



TITLE:
**ASSEMBLY TOOLS FOR
SCREWS & NUTS**
Part 1: Insulated hand operated
socket drive wrenches and screw
drivers

Doc. No.	KP1/3CB/TSP/09/088-1
Issue No.	1
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0.1 Circulation List

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0.2 Amendment Record

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FOREWORD

This specification has been prepared by the Standards Department in collaboration with Transmission Department, both of The Kenya Power and Lighting Company Limited (KPLC) and it lays down requirements for tools and equipment (Insulated hand operated socket drive wrenches and screwdrivers) for use on power lines. It is intended for use by KPLC in purchasing the tools.

The supplier shall submit information which confirms manufacturer’s satisfactory service experience with products which fall within the scope of this specification.

1. SCOPE

- 1.1. This specification is for tools and equipment - insulated hand operated socket drive wrenches and screwdrivers for use on power lines.
- 1.2. It is the responsibility of the supplier/bidder to ensure that the offered tools are of the highest quality and guarantees excellent service to KPLC. The insulated hand operated socket drive wrenches and screwdrivers and associated hardware equipment covered in this specification shall include:
 - a) Ratchet wrench and socket tool set,
 - b) Allen key and socket sets,
 - c) Flat and Star screw drivers set,
- 1.3. It shall be the responsibility of the manufacturer to ensure adequacy of the design and good engineering practice in the manufacture of the tools and equipment for KPLC. The supplier shall also submit information which confirms satisfactory service experience of the manufacturer with products which fall within the scope of this specification.

The specification does not purport to include all the necessary provisions of a contract.

2. REFERENCES

The following standards contain provisions which, through reference in this text constitute provisions of this specification. Unless otherwise stated, the latest editions (including amendments) apply:

ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories

ISO 3315: Assembly tools for screws and nuts -- Driving parts for hand-operated square drive socket wrenches -- Dimensions and tests

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- ISO 2380-2: Assembly tools for screws and nuts -- Screwdrivers for slotted-head screws -- Part 2: General requirements, lengths of blades and marking of hand-operated screwdrivers
- ISO 8764-2: Assembly tools for screws and nuts -- Screwdrivers for cross-recessed head screws -- Part 2: General requirements, lengths of blades and marking of hand-operated screwdrivers
- ISO 2936: Assembly tools for screws and nuts -- Hexagon socket screw keys
- ISO 1456: Metallic coatings - Electroplated coatings of nickel plus chromium and of copper plus nickel chromium.
- ISO 6508-1: Metallic materials -- Rockwell hardness test -- Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, and T)
- ISO 898-1 & 5: Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes -Coarse thread and fine pitch thread - Part 5: Set screws and similar threaded fasteners not under tensile stresses.
- ISO 1703: Assembly tools for screws and nuts — Nomenclature
- ISO 3316-1: Assembly tools for screws and nuts – Attachments for hand operated square drive socket wrenches - Torque testing
- ISO 2082: Metallic and other inorganic coatings -- Electroplated coatings of cadmium with supplementary treatments on iron or steel
- ISO 3574: Cold-reduced carbon steel sheet of commercial and drawing qualities
- ISO 4957: Tool steels
- BS 1524: Specification for cellulose acetate moulding materials

3. TERMS AND DEFINITIONS

For the purpose of this specification, the definitions given in the reference standards shall apply.

4. REQUIREMENTS

4.1. SERVICE CONDITIONS

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The insulated hand operated socket drive wrenches and screwdrivers shall be tropicalized, designed and constructed for continuous outdoor operation in tropical areas and harsh climatic conditions including areas exposed to:

- a) Sea spray (along the coast),
- b) Humidity of up to 95% and
- c) Average ambient temperature of +30°C with a minimum of -1°C and a maximum of +40°C.
- d) Altitudes of not more than 2200m above sea level.

4.2. RATCHET WRENCH TOOL SET

4.2.1. Design and construction

4.2.1.1. The design, manufacture and test of ratchet wrench tool and socket set shall be in accordance with ISO 3315:2011, adapter socket wrench and an extension bar in accordance with ISO 3316:1988.

4.2.1.2. The ratchet wrench set shall consist of the following and shall be as per Fig. 1 and 2 with the tool set as per Tables 1 and 2:

- a) Ratchet handle
- b) Socket set
- c) Extension bar
- d) Adapter socket wrench

