

朱派龙 主 编

战祥乐 副主编

Diagrammatic

图解

机械制造 专业英语

Diagrammatic

Professional English of
Mechanical Manufacturing



化学工业出版社

主编 (10) 目录 战祥乐

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前 言

专业英语是专业知识与英语知识的结合。许多词汇在公共英语和专业英语两个领域有着截然不同的含义，以至纯外语专业的人士往往难以胜任专业技术翻译工作，而具有工科专业背景且外语优秀的人才越来越受到欢迎。近年来，机械制造行业发展迅速，从业人员众多。随着技术全球化程度的提高及我国进出口贸易的发展，掌握一定的机械制造专业英语成为了机械领域从业人员的必备技能。

考虑到机械专业的专业特点，辅以图形会使专业内容更加直观、具体、形象、生动，基本可以达到“望图知意”的程度，更易于读者理解，所以本书以“看图识字”的方式编写专业英语，内容紧扣机械制造领域，形式上采用图文、英汉同步跟随的编写形式，对机械图做了新形式的表达。这种方式可使读者在学会某个名词、动词的英语表达时，进一步巩固、加深对机械本身专业术语的理解。

本书以机械制造专业必需的基础知识和专业知识为主，包括工程制图、技术测量、公差配合、机械传动与设备装置、液压与气动传动、机械制造技术与方法、数控加工与数控机床、机械加工工艺过程、模具结构等内容。内容选材不仅包括传统的制造工艺、方法、工具、设备，还选入了非传统的先进制造技术和特种加工技术，如：激光加工、电子束加工、硅晶片的制造等。对于已经学习过专业课程的读者，可以达到温故而知“英”的目的；对于非机类专业人士，可以起到简单学习专业术语、名称和认识机械各类零件、结构、设备和加工方法的作用，便于读者自学和应用于实际工作。本书内容系统新颖、实用性强，可作为机械及其相关专业的教材，也可供机械制造领域的技术人员作为简明的图解机械制造词汇手册使用。对于在华从事技术或贸易等领域工作的外籍人士、专家，可以通过英文词汇及图形索引查询相应的中文名词、术语，从而学习“专业中文”。

本书由朱派龙、战祥乐、林海雄、赵战峰共同编写。朱派龙任主编，并负责全书的统稿；战祥乐任副主编。林海雄编写 Unit1、Unit2 和 Unit3；朱派龙编写 Unit4、Unit6、Unit8 及词汇表、附录 2、附录 3；赵战峰编写 Unit5、Unit9 及附录 1；战祥乐编写 Unit4 中的部分内容和 Unit7。

本书在编写过程中得到了各界同仁和朋友的大力支持、鼓励和帮助，在此表示衷心的感谢！

由于编者水平所限，不妥之处在所难免，敬请广大读者和专家批评指正。

编 者

目 录

Unit1 Nomenclature About Professional (Vocational Terminology) 职业术语

- 1.1 Nomenclature on Major Curricular for Mechanical Engineering 相关机械工程专业
课程用语 1
- 1.2 Diagrammatic Scheme for Professional Terms 职业名称图解 3
- 1.3 Short passages for reading 阅读短文 3

Unit 2 Terminology of Engineering Drawing 工程制图术语

- 2.1 Various types of views 视图类别 8
- 2.2 Drawing Instruments 绘图仪器 9
- 2.3 Types of lines and shapes 线条类别及图形类别 10
- 2.4 AUTOCAD 常用命令 11
- 2.5 Basic Knowledge on Mechanical Engineering Drawing 机械制图基本知识 11
- 2.6 Drawing of various mechanical parts 各种机械零件的画法 16
- 2.7 Short passages for reading 阅读短文 31

Unit 3 Engineering Metrology and Tolerance/Fits 技术测量与公差配合

- 3.1 Measuring parameters and instruments 测量参数和测量仪器 33
- 3.2 Tolerance and Fits 公差与配合 44
- 3.3 Short passages for reading 阅读短文 50

Unit 4 Mechanical Transmission and Equipments 机械传动与设备装置

- 4.1 Parts, Components and mechanism 传动零(部)件及机构 53
- 4.2 Various types of machining equipment 各种机械加工设备 71
- 4.3 Cutting tools 切削刀具 102
- 4.4 Transport vehicle 交通车辆 122
- 4.5 Collection of commonly used machinery parts and tools 机械零部件和工具 148

