**The criterion of repair and maintenance for the mechanical transmission components of laser equipment**

**1. Guide rail, straight axis, sliding block (Metal roller), nylon roller**

The guide rail and straight axis are the core components of the machine, their function is guiding and supporting. To achieve the high precision of machine processing, the guide rail and straight axis need to have higher guiding accuracy and excellent working stability. There are much dust and smoke generated from the processing items during machine working which deposit in the surface of guide rail and straight axis affecting the processing precision and form the corrosion spot in the their surface shortening machine lifetime. In order to make machine work stably and guarantee product quality, the guide rail and straight axis need to be maintained daily.

The straight axis in the beam: switch off the power, move the laser head to the end of right side (or the end of left side), use the cotton cloth to wipe along the direction of straight axis till it is clean without dust. Move the laser head to the end of left side (or the end of right side), use the cotton cloth to wipe along the direction of straight axis till it is clean without dust. In the end, add some lubricating oil on the surface of guide rail (can use sewing machine oil, the engine oil is prohibited.) push the laser head along the left side and right side slowly, do it like this several times to make lubricating oil distribute in the guide rail surface averagely. Clean the straight axis in the left and right guide beam in the same way.

**2. Synchronous belt, synchronous pulley**

The synchronous belt and synchronous pulley are the vital mechanical transmission components controlling the motion trail of laser head. The synchronous belt is easy to be stretched long a bit and become loosen affecting the motion precision and sensitivity of laser head, so it needs to be adjusted in time.

Adjusting method: the adjustment for the X-direction and Y-direction synchronous belt should be tightened to appropriate tensioning degree; for the adjustment of synchronous belt of motor, the tensioning degree should be like this: if you press the middle part of belt, the sinkage is 3% to 5% of center distance of pulley.

**Attention:**

a. If you make the synchronous belt too tight, it is easy to be stretched to deform and the bearing abrases quickly; if it is too loose, the transmission accuracy will be not precise, the sensitivity will be decreased. So the tension of the synchronous belt should be adjusted to the optimum state. When adjusting Y-direction synchronous belt, you should make tensioning degree suitable and make tensioning degree of both sides the same, thus the synchronous belt will be stable during transmission, not affecting the effect of engraving and cutting product.

b. The synchronous belt should be far away from oil or chemicals, and is strictly forbidden to contact acid, alkali, oil and organic solvents. Keep the synchronous belt clean and dry.

c. The synchronous belt also has a problem of aging, if the belt ages too much (or abrasion), it needs to be replaced in time and matches the pulley. The pulley will loosen or abrase after a period of using, it needs to be replaced or locked and matches the synchronous belt.

**3. Fasten the screw and coupling**

After the machine works a period of time, the screw and coupling in the joints will become loose affecting the stability of mechanical motion, so you need to check if there are abnormal noises or abnormal phenomenon of transmission parts during machine working, if finding some problems,