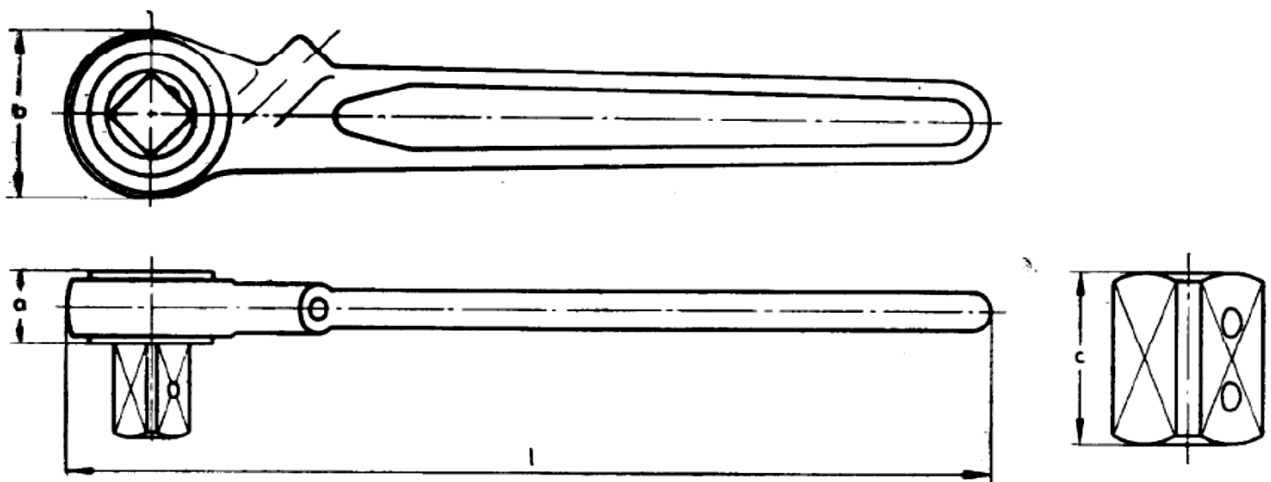


Fig. 1: Ratchet handle, normal

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Table 1: Ratchet handle tool set dimensions (Normal)

Nominal dimension of driving square	a	b	c	l	Swing Angle*	Test Torque, Nm
	min	min	min	min		min
6.3	12	25	25	150	26°	62
10	14	25	25	200	26°	202
12.5	21	50	38	275	26°	512
20	25	65	52	510	26°	1,412

* Swing angle between two teeth

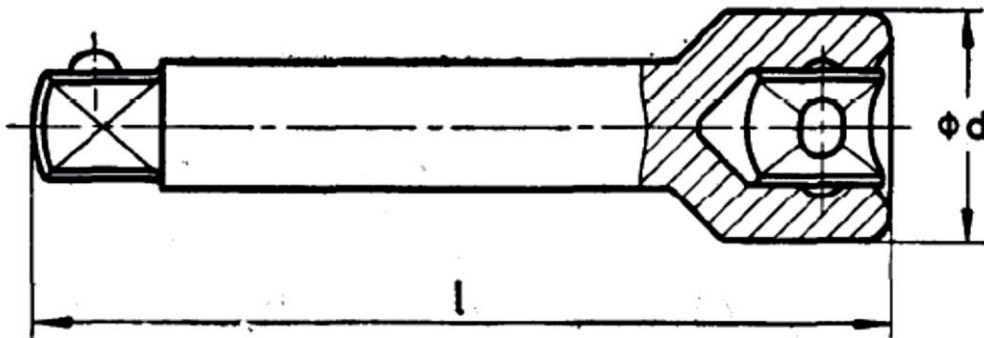


Fig. 2: Extension bar

Table 2: Extension bar dimensions and test torque

All dimensions in millimetres

Nominal size of square male and female	d max	l	Tolerance on l	Test torque
6.3	12.5	55	±3	62
6.3	12.5	100	±5	62
6.3	12.5	150	±8	62
10	20	75	±4	202
10	20	125	±6	202
10	20	250	±12	202
12.5	25	75	±4	512
12.5	25	125	±6	512
12.5	25	250	±12	512
20	38	200	±10	1412
20	38	400	±20	1412

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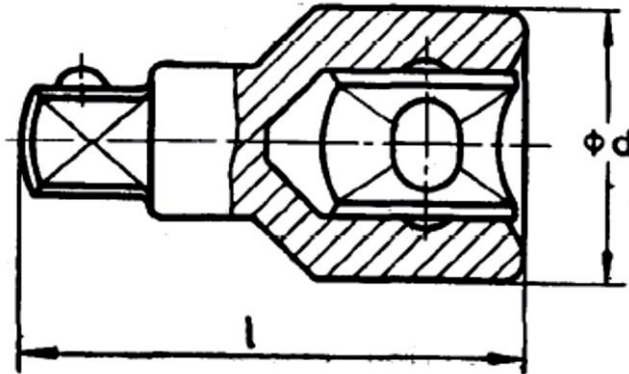


Fig. 3: Adapter socket wrench

Table 3: Adapter socket wrench

All dimensions in millimetres

Nominal size of square		d	l	Test torque
Male	Female	max	max	Nm
6.3	10	20	32	62
10	12.5	24	44	202
12.5	20	38	58	512
20	25	48	85	1412

4.2.2. Workmanship and Finish

4.2.2.1. The tools shall be provided with an insulating sleeve tested dielectrically to 20 kV in one (1) minute and their use shall be limited to 1 kV in accordance with IEC 60900: 2012. The fact that the tools are covered with the insulating material does not guarantee the user safe working against electric shock.