列表	125
4.6 Short passages for reading 阅读短文	133

Unit 5 Hydraulic and pneumatic drives 液压与气动传动

5.1 Hydraulic and pneumatic elements 液压气动元件	136
5.2 Hydraulic and pneumatic system 液压/气动系统	148
5.3 Short passages for reading 阅读短文	152

Unit 6 Mechanical Manufacturing Technologies 机械制造技术与方法

6.1 Outline of Manufacturing Processes 各种制造工艺技术简图要览	153
6.2 Short passages about manufacturing processes 制造工艺技术阅读短文	159
6.3 Cutting Principle 切削原理	161
6.4 Heat process for metals 金属的热加工工艺	166
6.5 Short passages about heat process for metals 金属热加工工艺阅读短文	186
6.6 Non-traditional processes 非传统加工(特种加工)工艺方法	188
6.7 Short passages about mechanical manufacturing technologies 机械制造技术与方法阅读短文	201

Unit 7 NC Machining and NC machine tools 数控加工与数控机床

7.1 Basic knowledge on numerical control 数控基本知识	206
7.2 NC machining tools 数控加工机床	211
7.3 CNC functional components and appendix 数控机床功能部件及附件	218
7.4 CNC Programming 数控加工编程	224
7.5 Word addresses, codes G, and codes M 字代码, G代码和M代码	236
7.6 Short passages for reading 阅读短文	240

Unit 8 Manufacturing Processes and Procedures 机械加工艺过程

8.1 Various commonly used processes 多种常用的工艺方法和过程	244
8.2 Machining procedures 工艺过程	277
8.3 Convey Setups 物料装置	293
8.4 Jig and Fixture, Tooling 工装夹具	299
8.5 Short passages for reading 阅读短文	308

Unit 9 Die and Mould Constructions 模具结构

9.1 Engineering materials 工程材料	314
9.2 Mould and die for metals 金属模具	323
9.3 Die and Mould for plastics 塑料模具	336
9.4 Short passages for reading 阅读短文	343

Vocabulary With Figure Index 词汇及图形索引 (英中对照)	345
词汇及图形索引 (中英对照) Vocabulary With Figure Index	372
附录 1 机械工程常用缩略用语及含义	398
附录 2 英文字母象形结构对应中文翻译	401
附录 3 Dactylology: one-hand alphabet 单手势字母表	403
References 参考文献	404

Unit1 Nomenclature About Professional (Vocational Terminology) 职业术语

1.1 Nomenclature on Major Curricular for Mechanical Engineering 相关机械工程专业课程用语

advanced mathematics 高等数学	professional English 专业英语
English 英语	descriptive geometry 画法几何
general chemistry 普通化学	philosophy 哲学
mechanical drawing 机械制图	general physics 普通物理
practice in metalworking 金工实习	moral education 德育
theoretical mechanics 理论力学	physical education 体育
fluid mechanics 流体力学	material mechanics 材料力学
metal processing technology 金属工艺学	linear algebra 线性代数
electronics 电子学	electrotechnics 电工学
metal materials and heat treatment 金属材料与热处理	principle of machinery 机械原理
basis of engineering cybernetics 工程控制基础	theory of probability 概率论
interchangeability and technical measurement	elements of machine 机械零件
design in the course "principle of machinery"	testing techniques 测试技术
design in the course "elements of machine"	互换性与技术测量
design in the course "cutting tools" 切削刀具课程设计	机械原理课程设计
design in the course "mechanical manufacturing technology" 机械制造工艺课程设计	机械零件课程设计
design in the course "machine tools" 机床课程设计	
principles of metal-cutting and cutting tools 金属切削原理与刀具	
principle of hydraulic transmission 液压传动原理	
mechanical manufacturing technology 机械制造工艺	
design of metal-cutting tools 金属切削机床设计	
business management and technical economics 企业管理与技术经济	
graduation project 毕业设计	biorheology 生物流变学
mechanics 力学; 机械学	finite element 有限元
electrodynamics 电动力学	scholastic record 学习成绩
fracture mechanics 断裂力学	thermodynamics 热力学
viscous elasticity theory 黏弹性理论	exterior ballistics 外弹道学
celestial mechanics 天体力学	aerodynamics 空气动力学
magnetic fluid mechanics 磁流体动力学	rheology 流变学

