



McGraw-Hill's

CHEMICAL ENGINEERING SERIES



# Process Systems Analysis and Control

Third Edition

## **Solution manual**

Donald R. Coughanowr  
Steven E. LeBlanc

# **Solution Manual Process Systems Analysis And Control**

**Lorena Rivero del Paso, Sailendra  
Pattanayak, Gerardo Uña, Hervé Tourpe**



## **Solution Manual Process Systems Analysis And Control:**

*Solution Manual to Process Systems Analysis and Control* Sutham Vanichseni, 1982      **Process Systems Analysis and Control** Steven E. LeBlanc, Donald Coughanowr, 2009 Process Systems Analysis and Control third edition retains the clarity of presentation for which this book is well known It is an ideal teaching and learning tool for a semester long undergraduate chemical engineering course in process dynamics and control It avoids the encyclopedic approach of many other texts on this topic Computer examples using MATLAB and Simulink have been introduced throughout the book to supplement and enhance standard hand solved examples These packages allow the easy construction of block diagrams and quick analysis of control concepts to enable the student to explore what if type problems that would be much more difficult and time consuming by hand      Process Systems Analysis and Control Donald R. Coughanowr, 1991 A text intended for a course in Process Dynamics and Control or Advanced Control offered at undergraduate level beginning with a presentation of open loop systems and continuing on to the more interesting responses of open loop systems      *Solutions Manual for An Introduction to Genetic Analysis* David Scott, 2012 Since its inception Introduction to Genetic Analysis IGA has been known for its prominent authorship including leading scientists in their field who are great educators This market best seller exposes students to the landmark experiments in genetics teaching students how to analyze experimental data and how to draw their own conclusions based on scientific thinking while teaching students how to think like geneticists Visit the preview site at [www.whfreeman.com/IGA10epreview](http://www.whfreeman.com/IGA10epreview)      **Classical Thermodynamics of Nonelectrolyte Solutions** Hendrick C. Van Ness, Michael M. Abbott, 1982      Fundamentals of Quality Control and Improvement, Solutions Manual Amitava Mitra, 2012-01-20 A statistical approach to the principles of quality control and management Incorporating modern ideas methods and philosophies of quality management Fundamentals of Quality Control and Improvement Third Edition presents a quantitative approach to management oriented techniques and enforces the integration of statistical concepts into quality assurance methods Utilizing a sound theoretical foundation and illustrating procedural techniques through real world examples this timely new edition bridges the gap between statistical quality control and quality management The book promotes a unique do it right the first time approach and focuses on the use of experimental design concepts as well as the Taguchi method for creating product process designs that successfully incorporate customer needs improve lead time and reduce costs Further management oriented topics of discussion include total quality management quality function deployment activity based costing balanced scorecard benchmarking failure mode and effects criticality analysis quality auditing vendor selection and certification and the Six Sigma quality philosophy The Third Edition also features Presentation of acceptance sampling and reliability principles Coverage of ISO 9000 standards Profiles of past Malcolm Baldrige National Quality Award winners which illustrate examples of best business practices Strong emphasis on process control and identification of remedial actions Integration of service sector examples The implementation of MINITAB software in

applications found throughout the book as well as in the additional data sets that are available via the related Web site New and revised exercises at the end of most chapters Complete with discussion questions and a summary of key terms in each chapter Fundamentals of Quality Control and Improvement Third Edition is an ideal book for courses in management technology and engineering at the undergraduate and graduate levels It also serves as a valuable reference for practitioners and professionals who would like to extend their knowledge of the subject

11th International Symposium on Process Systems Engineering - PSE2012, 2012-12-31 While the PSE community continues its focus on understanding synthesizing modeling designing simulating analyzing diagnosing operating controlling managing and optimizing a host of chemical and related industries using the systems approach the boundaries of PSE research have expanded considerably over the years While early PSE research was largely concerned with individual units and plants the current research spans wide ranges of scales in size molecules to processing units to plants to global multinational enterprises to global supply chain networks biological cells to ecological webs and time instantaneous molecular interactions to months of plant operation to years of strategic planning The changes and challenges brought about by increasing globalization and the the common global issues of energy sustainability and environment provide the motivation for the theme of PSE2012 Process Systems Engineering and Decision Support for the Flat World Each theme includes an invited chapter based on the plenary presentation by an eminent academic or industrial researcher Reports on the state of the art advances in the various fields of process systems engineering Addresses common global problems and the research being done to solve them

