

ISO: 9001-2015	Document No.: TM/SM/455	Revision 02	Date Effective From: 11/07/2023
Document Title: Specification of Electrically operated Light Weight Abrasive Rail Cutter			



Specification of Electrically operated Light Weight Abrasive Rail Cutter

No.TM/SM/LWARC (Power Supply)/455 dated 18.01.2019

(Revision 02 of 2023)

Track Machines & Monitoring Directorate

**RESEARCH DESIGNS AND STANDARDS ORGANISATION
Manak Nagar, Lucknow-226011**

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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 Manufacturers/suppliers have sole responsibility 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 R-350 (1175 HT).
- 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.
- 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.

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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/ R-350 (1175 HT) 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 Acceptance Tests (Test during supply):

4.1 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.

4.2 Performance/Field Test: Every Machine shall be checked for cutting rails in 52/60 Kg 90 UTS and R-350 (1175HT) Rails (for at least 20 cuts by each machine). It should be able to cut rail section up to up to R-350(1175HT) within 2 minute.

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 transhipment.

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