thermoelasticity 热弹性力学	geomechanics 地质力学
biomechanics 生物力学	contemporary mechanics 当代力学
open class 公开课	course; curriculum 课程
required/compulsory course 必修课	elective/optional course 选修课
basic course 基础课	specialized course 专业课
school timetable 课程表	extracurricular activities 课外活动
instruction after class 课外辅导	outside reading 课外阅读
class discussion 课堂讨论	period of schooling 学习年限
teaching program; syllabus 教学大纲	content of courses 教学内容
seminar 讨论会	record of formal schooling 学历
school/academic year 学年	(school) term; semester 学期
credit 学分	the 5-grade marking system 五分制
100-mark system 百分制	mark; grade 分数
academic record; school record 学习成绩	thesis; dissertation 毕业论文
school report; report card; transcript 成绩单	graduation field work 毕业实习
graduation ceremony 毕业设计	graduation ceremony; commencement 毕业典礼
diploma; graduation certificate 毕业证书	graduation appraisal 毕业鉴定
to confer a degree on sb. 授予某人学位	to be promoted to a higher grade 升级
to repeat the year's work; to stay down 留级	
make-up examination 补考	
scholarship 奖学金	
to go to a school of a higher grade; to enter a higher school 升学	
proportion of students entering schools of a higher grade 升学率	

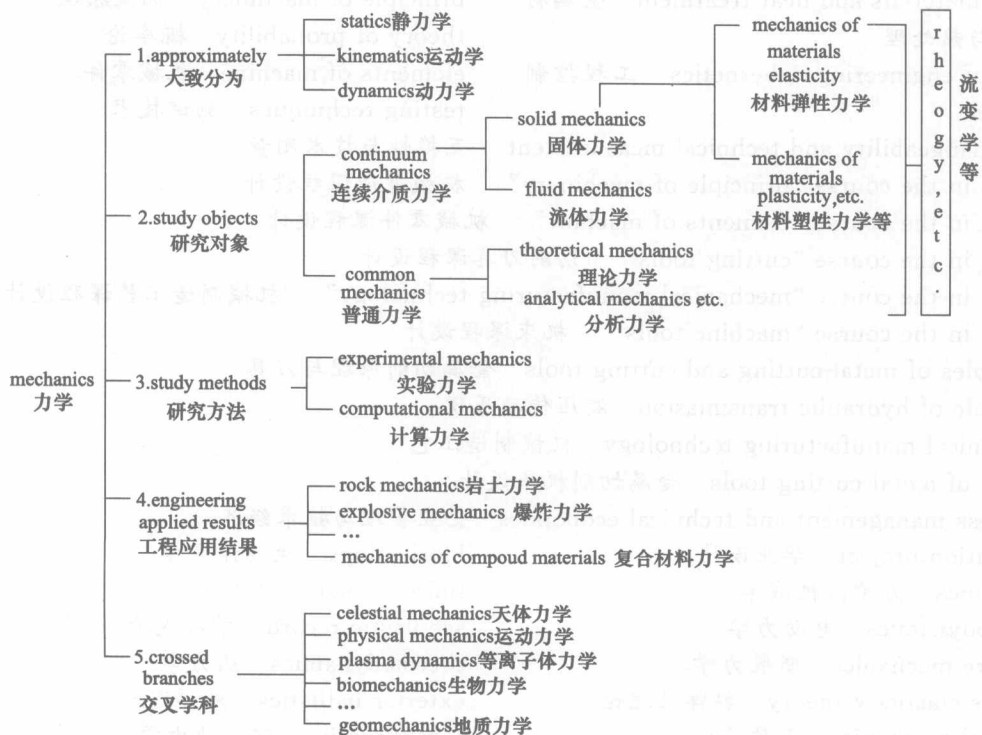
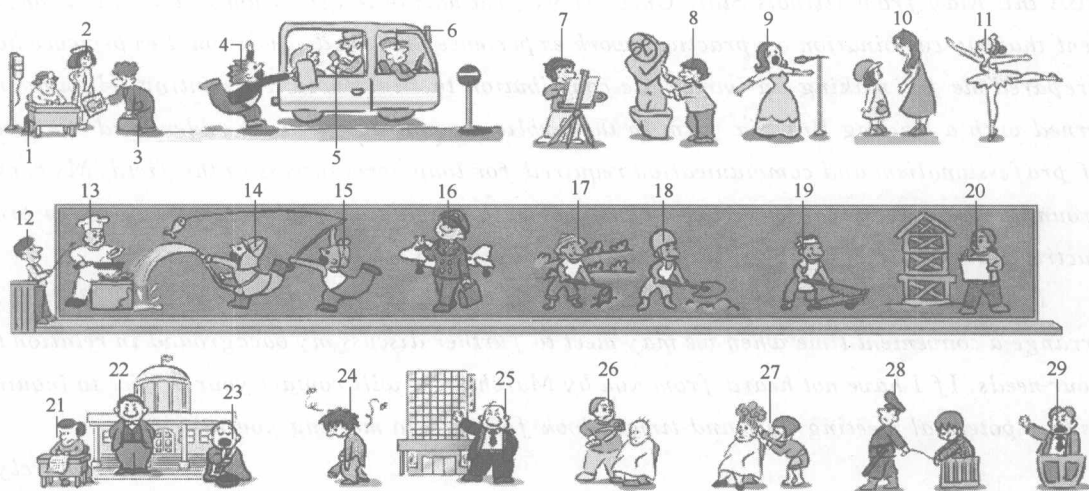


