



SMARTER FABRICATION

RoboPlazma™
It's all about...

Design to shop floor®

Knife Edged Cutting®

Multiple Operations

June 2007



Fab Flexibility..
Be an equal global player with an unequaled edge

ONE BUTTON INTELLIGENCE

With RoboPlazma™...

Is man power attrition affecting your fabrication output?

Is your fabrication shop hampered by your dependence on skilled labor?

Is cumbersome material handling problems creating a logistical nightmare with your production and delivery schedules?

Does your job have to be subjected to labor intensive, time-consuming processes such as grinding, drilling, manual marking and fit-up?

THE OPTIMUM SOLUTION IS AN INTELLIGENT MACHINE. programmed to assimilate shop floor and 'Domain Knowledge' and labor skills. RoboPlazma™ is an audacious integration of Robots, customized software and Plasma cutting. This system.. **The first of its kind world-wide** will place your company on the global map as an equal player with an unequaled edged advantage.

RoboPlazma is packed with intelligent features such as:

• **RoboSwift** enables error-free production with direct '**Design to shop floor**' programing. This customized software has all Plazma's cutting process knowledge fed into it. All the operator has to do is focus on production cycle times.

• **Multiple operations** such as cutting, drilling, marking, beveling in one set-up. This increases throughput in a reduced factory space - directly transforming your bottom-line.

• **Coherent Plasma Torches** (patented internationally) delivers '**Knife Edged Cutting**' requiring negligible, post-cut cleanup.

• **Fab Flexibility.** This system can process plate, pipe, channel, i-beam, dish-end, shell and formed components. This enables pre-weld and post-assembly automation.

• **Inherent sensing intelligence** enables **auto job alignment, 3-D arc voltage sensing** for cutting and beveling.

• **Robotic material handling.** Every stage from raw material storage to stacked,

finished components is RoboPlazma driven and interfaced.

• **Laser - like sheet metal cutting:** coherent Plazma with robotic controls is revolutionary. It delivers a precise quantum of plasma energy to the cut sheet. This eliminates heating and micro-structural distortion.

• **Virtual reality Plazma** will mimic a 'Customer Specific' or highly specialized set-up with an exact 3-D work cell. Every single throughput factor can be digitally recreated. This 3-D environment can also program the robot to cut complex 3-D geometries.



EDITORIAL

Plazma's customer-driven innovation is a passionate obsession encrypted in our R&D genes.. Small or big, each customer is important. Relentlessly and distinctively, we have truly rewritten the rule books and fostered a 'mega leap' in technology. After innovating customized designs for each major sector; our impelling R &D mantra and passion is simply to ensure our customers become competitive global player.

Our technological developments have exerted a reverberating impact on the very spine of the Fabrication Sector. We are 'Specialists' with a decade long track record and numerous citations and awards from Industry. This includes successive CMTI -PMT Awards. Even the President of India has given us recognition. Our customers are backed by a U.S. Patent, A South African Patent, the Indian Patent and now the first ever Canadian patent for Indian Engineering in this crucial field of specialization.

Plazma has expanded into a new 40,000 sq. ft , production base. This 'state of the art plant' is located five minutes from our first plant. We are setting up a 15000 sq. ft robotic training school; additionally, a Technology Center has been created to demonstrate our latest developments.

This monthly Newsletter reflects this resilient and dynamic maturity. We offer it as an illuminating, advisory bulletin that will feature guest writers, customer profiles, technical advice and the latest innovations from our continuous R&D activities.

ROBOTIC PRODUCTIVITY AT CIMOTEC HYDROMACHINES (P)LTD.

Engages in medium/heavy fabrication for:
Otis Elevator Company India (Ltd.)
Ingersoll Rand (India Ltd.)
Trackteck International
Tetra Truck (India Ltd.)
Westfalia Seperator India Ltd.
And many other corporate giants...

CIMOTEC was using skilled labour to produce quality products with the help of Weld fixtures, templates, drill jigs etc. Customer's confidence in quality resulted in large volumes of parts; which became difficult to fabricate consistently.

The existing infrastructure of conventional machinery like oxy acetylene cutting by use of templates, hydraulic shearing machine 12mm x 3 mtr, Hydraulic Press Brake 250 tons x 4 mtr, Mig welding machines, a Moving column milling and boring machine (to envelope a volume of 6mtr x 1 mtr x 1.6mtr) needed to be upgraded to CNC Control machines and effective material loading systems. The new facilities that have been added to upgrade the infrastructure are: -

PLAZMA ROBOTIC SYSTEM

The Robotic Plasma cutting system developed by M/s. Plazma – Pune is the first of its kind in the world. At our plant in Bangalore the system is performing a two shift production efficiency for the last four years.

The basis of selecting a plasma source for cutting was primarily considered due to the fact that the cutting speeds compared to oxy gas cutting is faster (at least 3 times). Laser cutting was not considered as the price was prohibitive and cutting of material beyond 12 mm thickness with a good edge is not attainable by laser. Coordinate table with either oxy gas / laser is common however it is limited to two axes. As mentioned we were using templates and manually cutting Port holes and openings on Hydraulic Tank meant for Ingersoll-Rand India Ltd. and on Side walls of channels used for Truck chassis meant for Tatra Trucks Ltd.

The process was very slow, resulting in very low volume of production. Broadly put, we were using 11 persons to make 5 sets of chassis over a period of 1 week (1 set comprises of 12 channels). **With Robo Plasma cutting we now produce 15 sets of chassis with 4 persons over a period of One week.**



Every fabricator is aware that beveling is done on plates most of the time for weld preparation. Currently, this was made either by using a hand torch or milling machine. By the hand torch method, the finish was very bad, very uneven bevelled edge. By the milling machine, we would obtain an excellent cut edge but the time taken and cost involved was very high. With the Robo Plasma machine, we have been able to achieve a high cut edge finish in shortest possible time. We have recently completed a number of export jobs with the desired quality and in time delivery.

CONCLUSION

Invest in the future is our motto. This Plazma Robotic system is our competitive edge for the tough export and Indian fabrication scenario. We now have extra capacity to take on new challenges.

The above is an excerpt from an article written by **Mr.K.N.Srinivasan (M.D.)Cimmotec. Hydro Machines (Pvt) Ltd.**



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