**Process Control Engineering** A. Ramachandro. Rao, 2022-01-26 Process Control Engineering is a textbook for chemical mechanical and electrical engineering students providing the theoretic fundamentals of control systems and highlighting modern control theory and practical aspects of industrial processes The introductory nature of the text should appeal to undergraduate students while later chapters on linear systems optimal control adaptive control and intelligent control are directed toward advanced students and practising engineers The textbook has been extensively tested in both undergraduate and graduate courses at the University of Alberta

**System Engineering Analysis, Design, and Development** Charles S. Wasson, 2015-11-16 Praise for the first edition This excellent text will be useful to every system engineer SE regardless of the domain It covers ALL relevant SE material and does so in a very clear methodical fashion The breadth and depth of the author's presentation of SE principles and practices is outstanding Philip Allen This textbook presents a comprehensive step by step guide to System Engineering analysis design and development via an integrated set of concepts principles practices and methodologies The methods presented in this text apply to any type of human system small medium and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical transportation financial educational governmental aerospace and defense utilities political and charity among others Provides a common focal point for bridging the gap between and unifying System Users System

Acquirers multi discipline System Engineering and Project Functional and Executive Management education knowledge and decision making for developing systems products or services Each chapter provides definitions of key terms guiding principles examples author s notes real world examples and exercises which highlight and reinforce key SE specification development system architecture development User Centric System Design UCSD interface definition system integration and Verification Life Cycle requirements Phases Modes SE Process Requirements Derivation System Architecture Development User Centric System Design UCSD Engineering Standards Coordinate Systems and Conventions et al Thoroughly illustrated with end of chapter exercises and numerous case studies and examples Systems Engineering Analysis Design and Development Second Edition is a primary textbook for multi discipline engineering system analysis and project management undergraduate graduate level students and a valuable reference for professionals **Process Systems Engineering 2003** Bingzhen Chen,Art Westerberg,2003-06-06 Contains proceedings from the 8th International Symposium on Process Systems Engineering PSE which brought together the global community of process systems engineering researchers and practitioners involved in the creation and application of computing based methodologies for planning design operation control and maintenance of chemical processes Contains proceeding from the 8th International Symposium on Process Systems EngineeringConference theme for PSE 2003 is supporting business decision making *Student Solutions Manual for For All Practical Purposes* COMAP,2008-12-26 Contains complete solutions to odd numbered problems in text *Process Control* Pao C. Chau,2002-08-26 An introductory 2002 textbook Process Control covers the most essential aspects of process control suitable for a two semester course While classical techniques are discussed also included is a discussion of state space modeling and control a modern control topic lacking in most introductory texts MATLAB a popular engineering software package is employed as a powerful yet approachable computational tool Text examples demonstrate how root locus Bode plots and time domain simulations can be integrated to tackle a control problem Classical control and state space designs are compared Despite the reliance on MATLAB theory and analysis of process control are well presented creating a well rounded pedagogical text Each chapter concludes with problem sets to which hints or solutions are provided A web site provides excellent support in the way of MATLAB outputs of text examples and MATLAB sessions references and supplementary notes Students and professionals will find it a useful text and reference Process Dynamics and Control Dale E. Seborg,Thomas F. Edgar,Duncan A. Mellichamp,Francis J. Doyle, III,2016-09-13 The new 4th edition of Seborg s Process Dynamics Control provides full topical coverage for process control courses in the chemical engineering curriculum emphasizing how process control and its related fields of process modeling and optimization are essential to the development of high value products A principal objective of this new edition is to describe modern techniques for control processes with an emphasis on complex systems necessary to the development design and operation of modern processing plants Control process instructors can cover the basic material while also having the flexibility to include advanced topics *The Publishers' Trade List Annual*

,1980 *How to Do Systems Analysis* John E. Gibson,William T. Scherer,William F. Gibson,2007-05-18 This book focuses on systems analysis broadly defined to also include problem formulation and interpretation of proposed alternatives in terms of the value systems of stakeholders Therefore the book is a complement not a substitute to other books when teaching systems engineering and systems analysis The nature of problem solving discussed in this book is appropriate to a wide range of systems analyses Thus the book can be used as a stand alone book for teaching the analysis of systems Also unique is the inclusion of broad case studies to stress problem solving issues making *How to Do Systems Analysis* a complement to the many fine works in systems engineering available today