Fig 1.1 The Categories of Mechanics 力学分类

1.2 Diagrammatic Scheme for Professional Terms 职业名称图解



- | | | |
|--------------------------------------|---------------------------|---------------------------|
| 1. doctor 医生 | 10. actor/actress 演员(男/女) | 20. architect 建筑师 |
| 2. nurse 护士 | 11. dancer 舞蹈家 | 21. public servant 公务员 |
| 3. salesman 业务员 | 12. teacher 教师 | 22. politician 政客 |
| 4. white-collar worker 上班族
(白领阶层) | 13. chef 厨师 | 23. monk 僧侣 |
| 5. conductor 售票员 | 14. firefighter 消防员 | 24. unemployed person 失业者 |
| 6. driver 司机 | 15. fisherman 渔夫 | 25. entrepreneur 企业家 |
| 7. artist 艺术家 | 16. pilot 飞行员 | 26. hairdresser 理发师 |
| 8. sculptor 雕刻家 | 17. farmer 农夫 | 27. beautician 美容师 |
| 9. singer 歌手 | 18. laborer 劳工 | 28. police officer 警察 |
| | 19. carpenter 木匠 | 29. lawyer 律师 |

1.3 Short passages for reading 阅读短文

Best College Cover Letters

Cover letters won't get you the job, but they do play a critical role in how you communicate your information. A successful cover letter should be specific and personal. It should be clean, neat laser copy, yet not mass generated. Each letter should refer to a specific person at a specific company and provide a specific next step that you will be taking. If you wait for them to call you, your odds of contact decrease dramatically. It usually requires a proactive response on your part to move the process forward to the next level. Here is a cover letter serving as a sample:

Ms. Doe:

I was referred to you by Mr. Dave Zbecki, a Partner with your New York office, who informed me that the Chicago office of Big Public Accounting is actively seeking to hire

quality individuals for your Auditor Development Program.

I have more than two years of accounting experience, including interning as an Auditor last year with the New York City office of Arthur Andersen. I will be receiving my BBA this May from Illinois State University, graduating Magna Cum Laude. I am confident that my combination of practical work experience and solid educational experience has prepared me for making an immediate contribution to Big Public Accounting. Having interned with a leading Big Six firm in the public accounting field, I understand the level of professionalism and communication required for long-term success in the field. My background and professional approach to business will provide your office with a highly productive Auditor upon completion of your Development Program.

I will be in the Chicago area the week of March 16. Please call me at 217-222-3456 to arrange a convenient time when we may meet to further discuss my background in relation to your needs. If I have not heard from you by March 9, I will contact your office to inquire as to a potential meeting date and time. I look forward to meeting you then.

Sincerely,

Tracy Q. Graduate

This type of cover letter will pay back far greater returns than the simple "introduction to me" letter that most people use. Remember that a successful cover letter is a marketing tool used to move your customer one step closer to buying your product. Customers do not buy features, they buy benefits. So make sure you drive home your benefit to the customer!

