



Ministry of Defence

Defence Standard

62 - 2 (PART 2) /Issue 1

1st October 1974

**BATTERY OPERATED LIGHTS,
TORCHES, AND LANTERNS, ELECTRIC**

PART 2: TORCHES, HAND, ELECTRIC

AMENDMENT RECORD

AMENDMENT NUMBER	DATE	SIGNATURE

MINISTRY OF DEFENCE

BATTERY OPERATED LIGHTS, TORCHES, AND LANTERNS, ELECTRIC

PART 2 - TORCHES, HAND, ELECTRIC

This Defence Standard and associated Parts 1 and 3 supersede DEF STAN 62-2 Issue 2 dated 13th October 1967, DEF-107-A dated May 1964, EL 1404 Issue 4 dated July 1961 and EL 1605 dated December 1970.

1. This Standard applies to battery operated torches, hand, electric, for Ministry of Defence use.
2. Ships, aircraft, and vehicle lights (including those for bicycles) forming part of the normal lighting system, and also general purpose lighting fittings for buildings and fixed installations, are outside the scope of this Standard.
3. LIGHTS (PART I) and LANTERNS (PART 3) are separate publications to this Standard.
4. For all general applications selection shall be made from items listed in Table I(A). These torches may be used with or without the special attachments in Table I(B).

For special applications selection may in addition be made from Table I(B).
5. This Standard lists all the necessary technical information and contains the definitive specification for the items listed in Table I. It is to be invoked for all tender and contract purposes.
6. Where items are manufactured in imperial units, illustrations show these dimensions. Metric equivalents are given in brackets.
7. There is no Table II.
8. Table III lists those items which are no longer to be provisioned, together with suitable replacements. Existing stocks may be used until exhausted.
9. Wands, adaptors and filters for use with torches are given in Section 2 and Table I(B).
10. This Standard has been prepared because there is no suitable national or commercial specification available and has been agreed by all authorities concerned who are to implement it from its date of issue.
11. If it should be found unsuitable for a particular requirement the Director of Standardization shall be informed of the circumstances. Any enquiries regarding this Standard in relation to an invitation to tender or contract in which it is invoked should be addressed to the Quality Assurance Authority named in that invitation to tender or contract.

INDEX TO SPECIFICATIONGENERAL

<u>CLAUSE</u>	<u>PAGE NO</u>
1. <u>SCOPE</u>	4
2. <u>RELATED SPECIFICATIONS</u>	4
<u>SECTION 1 - TORCHES, HAND, ELECTRIC</u>	
3. <u>MATERIAL</u>	6
4. <u>DESIGN</u>	6
<u>SECTION 2A - ADAPTOR, LIGHT FILTER</u>	
5. <u>MATERIALS</u>	8
6. <u>DESIGN</u>	8
<u>SECTION 2B - WAND, MARSHALLING</u>	
7. <u>GENERAL</u>	8
8. <u>CONSTRUCTION</u>	8
9. <u>MATERIALS AND FINISH</u>	9
10. <u>PLASTIC TUBES</u>	9
<u>SECTION 3 - QUALITY ASSURANCE</u>	
11. <u>QUALIFICATION APPROVAL</u>	9
12. <u>QUALIFICATION APPROVAL TESTS</u>	10
a. <u>General examination</u>	10
b. <u>Test sequence</u>	10
c. <u>Test detail</u>	11
13. <u>ROUTINE INSPECTION</u>	13
14. <u>BATCH SAMPLING</u>	13
a. <u>Tests</u>	13
b. <u>Conditions</u>	14
15. <u>MARKING</u>	14
16. <u>PACKAGING</u>	14
<u>SECTION 4 - TECHNICAL DETAIL</u>	
Figs 1 and 2. <u>TORCH, HAND, ELECTRIC TYPE A</u>	15 and 16
Fig 5 <u>TORCH, HAND, ELECTRIC TYPE B</u>	19

		<u>PAGE</u> <u>No</u>
Figs 3 and 4	<u>ADAPTOR, LIGHT, FILTER</u>	17 and 18
Fig 6	<u>TORCH, HAND, ELECTRIC</u>	20
Fig 7	<u>FILTER ASSEMBLY</u>	20
Fig 8	<u>ADAPTOR, LIGHT, FILTER</u>	20
Fig 9	<u>WAND, MARSHALLING</u>	21

INDEX TO TABLES

TABLE I(A))	(TORCH, HAND, ELECTRIC, Dual Purpose
)	(
TABLE I(B))	STANDARD	(WANDS, FILTERS and ADAPTORS for
)	RANGE	(use with TORCHES
)	(
TABLE I(C))	(TORCH, HAND, ELECTRIC - Special
)	(Purpose
TABLE III			Items no longer to be provisioned

SPECIFICATION

TORCH, HAND, ELECTRIC

GENERAL

1. SCOPE

This Specification consists of:

a. SECTION 1

Dual purpose electric hand torches of robust construction arranged to, contain two 1.5 volt dry batteries in line and to emit a beam of light, at right angles to the centre line of the body (Type A) or in line with the centre line of the body (Type B).

Type A. Moulded plastic construction. Tropicalized and watertight. Fixed focus.

Type B. Steel construction. Non-tropicalized and non-watertight. Focusing.

b. SECTION 2

A light filter adapter for attachment to the Type A torch and a marshalling wand for attachment to the Type B.

2. RELATED SPECIFICATIONS

Reference is made in this Specification to:

a. British Standards

BS 381C - 'Colours for specific purposes'

BS 407 - 'Phosphor bronze (copper-tin-phosphorus) sheets, strip and foil'

BS 1224 - 'Electroplated coatings of nickel and chromium'

BS 1322 - 'Amino plastic mouldings materials'

BS 1376 - 'Colours of light signals'

BS 2752 - 'Vulcanized chloroprene rubber compounds'

BS 2786 - 'Brass wire for springs (2/1 brass)'

BS 2870 - 'Rolled copper and copper alloys. Sheet, strip and foil'

b. DTD Specification

DTD 5592 - 'Acrylic sheets for aircraft glazing'.

2. c. Defence Specifications

DEF-1234-A 'Production requirements for Service packaging'.

d. Defence Standards

DEF STAN 05-29 - 'Basic Inspection Requirements for Industry'
DEF STAN 05-34 - 'Marking of Service materiel'

DEF STAN 61-3 (Part 1) - 'Batteries primary, Batteries dry, Leclanche mercury and manganese alkaline types'.

DEF STAN 62-2-'Lamps, electric'.

e. RAF Specification

AVP 24 - 'General design requirements for Aircraft Equipment for Service aircraft'.

SECTION 1

TORCHES, HAND, ELECTRIC

3. MATERIALS

The torches shall be comprised of the parts shown in Figs 1 to 6 and in the Tables as appropriate.

4. DESIGN

The torches shall comprise the parts shown in Figs 1 to 6 as appropriate.

a. Dimensions.

The torches shall conform to the dimensions shown in Figs 1 to 6 as appropriate and shall be suitably toleranced to accommodate batteries:

6135-99-910-1101 - Battery, Dry, 1.5 volt No. 1
(DEF STAN 61-3 (Part 1) Supplement No. 1).

The lamps shall be as detailed in Table I.

b. Body.

The end caps shall be ribbed or fluted and shall screw on to the body by means of threads conforming with the details in the appropriate figures.

c. Type A.