*Accounting Information Systems* Ulric J. Gelinas,Richard B. Dull,Patrick Wheeler,2018-09-01 Today s accounting professionals are challenged to identify enterprise risks and provide quality assurance for a company s information systems ACCOUNTING INFORMATION SYSTEMS 11th International Edition focuses on three critical accounting information systems in use today enterprise systems e Business systems and controls for maintaining those systems Students will easily grasp even the most challenging topics as they explore today s most intriguing AIS topics relative to business processes information technology strategic management security and internal controls The 11th International Edition provides students with the tools for organising and managing information to help them succeed and protect the integrity of their employer s information system

**Solutions Manual for Guide to Energy Management, International Version, Eighth Edition** Klaus-Dieter E. Pawlik,2020-11-26 This practical study guide serves as a valuable companion text providing worked out solutions to all of the problems presented in *Guide to Energy Management International Version Eighth Edition* This version expresses numerical data and calculations in System International SI Units Covering each chapter in sequence the author has provided detailed instructions to guide you through every step in the problem solving process You will find all the help you need to master and apply the state of the art concepts and strategies presented in *Guide to Energy Management*

**Catalog of Copyright Entries, Third Series** Library of Congress. Copyright Office,1965 The record of each copyright registration listed in the Catalog includes a description of the work copyrighted and data relating to the copyright claim the name of the copyright claimant as given in the application for registration the copyright date the copyright registration number etc

**Revised Student Solutions Manual** Mark L. Berenson,2002

**Digital Solutions Guidelines for Public Financial Management** Lorena Rivero del Paso,Sailendra Pattanayak,Gerardo Uña,Hervé Tourpe,2023-10-06 The Digital Solutions Guidelines for Public Financial Management Guidelines are intended to serve as a comprehensive reference material for the assessment design and improvement of digital initiatives in the public financial management PFM area To support the digital transformation of PFM functions the Guidelines are structured around three Pillars Functional IT Architectural and Governance and Management Each pillar comprises six principles which are further broken down into one to four attributes to promote more efficient and transparent PFM operations while fostering innovation and managing digital risks These Guidelines also allow a graduated approach to

digital transformation of PFM through three levels of maturity for each Attribute foundational intermediate and advanced to help take into account country specific contexts and capacities in digital transformation strategies

Thank you for downloading **Solution Manual Process Systems Analysis And Control**. As you may know, people have look hundreds times for their chosen novels like this Solution Manual Process Systems Analysis And Control, but end up in infectious downloads.

Rather than reading a good book with a cup of tea in the afternoon, instead they cope with some harmful virus inside their desktop computer.

Solution Manual Process Systems Analysis And Control is available in our book collection an online access to it is set as public so you can download it instantly.

Our book servers saves in multiple locations, allowing you to get the most less latency time to download any of our books like this one.

Merely said, the Solution Manual Process Systems Analysis And Control is universally compatible with any devices to read

[http://www.frostbox.com/book/publication/default.aspx/Wartsila\\_Diesel\\_Enginespare\\_Part\\_Manual.pdf](http://www.frostbox.com/book/publication/default.aspx/Wartsila_Diesel_Enginespare_Part_Manual.pdf)

## **Table of Contents Solution Manual Process Systems Analysis And Control**

1. Understanding the eBook Solution Manual Process Systems Analysis And Control
  - The Rise of Digital Reading Solution Manual Process Systems Analysis And Control
  - Advantages of eBooks Over Traditional Books
2. Identifying Solution Manual Process Systems Analysis And Control
  - 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 Solution Manual Process Systems Analysis And Control
  - User-Friendly Interface
4. Exploring eBook Recommendations from Solution Manual Process Systems Analysis And Control



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

- Fact-Checking eBook Content of Solution Manual Process Systems Analysis And Control
- 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

