

Diagrammatic Professional English of Mechanical Manufacturing

图解

陈天宏

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主编  
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# 机械制造 专业英语

看图识字  
望图知意

增强版

图文、英汉同步跟随  
图解+中文+英文=专业英语



化学工业出版社

图解

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# 机械制造 专业英语

增强版

藏书

Diagrammatic Professional English of  
Mechanical Manufacturing



化学工业出版社

· 北京 ·

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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，以致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。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。

本书是《图解机械制造专业英语》的增强版，前一版在2009年出版后，因特色鲜明、形式新颖、内容实用，而得到了读者的认可与好评，至今已5年，考虑到部分内容比较陈旧，不适应技术发展的要求。我们根据读者反馈的意见和建议，结合行业发展情况，在保留前版基本框架风格以及使用丰富的图形、英汉同步等形式进行表达的基础上，在内容方面做了进一步更新和完善。同时，为了使本书更加贴近生产实际，特邀请了日立电梯（中国）有限公司高级工程师唐电波、广汽吉奥汽车有限公司生产和质量管理部部长何健斌、四川省机械研究设计院雷宇航参与编写，使本书内容得到进一步增强。

本书由朱派龙担任主编，陈天宏、唐电波担任副主编，何健斌、雷宇航、余岩、郭剑、余尚行参与了编写。具体分工为：陈天宏编写 Unit1~Unit3；余岩编写 Unit4.1 中 (1)~(19)；朱派龙编写 Unit4.2~Unit4.5；何健斌编写 Unit5.1、Unit5.2、Unit9.1~Unit9.3；郭剑编写 Unit6.1~Unit6.3 和附录；雷宇航编写 Unit5.3、Unit5.4、Unit7；唐电波编写 Unit8.1~Unit8.5，余尚行编写 Unit4.1 中 (20)~(23)、Unit6.4、Unit6.5、Unit8.6、Unit9.4。

由于编者水平所限，书中不妥之处在所难免，敬请广大专家和读者批评指正。

编 者

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# Unit 1 Safety and Its Measures at Work