Reflector and Bush. The reflector shall be of paraboloidal form and shall be assembled together with the transparent cover disc in the groove of the top gasket. Means shall be provided for locating the lamp so that its filament is at the focal point of the reflector.

The bush shall securely retain the lamp in its correct position and have facilities for easy removal. It shall be designed to provide for the use of either:

- (1) A pre-focus lamp or
- (2) A MES lamp with adapter.

d. Type B.

Reflector. The reflector shall be made of aluminium to BS 1470 SIC or an approved equivalent treated by an approved chemical process which ensures both high reflectivity and durability (the alzak and brytal processes are approved). The reflecting surface shall either be slightly diffusing in which case the plastic front shall be clear, or it shall be specular in which case the plastic front shall be slightly diffusing. In this instance the degree of diffusion required is such that type-script can just be read through the plastic front when the diffusing surface is 9.5 mm above the surface of the paper. Whichever combination is used, it is emphasised that the amount of diffusion required is very small, and should not be substantially more than as necessary to remove striations from the beam.

4. d. Belt clip (Type A only).

The belt clip shall be secured to the body by a minimum of two copper rivets. The clip and rivets shall be chemically blacked

e. Switch.

The switch shall be such that when the torch is carried in pack or pocket it cannot be inadvertently pushed on. The switch shall be provided with a spring loaded push button for signalling and a 3 position slider with definite location in the following positions:

Position (1) Bottom - OFF

Position (2) Intermediate - Push Button Operative

Position (3) Top - Continuously ON

The switch shall be secured to the body by two brass rivets. The rivets and switch cover shall be chemically blacked.

f. Spare lamp carrier (Type A only).

A spare lamp carrier complete with a spare pre-focus lamp and an adaptor for MES cap lamps shall be accommodated in the bottom cap. The carrier shall be firmly held in position only by the battery spring.

g. Electrical connections.

The contacts shall have a rubbing action when making and when made should be under a force of 13.34 N. Electrical connections shall be of copper or copper alloy sheet or strips secured to the body by copper or copper alloy rivets. It shall not be possible to complete the battery circuit through any exposed metal.

SECTION 2

A. ADAPTOR, LIGHT FILTER

5. MATERIALS

The light filter adaptor shall be made from the materials listed in Fig 3.

6. DESIGN

The light filter adaptor shall comprise the parts shown in Fig 3.

a. Dimensions.

The light filter adaptor shall conform to the dimensions shown in Fig 4. and shall be suitably toleranced to fit the Type A torch specified in Section 1.

b. Adaptor nut, filter container, and battery end cap.

The adaptor nut, filter container, and battery end cap shall be of moulded high density polythene. The parts shall be ribbed or fluted and the threads shall be as detailed in Fig 4.

c. Filters.

Three filters shall be provided:

- (1) White - To have a total integrated light transmittancy of between 0.25 and 0.5%.
- (2) Signal Green - To have colour and transmittancy to BS 1376 Class A.
- (3) Signal Red - To have colour and transmittancy to BS 1376 Clause A.

Space is also required in the filter container for two additional 1.5 mm thick filters.

B. WAND, MARSHALLING, TYPE (A), HIGH BRIGHTNESS

7. GENERAL

These wands will be used for signalling to pilots of aircraft when parking aircraft at night. When signalling two wands are used, one in each hand. The wands are coloured to make them more distinctive.

8. CONSTRUCTION

The wand consists of a plastic tube illuminated internally by means of an electric hand torch, and is for attachment to the end of the torch type B in Section 1, and also to the type shown in Fig 6. These wands shall be in accordance with Fig 9.

9. MATERIALS AND FINISHES

The materials and finishes shall be in accordance with AvP 24 General Design Requirements for Aircraft Equipment for Service Aircraft.

10. PLASTIC TUBES

These tubes shall be made of white translucent cellulose acetate or other approved material, and if necessary for uniform brightness shall be frosted on the inner surface. They may be fabricated from sheet, but if so, the joint shall be cemented to prevent ingress of water. The material shall have an integrated transmission of not less than 60% and when fitted to the torches, the filament of the lamp must not be visible through the tube.

SECTION 3

QUALITY ASSURANCE

11. QUALIFICATION APPROVAL

Tenders for the supply of torches, wands and/or adaptors to Sections 1 or 2 of the specification shall be accompanied by a quotation of the appropriate current Qualification Approval certificate number, together with a statement that the articles offered conform in every detail to the sample which has been qualification approved and that the place of manufacture is the same and under Defence Standard 05-29 conditions. The Qualification Approval Authority, herein referred to as the authority for torches, wands, and/or adaptors is the Directorate of Standardization, MOD, First Avenue House, High Holborn, London WC1V 6HE. Applications for qualification approval of particular torches, wands, and/or adaptors may be made to the authority. Applications shall be accompanied by a statement that the manufacturer is satisfied that the articles comply with the specification. At the same time a sample shall be submitted free of charge for preliminary examination. After receipt of the application and sample, the Authority will notify the manufacturer if it has been decided to accept the application or give reasons for refusing it. If it has been decided to proceed with qualification approval, the Authority will request the provision of the samples as stated in clause 12 and two sets of manufacturing drawings. The manufacturer shall state whether or not the samples are from normal current production and if requested, shall provide evidence that he has facilities to produce, test and inspect the articles in quantity in accordance with Defence Standard 05-29. The qualification approval tests shall be carried out:

- a. at the manufacturer's premises under the supervision of the Quality Assurance Authority or
- b. on the manufacturer's behalf at the test house approved by the Authority or
- c. by a Government Quality Assurance Authority if the manufacturer is unable to provide or arrange for testing in either of the above ways.

If Qualification Approval tests are carried out by methods a. or b. above, 9 copies of the test certificate shall be forwarded to the Authority.

If the Authority decides that the testing of any of the articles which the manufacturers wishes to submit for qualification approval shall be carried out at the manufacturer's premises, the manufacturer shall give to the representative of the Authority full and free access to the said premises as and when required

11. (Contd)

for that purpose and shall at the expense of the manufacturer afford to such representatives all such reasonable accommodation and facilities as may be required by him thereof and all appliances, materials, and labour required for testing purposes. The manufacturer will be notified whether or not qualification approval has been granted. On the granting of qualification approval certificates permanent identification will be affixed to the two control samples held in accordance with clause 12.a. one of which, with one set of drawings suitably endorsed by the Authority, shall then be retained by the manufacturer and shall be made available to the Authority on request. The other control sample with the other set of drawings will be retained by the Authority. All other samples may be returned to the manufacturer. Any change contemplated in the design, construction, manufacturing process, or materials used in the manufacture of any torch, wand, and/or adaptor that has been qualification approved shall be brought to the notice of the Authority, who may, at its discretion, call for specimens embodying the proposed changes for qualification approval testing. Qualification approval will be reviewed periodically by the Authority and will also be reviewed when defects have been reported or other circumstances make this desirable. Should the results of repeat qualification approval tests be unsatisfactory, approval may be withdrawn.

12. QUALIFICATION APPROVAL TESTS

Initially, 10 samples of Type A torches and/or 10 samples of adaptors or 6 samples of Type B torches and/or 6 samples of wands (each sample of wand to consist of 4 wands, one of each type).

a. General examination.

