

## 英语学习

## 英语翻译技巧(18)

涂学忠

(化工部北京橡胶工业研究设计院 100039)

## 3.1.2 Ram Extruders

In the ram extruder, a quantity of warm compound is placed into the cylinder, the die head is attached to the cylinder, and the ram then pushes the compound through the die to form a profiled section<sup>①</sup>.

This type of machine is intermittent in operation, and its operating costs tend to be higher than those of the screw-type extruder. The main virtue, however, is an ability to extrude compound at a lower temperature and/or speed, which can result in marked technical advantages in controlling the conditions for extruding difficult compounds<sup>②</sup>. It is easier to clean and is applicable to short runs. Furthermore, it finds particular application when compounds need to be strained through gauze for high-quality products requiring completely contamination-free material. Other advantages lie in the much reduced heat build-up compared with the screw extruder, and its ability to extrude compounds with poor flow properties.

## 3.2 EXTRUSION TECHNOLOGY

The variability to be expected in the dimensions of the extrudate is at a minimum when the compound has the minimum entrapped stress. The stress can be relieved by means of a small loop immediately following the extruder die and prior to the take-away conveyor, or by means of a system of controlled shrinkage<sup>③</sup>. As the depth of the loop

increases, so does the variability of the section, since a large loop introduces stress. The greater the loop, the greater the stress from the compound weight that has to be supported.

Dies should always be designed to operate under conditions of minimum stress and at predetermined running speeds and temperatures, and the extrudates should always be produced under these conditions. Small adjustments in weight per unit length to accommodate minor compound variability can be made by subsequent slight stretching or compression of the section, but here again, the greater the stress in the compound after extruding, the greater the variability in the dimensions of the extrudate.

A different die will probably be needed for each compound, because of differing viscoelastic properties. The design of dies is an art, and normally requires a number of attempts to obtain the correct section with any given compound. Sections can be varied by means of different angles of 'lead-in' at the back of the die, as well as by changing the aperture of the die. Whether the die is a thick or thin one also affects the section obtained<sup>④</sup>.

## 生 词

ram extruder  
cylinder  
intermittent

柱塞式挤出机  
机筒  
间歇式

screw-type extruder	螺杆式挤出机
virtue	优点,长处
short run	小批量生产
gauze	滤网
strain	过滤
contamination	污染
heat build-up	生热
entrapped stress	残余应力
relieve	减轻,降低
predetermined	预定的
accomodate	适应
stretch	拉伸
compression	压缩
lead-in	导入端
aperture	孔

## 译 文

### 3.1.2 柱塞式挤出机

在柱塞式挤出机中,把一定量的预热胶料喂入与挤出机头相连的机筒中,柱塞推动胶料通过口型,形成具有一定断面形状制品<sup>①</sup>。

这种机器是间歇式的,其操作费用比用螺杆挤出机高。但其主要优点是能在较低温度和/或较低速度下挤出胶料,从而在控制难挤出胶料加工条件方面有着显著的工艺优点<sup>②</sup>。该机便于清理,适用于小批量生产。此外,在要求用完全无污染胶料生产高质量制品而胶料需用滤网过滤时,这种挤出机特别适用。柱塞挤出机的其它优点是生热比螺杆挤出机低得多,而且能挤出流动性差的胶料。

### 3.2 挤出工艺

胶料中残余应力愈低,挤出物的尺寸变化就愈小。胶料挤出口型后立即形成一个小环再到达输送带,或安装一个控制收缩的装置,可使残余应力降低<sup>③</sup>。环的深度增大,挤出物断面的变化亦随之增大,因为大环会产生应力。环愈大,必须支撑的胶料重量产生的应力就愈大。

口型都要设计得使其在最低应力条件以及预定的速度和温度下作业,挤出机也只能在这种条件下生产挤出物。挤出后,可轻轻拉伸或压缩断面,对单位长度的重量进行小调节,使之适应较小的胶料变化,但这里要重申,胶料挤出后残余应力愈大,挤出物尺寸的变化也就愈大。

由于粘弹性不同,各种胶料所需的口型可能也不相同:口型设计是一门技术,通常需经多次尝试才能得到一种给定胶料的正确断面形状。在口型后部采用不同的入口角即导入端,或改变口型孔可获得不同断面形状的挤出物。口型厚薄对挤出断面形状也有影响<sup>④</sup>。

注:①“profiled section”也可直译为“具有一定形状的断面”。

②“which”引出的是非限定定语从句,修饰整个主语。

③“small loop”为胶料挤出后因重力作用形成的下垂凹兜,可起缓冲应力的作用。

④“wheather”引出的是主语从句,直译为“口型是厚的,还是薄的”,可简化为“口型厚薄”。

## 英译汉常见错误实例

Low sulphur/high sulphenamide systems are particularly unsuitable for hot air curing because the combination of their delayed action, and the low rate of heat transfer in this curing method allows the rubber extrusion to collapse before any crosslinking occurs.

误:低硫高次磺酰胺体系特别不适用于热空气硫化,这是由于这些延迟作用的结合和在这种硫化方法中热传递速度低,因而使得橡胶挤出件在交联开始前发生下塌。

正:低硫高次磺酰胺体系特别不适用于热空气硫化,因为这种硫化方法既有延迟作用,而且传热速度又低,致使橡胶挤出件在交联开始前发生下塌。