

HST-P400A Fully Automatic Four-axis CNC Specimen Making Machine



Picture Just for reference

Application:

The HST-P400A Fully Automatic Four-axis CNC Specimen Making Machine is specially designed for pipe sample preparation. It can directly process dumbbell-shaped splines on the raw pipe material without any cutting of the pipe. Just cut a section from the original pipe and directly mount it on the prototype chuck to start

processing automatically. The equipment can automatically process the required samples along the length and circumference of the pipe. The rotating axis is used to control the processing position of the pipe, and multiple samples can be prepared on the round pipe at one time. The process is controlled by a computer and is fully automatic. The following figure is a schematic diagram of preparing 8 samples from a section of round pipe:

Equipment structural features:

- ◆ The four-axis structure expands the A axis on the Y axis, and the spindle motor is controlled by the XYZ three-axis to achieve three-dimensional processing. The A axis drives the pipe to rotate, and realizes automatic processing along the axial and circumferential directions of the pipe.
- ◆ The self-designed ultra-thin stainless steel chuck (patented product) can adapt to the clamping of pipes of $\varnothing 50$ - $\varnothing 400$. The whole body of stainless steel material can adapt to humid and water-cooling environments.
- ◆ The double-brake Y-axis clamping mechanism (patented product) ensures that the material is firmly clamped during processing and guarantees the processing quality.
- ◆ The high-speed spindle motor and the milling cutter suitable for cutting polymer materials are used to ensure smooth cutting and chip removal during processing, less heat and non-sticking knife.
- ◆ The three-axis proximity limit switch automatically returns to zero and automatically positions when the equipment is turned on. The position of the positive limit switch of the X-axis can be adjusted to avoid the accident of collision with the knife caused by the size of the processed graphics exceeding the material size.
- ◆ The material water cooling component can open the water cooling device during the processing as needed to spray and cool the material.
- ◆ The four-axis electronic handwheel control adjusts the position of the spindle motor through the crank, and the adjustment operation is more convenient.
- ◆ The touch screen industrial computer serves as a human-computer interaction interface, which is easy to operate. The independently designed control core board isolates interference signals at multiple levels and uses optimized communication protocols to communicate with the industrial computer. It works stably and has strong anti-interference capabilities.

Technical parameters

1. Number of moving axes: 4 axes (X, Y, Z, A);
2. Maximum moving speed: 500mm/min;
3. Minimum moving speed: 10mm/min;
4. Spindle positioning accuracy: 0.02mm;
5. X-axis moving range 550mm;

6. Y-axis moving range 350mm;
7. Z-axis moving range 220mm;
8. A-axis moving range 360°;
9. Spindle power 2.2KW;
10. Spindle speed 24000RPM;
11. Spindle cooling method Water cooling;
12. Tool diameter $\varnothing 6\text{mm}$, $\varnothing 3.175\text{mm}$;
13. Material cooling method Natural cooling, water cooling;
14. Maximum processing pipe diameter 400mm;
15. Maximum pipe section length: 530mm
16. Maximum processing pipe thickness 50mm;
17. Main machine dimensions (length * width *height) 1397*680*1473 (mm);
18. Power supply 220V $\pm$ 10% 3000W;
19. Host weight about 480kg