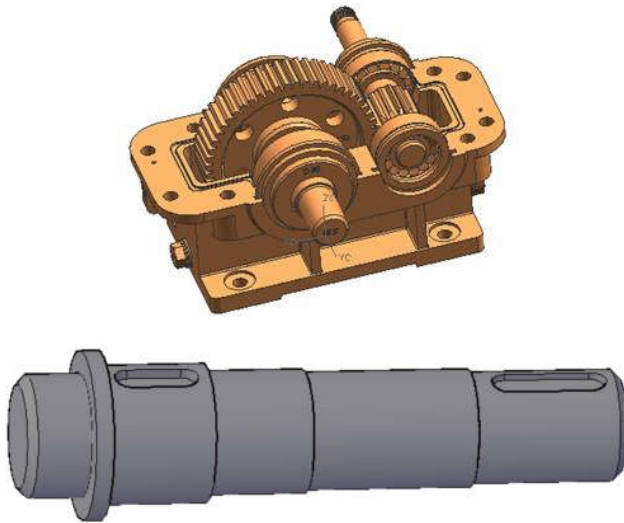


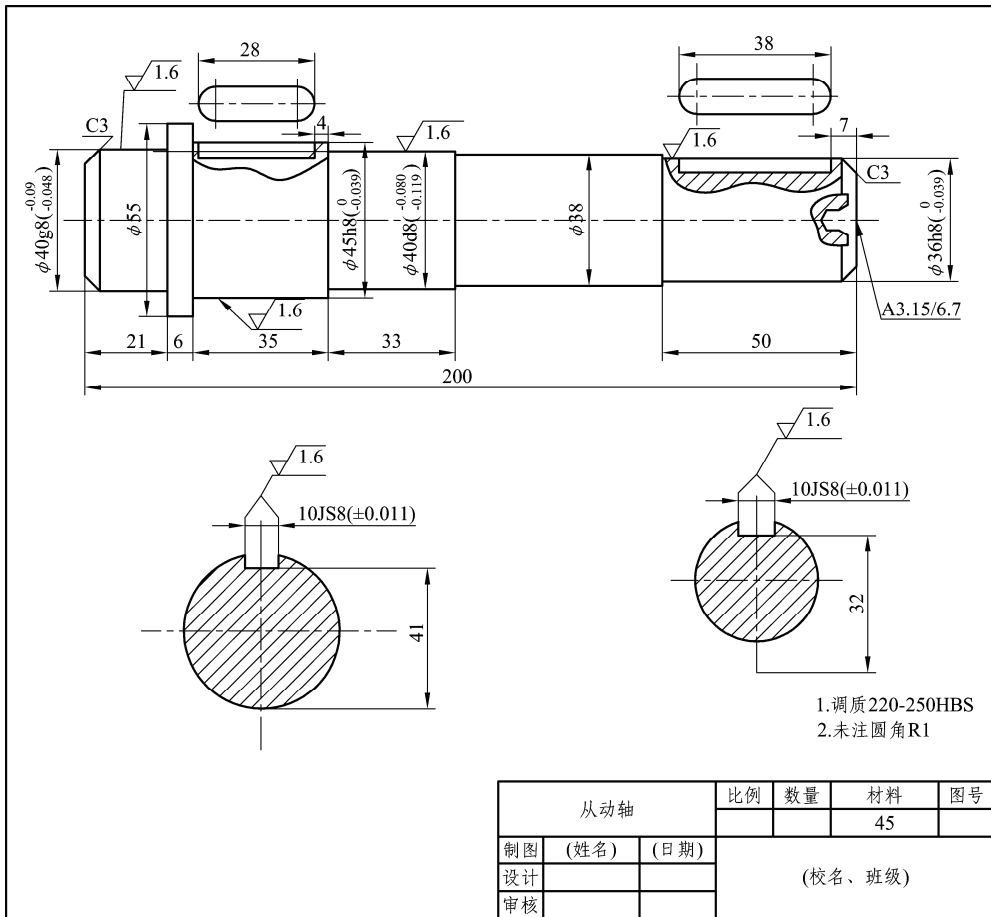
Lesson 3 Turning and Lathes

Look and Learn

Task 1

There is a secondary gear reducer, which has a driven shaft as shown in the figure below. Let's think how to process this shaft.