4.2.2.2. Driving parts shall be free of burrs, scales and cracks.

4.2.2.3. The driving parts of the tools shall be coated with anticorrosive coating. The type of anticorrosive coating shall be nickel-chromium plating - S Ni 10b Cr r as per ISO 1456:1988

4.2.3. Performance requirements

4.2.3.1. The tools shall be placed in a female test square and the corresponding test torque as laid down in ISO 3315:2011 and ISO 3316:1988. The tools shall not be given any jerk

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or struck while testing. The load shall be applied gradually until the required test torque is reached.

- 4.2.3.2. The torque shall be calculated as the product of the magnitude of the load and the distance measured between the point of application of the load and the axis of the female test square.
- 4.2.3.3. The nominal width across flats dimension of the female test square shall be equal to the nominal dimension with a tolerance of H8. The female test square shall be hardened to a value of 55 HRC minimum in accordance with ISO 6508-1:2015.
- 4.2.3.4. A device in which the female test square shall be rotated at a certain torque, determined with an accuracy of ± 2.5 per cent may also be used for this test.
- 4.2.3.5. On the completion of the test, the tools shall not show any permanent deformation or other damage which may influence its usability.

4.2.4. Preservation and Packing

- 4.2.4.1. The driving parts which are not given any protective treatment against rust, such as plating, shall be covered with grease or mineral jelly for rust-proofing. Each driving part may be wrapped in non-absorbent paper and packed in carton.
- 4.2.4.2. The driving parts of different sizes may be packed to form a set. The sizes and number of driving parts to comprise a set shall be as per Table 1 and 2.

4.3. ALLEN KEY SETS - Hexagon socket screw keys

4.3.1. Design and construction

- 4.3.1.1. The Allen keys shall be hexagonal type and shall be designed and tested in accordance with ISO 2936:2014.
- 4.3.1.2. The Allen key in this specifications shall only apply for tightening of hexagon socket screws for property class less than or equal to 12.9 as defined in ISO 898-1:2009 and for tightening of socket set screws as defined in ISO 898-5:2012.
- 4.3.1.3. The hexagon socket screw keys shall be hardened to a through hardness over their whole length. Hardness of the key when tested in accordance with ISO 6508-1:2015 shall be as per Table 4.

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- 4.3.1.4. The minimum proof torque of each size of the Allen key in this specification shall be as given in Table 4.
- 4.3.1.5. A complete set of hexagon socket screw key – Allen key, shall consist of all the sizes given in the Table 4.
- 4.3.1.6. The Allen key body shall be provided with an insulating sleeve tested dielectrically to 20 kV in one (1) minute and their use shall be limited to 1 kV in accordance with IEC 60900: 2012. The fact that the handle is covered with the insulating material does not guarantee the user safe working against electric shock.

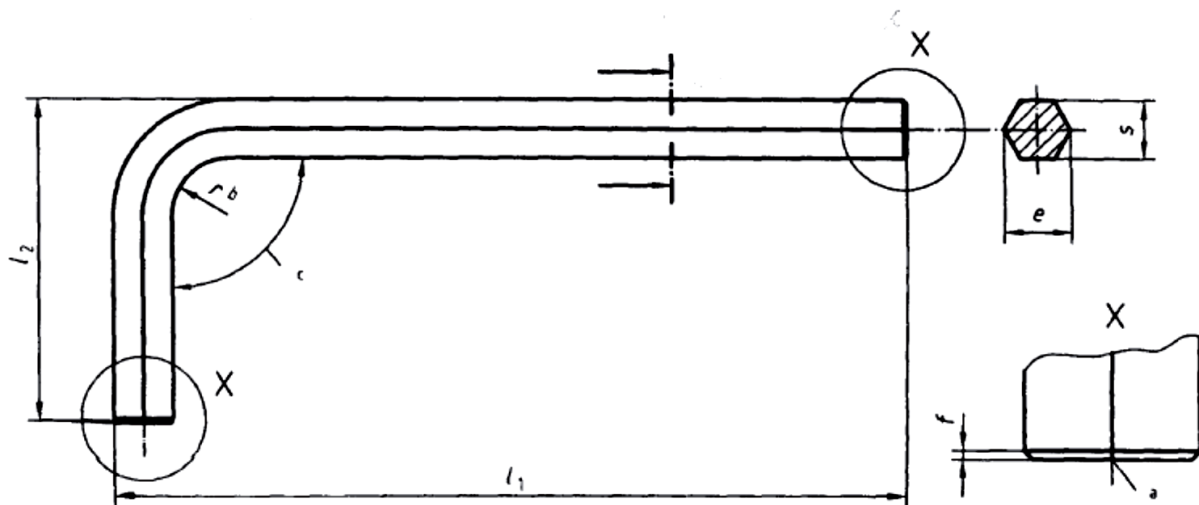


Fig. 4 — Hexagon socket screw key – Allen key

4.3.2. Designation

A socket screw key conforming to ISO 2936: 2014 shall be designated by:

- a) "Socket screw key";
- b) Reference standard, i.e. ISO 2936:2014;
- c) Its width across the flats, S, in millimetres;
- d) Capital letter M in the case of the design with a long length.
- e) Capital letter L in the case of the design with an extra-long length.

