



TITLE:

**SPECIFICATION FOR  
BENCH VICE & BENCH  
GRINDER**

Doc. No.

01

Issue No.

1

Revision No.

0

Date of Issue

2018-04-09

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**0.2 Amendment Record**

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)




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**FOREWORD**

This specification has been prepared by Standards Department and Quality Control Section (Logistics) both of The Kenya Power and Lighting Company Limited (KPLC) and it lays down requirements for The Bench Vice and The Bench Grinder for use in the Quality Control materials lab. It is intended for use by KPLC in purchasing the items.

This specification supersedes all other specifications for Quality Control tools and equipment for the measurement of dimensions issued before the revision date.

**1. SCOPE**

- 1.1. This specification is for The Bench Vice and The Bench Grinder for use by the company's Quality Control Teams. This specification stipulates the minimum requirements for The Bench Vice and The Bench Grinder acceptable for use in the company and it shall be the responsibility of the Supplier to ensure that the offered design is of the highest quality and guarantees excellent service to KPLC. The Supplier shall submit information which confirms satisfactory experience with products which fall within the scope of this specification
- 1.2. The Bench Vice and The Bench Grinder shall be of proven design and it is the responsibility of the Supplier to ensure that the offered design is of the highest quality and guarantees excellent service to KPLC.
- 1.3. Each Bench Vice and Bench Grinder shall be supplied complete with steel structure mounting comprising steel angle sections of at least 50mmx50mmx6mm.
- 1.4. The specification does not purport to include all the necessary provisions of a contract.

**2. REFERENCES**

The Bench Vice and The Bench Grinder shall comply with all applicable ISO, IEC Standards and Kenya Standards.

*References to brand names or catalogue numbers are intended to be descriptive only and not restrictive. The Tenderer may adopt higher standards, brand names, and or catalogue*



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*numbers in its Tender, provided that it demonstrates to KPLC's satisfaction that the substitutions ensure equivalence to all requirements of this specification.*

**3. TERMS AND DEFINITIONS**

For the purpose of this specification the terms and definitions given in the reference standard shall apply.

**4. REQUIREMENTS****4.1 SERVICE CONDITIONS**

The Bench Vice and The Bench Grinder shall be suitable for use outdoors in tropical areas and harsh climatic conditions including areas exposed to sea spray (along the coast), humidity of upto 90% and average ambient temperature of +30°C with a minimum of -1°C and a maximum of +40°C.

**4.2. DESIGN AND CONSTRUCTION****4.2.1 The Bench Vice**

4.2.1.1 The Bench Vice shall be manufactured to applicable ISO / IEC/BS Standards, Kenya Standards and the requirements of this specification.

4.2.1.2 The Bench Vice shall be designed for heavy duty applications.

4.2.1.3 The Bench grinder shall be used as a machine tool used for grinding, which is a type of machining using an abrasive wheel as the cutting tool. The Bench vice shall be made from cast iron for strength and durability. The base bolts shall be mounted directly to the workbench surface for stability, and swivels and locks for versatility. Roll-formed screw threads shall be used in fixing the jaws to the Bench Vice.

**4.2.1.4 Bench Vice Jaws.** The jaws manufacture shall comply to BS 4659:1989 Standard. Jaws shall be versatile, air-hardening tool steel that is characterized by good toughness and excellent dimensional stability in heat treatment. Jaws shall have effective combination of strength and toughness and tool performance. The jaws shall be easily replaceable.



**4.2.1.5 Bench Vice screw drive.** The function of vice screw of bench vice is to give the movement for movable jaw in to and fro direction. This is used for tightening the work piece in fixed and movable jaws. The material used shall be of Steel grade: SAE 3140 (stainless steel). The body of the screw drive shall be acme threaded.