## 劳动安全与防护

### 1.1 Human need 人类需求

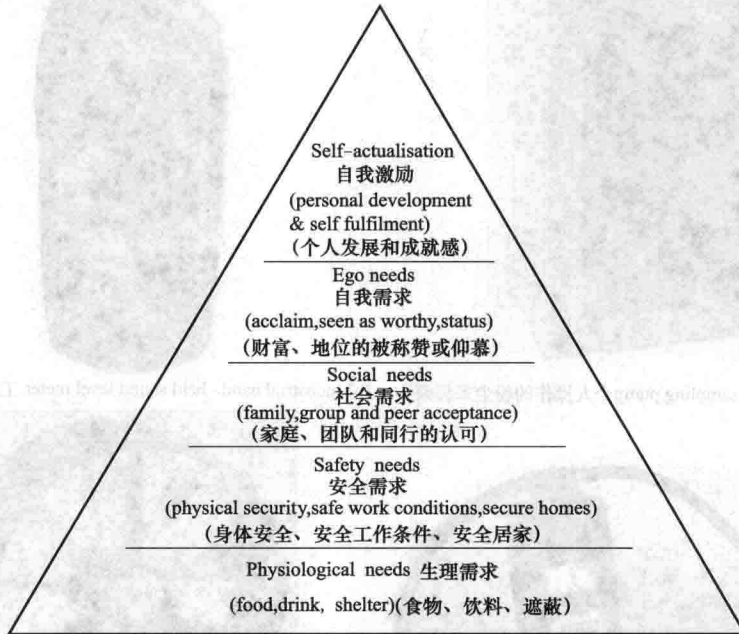


Fig 1.1 Maslow's hierarchy of human need 马斯洛人类分级需求图

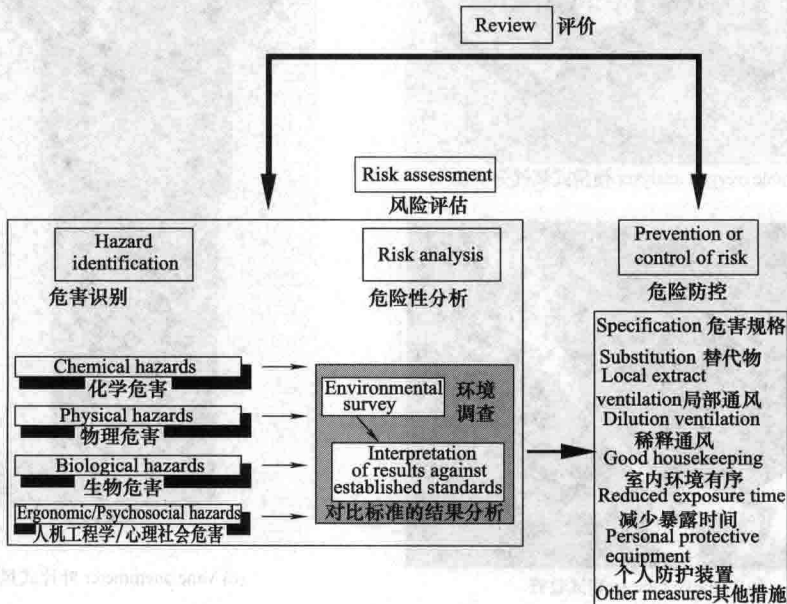


Fig 1.2 Diagram of strategy for protection against health risks 防止健康危害策略图解

### 1.2 Test and measuring gauge 测试仪器



(a) Personal dust sampling pump 个人操作的粉尘采样泵



(b) Industrial hand-held sound level meter 工业手持声压计



(c) Portable oxygen analyser 便携式氧气分析仪



(e) Vane anemometer 叶片式风速计

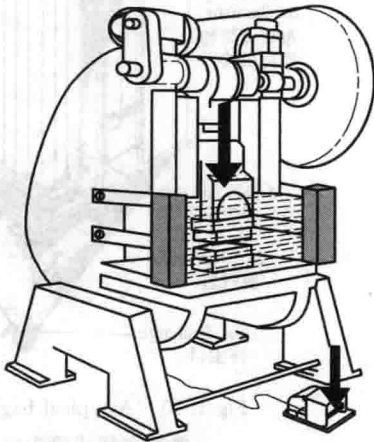


(d) Smoke tube 风烟试验管

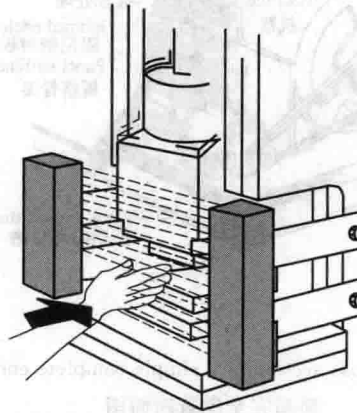
Fig 1.3 Test and measuring gauge 测试仪器



### 1.3 Shielding setups 隔离屏蔽装置



(a) With light beams forming a curtain across the zone of operation  
光束在操作区形成幕帘



(b) Breaking the curtain of light beams by operator's hands sets brake on machine and disconnects clutch  
操作者的手进入光束幕帘将启动机器制动器并断开离合器

Fig 1.4 Presence-sensing device 存在（“有无”）感应装置

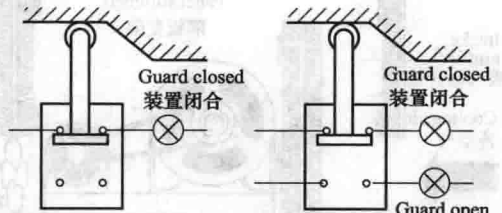


(a) Spring-type interlock shuts off power to machine when guard door is opened  
防护罩门打开时，弹簧式互锁开关将切断机器电源

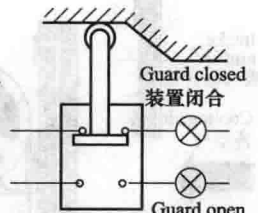


(b) Guard can only be removed by removing the plug, which then shuts off power to machine  
只有拔出插头防护罩才能移走，从而切断机器电源

Fig 1.5 Barrier guards 障碍防护罩



(a) Single lamp indication  
单灯显示



(b) Dual light indication  
双灯显示

Fig 1.6 Interlocking switch condition indication lights 互锁开关状态指示灯

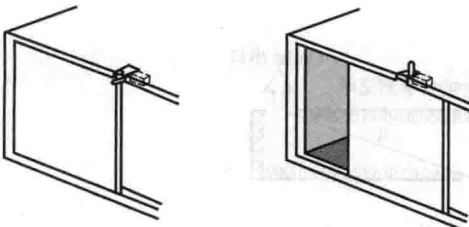
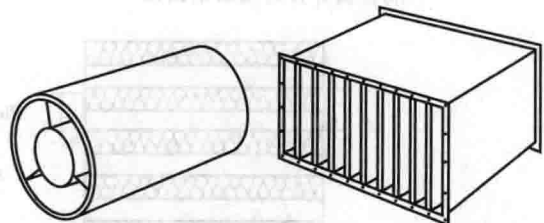