All samples will be dismantled, checked for design, workmanship construction and reassembled. If found to be satisfactory, two samples will be held as control samples not to be subjected to the tests.

b. Test sequence.

The 8 test samples of Type A torches and/or adaptors or 4 test samples of Type B torches and/or wands as applicable will be divided into pairs, each pair being subjected to one of the following tests:

(1) Torch (Type A).

Test No c(2) and (3) - Light Output and drop.

Test No c(4) - Cold drop.

Test No c(5) - Head and humidity.

Test No c(1) and (8) - Watertightness and switch endurance.

Test No c(9) - Disc transparency.

(2) Adaptor.

Test No c(1) and (3) - Watertightness and drop.

Test No c(4) - Cold drop.

Test No c(5) - Heat and humidity.

Test No c(6) - Colour and light transmittancy.

Test No c(7) - Light fastness.

12. b. (3) Torch (Type B).

Test No c(2) and (3) - Light output and drop.

Test No c(8) - Switch endurance.

(4) Wands.

After the first tender for these wands has been accepted, the contractor, before proceeding with bulk production, shall submit 4 sample wands assemblies of each type ordered (together with a translucent tube for the purpose of facilitating photometric tests) to EQD MOD (PE), Aquila, Golf Road, Bromley, Kent. These wands will be subjected to:

Test No c(6) - Colour and light transmittancy.

Test No c(7) - Light fastness.

If satisfactory, one sample pair will be engraved "EQD Approved" and returned to the contractor to be used as an approved sample for comparison with those offered for acceptance on each contract.

(5) Acceptance tests.

The wands shall be tested by comparing them visually for brightness with the approved sample when fitted to a Type B torch. Steps must be taken to ensure that the light output of the Type B torches used for this test are similar and of adequate intensity. The wands may be rejected if they differ appreciable from the approved sample in brightness, general workmanship, and compliance with this specification in any way which would adversely affect their performance.

c. Test details.

(1) Watertightness.

The two (a) Type A torches, complying with Section 1 of this Specification, complete with batteries or (b) adaptors without filters complying with Section 2A, correctly positioned on two Type A torches, will be submerged for a period of one hour at a depth of 1 metre below the surface in a 3.5% solution of sodium chloride in water at a room temperature of $20 \pm 5^{\circ}\text{C}$. At the end of this period no water shall have entered any part of the complete assembly. For this test the torches will be laid on their sides and the depth of submergence will be measured from the centre line of the body to the surface of the solution.

(2) Light output characteristics (Types A and B).

The characteristics of each of the two sample torches shall be measured by the following method:

- (a) Setting - A selenium photovoltaic cell shall be fixed on a suitable mount in a darkened enclosure. The photo cell shall be approximately 38 mm diameter and fitted with a low resistance across its output (not more than 100 ohms). A suitable read out (galvanometer or digital voltmeter) shall be attached.

12. c. (2) (b) Focusing - The torch shall be held with its beam perpendicular to the photo cell surface and at a distance of 500 mm from that surface. The positioning of the torches shall be adjusted to give maximum response from the photo cell. The adjustable focus of the Type B torch is also to be used for this purpose.

(c) Characteristics - The torches when mounted shall be moved in a direction perpendicularly towards the photo cell until the front of the transparent cover is 10 mm from the surface of the photo cell. At this point a reading will be taken on the photometer read out. The torches shall then be moved in the opposite direction until the reading is 1/10 of the original. The distance travelled will then be noted.

For Type A torches this distance shall be not less than 500 mm.

For Type B torches this distance shall be not less than 400 mm.

(3) Drop (Types A and B)

The two (a) adaptors or wands, complying with Section 2 of this specification, correctly positioned on two Type A or Type B torches respectively complying with Section 1 or (b) torches complying with Section 1 complete with batteries will be dropped six times, from a height of 1 metre on to a floor, concrete floor for Type A, wooden floor for Type B. The adaptors, wands and/or torches will be dropped on any part or edge at the discretion of the testing officer. After this test there shall not be any separation or disintegration of the parts and they shall still function satisfactorily. Cracking of any parts shall not in itself constitute a failure provided the serviceability of parts is unimpaired. Faulty operation shall constitute a failure. The test will be carried out in an ambient temperature of $20 \pm 5^{\circ}\text{C}$.

(4) Cold drop (Type A only).

The two (a) adaptors complying with Section 2A of this specification correctly positioned on two Type A torches complying with Section 1 of this Specification or (b) torches complying with Section 1 will be subjected to a temperature of $-40^{\circ} \pm 5^{\circ}\text{C}$ for two hours. They will then be subjected immediately to the drop test as described in Test No 3 with the same criteria for acceptance or rejection.

(5) Heat and humidity (Type A only).

All assembled component parts of the two (a) torches, complete with either batteries or dummies of equal weight and size, hung on a fabric strip 5 mm thick 38 mm wide by means of the belt clip and (b) the adaptors, will be subjected to a temperature of $70 \pm 2^{\circ}\text{C}$ with relative humidity of less than 40% for 16 hours followed by a temperature of $45 \pm 2^{\circ}\text{C}$ at 90% relative humidity for 6 hours. The test samples will then be compared with the untested samples and examined for dimensional stability, crazing of surface and other defects. Removable parts of the tested samples shall be interchangeable with corresponding parts of untested samples. After new batteries have been inserted the torches shall be

12. c. (6) Colour and light transmittancy.

The six filters extracted from the two filter adaptors, or two wands will be tested for colour and light transmittance as detailed in BS 1376.

(7) Light fastness.

The filters or wands will be exposed to the weather including direct sunlight, for a period of 4 weeks after which they will not have appreciably changed in colour or texture.

(8) Switch endurance (Types A and B)

The switch mechanism of each of the two sample torches will be tested by operating the slider for 25,000 cycles at a rate not exceeding 15 cycles per minute. A cycle will consist of a movement from position (1) to position (3) and back to position (1) (see clause 4(e)). The switches will be operated under normal electrical load conditions and the lamps and batteries will be replaced as often as required to ensure that switch mechanism is operating under this normal load throughout 25,000 cycles. After completion of this test the torches shall function properly.

(9) Disc transparency (Type A only).

Four transparent cover discs taken from the torches which have undergone Tests No 4 and 5 above shall not have visibly deteriorated in light transmission.

13. ROUTINE INSPECTION

All torches, wands, and/or adaptors will be subject at the contractor's works to a thorough visual, mechanical, and functional inspection for workmanship and construction. The Quality Assurance Officer may also select any torch, wand, and/or adaptor to be subjected to any of the tests detailed in clause 12 as applicable.

14. BATCH SAMPLING

Each batch shall consist of not more than a thousand Type A torches, and/or adaptors, or a thousand Type B torches and/or wands.

a. Tests.

A sample of 5 torches and/or adaptors or wands may be extracted from each batch submitted for acceptance and subjected to the following tests:

(1) Torches.

- ✓ Test No c(2) and (3) - Light output and drop.
- ✓ Test No c(1) - Watertightness (Type A only).

14. a. (2) Adaptors.

✘ Test No c(1) and (3) - Watertightness and drop.

✘ Test No c(6) - Colour and light transmittancy.

(3) Wands.

✘ Test No c(3) - Drop.

✘ Test No c(6) - Colour and light transmittancy.

b. Conditions.