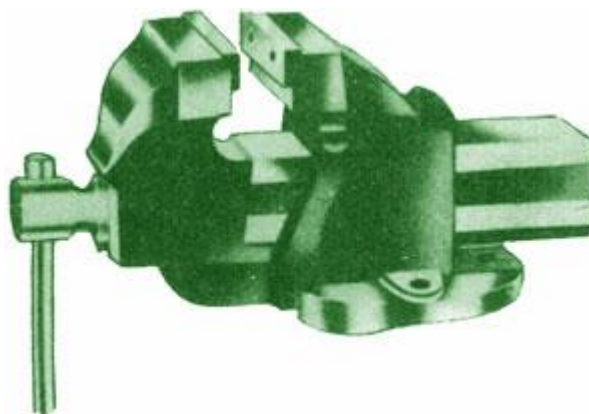
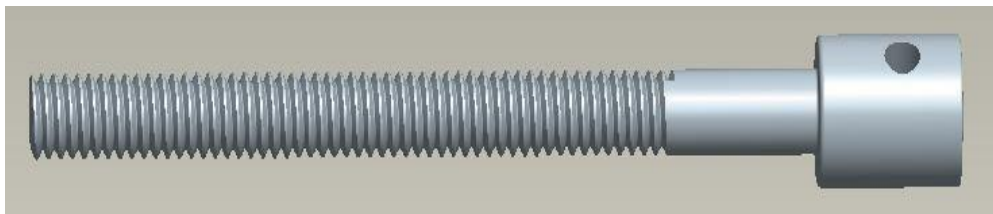


Figure 1: General arrangement of Bench Vice

#### 4.2.1.6 Specific Dimensional Requirements

NO.	00	0	1	2	3	4	5	6	8
SIZE	2 <sup>1/4</sup> "	2 <sup>1/2</sup> "	3"	3 <sup>1/2</sup> "	4"	4 <sup>1/2</sup> "	5"	6"	8"
WIDTH OF JAWS (IN MM)	60	65	80	90	100	115	125	150	200
OPENING OF JAWS (IN MM)	60	65	85	100	120	140	170	200	235
DEPTH OF JAWS (IN MM)	45	50	55	60	70	75	85	90	110
WEIGHT (APPROX. IN KGS)	3	4	6	9	13	15	20	25	42

***Note: The Bench Vice shall be supplied complete with mounting bolts and screw handle. The handle shall be forged steel type.***

#### 4.2.2 The Bench Grinder

4.2.2.1 The Bench grinder shall be manufactured to applicable ISO / IEC/BS Standards, Kenya Standards and the requirements of this specification.

4.2.2.2 The Bench grinder shall be designed for heavy duty applications.

4.2.2.3 The Bench grinder shall be used as a machine tools used for grinding, which is a type of machining using an abrasive wheel as the cutting tool. Each grain of abrasive on the wheel's surface cuts a small chip from the workpiece via shear deformation.

