




INFRASTRUCTURE MAINTENANCE

PROCUREMENT SPECIFICATION

Specification For A Cordless Battery Grinder and Blower

Editor:	Engineer RN Mechanical Technology	Rotondwa Ludzulu	
Approved:	Senior Engineering Technologist RN Mechanical Technology	Molefi Moeketsane	
Authorised:	Senior Engineering Technologist RN Mechanical Technology	Molefi Moeketsane	

Date: 24 April 2022

Circulation Restricted To:

Transnet Freight Rail - Infrastructure

© This document as a whole is protected by copyright. The information herein is the sole property of Transnet Ltd. It may not be used, disclosed or reproduced in part or in whole in any manner whatsoever, except with the written permission of and in a manner permitted by the proprietors.

Contents

1.	Scope	3
2.	Operating Conditions	3
3.	Qualifications.....	3
4.	Performance.....	3
5.	General Requirements.....	3
6.	Detailed Requirements	3
6.1	Cordless Angle grinder	3
6.2	Cordless Blower.....	4
6.3	Motor overload	4
6.4	Operator Comfort.....	4
6.5	Noise Emission	4
6.6	Body.....	5
6.7	Safety	5
6.8	Ergonomics	5
7.	Quality Control	5
8.	Data Plate.....	5
9.	Legal and Operational.....	5

1. Scope

- 1.1 This specification outlines the requirements of a heavy duty, battery operated Cordless Impact Devices required by Transnet Freight Rail.
- 1.2 Each cordless impact devices shall be supplied with three sets of devices bits as detailed in this specification.
- 1.3 Transnet Freight rail requires that the supplier should ensure that the complete set of heavy duty cordless impact devices to be supplied must be of high quality, robust material.

2. Operating Conditions

- 2.1 Machines will be operated in all weather conditions at altitudes varying from sea level to 1850 m above sea level, relative humidity 10% to 90% and atmospheric conditions which vary from heavily saline to dry and dusty.
- 2.2 Ambient air temperatures ranging from -5° C to 45° C.

3. Qualifications

- 3.1 The design of the cordless impact devices is to be that of the manufacturer but must be of robust construction in order to meet sustained heavy-duty demands of railway infrastructure environment.
- 3.2 A “no-tool” adjustment machine is preferred.

4. Performance

- 4.1 A service life of not less than 7 years is expected from each machine. The actual design life of the device is to be stated.
- 4.2 The cordless impact devices are to be easily and economically maintained with standard workshop tools and equipment.

5. General Requirements

- 5.1 The cordless impact devices is to be designed for professional use, it must be able to perform in rugged conditions and in a wide variety of applications.
- 5.2 The cordless impact devices must be easy to start, safe for handling and operation.
- 5.3 The cordless impact devices and its devices bits must be of high quality to handle any job.
- 5.4 The cordless devices must be supplied complete in a carry case with two (2) batteries.
- 5.5 The cordless devices must be supplied complete and ready for use.

6. Detailed Requirements

6.1 Cordless Angle grinder

Below table outline the technical requirements for the battery operated angle grinder:

Voltage	36V 3.0Ah
Wheel diameter	230mm
No load speed (r/min)	6000
Vibration Level	
Surface Grinding w/ Anti-Vibration Side Grip:	7.5 m/s ²
Disc Sanding w/ Anti-Vibration Side Grip:	2.5 m/s ² or less
Sound Pressure Level	88 dB(A)
Sound Power Level	99 dB(A)
Hole Diameter	22.23mm (7/8")
Dimensions (LxWxH)	499x250x158 mm
Net Weight	5.2kg - 8kg (11.46 - 17.64 lbs)
Voltage	36V 3.0Ah

6.2 Cordless Blower

6.2.1 Below table outline the technical requirements for the battery-operated blower.

Air volume	6.7-13.3m ³ /min
Air speed	27-53m/s
No load speed (r/min)	11,400-21,500
Sound power level	96dB(A)
Vibration level	2.5m/s ²
Dimensions	881-981x204x298mm
(L x W x H)	6.7-13.3m ³ /min
Net weight	3kg
Voltage	36V 3.0Ah

6.3 Motor overload

The device must be equipped with motor overload protection.

6.4 Operator Comfort

The devices must comply with SANS 8662-1:1998 (Hand-Held Portable Power Tools - Measurement of Vibrations at the Handle Part 1:General).

6.5 Noise Emission

The impact devices must comply to EN 62841-2-1(Declaration and verification of noise emission values of machinery and equipment).

6.6 Body

- 6.6.1 The body of the devices and its components must be robust.
- 6.6.2 The devices must be well protected against rust.
- 6.6.3 The grip on the handles must have a non-slip surface.
- 6.6.4 Machines will be acceptable in standard factory production finish and colour.
- 6.6.5 Details to be furnished.
- 6.6.6 Due cognizance must be given to the life requirement of the machine.

6.7 Safety

- 6.7.1 A safety trigger that prevents accidental switch-on must be fitted to the cordless impact devices.
- 6.7.2 The maximum rated operating speed (rpm) of the impact devices must be clearly marked.
- 6.7.3 More safety features should be installed for operators safety and comfort.
- 6.7.4 The machine must have hand guards with quick stop feature installed for operators safety.

6.8 Ergonomics

The impact devices must be ergonomically designed for maximum operator productivity and safety.

7. Quality Control

- 7.1 All machines must be manufactured in an environment that complies to the latest ISO 9000 to ISO 9004 or similar quality control standards. Details must be furnished.
- 7.2 Machines will be subject to a technical evaluation and the final decision will, amongst others, be based on these findings.

8. Data Plate

- 8.1 The machine must come with a data plate.

9. Legal and Operational

- 9.1 All machines must comply with the requirements of the Machinery safety and Occupational Safety Act, (Act 85 of 1993 – General and Driven Machinery Regulations).
- 9.2 The machine must be completely assembled and filled with lubricants and ready for service in all respects.
- 9.3 An operator's handbook, service manual and spare parts list must be supplied with each machine in order to ensure that the machine is operated in accordance to the manufacturer's instructions.
- 9.4 All machines and equipment must be supplied complete with essential tools such as allen keys, spanners etc. in order to make essential adjustments as well as to fit or remove consumable items.
- 9.5 Consumable items must be available locally and must be of standardized format in order to be used on equipment of more than one supplier.

-
- 9.6 All machines and equipment is to be guaranteed for a minimum period of 12 months against faulty material and workmanship - fair wear and tear excluded. Full details of guarantee is to be submitted.
- 9.7 The information as requested by the various clauses in this specification are to be supplied in the form of technical data, pamphlets and/or drawings. If this is not complied to, offers may be overlooked.
- 9.8 Sufficient training must be given to all operators of these machines.
- 9.9 Machines not already in service with Transnet Freight Rail must be made available for testing/evaluation during the adjudication of the tender. Technical improvements on existing machines/equipment is to be substantiated by physical examples.

END OF DOCUMENT