And keep in mind that many employers look to the cover letter as an example of your written communication skills. Resumes are often written and proofed by others, but cover letters are often yours alone. Make certain that your cover letter is spell-checked, grammar-checked, and proofed by someone other than yourself.

Use this checklist to insure that your cover letter is complete:

- One page only and limited to three targeted paragraphs
- Type written or word processor, with full spell check and proofing
- Written to someone specific, with the name and title spelled correctly
- Company name and address are correct and complete
- Quality bond paper, 8×11 inches, ideally the same as your resume
- Three focused paragraphs (focused on the reader's needs, not yours)
- Closes with "Sincerely," —anything else can be too chummy
- Signed with a blue or black pen
- Includes a P. S. for emphasis
- Place the resume behind and fold in a tri-fold, with no staples
- Type or neatly print address on envelope
- Seal the envelope
- Conservative stamp on the envelope
- Final step: do not forget to follow up, or all the other steps will be in vain!

Job Application and Resume

When you have completed your formal education, you will look for a job suited to your training, interests, and ambition. In most cases, you will visit a prospective employer's office and complete an application form for the position in which you are interested. The employer may then make a decision regarding your employability on the basis of the application form and a personal interview. This employment process is the simplest one and probably the one most commonly used for obtaining a first job.

In the job-seeking situation, there are a number of ways you may use your writing skills: to complete an application blank, prepare a resume, write an application letter, or write employment follow-up letters. To obtain your first job, you may need to complete only an employment application form. However, you may also need to prepare a letter of application and a resume. As an ambitious job-seeker, therefore, you should be able to prepare all the written material that will help you obtain the job you want.

What Abilities do You Have to Offer an Employer?

You will be hired because you have a skill that an employer needs. Before you start your campaign for a job, you must decide for which specific jobs you are qualified and in which jobs you are interested. On the basis of your personal and educational background, you begin by listing specific skills and knowledge that would benefit an employer. Then you decide which specific job titles need the skills and knowledge you possess.

Which of the positions you have listed interest you most? Which ones interest you least? Direct your job-hunting efforts to the most interesting positions for which you are qualified. Once you have assessed your skills and knowledge and determined the various jobs for which you are qualified, one of your most important decisions involves preparing your resume.

What's in a Resume?

Once you have decided what you have to sell an employer, you should prepare a written summary of your qualifications. This summary-called a resume-is a description of your qualifications. It usually includes a statement of your education, your employment record (experience), a list of references, and other data that will help you obtain the job you wish.

A resume is highly useful. You may use it to accompany a letter of application, present it to an employer at the interview, mail it to a prospective employer without a formal letter of application, or use it to assist you in filling out an employment application form.

Since resumes are sales instruments, they must be prepared just as carefully as sales letters. They must present the best possible impression of you. The act of preparing the resume is just as valuable as the resume itself, for it forces you to think about yourself-what you have to offer an employer and why you should be hired. Thus it becomes a self-appraisal. Everyone brings unique talents to a position, but usually only after you prepare a resume do you realize your true worth.

Make the resume attractive. Because the resume is a sales instrument, it should be as attractive as you can make it. Of course, it should be typewritten, perfectly balanced on the

page, and free from errors and noticeable corrections. Resumes vary in length from one page to several pages, depending on how much you have to say about yourself. Your first resume should probably fit on one page or at the most two, but as you gather experience and obtain more education, your resumes may get longer and more detailed.

Make the Resume Fit the Employer's Needs.

A resume is tailored carefully to meet the employer's needs for the job for which you are applying. Thus it is an individual thing. Never try to copy someone else's resume or to use the same one over and over. You must find out what the job you are seeking demands and then tailor your resume accordingly. For example, if you apply for a job where you will be required to take dictation at a high speed, you will want to emphasize your skill in shorthand. You will make absolutely sure that the employer knows you are a highly skilled shorthand writer and transcriber. On the other hand, if the secretarial job you want requires little in the way of shorthand but a good deal of talent in writing, you will mention your shorthand skill but emphasize your writing ability.

How to Shine at a Job Interview

The smart job-seeker needs to get rid of several standard myths about interviewing before starting to pound the pavement looking for a job. What follows is a list of some of these untruths and some tips to help you do your best at your next interview.

Myth 1: The aim of interviewing is to obtain a job offer.