Fig 1.7 Direct manual switch interlock  
手动互锁开关



(a) Centre-pod silencer 中心柱形消声器 (b) Splitter silencer 分隔片式消声器

Fig 1.8 Silencer 消声器

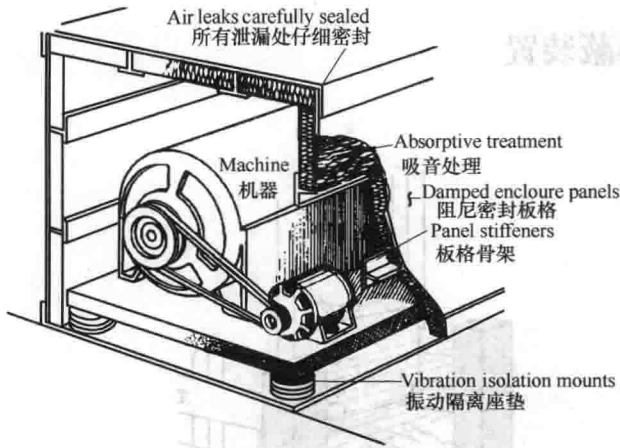


Fig 1.9 Cross section of a simple complete enclosure  
简易完全围蔽断面图



Fig 1.10 A typical baghouse  
典型布袋式除尘室

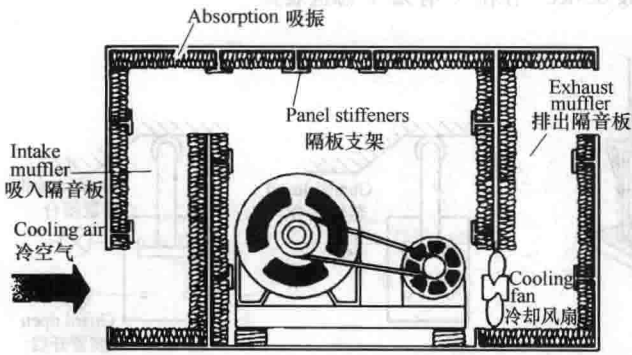


Fig 1.11 Schematic sectional view of a partial enclosure with mufflers  
隔音板部分封闭的剖面图

