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**Detailed Technical Specifications for Electromagnetic System**

**Specifications for various components of the system:**

**I. GENERAL**

The electromagnets will work together with an axial-torsion mechanical system applications in for testing of magnetic shape memory alloys, magneto active polymers and magneto-gels. All the related components must be integrated and supported by the vendor.

**II. SYSTEM SPECIFICATIONS**

This unit describes major sub-components of the integrated system and their specifications.

**A. ELECTROMAGNET**

1. FIELD INTENSITY: 17,500 Gauss with an air gap of 25mm with Flat pole pieces and 20,000 Gauss with tapered pole pieces (consult field curves on page no. 28 for magnetic fields in different air gaps)
2. POLE DIAMETER: 250mm (A pair of flat pole cap is usually supplied with the magnet.)
3. COIL SEPERATION: 175 mm.
4. AIR-GAP: Adjustable from 0 to 150 mm with detachable pole caps.
5. YOKE CONSTRUCTION & MATERIAL: H' shaped made out of soft iron.
6. NUMBER OF ENERGISING COILS: Two, wound on non-magnetic formers.
7. MOUNTING: Mounted on stand to obtain 45 degrees.
8. COOLING: Water-cooled for continuous operation with a flow.

**B. POWER SUPPLY**

9. OUTPUT CURRENT: 0 to 60 Amps continuously variable with Coarse and fine controls.
10. POWER OUTPUT: 6500 Watts.
11. PROTECTION: Output should be protected against overload and short circuit by crossover characteristics. Output Over voltage trip protection is required.
12. METERING: One voltmeter and one ammeter to monitor output voltage and current simultaneously.
13. REMOTE MONITORING: 0 to 5 VDC Voltage signal at rear panel corresponds to output voltage of 0 to 100 Volts. 0 to 5 VDC Voltage signal at rear panel corresponds to output current of 0 to 60 Amps.
14. EXTERNAL PROGRAMMING: External programming of current by voltage signal. (0 to 5 VDC external voltage signal controls current from 0 to 60 Amps.) External programming of current by resistance. (0 to 500 ohms resistance controls current from 0 to 60 Amps.)
15. INPUT REQUIREMENT: 400 VAC, 50 Hz, three phase.