EXAMPLE 1: A hexagon socket screw key with a width across flats $s = 10$ mm is designated as follows: Socket screw key ISO 2936-10

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EXAMPLE 2: A hexagon socket screw key, with a width across flats $s = 10$ mm and long length (M) is designated as follows: Socket screw key ISO 2936-10 M

EXAMPLE 3: A hexagon socket screw key, with a width across flats $s = 10$ mm and extra-long length (L) is designated as follows: Socket screw key ISO 2936-10 L

Table 4: Dimensions and test values of Allen key

Width across flats of keys mm			Widths across corners e		Arm length	Width across flats of hexagon socket adapter		Key engagement		Torque proof N-m min	l_2	Rockwell hardness of key HRC, min	
Nom.	max	min	max	min	min	Max mm	Min mm	mm	Limit dev. mm				
3	3.00	2.96	3.39	3.31	66	3.080	3.020	3.5	+1	6.6	23	52	
4	4.00	3.95	4.53	4.44	74	4.095	4.020	5	0	16	29		
5	5.00	4.95	5.67	5.58	85	5.095	5.020	6		30	33		
6	6.00	5.95	6.81	6.71	96	6.095	6.020	8		52	38		
8	8.00	7.94	9.09	8.97	108	8.115	8.025	10		120	44		
10	10.00	9.94	11.37	11.23	122	10.115	10.025	12	+2 0	220	50	48	
12	12.00	11.89	13.65	13.44	137	12.142	12.032	15			370		57
14	14.00	13.89	15.93	15.70	154	14.142	14.032	17			590		70
17	17.00	16.89	19.35	19.09	177	17.230	17.050	20			980	80	45
19	19.00	8.87	21.63	21.32	199	19.275	19.065	23			1360	89	
22	22.00	21.87	25.05	24.17	222	22.275	22.065	26		2110	102		
24	24.00	23.87	27.33	26.97	248	24.275	24.065	29		2750	114		

NOTE:

a - The corners may be sharp, rounded or chamfered and the radius of curvature or the chamfer f respectively shall not be greater than half the difference between width across corners e and width across flats.

r^b - shall not be smaller than 1,5 mm, $r > s$

c - $90^\circ +2^\circ$ or -1° for width across flats < 17 mm
 $90^\circ +3^\circ$ or -1° for width across flats > 17 mm

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4.4. FLAT AND STAR SCREW DRIVERS SET

4.4.1. Design and construction

- 4.4.1.1. There shall be two types of screw drivers namely:
 - a) Type 1: Flat screw driver – for slotted head screws in accordance with ISO 2380-2:2004
 - b) Type 2: Star screw drivers – a Philips head type for cross-recessed head screws in accordance with ISO 8764-2:2004.
- 4.4.1.2. The blades shall be free from seams, burrs, cracks or other manufacturing defects and shall be finished smooth all over
- 4.4.1.3. The handles shall be provided with proper serrations so that the handles do not slip during usage. The handles shall be finished smooth and shall be convenient for holding
- 4.4.1.4. The screwdriver points shall be ground blunt and shall be in the same plane as the axis of the blade.

4.4.2. Materials

4.4.2.1. Blade

- 4.4.2.1.1. The blades shall be manufactured from a suitable tool steel such as Grade BS1 of BS EN ISO 4957:2000 or equivalent which after a heat-treatment at a temperature of 600⁰C, shall possess a minimum hardness of 48 HRC (485 HV) as per ISO 6508-1:2015 on their full length over at least four times the width of the screwdriver blades from the working end of the blade.
- 4.4.2.1.2. The blades of the screwdrivers shall be protected against rust by plating with nickel-cadmium or chromium or by any other suitable process.
- 4.4.2.2. **Handles** – The handle shall be made of a solid plastic manufactured from cellulose acetate as per BS 1524:1993 or equivalent.
- 4.4.2.3. **Ferrules** – The ferrules shall be manufactured from steel conforming to Grade SPCD (drawing quality) as per ISO 3574:1999.
- 4.4.2.4. **Insulating Sleeves** – The blades of the screwdrivers shall be provided with an insulating sleeve tested dielectrically to 20 kV in one (1) minute and their use shall be

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limited to 1 kV in accordance with IEC 60900: 2012. The fact that the handle is covered with the insulating material does not guarantee the user safe working against electric shock.

