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ABRASIVE JET MACHINE

Pathak Omkar *[1], Dhole Shubham[2], Erande Rohit[3] & Chikne Ketan[4]
*[1,2,3&4]Students at Department of Mechanical engineering,Jaihind Polytechnic, Kuran,INDIA

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ABSTRACT
Abrasive jet machine are suddenly hit market .because it is quick and it give money in short time. Abrasive jet machine will chiefly used to cut shapes in hard and brittle materials like glass, ceramics etc. The lack of accuracy in component which may result a poor performance of the machine. The different components are selected after accurate design and calculation. The best advantage They due not heat material. It is removal from a workpiece by the application of a high speed stream of abrasive partical. This paper represent extensive change in abrasive jet machine. The abrasive jet machine is an effective machining process for drilling a glass material. The used of electricity totally eliminated. The research paper will help the manufacture, and researcher.

INTRODUCTION
The abrasive jet machine process differs from blasting .All the process parameter and cutting action are control. This process is used to cut all type of glass which are very sensitive. This process is also used for design of glass.This machine are free from vibration and less noise. We can usedsilicon carbide, aluminium oxide, glass beads,dolomite, sodium bicarbonate as a abrasive partical.A stream of abrasive grains is carried by air compressor .In this machine there is no need of electricity.It cut the gas accurately .Do not damage the remaining portion of glass.It is different than water jet machine.

MATERIALS
•Abrasive
Material: Al2O3, SiC, Glass beads, crushed glass, sodium bicarbonate
•Air compressor
• Abrasive Jet
• Nozzle
• pump

Formula (MRR) :

$$= KNd_a^{3} v^{3/2} \left(\frac{\rho_a}{12 H_w} \right)^{3/4}$$

where K = constant
N = number of abrasive particles impacting/unit area
d_a = mean diameter of abrasive particles, µm
ρ_a = density of abrasive particles, kg/mm^3
H_w = hardness number of the work material
v = speed of abrasive particles, m/s

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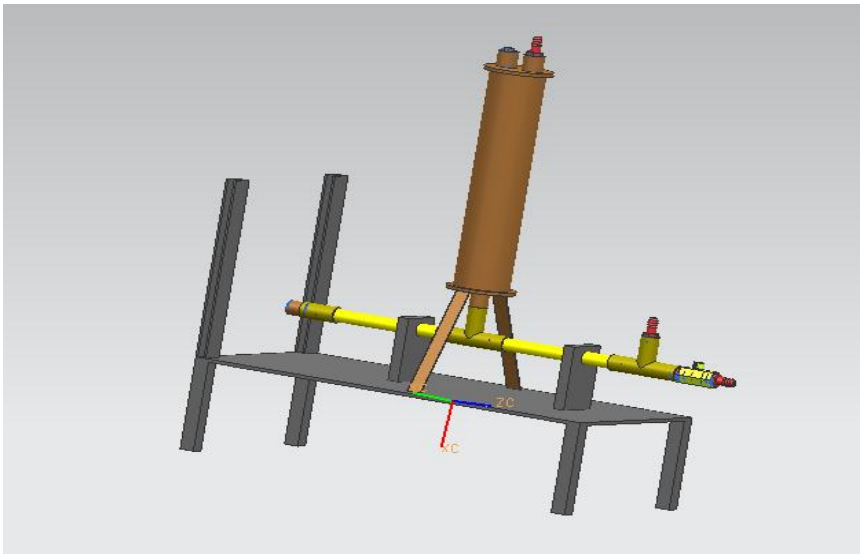

Fig 1 : Abrasive jet machine.

TABLE

Process	M.R.R. MM3/ Min	Tolerance (Micron)	Surface finish Micron CLA	Depth of surface damage (micron)	Power (Watt)
USM	300	7.5	0.2-0.5	25	2400
AJM	0.8	50	0.5-1.2	5	250
ECM	15000	50	0.5-2.5	5	100000
CHM	15	50	0.5-2.5	5	--
EDM	800	15	0.2-1.2	125	2700
EBM	1.6	25	0.2-2.5	250	150(Average) 200 (Peak)
LBM	0.1	25	0.5-1.2	125	2(Average) 200(peak)
PAM	75000	125	Rough	500	50000
Conven-tional	50000	50	0.5-5	25	3000

CONCLUSION

In our country even today abrasive machine is a relative unknown process. So much so, people often consider it similar with grinding which is traditionally branded as finishing operations usually proceeded by planning, milling, turning but in many shapers it has been proved beyond doubt that the abrasive machining as primary as well final abrasive replaces non abrasive process and compares favorably productivity and economy wise. In great majority of cases well fine abrasive machining useful to cut down cost.

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