If no failures occur the batch will be accpeted. If one failure occurs a second sample of 5 torches, wands, and/or adaptors will be tested. If two or more failures occur on the first sample the batch will be rejected. If no failure occurs on the second sample the batch will be accepted. If one or more failures occur on the second sample the batch will be rejected.

15. MARKING

Marking shall be in accordance with DEF STAN 05-34.
The NATO Stock Number and manufacturers name and/or reference number moulded or rolled with steel type as applicable.

a. Torch Type A - On the body within the circle indicated in Fig 1, ie with the NATO Stock Number one side and the manufacturer's reference on the opposite side.

Type B - On the body as indicated in Fig 5.

b. Adaptor.

On the base of the filter container.

c. Wand - On the metal cover at the end of the tube.

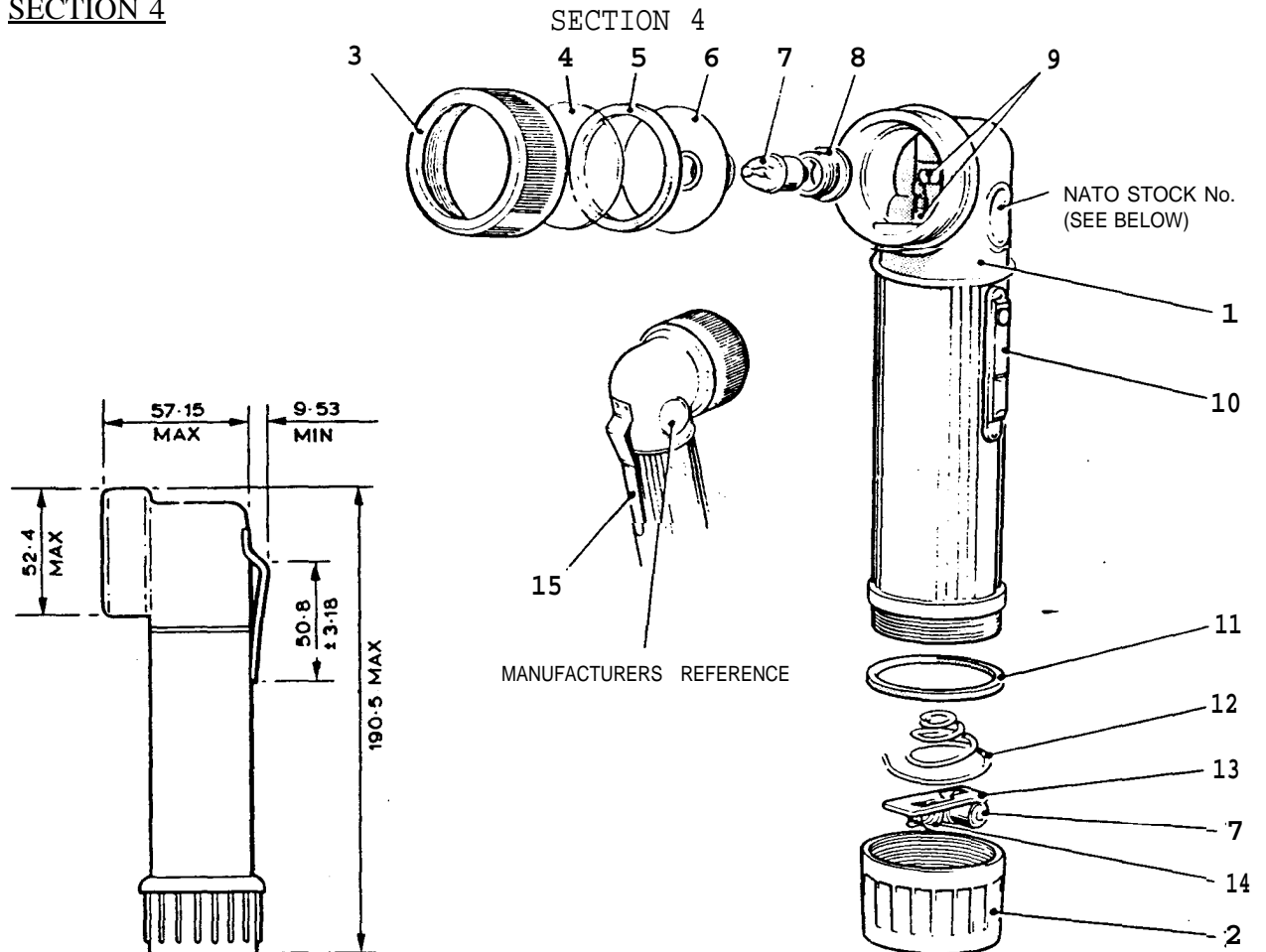
16. PACKAGING

Packaging (preservation, identification, and packing) shall be in accordance with the instructions stated in the contract. Normally these instructions will be based on DEF-123-A.

✘ Para 12 refers.

DEF STAN 62-2 (PART 2)/1

SECTION 4

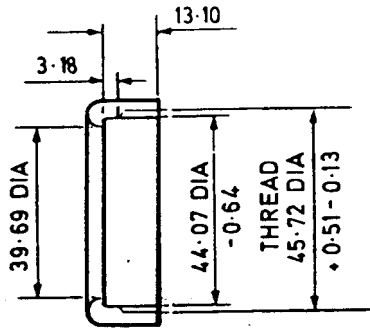


NO	ITEM	MATERIAL	FINISH	REMARKS
1	BODY	HDPolythene	Colour 224 (Deep Bronze Green) to BS 381c	
2	BOTTOM CAP		Colour 356 (Golden Yellow) to BS 381c	
3	TOP CAP			
4	TRANSPARENT COVER DISC	To DTD 5592	Clear	Thickness 1.59
5	TOP GASKET	Compound C4 to BS 2752		'U' Section to fit around edge of Reflector & Cover Disc
6	REFLECTOR	AA to Specification	Vacuum Electro Aluminised	
7	LAMP ELECTRIC 2.5V 0.75W PREFOCUS (2 OFF)			NATO Stock No 6240-99-995-1279
8	BUSH	Moulding Material to BS 1322		
9	CONTACTS	Phosphor Bronze to BS 407		0.38 thick 6.35 wide
10	SWITCH COVER	Brass to BS 2870	Chemically Blacked	
11	BOTTOM GASKET	Compound C2 to BS 2752		
12	SPRING	Brass to BS 2786	Nickel Coating to BS 1224	1.83 thick
13	SPARE LAMP CARRIER	Brass to BS 2870	Nickel Coating to BS 1224	
14	SCREW LAMP ADAPTOR	Brass to BS 2870	Nickel Coating to BS 1224	For MES Cap Lamp
15	BELT CLIP	Phosphor Bronze to BS 407	Chemically Blacked	0.81 thick