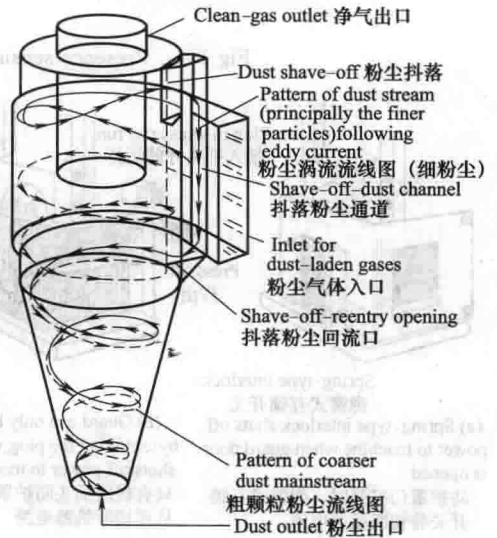


Fig 1.12 Flow pattern through a typical cyclone separator  
典型旋风式粉尘分离器流线图

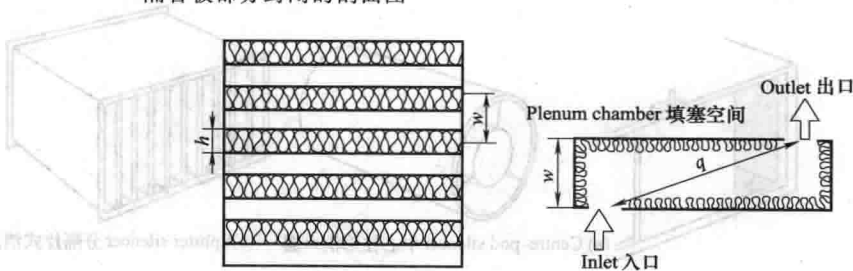


Fig 1.13 Parallel baffle muffler 平行吸振隔音板

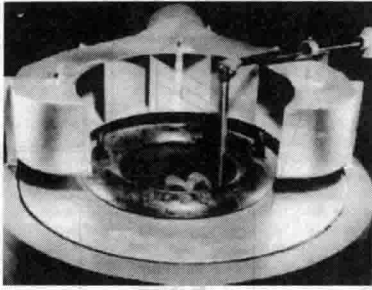


Fig 1.14 Captor-type claw hood for a furnace  
加热炉捕捉型爪式围蔽罩

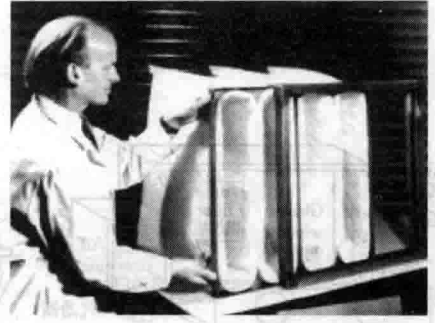


Fig 1.15 Bag filters 袋式过滤器

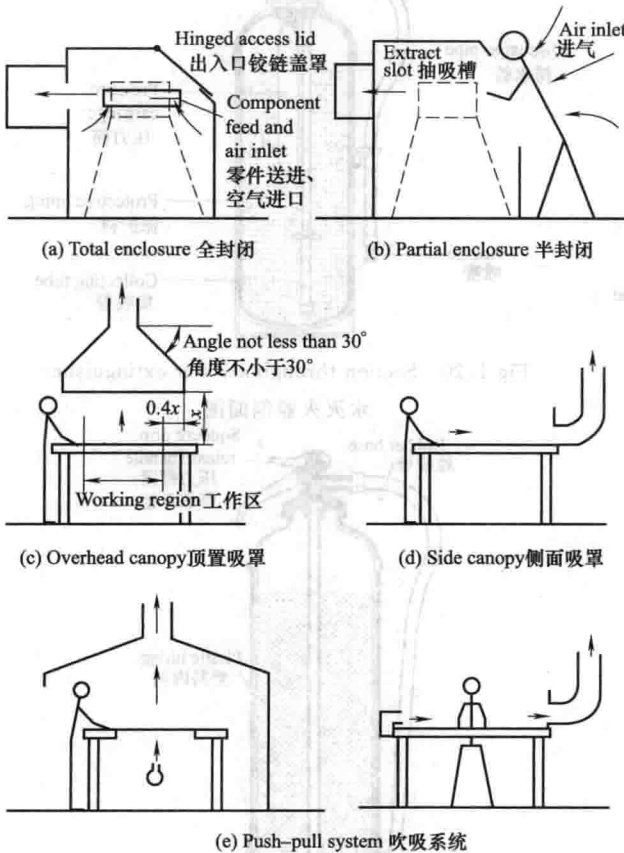


Fig 1.16 Typical local extract hoods and enclosures  
典型局部抽吸罩和围蔽设施



Fig 1.17 Protective clothing and equipment  
防护服及其装备

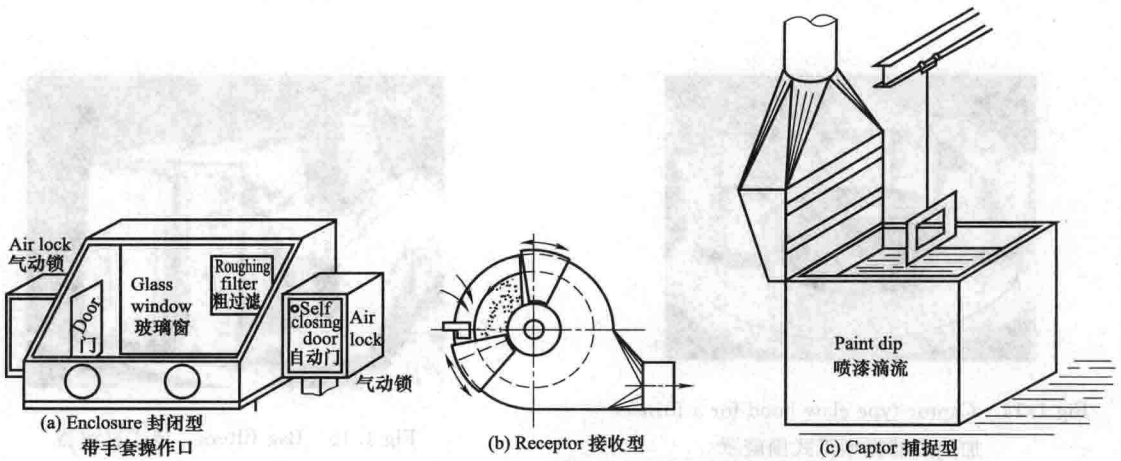


Fig 1.18 Types of hoods 围蔽罩的种类

