

| | | | |
|--|---------------------------|-------------|--------------------------------|
| ISO 9001-2015 | Document No.: TM/SM/LWRDM | Version-1.0 | Date Effective From:25.01.2021 |
| Document Title: Final Copy of Specification of Light Weight Rail Drilling Machine (Broad Functional Requirement) | | | |



SPECIFICATION OF LIGHT WEIGHT RAIL DRILLING MACHINE
(BROAD FUNCTIONAL REQUIREMENT)

(No. TM/SM/LWRDM dated 31.03.2014 Rev. 01 of 2021)

Track Machines & Monitoring Directorate

RESEARCH DESIGNS AND STANDARDS ORGANISATION
Manak Nagar, Lucknow-226011



| | | | |
|--------------|--------------|--------------|-------------|
| SSE/SSRE/JRE | ARE/DTM/EDTM | PEDTM | Page 1 of 3 |
| Prepared By: | Checked By: | Approved By: | |

400404/2021/O/o PED/TMM/RDSO

| | | | |
|--|---------------------------|-------------|--------------------------------|
| ISO 9001-2015 | Document No.: TM/SM/LWRDM | Version-1.0 | Date Effective From:25.01.2021 |
| Document Title: Final Copy of Specification of Light Weight Rail Drilling Machine (Broad Functional Requirement) | | | |

1.0 Scope

- 1.1 This specification covers the functional requirements with testing criteria of Light weight Rail Drilling Machine, which is used to drill in Rail.
- 1.2 Preference to make in India: Compliance of the instructions contained in Public procurement (Preference to Make in India) order-2017 or latest instructions issued on subject shall be ensured.
- 1.3 All the provisions contained in RDSO's ISO procedures laid down in document No. QOD. 8.1-11 latest version (titled-"Vendor - Changes in approved status") and subsequent versions/amendments thereof, shall be binding and applicable on the successful vendor/vendors in the contracts floated by Railways to maintain quality of products supplied to Railways"

2.0 Functional Requirements:

- 2.1 It should be able to drill holes upto 35 mm dia. hole in the rail web of any type and section of rail from 60 R to 60 kg/m having UTS of 70 to 90 kg/mm².
- 2.2 Clamp should ensure that the machine is rigidly fixed to all types of rails & should drill a straight hole centrally to both axes.
- 2.3 It should be able to drill holes as close as 40 mm from rail ends.
- 2.4 The tolerance for the diameter and position of the hole shall be + 0.5 mm.
- 2.5 The machine should have proper handling / transportation arrangements.

3.0 Technical Features:

| | | |
|------------|---|---|
| i | Weight of the complete unit including all attachments but without fuel. | Maximum 22 kg. |
| ii | Capacity of power source and drilling time | Sufficient to drill holes in the rail section upto 60 kg having UTS upto 90 within 1 minute. |
| iii | Fixing time of rail clamp and the Machine | Fixing arrangement should be easy and firm and should not take more than 2 1 minute for fixing to prepare the hole & 1 minute for removing the fixture. |
| iv | Fuel consumption | Each litre of fuel should drill a minimum of 10 holes in the rail section upto 60 kg 90 UTS & capacity of tank should be enough to cater fuel for drilling at least forty holes in rail section upto 60 kg 90 UTS. |
| v | Chamfering of drilled holes | Machines should have provision for Chamfering of drilled holes. |
| vi | Marking of Centre of Hole | There should be provision of a Track Guide Plate, which mounts on the machine using a single bolt and Two dowels. Marking for easy identification is provided on the plate for locating it on 52 Kg & 60 Kg tracks. |

| | | | |
|--------------|--------------|--------------|-------------|
| SSE/SSRE/JRE | ARE/DTM/EDTM | PEDTM | Page 2 of 3 |
| Prepared By: | Checked By: | Approved By: | |

400404/2021/O/o PED/TMM/RDSO

| | | | |
|--|---------------------------|-------------|--------------------------------|
| ISO 9001-2015 | Document No.: TM/SM/LWRDM | Version-1.0 | Date Effective From:25.01.2021 |
| Document Title: Final Copy of Specification of Light Weight Rail Drilling Machine (Broad Functional Requirement) | | | |

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

Two samples shall be taken for type tests. Both 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 material as well as 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 drilling holes in 52/60 Kg 90UTS Rails (for at least 20 holes by each Machines). It should be able to drill holes in the rail section upto 60 kg 90 UTS within 1 minute. Each liter of fuel should drill a minimum of 10 holes in rail section upto 60 kg having upto 90 UTS & capacity of tank should be enough to cater fuel for drilling at least forty holes in rail section upto 60 kg 90 UTS.

In addition other provisions mentioned in clause 3.0 should be verified.

4.1.3 If either of the samples submitted fails in above test, case will be closed and the supplier/manufacture shall submit afresh two new samples as per ISO procedure if applicable.

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 machine fails during the test that should be rejected.

| | | | |
|--------------|--------------|--------------|-------------|
| SSE/SSRE/JRE | ARE/DTM/EDTM | PEDTM | Page 3 of 3 |
| Prepared By: | Checked By: | Approved By: | |