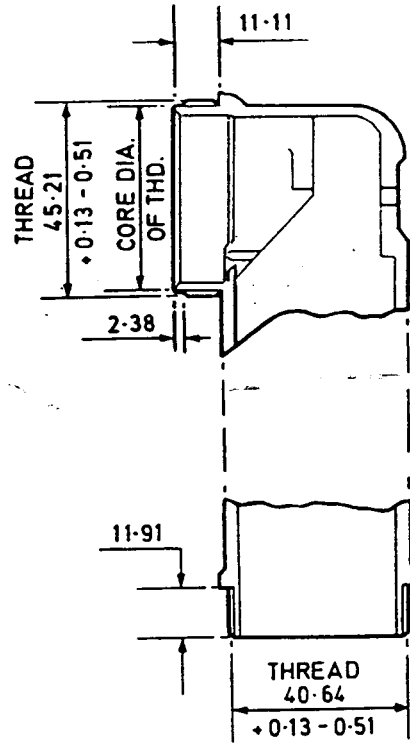
Dimensions in mm

NATO STOCK No. 6230-99-910-5033 : Green
 NATO STOCK No. 6230-99-523-7224 : Yellow

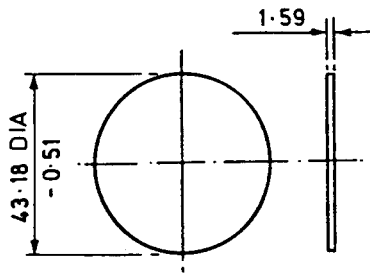
TORCH, HAND, ELECTRIC
 FIG. 1 (TYPE A)



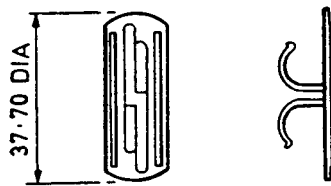
Section on C/L of
③ TOP CAP



Section on C/L of
① BODY



④ TRANSPARENT COVER DISC



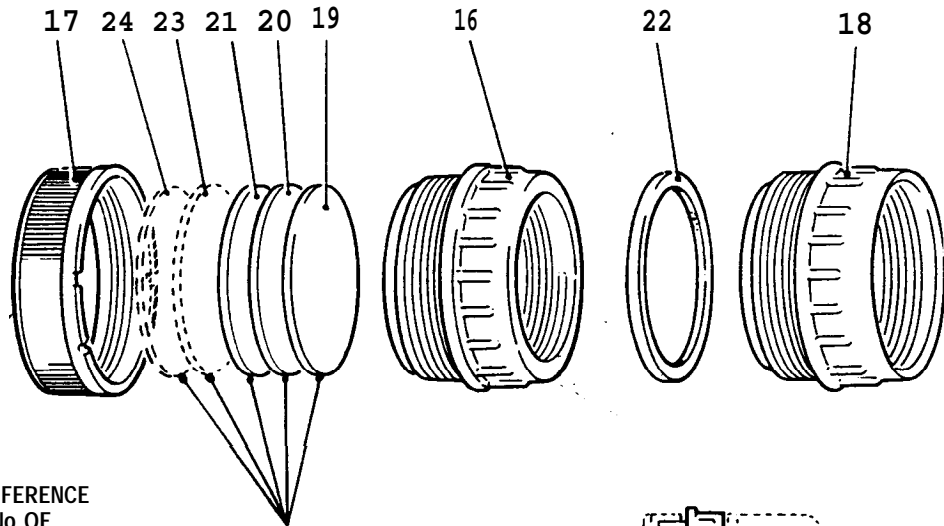
Section on C/L of
⑬ SPARE LAMP CARRIER

Dimensions in mm

TOLERANCES	THREAD DETAILS
Metric $\pm .4$	All Threads shall be 12 UNS to BS1580

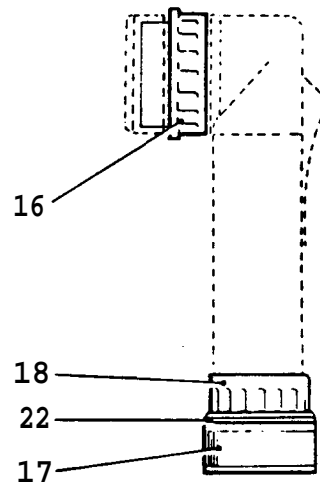
TORCH, HAND, ELECTRIC
Dimensioned Details

FIG.2 (TYPE A)



MANUFACTURERS REFERENCE
AND NATO STOCK No OF
ADAPTOR ON THIS FACE

SEE CLAUSE 6(c)



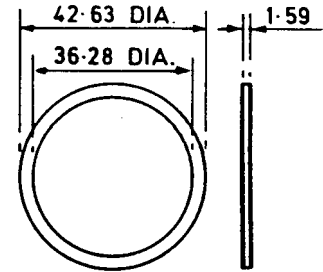
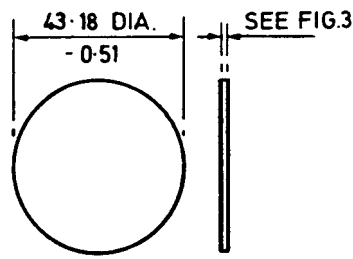
NO	ITEM	MATERIAL	FINISH	REMARKS
16	ADAPTOR NUT	HD Polythene	Colour 224 (Deep Bronze Green) to BS 381c Colour 356 (Golden Yellow) to BS 381c	To accommodate Items 3 and 4 of Fig 1
17	FILTER CONTAINER			To accommodate Items 19 to 24
18	BATTERY END CAP			To accommodate Items 7, 11, 12, 13 & 14 of Fig 1
19	FILTER	PVC Sheet	White - smooth both sides	Thickness 0.792
20	FILTER	Acrylic Sheet	Signal Green - smooth both sides	Thickness 1.587
21	FILTER	Acrylic Sheet	Signal Red - smooth both sides	Thickness 1.587
22	FILTER CONTAINER GASKET	Compound C2 to BS 2752		
23	FILTER			Additional 1.5 thick filters See clause 6c
24	FILTER			

Dimensions in mm

ADAPTOR, LIGHT FILTER

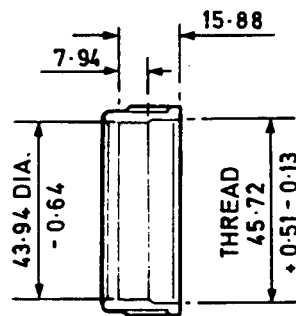
NATO STOCK No. 6230-99-949-6381

FIG. 3

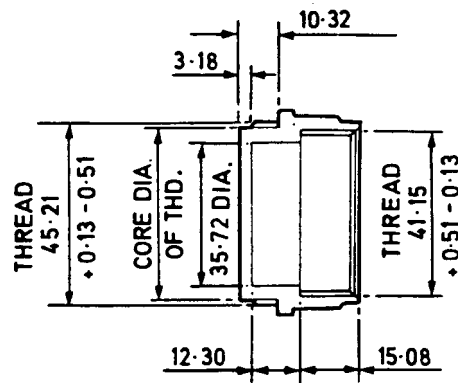


(19) (20) (21) (23) (24) FILTERS
SEE CLAUSE 6(c)