Task 2

Read the picture of the engine lathe and match the English with the Chinese. Draw lines.

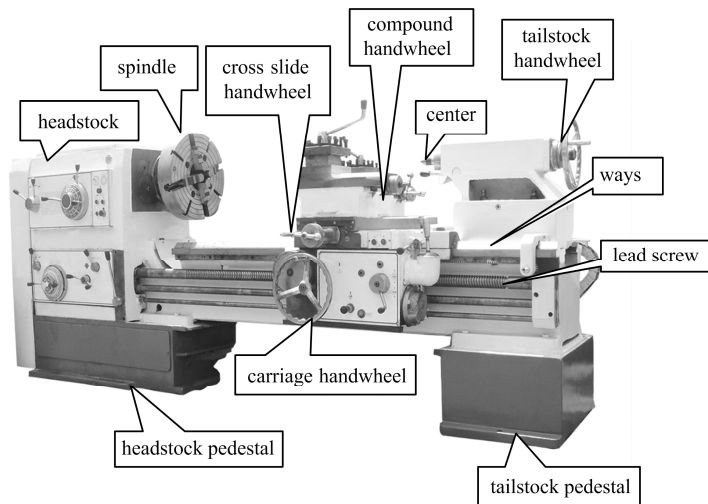


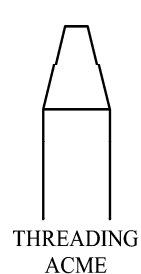
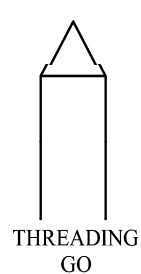
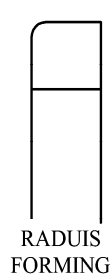
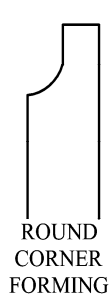
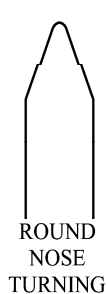
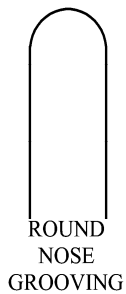
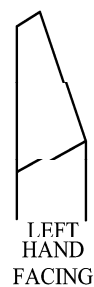
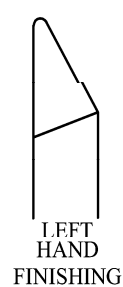
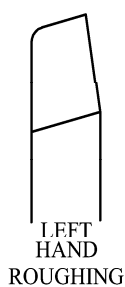
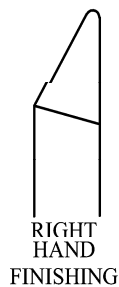
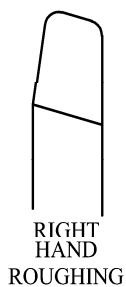
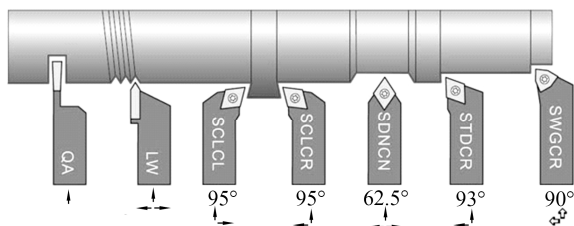
Fig.1 The engine lathe(普通车床)