Only half true. The real aim of an interview is to obtain the job you want. That often means rejecting job offers you don't want! Incompetent job-seekers, however, become so used to accommodating employers' expectations that they often easily qualify for jobs they don't want. So, before you do back-flips for an employer, be sure you want the job.

Myth 2: Always please the interviewer.

Not true. Try to please yourself. Giving answers that you think will suit a potential employer, losing touch with your own feelings (in order to get in touch with some other person's feelings) and, in general, practicing an abject policy of appeasement are certain to get you nowhere. Of course, don't be hostile-nobody wants to hire someone disagreeable. But there is plainly a middle ground between being too ingratiating and being hostile. An effective interview (whether you are offered the job or not) is like an exciting encounter in conversation with your seatmate on an airplane.

Myth 3: Try to control the interview.

Nobody "controls" an interview-neither you nor the interviewer-although one or both parties often try. Then it becomes a phony exchange between two human beings; no business is likely to be transacted. When somebody tries to control us, we resent it. When we try to control somebody, they resent us. Remember, you can't control what employers think of you, just as they can't control what you think of them. So hang loose when interviewing: Never dominate the interview.

Myth 4: Never interrupt the interviewer.

No dice. "Never talk when I'm interrupting," said Mc George Bundy.

Good advice.

Study the style of effective conversationalists; They interrupt and are interrupted! An exciting conversation always makes us feel free-free to interrupt, to disagree, to agree enthusiastically. We feel comfortable with people who allow us to be natural. So, when interviewing, half the responsibility lies with you. Do you seem uptight? Try being yourself for a change. Employers will either like or dislike you, but at least you'll have made an impression. Leaving an employer indifferent is the worst impression you can make. And the way to make an effective impression is to feel free to be yourself, which frees your interviewers to be themselves!

Myth 5: Don't disagree with the interviewer.

Another silly myth. If you don't disagree at times, you become, in effect, a "yes" man or woman. Don't be afraid to disagree with your interviewer-in an agreeable way. And don't hesitate to change your mind. The worst that could happen would be that the interviewer thinks, "There's a person with an open mind!" The conventional wisdom says "be yourself," true enough. But how many people can be themselves if they don't feel free to disagree?