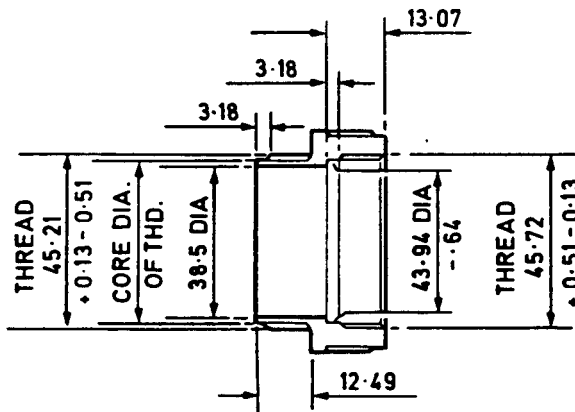
(22) FILTER CONTAINER GASKET



Section on C/L of
(17) FILTER CONTAINER



Section on C/L of
(18) BATTERY END CAP



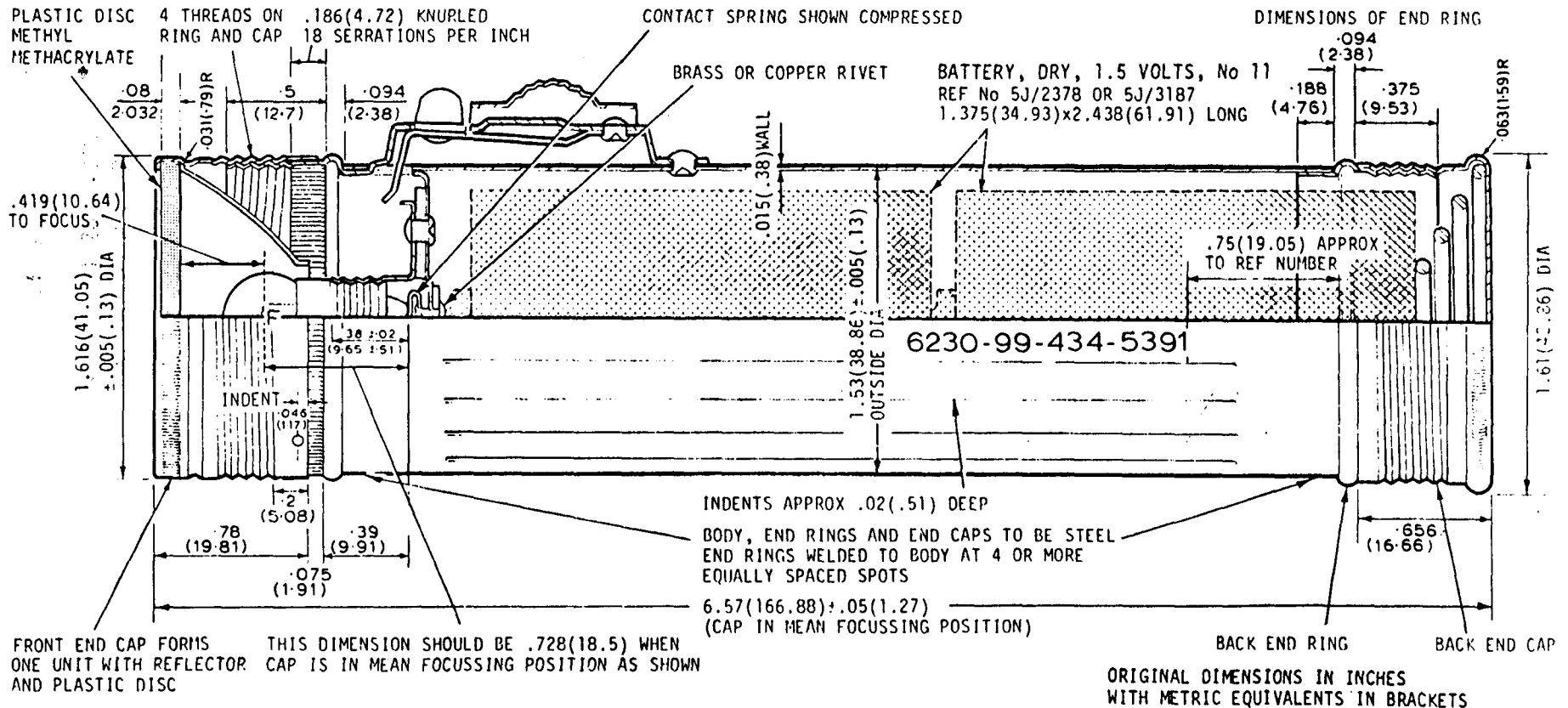
Section on C/L of
(16) ADAPTOR NUT

Dimensions in mm

TOLERANCES	THREAD DETAILS
Metric $\pm .4$	All Threads shall be 12 UNS to BS1580

ADAPTOR, LIGHT FILTER
Dimensioned Details

FIG. 4

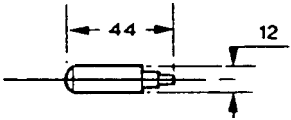
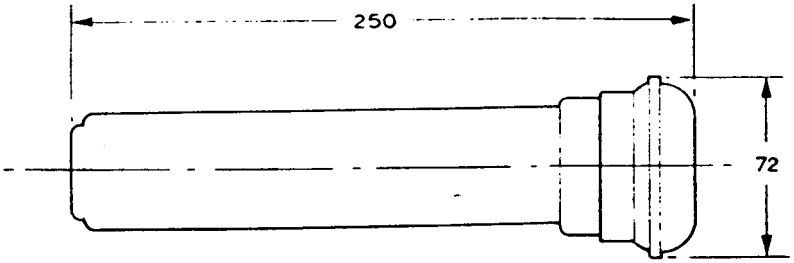


NATO STOCK No.6230-99-434-5391

TORCH, HAND, ELECTRIC

FIG.5 (TYPE B)

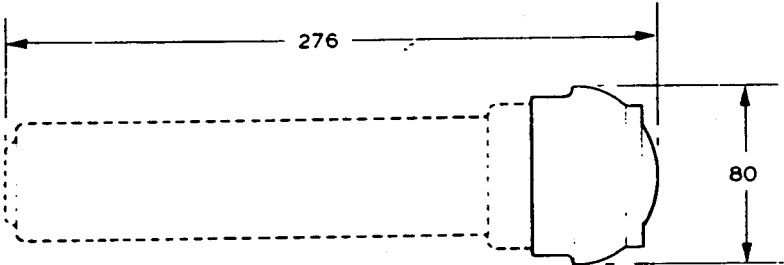
19



KEY, NSN 6230-99-521-4856

TORCH, HAND, ELECTRIC NSN 6230-99-521-4855

FIG. 6



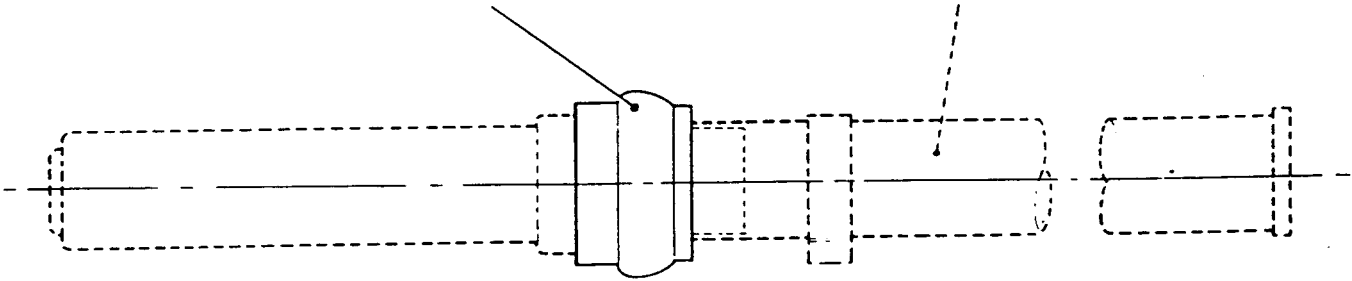
FILTER ASSEMBLY, RED
 NSN 6230-99-521-4858
 OR
 FILTER ASSEMBLY, GREEN
 NSN 6230-99-521-4857