### **Solution Manual Process Systems Analysis And Control Introduction**

In the digital age, access to information has become easier than ever before. The ability to download Solution Manual Process Systems Analysis And Control 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 Solution Manual Process Systems Analysis And Control has opened up a world of possibilities. Downloading Solution Manual Process Systems Analysis And Control 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 Solution Manual Process Systems Analysis And Control 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 Solution Manual Process Systems Analysis And Control. 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 Solution Manual Process Systems Analysis And Control. 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 Solution Manual Process Systems Analysis And Control, 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 Solution Manual Process Systems Analysis And Control 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 Solution Manual Process Systems Analysis And Control Books**

1. Where can I buy Solution Manual Process Systems Analysis And Control books? Bookstores: Physical bookstores like Barnes & Noble, Waterstones, and independent local stores. Online Retailers: Amazon, Book Depository, and various online bookstores offer a wide range of books in physical and digital formats.
2. What are the different book formats available? Hardcover: Sturdy and durable, usually more expensive. Paperback: Cheaper, lighter, and more portable than hardcovers. E-books: Digital books available for e-readers like Kindle or software like Apple Books, Kindle, and Google Play Books.
3. How do I choose a Solution Manual Process Systems Analysis And Control book to read? Genres: Consider the genre you enjoy (fiction, non-fiction, mystery, sci-fi, etc.). Recommendations: Ask friends, join book clubs, or explore online reviews and recommendations. Author: If you like a particular author, you might enjoy more of their work.
4. How do I take care of Solution Manual Process Systems Analysis And Control books? Storage: Keep them away from direct sunlight and in a dry environment. Handling: Avoid folding pages, use bookmarks, and handle them with clean hands. Cleaning: Gently dust the covers and pages occasionally.
5. Can I borrow books without buying them? Public Libraries: Local libraries offer a wide range of books for borrowing. Book Swaps: Community book exchanges or online platforms where people exchange books.
6. How can I track my reading progress or manage my book collection? Book Tracking Apps: Goodreads, LibraryThing, and Book Catalogue are popular apps for tracking your reading progress and managing book collections. Spreadsheets: You can create your own spreadsheet to track books read, ratings, and other details.

7. What are Solution Manual Process Systems Analysis And Control audiobooks, and where can I find them? Audiobooks: Audio recordings of books, perfect for listening while commuting or multitasking. Platforms: Audible, LibriVox, and Google Play Books offer a wide selection of audiobooks.
8. How do I support authors or the book industry? Buy Books: Purchase books from authors or independent bookstores. Reviews: Leave reviews on platforms like Goodreads or Amazon. Promotion: Share your favorite books on social media or recommend them to friends.
9. Are there book clubs or reading communities I can join? Local Clubs: Check for local book clubs in libraries or community centers. Online Communities: Platforms like Goodreads have virtual book clubs and discussion groups.
10. Can I read Solution Manual Process Systems Analysis And Control books for free? Public Domain Books: Many classic books are available for free as they're in the public domain. Free E-books: Some websites offer free e-books legally, like Project Gutenberg or Open Library.

### **Find Solution Manual Process Systems Analysis And Control :**

[wartsila diesel enginespare part manual](#)

[warhammer painting guide](#)

**water quality control handbook**

[warehouse worker test guide](#)

[wbut 1st year 2nd semester syllabus 2014 2015](#)

**ward against death chronicles of a reluctant necromancer 1 melanie card**

[waves sound and light study guide answers](#)

**warrior of the moon alpha billionaire books 1 3 boxed set**

**wan pisu 69 one piece 69 eiichiro oda**

[water wind spirit stone](#)

[waterproof paper printable calendars](#)

[wartsila maintenance manual](#)

[washington state sentencing guidelines manual](#)

[war against the animals paul russell](#)

