INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

Powai, Mumbai - 400076

Technical Specification :

Linear motors motion system with CNC controller

Item Description: Linear Motors with Controller

Linear Motors Motion System with CNC Controller for Print Head motion of Sand 3D Printer:

Linear Motor

1. Linear motor should capable of linear speed upto 4m/s
2. Linear motor should have maximum acceleration of over 30G
3. Linear motor should capable of sustaining 9000N force.
4. Positioning feedback needs to incorporate with 0.005 mm precision accuracy.
5. Print head travel: 850 x 850 x 600mm.
6. Linear Motor magnet plate should cover above mentioned traveling area.
7. Linear motor should interface with CNC controller.

CNC Controller

1. 3 axes simultaneous control
2. With Absolute scale interface
3. Feed rate override
4. Buffered user memory
5. Pitch error and backlash compensations
6. Integrated graphic simulation of part programs.
7. Dry run option
8. Manual pulse generator for all axes
9. Special cycles like dwell time, program call, subroutines, etc
10. Parametric programming option with mathematical functions
11. Subprograms and subroutines repeats options
12. Work offsets shall be provided.
13. RS232/USB option for backing of machine data, archiving series files and backing of part programs data.

14. Compact flash card option for system data archiving, load and execution of part program through machine.
15. DNC option for program run directly through flash card
16. Networking option through Ethernet port (RJ45) shall be available.
17. Look ahead option availability.
18. Diagnostic functions availability for easy troubleshooting of problems in machine.
19. Alarms and HELP menu.
20. Canned cycles for various operations
21. Nalog voltage output for laser source control
22. Axis synchronous control
23. AI contour control
24. Bell-type acceleration/deceleration before look ahead interpolation
25. Jerk control
26. Smooth tolerance Control
27. Automatic corner deceleration