Unit 2 Terminology of Engineering Drawing

工程制图术语

2.1 Various types of views 视图类别

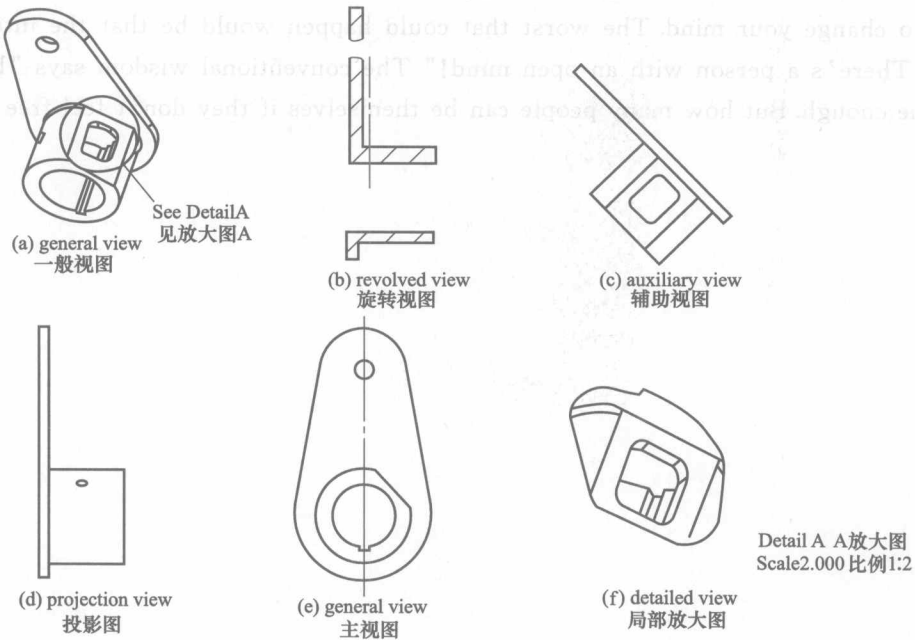


Fig 2.1 The six main types of views 六种主要的视图

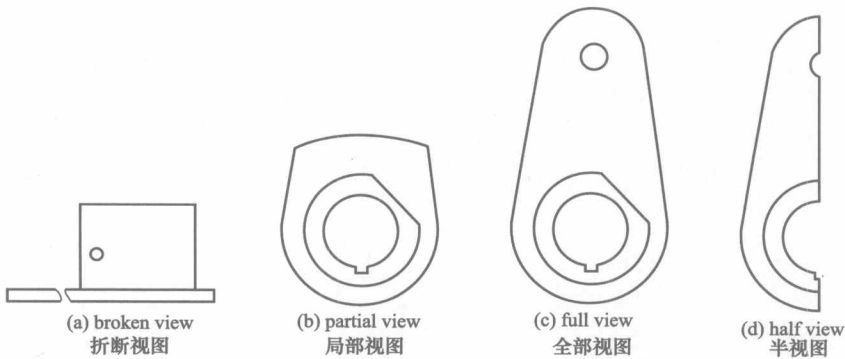
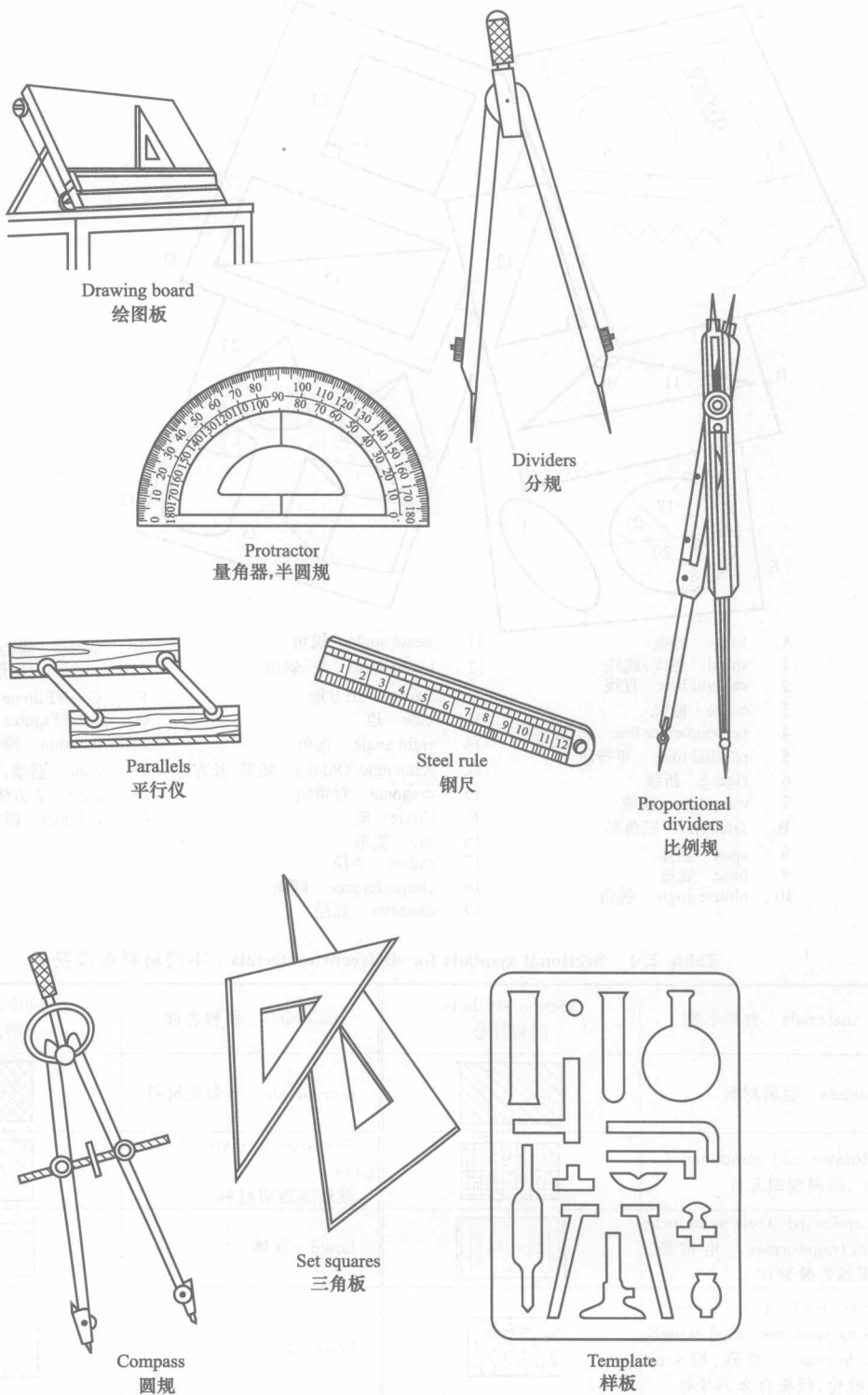
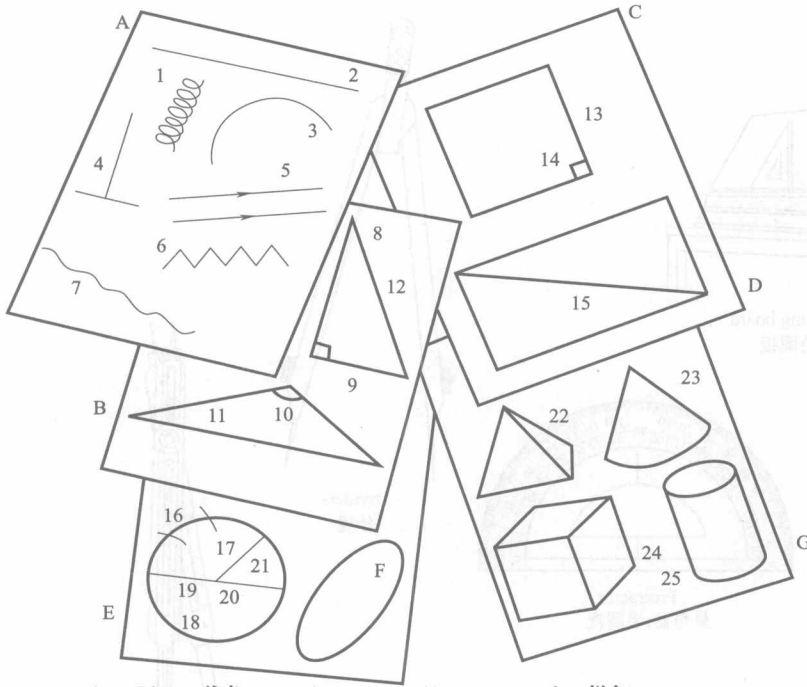


