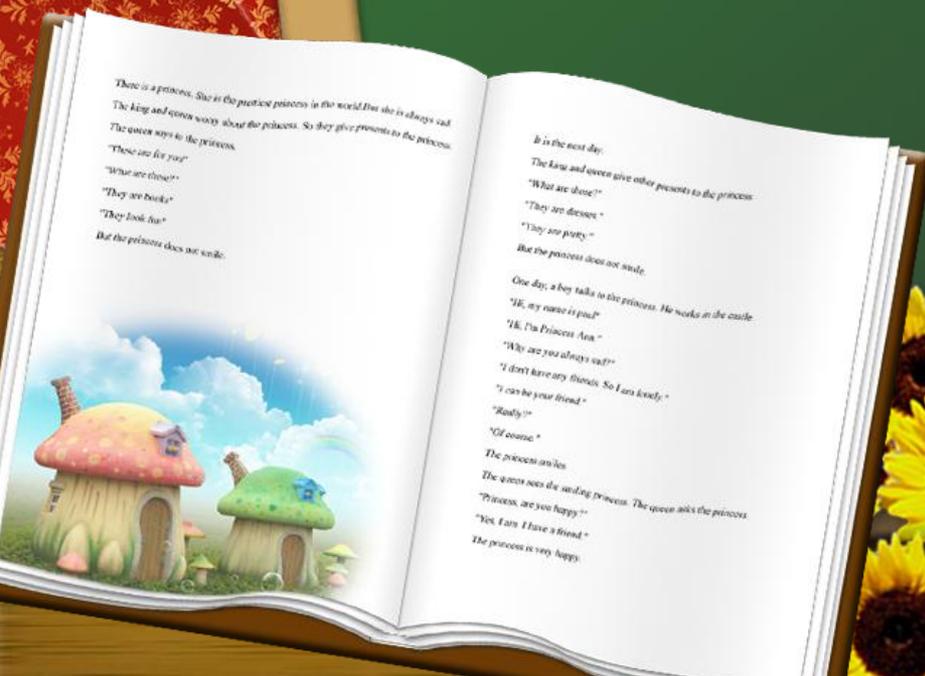




# 数控铣削的手动操作



# 一、手动操作

手动移动刀具的方式有“手动”“手轮”和“快速”三种。

## 1. 【手动】和【快速】方式

“手动”或“快速”方式操作步骤相同，不同之处是移动速度。

手动轴选择方式由“+X”“-X”、“+Y”“-Y”、“+Z”“-Z”六个按键组成。在“手动”或“快速”方式下，按下其中一个按键，可以使刀具沿各轴正向或负向连续移动，移动速度可由进给倍率旋钮调节，松开按钮后移动停止。

## 2. 【手轮】方式

“手轮”方式由“手轮轴选择”、“手轮轴倍率”和“手摇脉冲发生器”三部分组成。使用时，首先旋转手轮轴选择旋钮至“X”、“Y”或“Z”，选择刀具所要移动的轴；然后旋转手轮轴倍率旋钮，选择刀具移动的距离和精度；最后旋转手摇脉冲发生器移动机床。其中“手摇脉冲发生器”每转动一个刻度，根据确定的手轮轴倍率“ $\times 1$ ”、“ $\times 10$ ”、“ $\times 100$ ”，机床移动的距离分别为 $0.001\text{mm}$ 、 $0.01\text{m}$ 、 $0.1\text{mm}$ 。

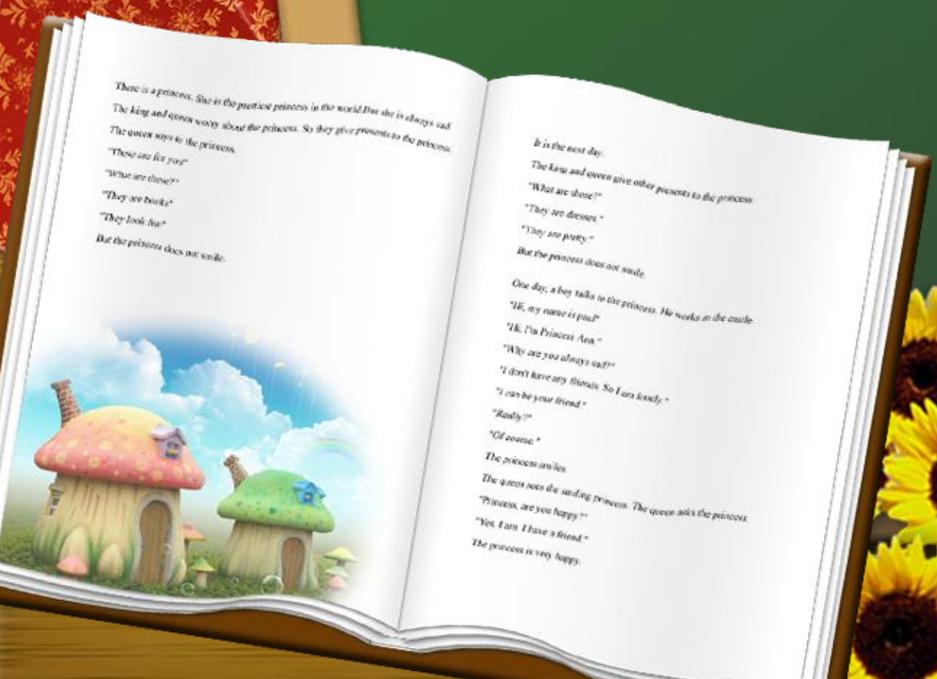
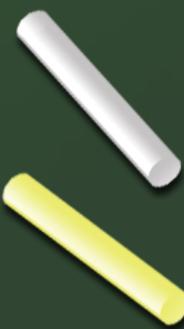
## 二、MDI操作

MDI方式适用于简单程序的操作，如指定主轴的转速、更换刀具等。这些程序在执行后将不能被存储。例如，指定主轴的转速为500r/min，操作步骤如下：

- (1) 在操作面板中按下“MDI”键。
- (2) 按“PROG”键，CRT将显示“程式MDI”界面。
- (3) 在MDI键盘中输入“M03 S500”，按“EOB”和“INSERT”键，程序显示在CRT界面中，通过光标键使光标回到程序开头。
- (4) 按下机床操作面板上的循环启动按钮，主轴设定的速度开始旋转。



# THANK YOU



There is a princess. She is the prettiest princess in the world. But she is always sad.  
The king and queen worry about the princess. So they give presents to the princess.  
The queen says to the princess:

"These are for you!"  
"What are these?"  
"They are books."  
"They look fun!"

But the princess does not smile.



It is the next day.

The king and queen give other presents to the princess.  
"What are those?"  
"They are dresses."  
"They are pretty."

But the princess does not smile.

One day, a boy talks to the princess. He works in the castle.  
"Hi, my name is Paul."

"Hi, I'm Princess Ann."  
"Why are you always sad?"  
"I don't have any friends. So I am lonely."  
"I can be your friend."  
"Really?"  
"Of course."

The princess smiles.  
The queen sees the smiling princess. The queen asks the princess:  
"Princess, are you happy?"  
"Yes, I am. I have a friend."  
The princess is very happy.