**wbjee 2question paper**

**Solution Manual Process Systems Analysis And Control :**

Jung on Active Imagination The goal of active imagination is to build a functional bridge from consciousness into the unconscious, which Jung terms the "transcendent function." This ... Jung on Active Imagination He termed this therapeutic method "active imagination." This method is based on the natural healing function of the imagination, and its many expressions. Active imagination As developed by Carl Jung between 1913 and 1916, active imagination is a meditation technique wherein the contents of one's unconscious are translated into ... A Guide to Active Imagination Dec 9, 2021 — Active Imagination is a technique that was developed by Carl Jung to access the unconscious in waking life. When we consider engaging the ... Jung on Active Imagination He termed this therapeutic method "active imagination." This method is based on the natural healing function of the imagination, and its many expressions. Jung on Active Imagination Jung learned to develop an ongoing relationship with his lively creative spirit through the power of imagination and fantasies. He termed this therapeutic ... Active Imagination: Confrontation with the Unconscious Active Imagination Active imagination is a method of assimilating unconscious contents (dreams, fantasies, etc.) through some form of self-expression. The object of active ... Active Imagination: Confrontation with the Unconscious May 9, 2022 — Although Jung held dreams in high regard, he considered active imagination to be an even more effective path to the unconscious. The difference ... Jung on active imagination. by CG Jung · 1997 · Cited by 319 — Abstract. This volume introduces Jung's writings on active imagination. For many years, people have had to search throughout the Collected Works and elsewhere, ... PEUGEOT 308 HANDBOOK In this document you will find all of the instructions and recommendations on use that will allow you to enjoy your vehicle to the fullest. It is strongly. Peugeot 308 Car Handbook | Vehicle Information This handbook has been designed to enable you to make the most of your vehicle in all situations. Please note the following point: The fitting of electrical ... Peugeot 308 & 308SW Vehicle Handbook this handbook has been designed to enable you to make the most of your vehicle in all situations. Page 4 . . Contents. Overview. User manual Peugeot 308 (2022) (English - 260 pages) Manual. View the manual for the Peugeot 308 (2022) here, for free. This manual comes under the category cars and has been rated by 7 people with an average ... User manual Peugeot 308 (2020) (English - 324 pages) Manual. View the manual for the Peugeot 308 (2020) here, for free. This manual comes under the category cars and has been rated by 3 people with an average ... Peugeot Driver Manual 308 | PDF Peugeot Driver Manual 308 - Free ebook download as PDF File (.pdf), Text File (.txt) or read book online for free. Peugeot for Driver Manual 308. Peugeot 308 (2018) user manual (English - 324 pages) User manual. View the manual for the Peugeot 308 (2018) here, for free. This manual comes under the category cars and has been rated by 34 people with an ... Peugeot 308 (2021) user manual (English - 244 pages) User manual. View the manual for the Peugeot 308 (2021) here, for free. This manual comes under the category cars and has been rated by 8 people with an ... PEUGEOT 308 HANDBOOK Pdf Download View and Download PEUGEOT 308 handbook online. 308 automobile pdf manual download.

Peugeot 308 owner's manual Below you can find links to download for free the owner's manual of your Peugeot 308. Manuals from 2008 to 2008. ... Looking for another year or model? Let us ... Engine Engine - Porsche Parts Diagrams Shop By Parts Diagram 911 (996) 1999-2005 Engine. Porsche 996 Parts Porsche 911 (996) Diagrams. Exploded diagrams ... 04 replacement engine without drive plate tiptronic without flywheel manual transmission without compressor ... Porsche 911 996 (MY1998 - 2005) - Part Catalog Looking for 1998 - 2005 Porsche 911 parts codes and diagrams? Free to download, official Porsche spare parts catalogs. Porsche 996/997 Carrera Engine Tear Down This project focuses on a brief overview of the 911 Carrera engine and what it looks like inside. The engine featured here suffered a catastrophic failure, ... Porsche 996 (2003) Part Diagrams View all Porsche 996 (2003) part diagrams online at Eurospares, the leading Porsche parts supplier. Engine and fuel feed / Diagrams for Porsche 996 / 911 ... Porsche 996 / 911 Carrera 2003 996 carrera 4 Targa Automatic gearbox > Engine and fuel feed > List of diagrams. Porsche Classic Genuine Parts Catalog To help you find genuine parts for your classic car, we offer a catalog for Porsche Classic Genuine Parts. Choose Catalogue. Model: Year: 356/356A ... V-Pages Jul 24, 2017 — ALL ILLUSTRATIONS ARE SUBJECT TO CHANGE WITHOUT OBLIGATION. THE SEATS FOR EACH MODEL ARE AVAILABLE IN THE PARTS CATALOGUE. "SEATS (STZ 19)". V-Pages Jul 24, 2017 — 70 309 KW. Page 4. V-Pages. Model: 996 01. Model life 2001>>2005. 24.07.2017. - 1. Kat 523. EXPL.ENGINE-NO. EXPLANATION OF THE MOTOR-NUMBERS ...