## 1.4 Fire extinguisher 灭火设备

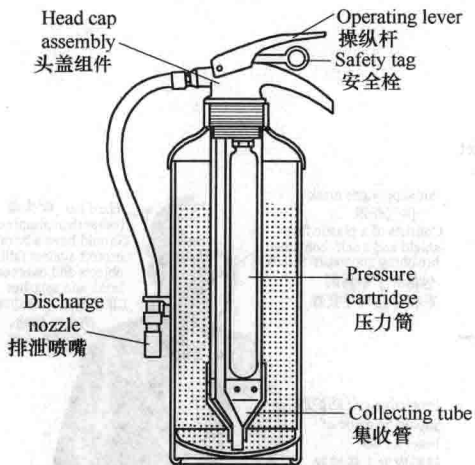


Fig 1.19 Section through a dry powder extinguisher 干粉灭火器剖面图

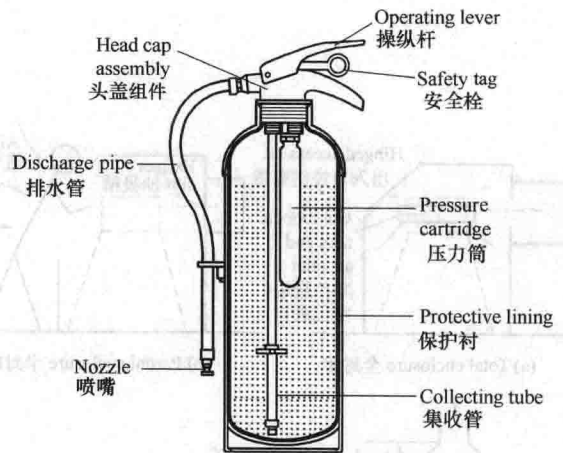


Fig 1.20 Section through a water extinguisher 水灭火器剖面图

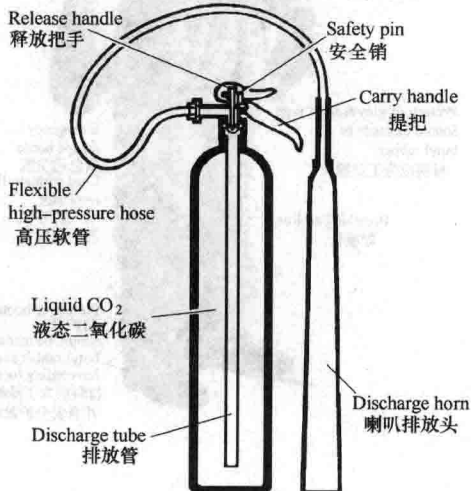


Fig 1.21 Section through a carbon dioxide extinguisher 二氧化碳灭火器剖面图

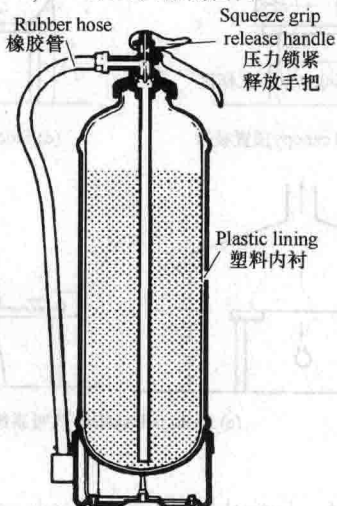


Fig 1.22 Section through a stored pressure type of water extinguisher 储存压力水灭火器剖面图

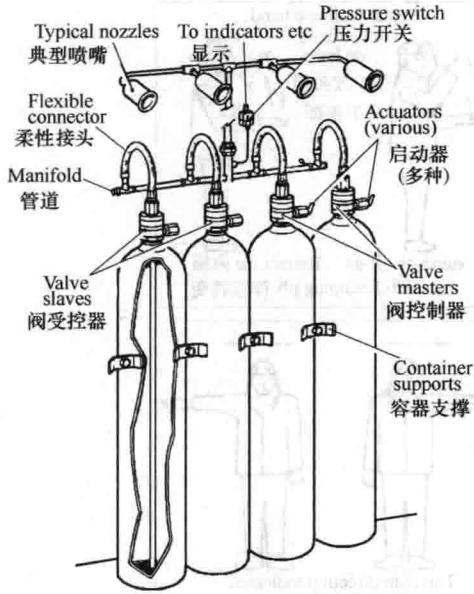


Fig 1.23 Diagram of battery of CO<sub>2</sub> cylinders supplying a small gas installation  
二氧化碳缸筒组供给少量气体装置图

