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सत्यमेव जयते

**Government of India
Ministry of Railways**

Schedule of Technical Requirement (STR)

For

**Control Telephones, Magneto Telephone & other types of
Telephones**

Telecom Directorate

Research Designs & Standards Organisation

Manak Nagar, Lucknow - 226011

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Scope:

The Schedule of Technical Requirement No. TCQ 0033 covers the requirement norms for Machinery & Plants (M&P) required for production, Testing & Measuring equipment for quality assurance and infrastructure for manufacturing of different types of Control Telephones, Magneto Telephones and other types of Telephones as mentioned in the list of Telephones covered under item 1 of this STR. This STR is required for vendor development of RDSO. Vendors are also required to comply other relevant laws of the country and quality norms issued by RDSO time to time.

1. List of specifications for Various Types of Telephones covered under this STR.

S.No	Specification No.	Description
1.	IRS: TC 36/97 with Amendment no.1	Magneto Telephone
2.	IRS:TC 37/97 with Amendment no.1	2 Wire Way Station Control Telephone
3.	IRS: TC 38/97 with Amendment no.1	4-Wire Way Station Control Telephone
4.	IRS:TC 79/2000 with Amendment no.2	Desk Type Electronic Magneto Telephone
5.	IRS: TC 80/2000 with Amendment-1	Desk Type 2 Wire, 12 Way DTMF Telephone
6.	IRS :TC 82/2005 with Amendment no.1	Universal Wayside DTMF Control Telephone
7.	IRS: TC 75/99 with Amendment no.2	4 Wire/ 2 Wire Portable Control Telephone
8.	IRS: TC 78/2000 with Amendment no.1	Light Weight Portable Control Telephone

2. The required essential "Machinery & Plant for Production" , "Testing & Measuring Equipments for Quality Assurance" and typical Process Flow Chart are given in (I), (II) and (III) below:

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(I) Essential Machinery and Plants Required for Production –

S.No.	Description	Applicable for
1.	Drilling Machine	All Items
2.	Grinding Machine	All Items
3.	Vices	All Items
4.	Electric Blower	All Items
5.	PCB Assembly Zigs	All Items
6.	Coil Winding Machine	All Items
7.	Shearing Machine	Item No. 7 & 8
8.	Bending Machine	Item No. 7 & 8
9.	Spray Painting Machine	Item No. 7 & 8
10.	Hacksaw Machine	Item No. 7 & 8
11.	Baking Oven	All Items
12.	Vacuum impregnation plant	All Items
13.	Temperature controlled soldering iron	All Items
14.	Regulated power supply	All Items
15.	Test Jigs	All Items
16.	Threading machine/ tool	Item No. 7 & 8
17.	Hand Press	Item No. 7 & 8

Note : M&P S. No. 7, 8, 9, 10, 16 & 17 are not required if :

- (i) Body is made of ABS material
- (ii) Metallic body fabrication work is outsourced.

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(II) Essential Testing & Measuring Equipments Required for Quality Assurance –

S.No.	Description	Applicable for
1.	High Voltage Tester 2KV/AC rms	All Items
2.	Megger or Insulation Resistance Tester 500V	All Items
3.	Digital level Meter	All Items
4.	Oscilloscope 10 MHz or better	All Items
5.	Digital Multi Meter 3 ^{1/2} digit	All Items
6.	Harmonic Distortion Meter	All Items
7.	Decade Step Attenuator or Variable Attenuator	All Items
8.	Dial pulse and DTMF tester	Item 5 & 6
9.	Terminating Load Resistances of different values such as 100, 200, 300, 470, 600 ohms & 1120 ohms etc. with tolerances of 1%	All Items
10.	LCR Bridges and Meters	All Items
11.	Digital IC Tester	All Items
12.	Frequency Counter	Item 5 & 6
13.	Signal Generator or Audio Oscillator	All Items
14.	Vernier calipers, Scale, Micro meter, Filter Guages, Thermometer etc.	All Items
15.	Tone Generator (for ringer testing)	Item No. 1 only

(III) Process Flow Chart for Manufacturing of Telephones covered under this STR

