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GOVERNMENT OF INDIA

Ministry of Railways

Signal Directorate-2003 (Rev) -0

Schedule of Technical Requirement (STR)

FOR

(Electro mechanical Equipments)

Research Designs & Standards Organisation

Manak Nagar Lucknow -226011

Approved by	Executive Director / Signal
Signature	

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ELECTRO-MECHANICAL EQUIPMENTS

List of specifications for various types of ELECTRO-MECHANICAL EQUIPMENTS

Sen.	Item Description	Specification No
1	CIRCUIT CONTROLLER	DRG. NO. SA 20245, 46, 66, 67, 76, 77, 86, 23955
2	DETECTOR ELECTRIC	IRS:S 49/74
3	ELECTRIC LIFTING BARRIER	IRS:S 41/70
4	KEY TRANSMITTER - ELECTRIC	IRS:S 21/64
5	LEVER LOCK-8" STROKE & IRS TYPE	DRG. NO. SA-21201/M 21301/M 22701
6	POINT MACHINE - ELECTRIC	IRS:S 24/90
7	SM'S CONTROL - ELECTRIC	IRS:S 48/74
8	SIGNAL MACHINE - ELECTRIC	IRS:S 25/63
9	SIGNAL REVERSER - ELECTRIC	IRS:S 19/65
10	DAIDO TYPE TOKENLESS S/L <u>BLOCK INSTRUMENT</u>	DRG. NO. S:32001
11	NEALE'S TYPE BALL TOKEN S/L <u>BLOCK INSTRUMENT</u>	DRG. NO. SA-20701
12	SGE TYPE TOKENLESS D/L <u>BLOCK INSTRUMENT</u>	IRS:S 22/91

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ELECTRO-MECHANICAL ITEMS (INCLUDING ELECTRIC POINT MACHINE)

I. ESSENTIAL MACHINERY AND PLANTS REQUIRED FOR PRODUCTION

A) MACHINE SHOP

1. CNC lathe machine.
2. CNC milling machine.
3. Surface grinding machine.
4. shearing stamping machine.
5. drilling machine.
6. Power press.
7. Hand grinder.
8. Required tools & jigs for shear metal fitting and other mechanical shops.

B) FOUNDRY/FORGING/WELDING SHOP

1. Furnace.
2. Cupola.
3. Smithy Hearth (bhatti) with blower.
4. Moulding/casting accessories.
5. Hydraulic forging machine.
6. Forging accessories machine.
7. Electrical arc welding machine.
8. Electrical butt welding machine.
9. Oxy-Acetylene welding/cutting machine.
10. Riveting machine.
11. Spot welding machine.
12. Portable drilling machine.

C) PAINTING/ELECTROPLATING SHOP

- 1) Spray painting equipment or power coating painting equipment.
- 2) Electroplating plant.
- 3) Cadmium plating plant.

D) ASSEMBLY SHOP

1. Tools Jigs like bench vices, fixtures for fitting friction clutch.

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E) ELECTRICAL SHOP

1. Coil winding machine
2. Vacuum impregnation plant

II. ESSENTIAL TESTING EQUIPMENTS REQUIRED FOR QUALITY ASSURANCE

1. Digital multimeter (of Philips PM 2518 or equivalent)-2 nos.
2. Million Megaohm meter.
3. High voltage break down tester (0-5KV).
4. LCR meter.
5. Frequency meter.
6. CRO (double beam).
7. True RMS multi meter.
8. Power meter.
9. Testing panel with required voltmeter and ammeter.
10. Crimping machine.
11. Pressure, feeler and other gauges.
12. Electrical testing accessories, e.g. Variac, variable resistance etc.
13. Assortment of tools and accessories.
14. Stabilised power supply system.
15. Tacho meter.
16. Electro magnetic counter.
17. Battery charger.
18. Surface finishing /checking equipment.
19. Load test set up apparatus.
20. 60 kg turnout for testing of point machine.
21. Ultrasonic flaw detector.
22. Hardness testing machine.
23. Digital vernier caliper.
24. Digital micrometer.
25. Electronic timer
26. Facility for chemical analysis of metallic parts.
27. Stop watch.

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QUALITY ASSURANCE FLOW CHART ELECTROMECHANICAL SIGNALLING ITEMS

