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Plasma Cutting Machines are those machines that are used for cutting steel, aluminum and other electrically conducive sheet metals to different thicknesses, sizes and shapes using plasma cutting techniques. These machines generally use high speed ionized gas, which is delivered from a nozzle in order to heat and melt the metal which is to be cut. An electric spark also forms inside the machine which transforms the highly pressurized gas into into plasma. This is sufficiently hot and ensures smooth cutting of metals. Plasma Cutting Machines mostly find applications in metal fabrication industry and allied segments.

Plasma Cutting Machines in India are high in demand and used in small workshops to large industrial manufacturing units. These high power systems are reckoned for their rigid construction, compact size, high efficiency and flawless performance. Plasma Cutting Machines can be dangerous sometimes and hence, protective helmet, hand gloves, welding goggles and face shield etc. must be used before operation such equipment.

With smaller nozzle and thinner plasma arcs, Plasma Cutting Machines have few advantages over laser and other cutting machines in the market. These machines allow more precision cuts and better finish to various products made from copper, steel, brass, aluminum and other metals. Available in different capacities and specifications, plasma cutters can cut metals ranging from 5mm thickness to 300mm thickness. The Plasma Cutting Machines are highly cost effective and largely used in welding shops, garages and related places. Plasma Cutting Machines provide gouging and piercing skills and are faster than other cutting machines. Further, these donâ€™t require a pre-heat cycle, which saves time and makes cutting job much more convenient.

Plasma Cutting Machines can be segmented into 3 categories: High Frequency Contact System (HF), Pilot Arc Machines and Computer Numerical Controlled (CNC) Machines.

High Frequency Contact System (HF) : These were used years ago to cut electrically conducive metal sheets only. These machines used a high frequency spark to initiate the electrical arc to cut metal. In this machine, the electrical arc has to be kept in contact with material being cut; the operator of the machine has to keep the nozzle that produces the plasma in contact with the sheet that has to be cut. The machine is manual and controlled by hand.

Pilot Arc Machines : These machines are capable in cutting non-conducive materials also. In these machines, a small pocket of plasma is created which is maintained within the nozzle until it comes in contact with the metal sheet or material that is to be cut. This pilot arc then becomes a full plasma arc, which gets hot enough to cut the steel plates, aluminum plates, brass plates etc. into required shapes and sizes. to the material. Because of the way this system works, it also allows cutting of. For example, heavy plastic sheets or glass. This machine too is controlled manually.

Computer Numerical Controlled (CNC) Machines : These are the most advanced and heavy duty Plasma cutting machines which can cut non-conducive metals and other materials into various shapes like squares, circles, flanges, stars, ellipse or any other irregular shapes. These machines have a fixed plasma torch that is controlled by a computer. In this system, the cutting can be pre-programmed to cut metal sheets into various shapes and dimensions as required by clients.

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Author is expert is writing about a plasma Cutting machine and a plasma cutting machines products.

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