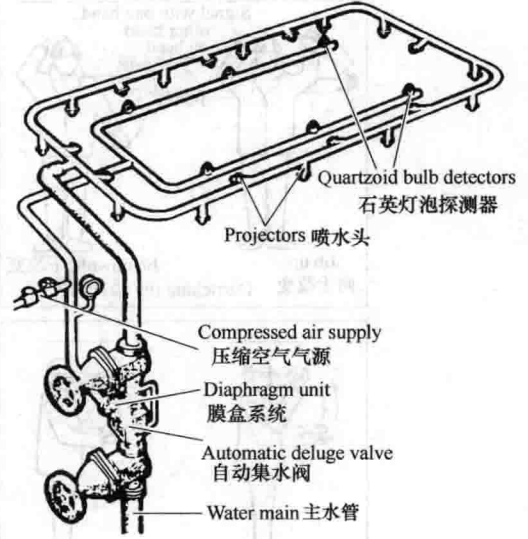


Fig 1.24 Diagram of a typical drencher (deluge) system  
典型喷淋(集水)系统图解

### 1.5 Crane signals 起重设备指挥信号



Fig 1.25

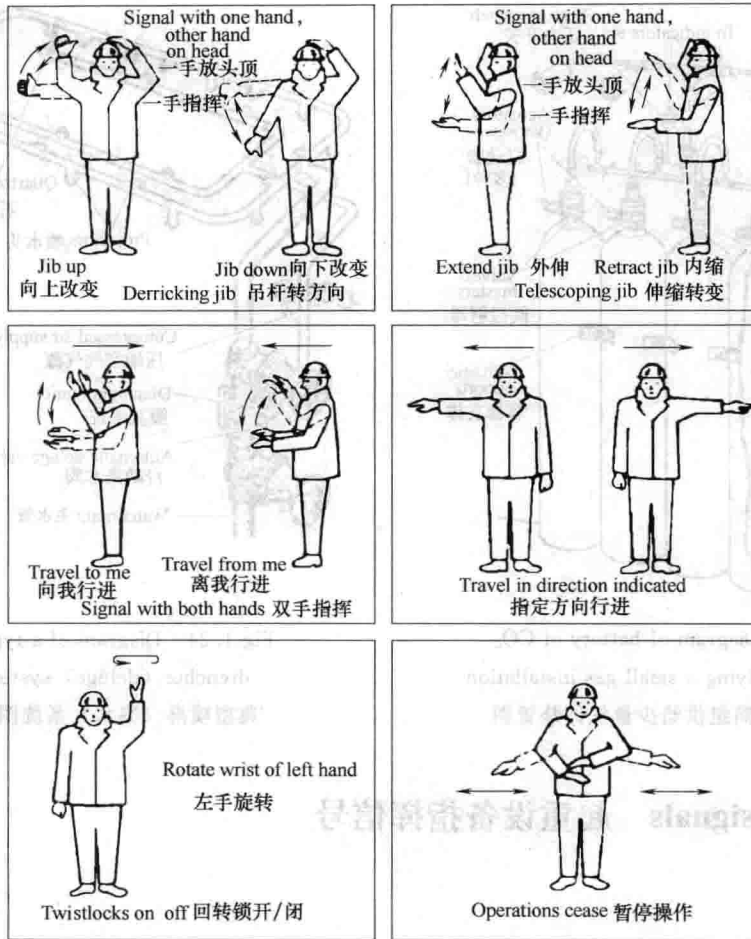


Fig 1.25 Crane signals 起重设备的指挥信号

## 1.6 Short passage for reading 阅读短文

### Risks to health at work

The main hazards are of three kinds, physical, chemical and biological, although occupational psychological factors may also cause illness.

#### 1. Physical hazards

Noise, vibration, light, heat, cold, ultraviolet and infrared rays, ionising radiations.

#### 2. Chemical hazards

These are liable to occur as a result of exposure to any of a wide range of chemicals. Ill-effects may arise at once or a considerable period of time may elapse before signs and symptoms of disease are noticed. By this time the effects are often permanent.