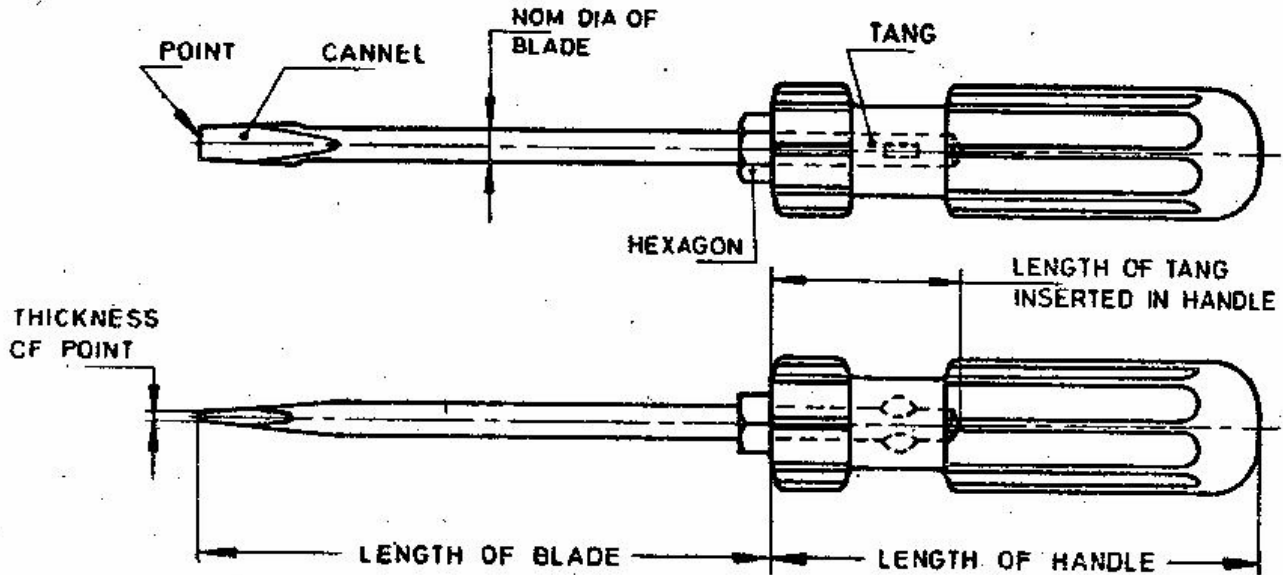


Fig 5: Nomenclature of a screw driver

4.4.3. Dimensions

4.4.3.1. Handle dimensions

The dimensions of the plastic handles of the screwdriver shall be in accordance with Table 4. The dimensions for the screwdriver shall be as given in Table 5.

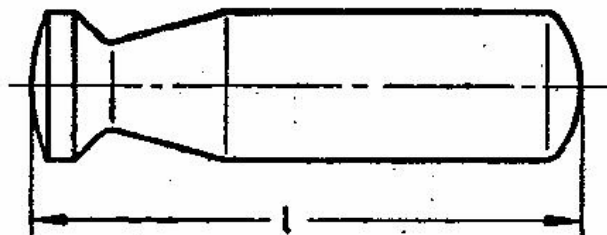


Fig.6a: plastic handles of screwdrivers

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Table 5: Dimensions for plastic handles of screwdrivers

Type	L o -5 (mm)	Volume cm ³
L	60	5
L	70	7
L	80	14
L	90	25
L	100	35
L	110	50
L	120	70

4.4.3.2. Type 1: Slotted head screwdriver dimensions

The **slot** screwdriver shall be used on a single slot in the fastener head (see Fig 6a) and shall be driven by a "common blade" or flat-bladed screwdriver (see Fig. 6b). The dimensions shall be as per Table 3.



Fig. 6a: Slot

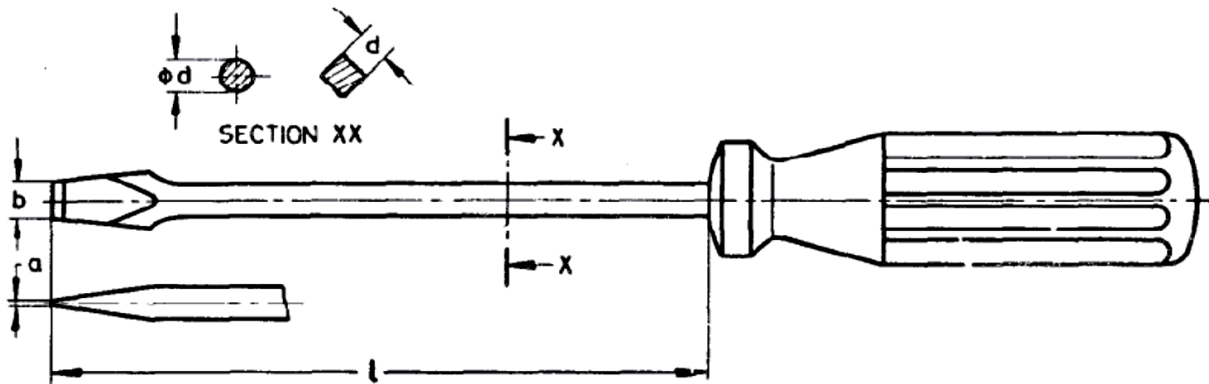


Fig. 6b: Type 1: Flat screw driver

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Table 6: Dimensions of the blade of a slotted (flat) screwdriver as per ISO 2380