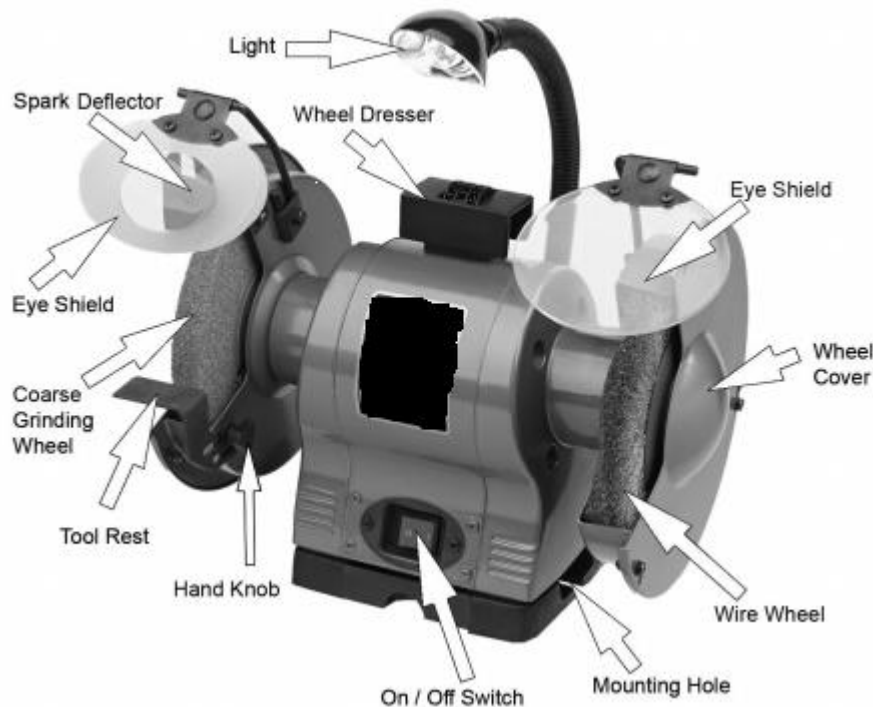


Figure 2: General arrangement of Bench Grinder

#### 4.2.2.4 Specific Requirements

Rated Voltage	240V- 50HZ
Rated input	370W
No load speed	2850 RPM (+/-5%)
Sound pressure level, LPA	84db Max.
Sound power level, LWA	94db Max.
Weight	13-15kg
Abrasive wheel supplied	Coarse (36 Grit)
Wheel dimensions	7 inch
Lamp	integral 10W lamp
Plug	Must be BS 1363/A approved
Construction	Robust
Wheel dresser	For dressing grinding wheels back to their original shape
Combined eye shield / spark arrestors plus wheel guards	to protect against flying particles
Adjustable tool rest	enable controlled presentation of the workpiece
Tray	Tool tray not coolant tray
Warranty	12 Months



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**Note: The Bench Grinder shall be supplied with coarse grinding wheel, wire wheel and all the components as per the general arrange drawing in Fig. 2 necessary for operation.**

**5. TESTS AND INSPECTION**

- 5.1 The Bench Vice and Bench grinder shall be inspected and tested in accordance with the requirements of this specification. It shall be the responsibility of the supplier to test or to have all the relevant tests performed.
- 5.2 Copies of previous test certificates by a third party testing laboratory accredited to ISO/IEC 17025 shall be submitted with the offer for evaluation. A copy of the accreditation certificate for the testing laboratory shall also be submitted with the tender (all in English Language). Any translations of certificates and test reports into English language shall be signed and stamped by the Testing Authority.
- 5.3 Test certificates and calibration certificates for the Bench vice and Bench grinder to be supplied shall be submitted to KPLC for approval before shipment/delivery of the goods.
- 5.4 On receipt of the Bench vice and Bench grinder, KPLC will inspect them and may perform or have performed any of the relevant tests in order to verify compliance with the specification. The supplier shall replace without charge to KPLC, any Bench vice and Bench grinder which upon examination/inspection, test or use fail to meet any of the requirements in the specification.





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**6. MARKING AND PACKING**

6.1 The following information shall be marked legibly and in a permanent manner on each Bench vice and Bench grinder:

- a) The manufacturer's identity;
- b) Model Number;
- c) The words "Property of KPLC".

6.2 Each Bench vice and Bench grinder shall be packed in a manner so as to protect it from damage during transportation and storage.

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**Tender No.** .....

Clause number	Bidder's offer (indicate full details of the offered The Bench vice and The Bench grinder for each requirement of the specification)
Item Name and Model Number	
Manufacturer & country	
1 Scope	
2 Applicable Standards	
3 Terms & Definitions	
4.1 Service Conditions	
4.2 Design & Construction	
4.2.1 The Bench Vice	
4.2.1.1	
4.2.1.2	
4.2.1.3	
4.2.1.4	
4.2.1.5	
4.2.1.6	
4.2.2 The Bench Grinder	
4.2.2.1	
4.2.2.2	
4.2.2.3	
4.2.2.4	
5 Tests & Inspection	
5.1	
5.2	
5.3	
5.4	
6 Marking and Packaging	
6.1	
6.2	

.....  
**Supplier's Name, Signature, Stamp and Date**
