

ISO9001-2015	Document No.: TM/SM/455	Revision 01	Date Effective From: 22/12/2020
Document Title: Specification of Broad Functional Requirement of Electrically operated Light Weight Abrasive Rail Cutter			



Specification of Broad Functional Requirement of Electrically operated Light Weight Abrasive Rail Cutter

**No.TM/SM/LWARC (Power Supply)/455 dated 18.01.2019
(Revision 01 of 2020)**

Track Machines & Monitoring Directorate

**RESEARCH DESIGNS AND STANDARDS ORGANISATION
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1.0 SCOPE:

The Electrically Operated Light Weight Abrasive Rail Cutter shall be capable of cutting all types of flat bottom rails being used in Indian Railways, which is needed to cut rails very fast by using abrasive rail cutting wheel/ disc. In this specification “Electrically Operated Light Weight Abrasive Rail Cutter” will be termed as “machine” for the conveniences.

- 1.1 All the provisions contained in RDSO’s ISO procedures laid down in Document No. QO-D-8.1-11 dated 12.09.2018 (titled Vendor – Changes in approved status”), subsequent versions / amendments thereof shall be binding, and applicable on the successful manufacturers/suppliers in the contracts floated by Railways to maintain quality of products supplied to Railways.
- 1.2 Preference to make in India: compliance of the instruction contained in public procurement (preference to make in India) order -2017 “Make in India” shall be Ensured or latest instructions issued on subject shall be ensured.

2.0 FUNCTIONAL REQUIREMENTS:

- 2.1 The abrasive rail cutter shall be capable of cutting all types of flat bottom rails being used in Indian Railways of any metallurgy up to 90 UTS.
- 2.2 The abrasive rail cutter shall be capable of cutting rail at any distance from rail end.
- 2.3 The abrasive rail cutter shall have a strong and rigid clamping arrangement which shall fix the machine on rail near the cutting location. The clamping arrangement shall have a suitable location pointer to mark the cutting point on the rail. The fixing and removing mechanism shall be easy and quick in nature. The abrasive rail cutter while attached with clamp during cutting operation shall not be loosen/misaligned. The abrasive rail cutter shall be so attached with the clamp that it can swing vertically.
- 2.4 The Abrasive Rail Cutter shall be capable of working continuously during the severe Indian atmospheric and climatic conditions.
- 2.5 The machine shall function properly in tilted position also, if required.
- 2.6 The Abrasive Rail Cutter shall be so designed that there shall be minimum or no vibration during cutting operation to avoid possibility of misalignment and breakage of the abrasive cutting wheel/Disc.

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2.7 Proper safety and insulation has to be taken care of for electric connection before execution of work and the same is to be ensured after completion of work.

2.8 Cable of approx. 50 meters of length is required to connect the nearest power source.

3.0 TECHNICAL FEATURES:

i.	Rated capacity of power source.	Sufficient to cut the rail within the specified time and tolerance.
ii.	Capacity of power source having 220-240 V AC supply	Sufficient to generate speed of power output shaft to cut the rail within the specified time and tolerance.
iii.	Overall weight (including rail clamp)	22 kg (Max.)
iv.	Cutting time	60 kg 90 UTS rail – 2 min. (Max.)
v.	Fixing time of rail clamp and the abrasive rail cutter	Within one minute.
vi.	Squareness of cuts	±0.5 mm for vertical and lateral direction

4.0 TESTS:

4.1 Test at the time of initial approval (*Type Tests*):

Following type test are to be conducted on Prototypes at the time of initial approval. The manufacturer/supplier shall produce **two prototype** samples before inspecting officials for type tests. The cost of type tests shall be borne by the manufacturer/supplier. All arrangement to conducts type tests shall be made by manufacturer/supplier. Type tests, both the sample shall be subjected to the following tests for ascertaining their suitability as per functional requirement/ Technical Features.

4.1.1 Visual & Dimensional test: The Machine shall be free from manufacturing defects like cracks, blow holes, etc. These should be subjected to dimensional/functional check and shall conform as per technical features/ functional requirement.

4.1.2 Performance/Field Test: Both Machines shall be checked for cutting rails in 52/60 Kg 90UTS Rails (for at least 20 cuts by each Machine). It should be able to cut rail section up to 60 kg having up to 90UTS within 2 minute.

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4.2 Acceptance Tests (Test during supply):

4.2.1 Criteria mentioned in type test shall be applicable for all machines to be procured.

4.2.2 If any machines fails during test that should be rejected.

5.0 Marking and Packing:

5.1 The machine shall be legibly and indelibly marked with:

- i) Name, initials, contact no. and trade-marks of manufacturer.
- ii) Serial number of machine.
- iii) Month & year of supply.

5.2 The Machine shall be packed in wooden/suitable carton after covering with good quality plastic sheets as per best trade practice to avoid any damage during transshipment.

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