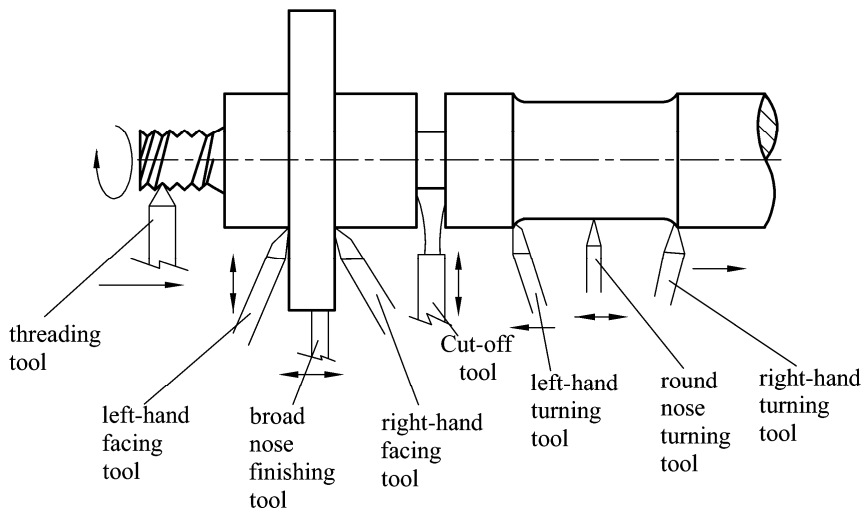
1. ways
2. headstock
3. compound handwheel
4. spindle
5. center
6. cross slide handwheel
7. tailstock handwheel
8. lead screw
9. tailstock pedestal
10. headstock pedestal
11. carriage handwheel

- a. 尾座滑动手柄
- b. 主轴箱底座
- c. 丝杠
- d. 顶尖
- e. 混合手柄
- f. 主轴
- g. 主轴箱
- h. 横向滑板/中拖板手柄
- f. 导轨
- g. 大拖板手柄
- h. 尾座

Task 3

Read the pictures and learn the tools.





New words

carriage	[ˈkæriɪdʒ]	n.	拖板
compound	[ˈkɒmpaʊnd]	adj.	复合的；混合的
cross	[krɒs]	adj.	交叉的；n. 交叉，十字；横切；横断
handwheel	[ˈhændwi:l]	n.	手轮，操纵轮；驾驶盘
headstock	[ˈhedstɒk]	n.	主轴承，主轴箱
lead	[liːd]	n.	领导；铅；导线；榜样；adj. 带头的；最重要的
pedestal	[ˈpedɪst(ə)l]	n.	基架，基座；基础
screw	[skru:]	n.	螺旋；螺丝钉；吝啬鬼
slide	[slaid]	n.	滑动；滑板；v. 滑动
spindle	[ˈspɪnd(ə)l]	n.	轴；主轴
tailstock	[ˈteɪlstɒk]	n.	(车床的可调整或可滑动的)[机]尾座
workshop	[wɜ:kʃɒp]	n.	车间
disassembly	[ˌdɪsəˈsembli]	n.	拆卸，分解，解体
revolve	[rɪˈvɒlv]	v.	旋转，绕行
attachment	[əˈtætʃmənt]	n.	连接附件
reassemble	[ˌriːəˈsemble]	v.	重新装配
train	[treɪn]	n.	火车；v. 培养，训练
trainee	[treɪˈni:]	n.	实习生；受训者
signature	[ˈsɪgnətʃə]	n.	署名，签名

instructor [ɪnˈstrʌktə] n. 指导者；教员

Useful expressions

1. facing tool 端面车刀
2. roughing tool 粗加工刀具
3. finishing tool 精加工刀具
4. turning tool 车刀
5. threading tool 螺纹车刀
6. round nose tool 圆形头刀具
7. tear down 拆卸

Dialogue

A: Sue, have you seen the lathe in our workshop?

B: Yes, sir. I have just made a complete disassembly.

A: What? You have torn it down! OK, where is the headstock?

B: It is here, sir. The headstock is a part of a lathe that holds the revolving spindle and its attachments.

A: That's good. But you should reassemble the lathe by yourself.

B: No problem, sir.

