

9.7 gear generator

Straight bevel gear generator

It is a machine that processes straight bevel gear or helical bevel gear with double gear shaper tool in a rough or precise way. The upper and lower knife holder makes straight-line reciprocating cutting motion. The whole knife is installed on the cradle and swing along in a certain angle. This, together with the rotation of workpiece in a certain angle, creates generating motion. Every time the cradle makes up and down reciprocation, it finishes the cutting work of a tooth. At that time, the workpiece withdraws along the saddle, turning in an angle and starting tooth dividing. Then the saddle will be sent to its working position again and starts a new round of working cycle. All the teeth are processed in this way until one workpiece is shaped out. Generally, the principal axis of workpiece of straight bevel gear shaping machine has the same height with cradle. Therefore, only straight tooth can be processed. Some height of principle axis of workpiece of straight bevel gear shaping machine can be adjusted and it is equipped with tangential tool rest which can be used in shaping helical bevel gear. There are two adjustable slide ways of the hob slide of gear generator which can shape crowned tooth. Those can help the motion trail present curve shape so crowned shape can be shaped. The processing range of the machine is relative large with the processing module being 0.5~20mm, the processing diameter being 5~900mm. Generally, its processing accuracy can reach Class 7. The surface roughness is $R_a 0.63 \sim 0.32 \mu_m$. This kind of machine is used in medium and small batch production. The outline drawing of Y236 type straight bevel gear generator can be seen from Figure 9-10.

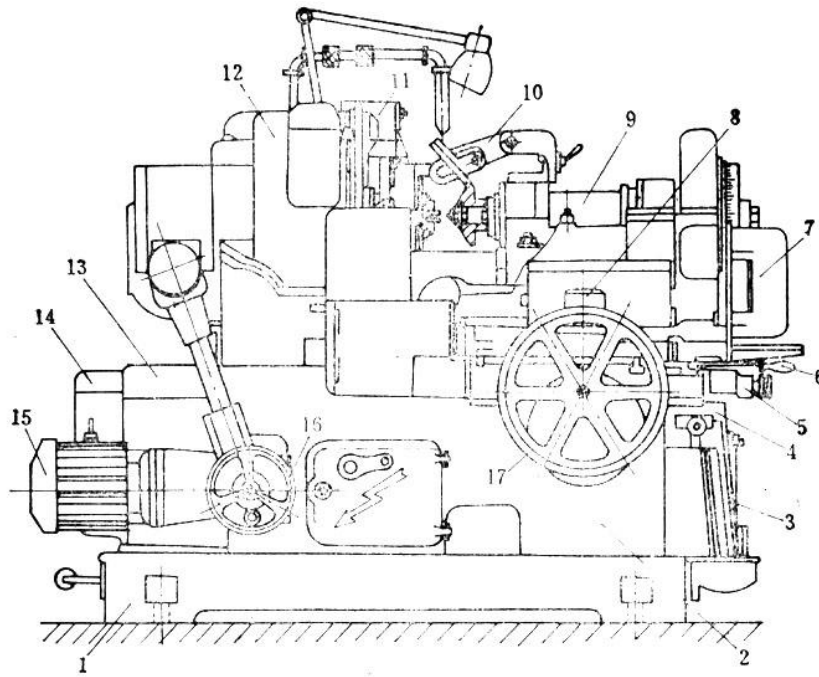


图 9-10

1—底座 2—床身 3—进给鼓轮 4—摇臂 5—床鞍 6—锁紧床鞍手柄 7—分齿箱 8—控制轮
 环安装距的分齿箱游标尺 9—分齿箱主轴 10—加工余量分配规 11—摇台 12—摇台座 13—控
 制机构 14—滚切挂轮和摇台摆动挂轮箱 15—主电动机 16—转动机床使刨齿刀前后移动的手轮
 17—移动床鞍用的手轮

Bevel gear shaping machine

Bevel gear shaping machine refers to straight tooth bevel gear shaping machine. Details can be seen from “straight tooth bevel gear shaping machine”.