Nominal screwdriver point size a x b, mm	d Min	l ± 5 mm	Handle sizes
	Round mm		
0.6 x 5.0	5	100	L 80
0.8 x 5.5	5	125	L 90
1.0 x 6.5	6	150	L 100
1.2 x 8.0	7	175	L 110
1.6 x 10.0	8	250	L 110
2.0 x 13.0	9	300	L 110
2.5 x 16.0	11	300	L 120
3.0 x 14.0	10	300	L 120
4.0 x 22.0	16	350	L 120
5.0 x 25.0	16	350	L 120

4.4.3.3. Type 2: Cross recessed screwdriver – Philips (star) head type

A cross-recess screwdriver shall be used in two slots, oriented perpendicular to each other, in the fastener head (see Fig. 7a); a slotted screwdriver shall still be used to drive just one of the slots



Fig. 7a: Cross

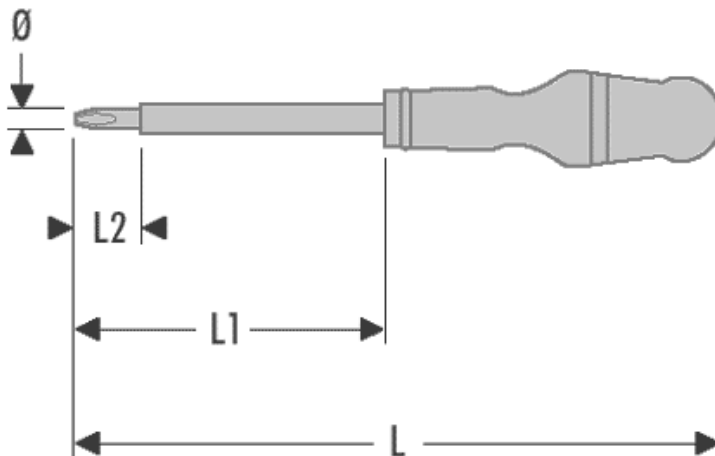


Fig. 7b: Type 2: Star screw driver

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Table 7: Dimensions of the blade of a cross recessed screwdriver as per ISO 8764

All dimensions in millimetres

L1	L2	Φ	L	Handle sizes
75	10	4.0	175	L100
100	18	5.0	210	L110
125	18	6.5	245	L120
150	18	8.0	170	L120
200	18	10.0	320	L120

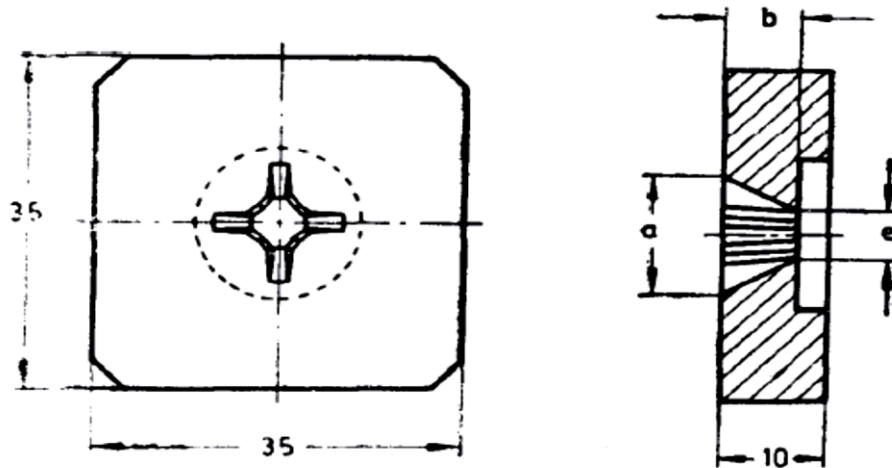


Fig 8. Slotted screwdriver blade

Table 8: Dimensions of the blade hole of a cross recessed screwdriver as per ISO 8764

Nominal point size	a, mm		b mm	e mm	Testing torque, Nm, Min
	Max	Min			
0	2.34	2.24	1.47	0.81	1.4
1	3.66	3.56	2.34	1.27	3.8
2	5.97	5.87	3.63	2.29	10.4
3	9.85	9.75	5.99	3.81	38.0
4	12.39	12.29	7.26	5.08	58.0

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4.5. QUALITY MANAGEMENT SYSTEM

- 4.5.1. The supplier shall submit a quality assurance plan (QAP) that will be used to ensure that the design, material, workmanship, tests, service capability, maintenance and documentation of the insulated hand operated socket drive wrenches and screwdrivers fulfil the requirements stated in the contract documents, standards, specifications and regulations. The QAP shall be based on and include relevant parts to fulfil the requirements of ISO 9001:2008.
- 4.5.2. The Manufacturer’s Declaration of Conformity to applicable standards and copies of quality management certifications including copy of valid and relevant ISO 9001: 2008 certificate shall be submitted with the tender for evaluation.