Practice

1. Ask your partner something about the lathe.

2. This is a recording sheet which enables you to track a trainee's progress through the train tasks.

Each training task has a space for your signature and the date when you are satisfied that the trainee has completed the task correctly. Here is an example of how the recording sheet could be used:

Trainee name	Tom	
Task number	Instructor's signature	Date completed
1-Turning-center punch	J.Bloggs	2 nd March , 2001

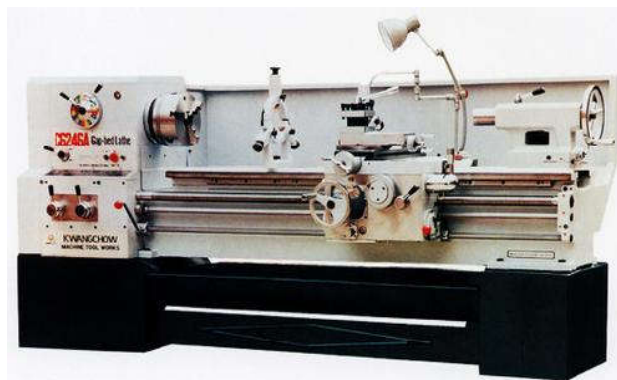
Train Task Record Sheet

Trainee name		
Task number	Instructor's signature	Date/year completed
1-Turning-center punch		
2-Turning-screw jack		
3-Milling-parallels		
4-Milling-Vee block		
5-Grinding-parallels		
6-Grinding-Vee block		

Reading

Passage 1 Types of Lathes

There are many types of lathes. Look and learn them below.



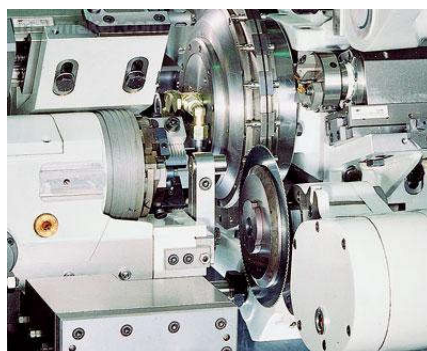
Lathe (CNC included) —— 车床 (含数控)



Horizontal lathes —— 卧式车床



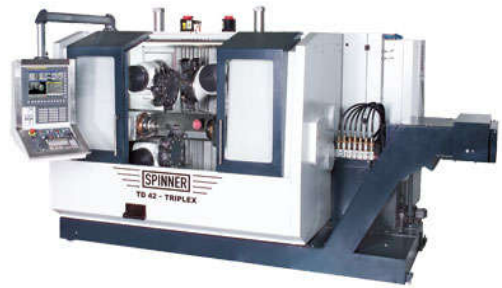
Vertical lathes —— 立式车床



Multi-spindle lathes —— 多轴车床



Multi-tool lathes ——多刀车床



Ultra-precision turning machines ——超精车床



Special purpose lathes ——专用车床



Turning center ——车削中心



Turning/Milling machines ——车/铣复合中心

Practice

Try to answer the following questions orally.

1. How many types of lathes have you seen from Passage 1?
2. Do you know how to use them?

Passage 2 The Lathe

The lathe is one of the most useful and versatile machines in the workshop, and is capable of carrying out a wide variety of machining operations. The main components of the lathe are

the headstock and tailstock at opposite ends of a bed, and a tool-post between them which holds the cutting tool. The tool-post stands on a cross slide which enables it to move sideward across the saddle or carriage as well as along it, depending on the kind of job it is doing.

New words

- versatile [ˈvɜːsətaɪl] *adj.* 通用的, 万能的
component [kəmˈpəʊnənt] *adj.* 组成的, 构成的; *n.* 成分; 组件; 元件
sideward [ˈsaɪdwəd] *adj.* 旁边的, 侧面的; *adv.* 向侧面地
saddle [ˈsædl] *n.* 刀座鞍; 溜板座

Useful expressions

1. be capable of 能够
2. carry out 执行, 实行; 贯彻; 实现; 完成
3. as well as 也; 和.....一样; 不但.....而且.....
4. tool-post 刀架
5. cutting tool 切削刀具