**FILTER ASSEMBLIES FOR USE WITH
 TORCH, NSN 6230-99-521-4855**

FIG. 7

ADAPTOR, LIGHT, FILTER NSN 6230-99-521-4859

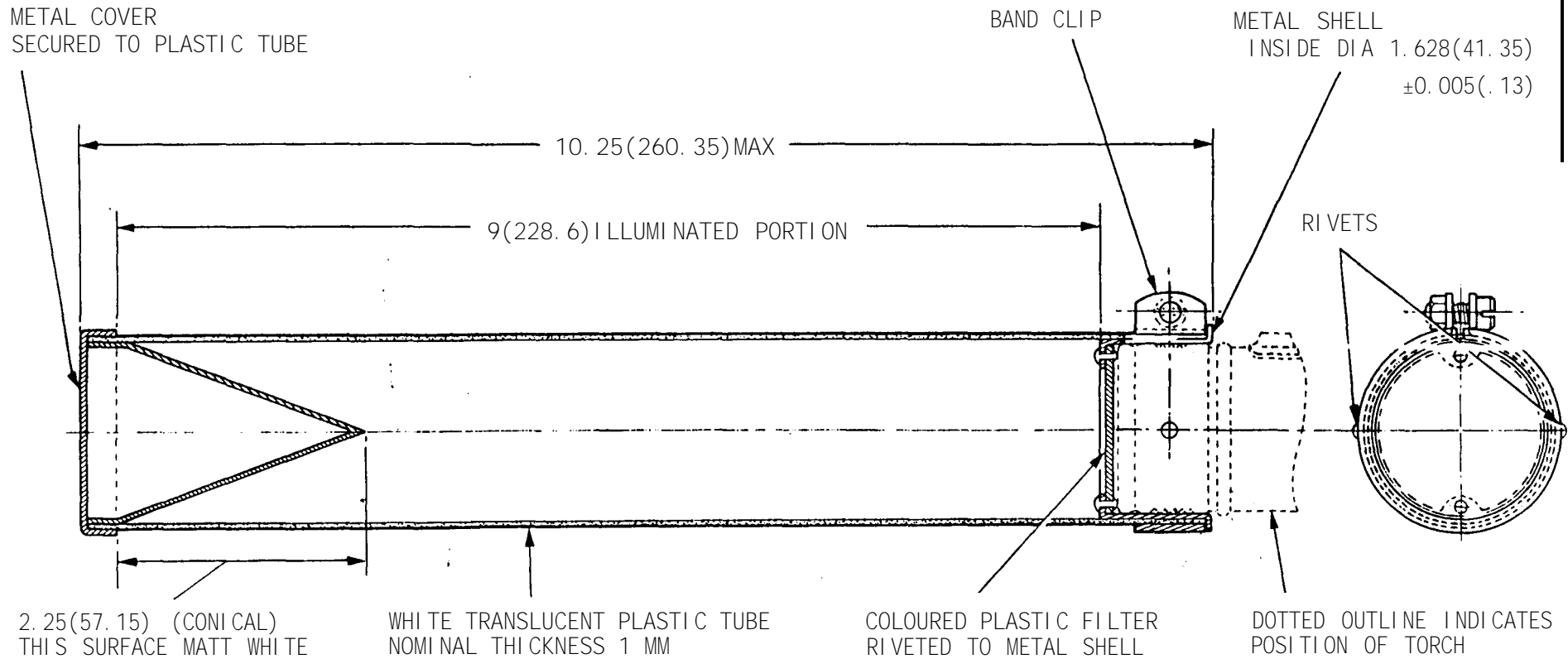
MARSHALLING WAND (SEE FIG 9)
 Amber)
 Green) For Use With Torches
 Red) NSN 6230-99-521-4855 and
 Yellow) NSN 6230-99-434-5391



Dimensions in mm

**FOR USE WITH TORCH,
 NSN 6230 - 99 - 521 - 4855**

FIG. 8



COLOUR FILTERS 0.063(1.59) NOMINAL THICKNESS

- YELLOW, PERSPEX 200 FOR 5A/4345455
- AMBER, PERSPEX 300 FOR 5A/1117951
- RED, PERSPEX 400 FOR 5A/1117953
- GREEN, PERSPEX 600 FOR 5A/1117952

DIMENSIONS ± 0.125 (3.17)

ORIGINAL DIMENSIONS IN INCHES
WITH METRIC EQUIVALENTS IN BRACKETS

NOTE: - THE METAL SHELL AND END OF PLASTIC TUBE ARE TO BE SLOTTED AS SHOWN TO ENSURE THAT THE BAND CLIP CLAMPS THE WAND ON THE TORCH. THE METAL SHELL, PLASTIC TUBE AND BAND CLIP ARE CONNECTED BY TWO RIVETS. RIVET HEADS INSIDE METAL SHELL TO BE COUNTERSUNK.

MARSHALLING WAND

FIG. 9

TABLE I(A)
TORCH, HAND, ELECTRIC - DUAL PURPOSE

NATO STOCK NUMBER 6230-99-	SERVICE MANAGEMENT CODE OR DOMESTIC REFERENCE NUMBER			ITEM NAME	DESCRIPTION											FIG NO																	
	NAVY	ARMY	AIR FORCE		LAMP				BATTERY			CASE MATERIAL	MAX OVERALL DIMENSIONS EXCLUDING SWITCH				LENS	SWITCH	SPECIAL FEATURES	MANUFACTURER DATA, DWGS., OR SPECIFICATION (LATEST ISSUE)													
					QTY	CAP	VOLTS	WATTS	CATALOGUE NO 6240-99-	QTY	VOLTS		CATALOGUE NO	LENGTH	WIDTH						DEPTH												
910-5033		X2	5A	TORCH, HAND, ELECTRIC	1 (plus 1 spare)	Prefocus (plus 1 M.E.S. adaptor)	2.5	0.74	995-1279	2	1.5	6135-99-910-1101	Plastic	190.5	52.4 dia	67	Plastic	Slide and Push	Green can also be used with Adaptor, light filter (See Appendix A)	See page 5 (Type A)													
523-7224	0583	- -	- -						995-1156										Steel		167	43 dia	-	Can also be used with Marshalling wand type A (See Table I(B))	See page 5 (Type B)	5							
434-5391	- -	- -	5A						1										M.E.S.			995-1156											
521-4855	0583	- -	- -						1										Prefocus	3.5	1.05	995-2116	3			Plastic	250	72	-			Can also be used with Marshalling wand Type A (See Table I(B)) with key 6230-99-521-4856	See page 22

NOTES APPLICABLE TO TABLES

1. When only a Service management code appears in the Navy column the full Navy number is the last seven digits of the NATO Stock Number prefixed by that code, eg 0583/910-5033.
2. When only a Service management code appears in the Army column the full Army number is the NATO Stock Number prefixed by that code, eg X2/6230-99-910-5033.
3. - - indicates that the Service concerned does not at present use this item, and pending NATO Codification action, should use the Service reference number of the Service which does use the item.
4. - indicates that no information is available.