5.0. TESTS AND INSPECTION

- 5.1. The insulated hand operated socket drive wrenches and screwdrivers shall be inspected and tested in accordance with the requirements of the standards and all the provisions of this specification. It shall be the responsibility of the supplier to perform or to have performed the tests specified and whatever other tests he normally performs at works.
- 5.2. Copies of previous Type Tests Reports issued by a third party testing laboratory that is accredited to ISO/IEC 17025 shall be submitted with the tender for the purpose of technical evaluation. The accreditation certificate to ISO/IEC 17025 for the same third party testing laboratory used shall also be submitted with the tender document (all in English Language). The type tests shall include:
 - a) Hardness test for the tool steel
 - b) Chemical analysis of the tools component parts
 - c) Torque/Torsional tests
 - d) Dielectric strength of the insulation
- 5.3. The insulated hand operated socket drive wrenches and screwdrivers shall be subject to acceptance tests at the manufacturer’s works before dispatch. Acceptance tests shall be witnessed by two Engineers appointed by The Kenya Power and Lighting Company Limited (KPLC). Routine and Sample Test Reports for the insulated hand operated socket drive wrenches and screwdrivers to be supplied shall be submitted to KPLC for approval before delivery of the goods. The tests to be witnessed shall include;
 - a) Static Load Tests
 - b) Static Shock Load Tests
 - c) Dielectric strength of the insulation
 - d) Hardness Test
 - e) Torque Tests

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- f) Longitudinal/Transverse Play (Adjustable Wrenches)
- g) Dimensional tests

5.4. On receipt of the product, KPLC will perform any of the tests specified in order to verify compliance with this specification. The supplier shall replace without charge to KPLC the insulated hand operated socket drive wrenches and screwdrivers which upon examination, test or use; fail to meet any of the requirements in the specification.

6.0. MARKING AND PACKING

6.1. MARKINGS

All insulated hand operated socket drive wrenches and screwdrivers (insulated hand operated socket drive wrenches and screwdrivers) shall indelibly be marked / stamped on the frame in English Language the following.

- a) Standard of manufacture
- b) Identity of the manufacturer
- c) Nominal width across flat(s) on the respective ends for insulated hand operated socket drive wrenches and screwdrivers
- d) Nominal size and length for pliers and nippers.
- e) Standardization Mark from the country of manufacture.
- f) Words “**PROPERTY OF KPLC**”

6.2. PACKAGING

- 6.2.1. Insulated hand operated socket drive wrenches and screwdrivers which are not given any protective treatment against rust, such as plating, shall be covered with grease or mineral jelly for rust-proofing. Each insulated hand operated socket drive wrenches and screwdrivers shall be wrapped in non-absorbent paper and packed in a carton.
- 6.2.2. Several insulated hand operated socket drive wrenches and screwdrivers of different sizes shall be packed to form a set. The sizes and number of insulated hand operated socket drive wrenches and screwdrivers to comprise such a set shall depend on the job for which it is required, and shall be subject to the requirement in the tender
- 6.2.3. The following information shall be printed on a suitable label firmly attached to each packaging:
 - a) Purchase order number/tender
 - b) Manufacturer's name
 - c) Year of manufacture
 - d) Insulated hand operated socket drive wrenches and screwdrivers catalog number

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e) The words, "**PROPERTY OF KENYA POWER & LIGHTING CO.**"

7. DOCUMENTATION

7.1 The bidder shall submit its tender complete with technical documents required by Annex A (Guaranteed Technical Particulars) for tender evaluation. The technical documents to be submitted (all in English language) for tender evaluation shall include the following:

- a) Guaranteed Technical Particulars signed by the manufacturer;
- b) Copies of the Manufacturer's catalogues, brochures, drawings and technical data;
- c) Sales records for the last five years and at least four customer reference letters;
- d) Details of manufacturing capacity and the manufacturer's experience;
- e) Copies of required type test reports by a third party testing laboratory accredited to ISO/IEC 17025;
- f) Copy of accreditation certificate to ISO/IEC 17025 for the third party testing laboratory;
- g) Manufacturers letter of authorization, ISO 9001:2008 certificate and other technical documents required in the tender.

7.2 The successful bidder (supplier) shall submit the following documents/details to The Kenya Power & Lighting Company for approval before manufacture:

- a) Guaranteed Technical Particulars signed by the manufacturer;
- b) Design Drawings with details of insulated hand operated socket drive wrenches and screwdrivers to be manufactured for KPLC.
- c) Quality assurance plan (QAP) that will be used to ensure that the design, material; workmanship, tests, service capability, maintenance and documentation will fulfill the requirements stated in the contract documents, standards, specifications and regulations. The QAP shall be based on and include relevant parts to fulfill the requirements of ISO 9001:2008
- d) Detailed test program to be used during factory testing;
- e) Marking details and method to be used in marking the insulated hand operated socket drive wrenches and screwdrivers;
- f) Manufacturer's undertaking to ensure adequacy of the design, good engineering practice, adherence to the specification and applicable standards and regulations as well as ensuring good workmanship in the manufacture of the insulated hand operated socket drive wrenches and screwdrivers for The Kenya Power & Lighting Company;
- g) Packaging details (including packaging materials).