Fig 2.2 Some other commonly used views 其他常用视图

2.2 Drawing Instruments 绘图仪器



2.3 Types of lines and shapes 线条类别及图形类别



- | | | |
|----------------------------|-----------------------------|-------------------------|
| A. Lines 线条 | 11 acute angle 锐角 | 20 center 圆心 |
| 1 spiral 螺旋线, 蜗线 | 12 hypotenuse 弦, 斜边 | 21 sector 扇形 |
| 2 straight line 直线 | C. Square 正方形 | F. Oval/Ellipse 椭圆 |
| 3 curve 曲线 | 13 side 边 | G. Solid Figures 立体图形 |
| 4 perpendicular line 垂(直)线 | 14 right angle 直角 | 22 pyramid 棱锥(体), 角锥(体) |
| 5 parallel lines 平行线 | D. Rectangle/Oblong 矩形, 长方形 | 23 cone 圆锥, 锥体, 锥形 |
| 6 zigzag 折线 | 15 diagonal 对角线 | 24 cube 立方体 |
| 7 wavy line 波线 | E. Circle 圆 | 25 cylinder 圆柱体 |
| B. Triangles 三角形 | 16 arc 弧形 | |
| 8 apex 顶点 | 17 radius 半径 | |
| 9 base 底边 | 18 circumference 圆周 | |
| 10 obtuse angle 钝角 | 19 diameter 直径 | |

Table 2.1 Sectional symbols for different materials 不同材料剖面符号

materials 材料名称	section symbols 剖面符号	materials 材料名称	section symbols 剖面符号
metals 金属材料		non-metals 非金属材料	
Rotator, coil components 转子、线圈绕组元件		Transparent materials as glass 玻璃等透明材料	
Laminated steels as inductance, transformer 电抗器、变压器等叠钢片		liquid 液体	
Parts made of powder materials as sand cast, sand wheel, carbide insert 型砂、粉末冶金、砂轮、硬质合金刀片等		brick 砖	