaby piaggio workshop manuals contain in depth maintenance service and repair information get your emanual now piaggio carnaby service repair workshop manuals

pdf piaggio carnaby cruiser 300 ie en dokumen tips - Feb 10 2023

web this service manual describes the technical features and servicing procedures for the piaggio carnaby cruiser 300 ie text of piaggio carnaby cruiser 300 ie en

[piaggio carnaby cruiser 300 i e complete workshop service](#) - Apr 12 2023

web this piaggio carnaby cruiser 300 i e complete workshop service repair manual mt060111 is an essential tool for anyone looking to repair and maintain their vehicle it provides detailed instructions illustrations and diagrams to help you through every service and repair procedure

piaggio carnaby 300 cruiser manual pdf - May 01 2022

web piaggio carnaby 300 cruiser manual piaggio carnaby cruiser 300 ie en free ebook download as pdf file pdf text file txt or read book online for free this service manual describes the technical features and servicing procedures for the piaggio carnaby cruiser 300 ie piaggio carnaby 200 manuals manualslib com carnaby 200 piaggio

piaggio carnaby 300 cruiser manual ai classmonitor com - Jun 02 2022

web 2 piaggio carnaby 300 cruiser manual 2023 01 16 carnaby 200 we have 1 piaggio carnaby 200 manual available for free pdf download service station manual piaggio carnaby 200 service station manual 310 pages brand piaggio carnaby 200 manuals manualslib compiaggio carnaby 125 service manual workshop 200

piaggio carnaby cruiser 300 ie workshop service manual - Jun 14 2023

web piaggio carnaby cruiser 300 ie workshop service manual chassis prefix m60400 engine prefix m604m original factory service repair workshop manual is a complete informational book at the click of a mouse you have access to the most comprehensive diagnostic repair and maintenance information as used by professional technicians

piaggio carnaby 300 cruiser manual book - Oct 06 2022

web the complete sailing manual may 27 2023 the only sailing manual you will ever need covering everything from sailing basics to making repairs and mastering navigation the undisputed market leader in sailing guides this fully revised and updated sailing manual answers questions about any sailing situation with thorough coverage of all

piaggio carnaby cruiser 300 i e service manual - Sep 17 2023

web keep your piaggio carnaby cruiser 300 i e running smoothly with this comprehensive service manual this 326 page electronic manual includes detailed illustrations step by step instructions and diagrams to help you through each repair maintenance and s

[piaggio carnaby cruiser 300 ie en documents and e books](#) - Dec 08 2022

web piaggio carnaby cruiser 300 ie en 8x4emk2xx3l3 idocpub home current explore explore all upload login register home piaggio carnaby cruiser 300 ie en piaggio carnaby cruiser 300 ie en 0 0 november 2019 pdf bookmark embed share print download carnaby cruiser 300 ie service station manual

piaggio carnaby cruiser 300 i e service manual mt056104 - Oct 18 2023

web this piaggio carnaby cruiser 300 i e service manual mt056104 is a comprehensive guide to servicing and repairing your piaggio carnaby cruiser 300 i e it features detailed illustrations step by step instructions and troubleshooting information to help you repair and maintain your vehicle

piaggio carnaby cruiser 300 i e complete workshop service repair manual - May 13 2023

web piaggio carnaby cruiser 300 i e complete workshop service repair manual thanks for taking the time to look at this complete service repair workshop manual this able manual covers every service repair procedure you will need description you can now save yourself big money by doing your own repairs

piaggio carnaby cruiser 300 ie full service repair manual - Mar 11 2023

web piaggio carnaby cruiser 300 ie full service repair manual complete factory service repair workshop manual no extra fees no expiry dates service repair workshop manual available for instant to your computer tablet or smart phone this professional manual covers all repairs servicing and troubleshooting procedures

piaggio carnaby cruiser 300 ie workshop servi issuu - Jul 15 2023

web piaggio carnaby cruiser 300 ie workshop service manual download here piaggio carnaby cruiser 300 ie workshop service manual chassis prefix m60400 engine prefix m604m original factory

piaggio carnaby cruiser 300 i e complete service manual - Nov 07 2022

web piaggio carnaby cruiser 300 i e complete workshop service repair manual covers all models all repairs a z this is not generic repair or parts information it is specific to your model this is the exact same manual used by technicians at the dealerships to maintain service diagnose and repair your vehicle motorcycle atv or other machinery

piaggio carnaby 300 cruiser manual 2023 usa tgifridays - Feb 27 2022

web piaggio carnaby 300 cruiser manual 2023 usa tgifridays com subject piaggio carnaby 300 cruiser manual 2023 created date 20220522031034am

pdf piaggio carnaby 300 cruiser manual - Jul 03 2022

web piaggio carnaby 300 cruiser manual piaggio carnaby 300 4t ie cruiser 2011 spare parts msp oct 21 2021 web piaggio carnaby 300 4t ie cruiser 2011 genuine spare parts save to my vehicles below you will find technical drawings of all parts for a piaggio carnaby 300 4t ie cruiser 2011 simply select the drawing containing the parts

piaggio carnaby 300 cruiser manual - Mar 31 2022

web piaggio carnaby 300 cruiser manual right here we have countless book piaggio carnaby 300 cruiser manual and collections to check out we additionally find the money for variant types and next type of the books to browse the welcome book fiction history novel scientific research as skillfully as various extra sorts of books are readily

piaggio carnaby cruiser 300 i e service manual - Aug 16 2023

web piaggio carnaby cruiser 300 i e service manual original factory service repair workshop manual is a complete informational book at the click of a mouse you have access to the most comprehensive diagnostic repair and maintenance information as used by professional technicians

piaggio carnaby cruiser 300 history specs pictures - Sep 05 2022

web the piaggio carnaby cruiser 300 was a single cylinder four stroke scooter motorcycle produced in 2010 it could reach a top speed of 78 mph 125 km h manuals service manual the piaggio carnaby cruiser 300 was a single cylinder four stroke scooter produced by piaggio in 2010

solved looking for piaggio carnaby cruiser 300 repair guide - Aug 04 2022

web i need a service manual for my piaggio carnaby cruiser 300 to replace some parts but can not find any free one online only the basic owners manual which is regular maintenance and useless for the kind of job i d like to do piston rings replacement and some other repairs