

**Government of India
Ministry of Railways**

No. TI/STR/041 (REV.0)

**Schedule of Technical
Requirements
For
Manufacture & Supply of spring type regulating
equipment
'As per Specification No. TI/SPC/OHE/SPRING
ATD/0110(03/2012) (or latest)**

ISSUED BY

**Traction Installation Directorate
Research Designs & Standards Organisation
Manak Nagar, Lucknow – 226011**

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1.0 **SCOPE:** This schedule covers the technical requirement for manufacture and supply of spring type regulating equipment.

2.0 GENERAL INFRASTRUCTURE & MANUFACTURING FACILITIES :-

(i) Manufacturer should have system to ensure that product conforms to requirements of the specification Nos. TI/SPC/OHE/SPRING ATD/0110(03/2012).

(ii) The "Make in India" policy of government of India shall be applicable.

The following machinery and plant of suitable capacity should be essentially available.

2.1.1	Lathe Machine
2.1.2	Drilling Machine, Grinding Machine, Welding Machine
2.1.3	Arrangement for identification marking on ATD components
2.1.4	Adequate tools & tackles.
2.1.5	Adequate covered accommodation for storing raw material, finished items
2.1.6	Facilities for assembly of the Spring Type ATD
2.1.7	Facility for packing

3.0 TESTING FACILITIES:-The following testing facilities should be essentially available.

3.1	All measuring instruments as require for measurements of dimensions.
3.2	Tensile testing machine for elongation & tensile strength test.
3.3	Load test will be done on mast attachment & other fittings and SS wire rope (If used in Spring ATD) under tensile load.
3.4	Weighing machine.
3.5	Chemical Testing Facilities: The manufacturer should have a chemical laboratory with adequate facilities and staff strength to test the raw materials and testing the finished products. In addition to the availability of above mentioned chemical laboratory, if firm desires Testing of finished product may be carried out from NABL/NABCB accredited lab.
3.6	Hardness testing machine for testing of fasteners and other components of Spring ATD.
3.7	Facility for Head soundness test.
3.8	Testing rig for mechanical endurance, mechanical advantage and proof load test.
3.9	Facility for Dye penetration test & Radiographic examination of aluminium bronze & aluminium castings.(Alternatively radiographic examination can be carried out at NABL/NABCB accredited laboratory).
3.10	Bend test machine for testing of locking plates and split pins.

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3.11	Facility for galvanization test
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4.0 QUALITY CONTROL REQUIREMENTS:

4.1	The firm should ensure compliance of RDSO ISO procedure 'QM-RF-8.1-3 Version No: 1.0 Date Effective: 28.08.2018 (latest)' & it covers Quality Assurance Plan (QAP). This document may be referred from RDSO website. The QAP shall be submitted to RDSO and got approved.
4.2	The firm should have acquired ISO: 9001 series certification for the product for which an approval is sought and the product should be broadly covered in the scope of the certification for manufacture and supply.
4.3	Quality manual of the firm for ISO: 9000 should clearly indicate at any stage the control over manufacturing and testing of the said product.
4.4	System and documentation should exist for documentation of the following:
4.4.1	Easy traceability of the product from raw material stage to finished product stage,
4.4.2	Incoming raw material with TC reference of supplier, Internal test and audit checking from outside agency, wherever required.
	Stage inspection and test result.
4.4.3	System for calibration of testing & measuring equipment and record.
4.4.4	Rejection at customer end and remedial action implemented.

5.0 If Spring ATD require SS wire rope and SS wire rope is manufactured by the manufacturer then the requirement of RDSO STR NO. TI/STR/009 (Revision 2) or latest should be complied by manufacturer. Manufacturer can also outsource SS wire rope from RDSO approved firms of SS wire rope as per specification No. TI/SPC/OHE/WR/1060(Rev.1), if manufacturer outsource SS wire rope from other than RDSO approved firm, then the outsourced firm should comply with the requirements of the RDSO STR NO. TI/STR/009 (Revision 2) or latest which shall be verified the compliance submitted by the manufacturer.

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