

Points to consider while selecting a CNC Profile cutting machine

Check out the below while you select a machine:

1. **Controller:** This is one of the major part of the CNC machine. There are controllers available from USD 600 to USD 11000 for such machines. The performance and user friendliness depend on the type of controller. The latest controllers have the features like EtherCAT digital communication with drives, Windows embedded system, full touch screen system avoiding keyboards and mouse. Various "go to" function enabling the operator to go to any position while working, job interruption mode to switch over while running a job, Multiple kerf compensation (for inside and outside profiles), No hard disks. Down loading of programs by USB, Modem and Wifi. Possibility of adding remote control, etc.
2. **Drive System and Motors:** Drive motors are available from Stepper motor to DC Servo and AC Servo drive. The basic Stepper motors are used for lower accuracy based systems and movement of single axis. for X-Y movement the DC or AC servo drives with Encoders and gearbox are better. Plasma cutting being high speed cutting, it needs dual drive system for the longitudinal drive to get better accuracy of profiles like circles. Encoders are devices which give feed back to the drive system and controllers about movement of the machine. So the higher accuracy level needs higher resolution of encoder ie Ticks/Pulse Per Mtr. Gearbox is required to reduce load on the motor which is directly related to the life it.
3. **Torch Stations:** Motorised torch lifters can be fitted with Stepper motors, DC servo motors or AC servo motors with or without gearbox. Torch stations with auto height control systems work better with motors which respond faster. Plasma cutting being faster the taper cutting is minimized by having a torch lifting station with AC servo motor and also the Arc/Volt height control system linked with the controller. Especially when High Definition or High Performance Plasma systems are used, the cut quality is dependent on torch lifters also. The Oxy fuel cutting being slow normally the torch lifters are based on single ball screw arrangements where as for higher end Plasma systems the torch lifters are made heavy duty with double ball screw.
4. **The Gantry:** For more accuracy and precise cutting the Gantry has to be sturdy. Mostly the lower end machines come with bolted joints in the gantry where as the sturdy designs are with fully welded beams and gantry. This makes the machine work without backlash for a longer period of time giving precise movements.
5. **Gas Manifold:** In Oxy fuel operation normal machines have 3 gas lines with 3 regulators ie. For heating gas, heating Oxygen and Cut Oxygen. In such systems piercing higher thickness with single opening of cut oxygen damages the nozzles much more than the machines equipped with multistage opening of cut oxygen. Such gas manifolds will either have multiple regulators or proportional valves for step less regulation of cut oxygen. Piercing of higher thickness plates can be done easily with minimum damage to the nozzles with multi stage regulation of cut oxygen and programming of Pierce Ramp up/down of torch.
6. **Forced Air Cooling:** Profile cutting machines with flame are subjected to high heat environment. The wearing out of mechanical parts like gears, bearings, bushes, etc are higher if the ambient heat is higher. There are forced air cooled gantries and machines which when connected with a compressed air line circulates forced air through the full machine and torch heads. This keeps the temperature of machine parts lower by reducing the wearing out.

To see Control system and various machine parts visit:

http://www.therm-x.in/CNC%20Profile/PIERCE_NEW_CONTROL_SYSTEM_1.PDF

http://www.therm-x.in/CNC%20Profile/MACHINES_PARTS_AND_ACCESSOR.PDF

HELP US TO MAKE A QUOTATION FOR YOUR REQUIREMENT

Please fill in the below questionnaire to make us understand the configuration of machine needed:

1. Type of Industry:
2. Volume of Plates to be handled per month
3. Percentage of plate sizes
 - a. Upto 10mm –
 - b. 10-25mm –
 - c. 25-35mm -
 - d. 35-50mm –
 - e. 50mm and above –
4. Maximum Plate width –
5. Maximum plate length –
6. Type of Plate – MS/SS/Alu
7. Space Available in the factory to install this machine
8. Quality of Cut required with Plasma (if any) especially Bolt Quality hole
9. Any other relevant information you would like to provide:
10. Looking for: Lowest/Moderate/Best equipment
11. Your budget price Minimum and Maximum :