#### 3. Biological hazards

These may occur in workers using bacteria, viruses or plants or in animal handlers and workers dealing with meat and other foods. Diseases produced range from infective hepatitis

in hospital workers (virus infection) to ringworm in farm labourers (fungus infection).

#### 4. Stress

This may be caused by work or may present problems in the time spent at work. Work related stresses may be due to difficulties in coping with the amount of work (quantitative stress) or the nature of the job (qualitative stress).

#### 工作场所面临的健康危害

(工作场所面临的健康) 危害主要分为三类, 即物理危害、化学危害和生物危害, 当然职场心理因素也可能导致疾病。

1. 物理危害: 噪声、振动、光、热、受冻、紫外线、红外线和粒子辐射。

2. 化学危害: 暴露在各种化学品中易于引起这些危害。病况可能会立即出现, 也可能经历相当长时间而消失。但在疾病的预兆和征兆发现之后, 此时的影响将会是长期的。

3. 生物危害: 可能发生在那些接触细菌、病毒或动、植物处理以及肉类或其他食品的相关从业人员中。产生的疾病遍及医院从业人员感染的传染性肝炎(病毒感染)到田间地头农夫感染的金钱癣(真菌感染)。

4. 压力: 工作本身或工作期间呈现的问题可能引起压力。工作相关的压力起因一方面是工作量太大难于处理(定量压力), 另一方面是工作性质(定性压力)。

# Unit 2 Engineering Drawing 工程制图

## 2.1 Various types of views 视图类别

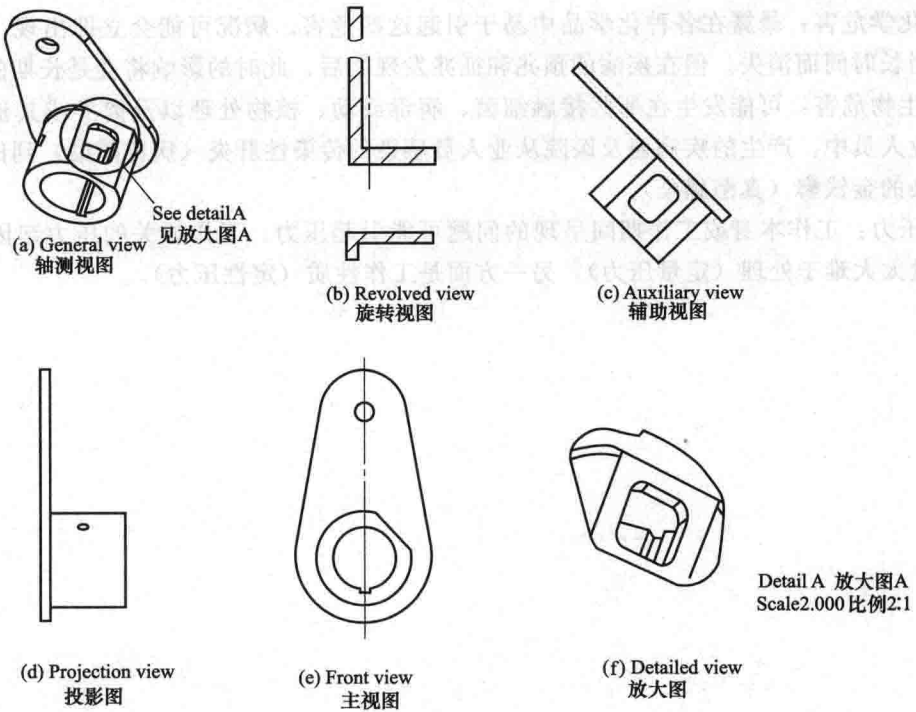


Fig 2.1 The five main types of views 五种主要的视图

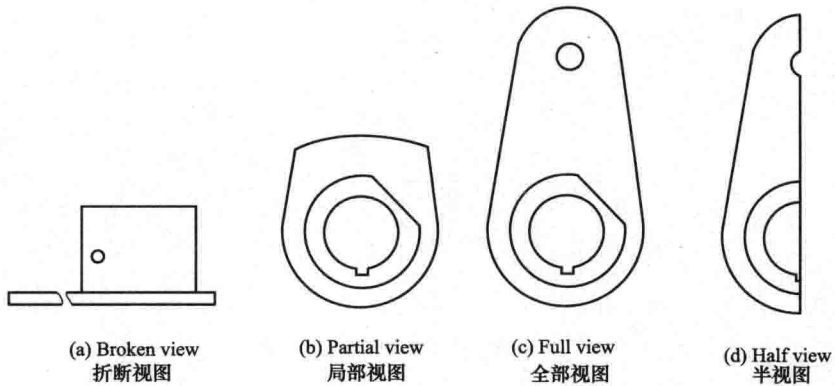


Fig 2.2 Some other commonly used views 其他常用视图



## 2.2 Drawing instruments 绘图仪器

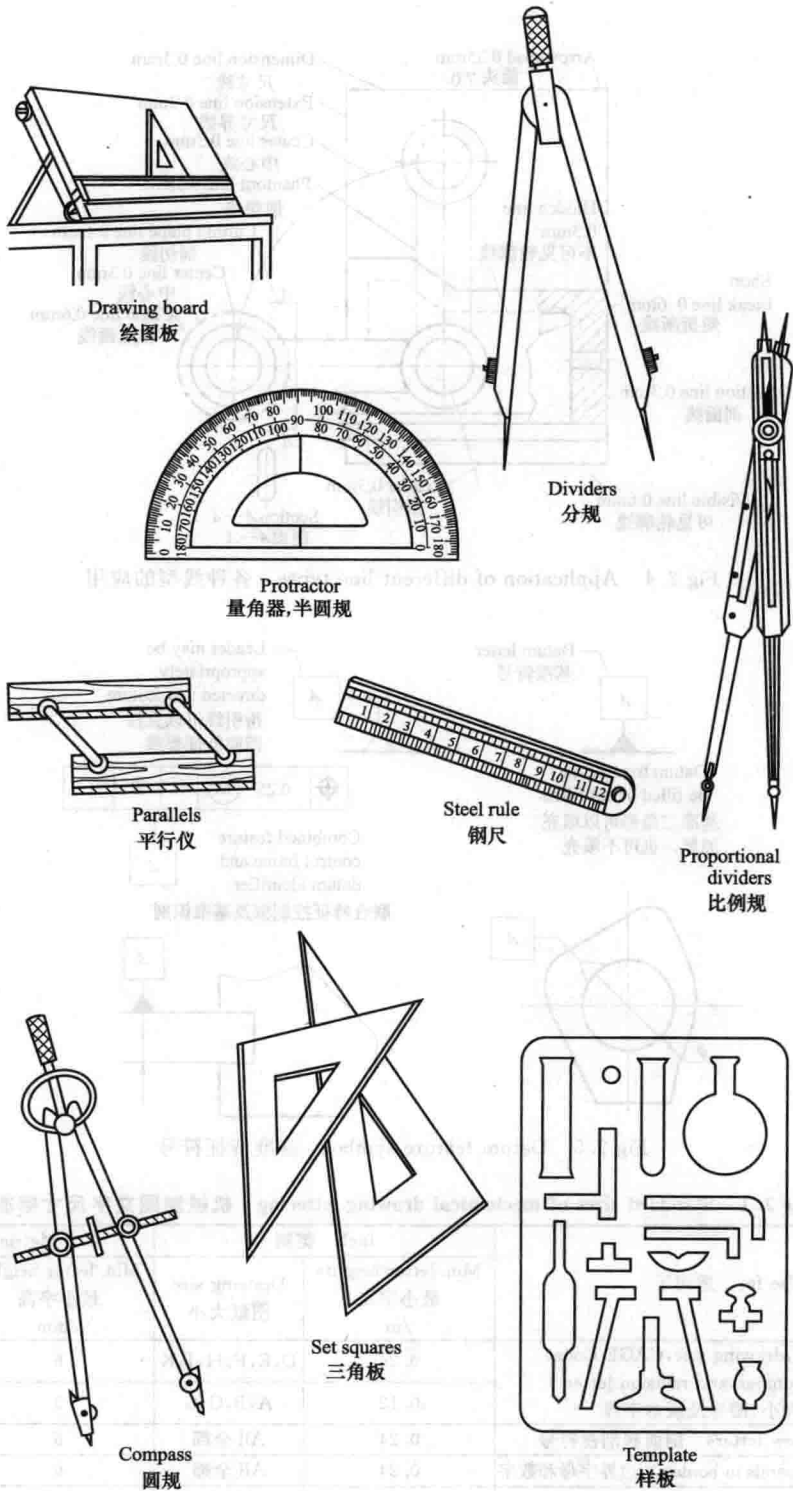


Fig 2.3 Drawing instruments 绘图仪器