7.3 The supplier shall submit recommendations for use, care, storage and routine inspection/testing procedures, all in the English Language, during delivery of the insulated hand operated socket drive wrenches and screwdrivers to KPLC stores.

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TITLE:
ASSEMBLY TOOLS FOR SCREWS & NUTS
Part 1: Insulated hand operated socket drive wrenches and screw drivers

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ANNEX A: Guaranteed Technical Particulars (to be filled and signed by the Supplier and submitted together with copies of manufacturer's catalogues, brochures, drawings, technical data, sales records, customer reference letters and copies of certificates/test reports for tender evaluation)

Tender No.

Clause	Description	Guaranteed Technical Particulars offered
	Name of Manufacturer & Country of manufacture of the assembly tools being offered	specify
	Type/Model Reference Number	specify
1	Scope: Supplier to ensure adequacy of the design, good workmanship, good engineering practice and adherence to standards, specifications and applicable regulations in the manufacture of the insulators for KPLC	specify
2	Design standards complied with	specify
3	Terms and Definitions	specify
4	Requirements	
4.1	Service condition	specify
4.2	Ratchet wrench tool set	specify
4.2.1	Design, manufacture and test	in accordance with ISO 3315:2011 and ISO 3316:1988. Prove compliance : attach type test
4.2.1.2	Dimensions and shape	As per fig.1, 2 & 3,table 1,2 & 3 Provide drawing
4.2.2	Workmanship and finish	Free of burrs, scales and cracks. The driving parts shall be coated with anticorrosive coating as per ISO 1456:1988 Prove compliance : attach type test
4.2.3	Performance requirement	Torque test in accordance to ISO 3315 and ISO 3316:1988 Prove compliance : attach type test
4.2.4	Preservation and packing	specify
4.3	Allen keys sets- Hexagon socket screw keys	
	Design, manufacture and test	In accordance with ISO 2936:2014 Prove compliance : attach type test
	Hardness over their whole length	Tested in accordance with ISO 6508-1:2015 shall be as per Table 4. Prove compliance : attach type test
	Proof torque	Shall be as per Table 4 Prove compliance : attach type test
	Dimensions, shape, and sizes	As per fig.4,table 3 Attach drawing
	Designation	Shall be as clause 4.3.2 specify
4.4	Flat and star screwdrivers sets	

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TITLE:
**ASSEMBLY TOOLS FOR
SCREWS & NUTS**
Part 1: Insulated hand operated
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drivers

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	Design types	-Type 1: Flat screw driver – for slotted head screws in accordance with ISO 2380-2:2004 -Type 2: Star screw drivers – for cross-recessed head screws in accordance with ISO 8764-2:2004.	specify
	Workmanship and finish	Free from seams, burrs, cracks or other manufacturing defects and shall be finished smooth all over	Prove compliance : attach type test
	Materials	Blade – The a suitable tool steel such as Grade BS1 of BS EN ISO 4957:2000 or equivalent) as per ISO 6508 Handles –a solid plastic manufactured from cellulose acetate as per BS 1524:1993 or equivalent. Ferrules –steel conforming to Grade SPCD (drawing quality) as per ISO 3574:1999. Insulating Sleeves – The blades of the screwdrivers shall be provided with an insulating sleeve tested dielectrically to 20 kV in one (1) minute and their use shall be limited to 1 kV in accordance with IEC 60900: 2012.	Prove compliance : attach type test
	Shapes of the screw drivers	As per fig 5, 6a, 6b , 7a & 7b	Provide drawings
	Handle dimensions	As per table 5	specify
	Slotted head screwdriver dimensions	As per table 6	specify
	Cross recessed screwdriver – star head type	As per table 7 & 8	specify
4.5	Quality Management System		
	Quality Assurance Plan		provide
	Copy of ISO 9001:2008 Certificate		provide
	Manufacturer's experience		provide
	Manufacturing Capacity (units per month)		provide
	List of previous customers		provide
	Customer reference letters		provide
5.1	Test standards and responsibility of carrying out tests		provide
5.2	Copies of Type Test Reports submitted with tender		provide
5.3	Test reports to be submitted by supplier to KPLC for approval		provide

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5.4	Replacement of rejected assembly tools.	specify
6.1	Marking	specify
6.2	Packing	specify
7.1	Documents submitted with tender	provide
7.2	Documents to be submitted by supplier to KPLC for approval before manufacture	provide
8.0	Manufacturer's Guarantee and Warranty	provide
9.0	List catalogues, brochures, technical data and drawings submitted to support the offer	provide
10.0	List customer sales records and reference letters submitted to support the offer.	provide
11.0	List Test Certificates submitted with tender	provide
12.0	List test reports of the wrenches to be submitted to KPLC for approval before shipment	provide
13.0	Statement of compliance to specification (indicate deviations if any & supporting documents)	provide

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

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