TABLE I(B)
WANDS, FILTERS AND ADAPTORS FOR USE WITH TORCHES

NATO STOCK NUMBER 6230-99-	SERVICE MANAGEMENT CODE OR DOMESTIC REFERENCE NUMBER			DESCRIPTION	SPECIFICATION (LATEST ISSUE)	DRAWING	REMARKS	FIG NO
	NAVY	ARMY	AIR FORCE					
949-6381		X2		Adaptor, light filter (comprising, adaptor nut, white, green, red, and neutral filters, filter container, and gasket and battery end cap)	See Section 2A page 9	Included in Specification	Used in conjunction with 6230-99-523-7224 and 6230-99-910-5033 Torch, hand, electric, for signalling purposes	3
521-4859	- -	- -		Adaptor, light, filter	-	-	For use with safety torch 6230-99-521-4855	8
434-5455		- -	5A	Marshalling wand, Type A, yellow filter	See Section 2B page 9	Included in Specification	For use with 9230-99-434-5391 and 6230-99-524-4855 Torch for marshalling aircraft	8 and 9
111-7951		- -		Marshalling wand, Type A, amber filter				
111-7952		- -		Marshalling wand, Type A green filter				
111-7953		- -		Marshalling wand, Type A red filter				
521-4858	- -	- -		Filter assembly, red	-	-	For use with safety torch 6230-99-521-4855	
521-4857	- -	- -		" " green	-	-		

Notes applicable to the Tables are on page 22.

TABLE 1(C)
TORCHES, HAND, ELECTRIC
SPECIAL PURPOSE TYPES

Nato STOCK NUMBER 6230-99-	SERVICE MANAGEMENT CODE OR DOMESTIC REFERENCE NUMBER			ITEM NAME	DESCRIPTION														
	NAVY	ARMY	AIR FORCE		LAMP				BATTERY		CASE	OVERALL DIMENSIONS MM		SWITCH	SPECIAL FEATURES	MANUFACTURER'S DATA, DWCS., OR SPECIFICATION (LATEST ISSUE)			
					CAP	VOLTS	WATTS	CATALOGUE NO 6240-99-	QTY	VOLTS		CATALOGUE NO 6135-99-	LENGTH				DIA		
942-7884	- -	Y3	- -	TORCH, HAND, ELECTRIC	MES	2.2	0.55	995-1163	2	1.5	910-1139	Tubular	127	12.7	Slide	Pen type clip	Ever Ready Type 2216		
942-7885	0583	Y3	- -			4.0	1.20	995-1116	3		910-1101		279.4	86.52	Not Switched	Protection studs for lens	Siebe Gormen B040349-00		
532-3819	0583	- -	- -			4.5	1.35	995-1152			-		-	330.2	76.2	Slide	Waterproof	DEE 93581	
109-7788	- -	- -	5A			4.5	1.35	995-1152			-		-	266.7	76.2	Rotary	Explosion proof	Bardic Type BM66S	
106-7377	- -	W7	- -		-	-	-	-	910-1101		260.35		73	Slide	Explosion proof w/clip	Shinwell Alexander Type SA 622			
523-5323	0583	- -	- -		-	-	-	-	-		266.7		73	Push	w/ring	Ever Ready Type 3698			
434-9807	- -	- -	5A		-	-	-	-	-		269.37		76.2	Rotary	Explosion proof	Bardic Type BM66			
412-8491	- -	2A	- -		-	-	-	-	-		279.4		107.95	Push	Waterproof	Siebe Gormen E3/40569			
522-6250	0583	- -	- -		-	-	-	-	-		209.55		73	Push	w/ring	Ever Ready Type 2698			
943-3474	0583	W7	- -		-	-	-	-	-		-		-	Rotary	For use in inflammable vapours	Geag Ltd B 3342			
111-4410	- -	X2	- -		-	-	-	-	1		4.5		-	Rectangular	74.61	31.75 wide	Slide	-	Ever Ready No 9222

DEF STAN G2-2 (PART 2)/A
7101 F 1(C)

Notes applicable to the Tables are on page 22.

TABLE III

TORCH, HAND, ELECTRIC

ITEMS NO LONGER TO BE PROVISIONED

ITEM NO	SERVICE REFERENCE NUMBER			ITEM NAME	NATO STOCK NO OR SERVICE REFERENCE NO OF REPLACING ITEM
	NAVY	ARMY	AIR FORCE		
	(a)	(b)	(c)		
1	-	WT/6230-99-901-3018	5A/9013018	TORCH, HAND, ELECTRIC	6230-99-106-7377
2	-	X2/6230-99-910-5034	-		6230-99-910-5033
3	0583/520-1611	-	-		6230-99-523-3819
4	0583/412-8450	-	-		6230-99-521-4855
5	0583/412-8489	-	-		
6	0583/412-8446	-	-		
7	-	6230-99-211-1437	-		None

Notes applicable to the Tables are on page 22.

Crown Copyright

Published by and obtainable from:

Ministry of Defence

Directorate of Standardization

First Avenue House

High Holborn

London WC1V 6HE

DEF STAN 62-2 (PART 2)/1
BATTERY OPERATED LIGHTS,
TORCHES, AND LANTERNS, ELECTRIC
PART 2: TORCHES, HAND, ELECTRIC

AMENDMENT 1

1. Page 5,

Insert new sub-clause 2f:

f. TS Specification

TS 437B Polycarbonate moulding and extrusion material.

2. Page 6, clause 4c

Delete text in toto

Substitute new text:

c. TYPE A

Reflector. The reflector shall be made of acrylonitrile-butadiene-styrene or an equivalent and of paraboloidal form. It shall be assembled together with the transparent cover disc in the groove of the top gasket. Means shall be provided for locating the lamp so that its filament is at the focal point of the reflector.

Bush. The brass plated bush shall securely retain the lamp in its correct position and have facilities for easy removal. It shall be designed for use with a pre-focus lamp.

3. Page 7,

a. sub-clause 4d, line 2

Delete: copper

Substitute: brass

b. sub-clause 4e, last line

Delete: revets

Substitute: rivets

c. sub-clause 4f

Delete text in toto

Substitute new text:

3. c. (contd)

f. Spare lamp carrier (Type A only)

A spare lamp carrier complete with two spare pre-focus lamps shall be accommodated in the bottom cap. The carrier shall be firmly held in position only by the battery spring.

4. Page 10,

a. clause 12, line 1, (in two places)

Delete: 10

Substitute: 12

b. sub-clause 12b, line 1

Delete: 8

Substitute: 10

c. sub-clause 12b(1), Test No c(5)

Delete: Head

Substitute: Heat

5. Page 15,

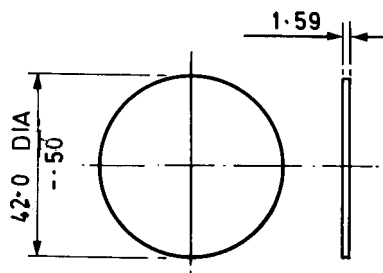
Delete existing page 15

Substitute new page 15 attached

6. Page 16, FIG 2 (TYPE A) (4), TRANSPARENT COVER DISC

Delete existing drawing

Substitute new drawing:



(4) TRANSPARENT COVER DISC

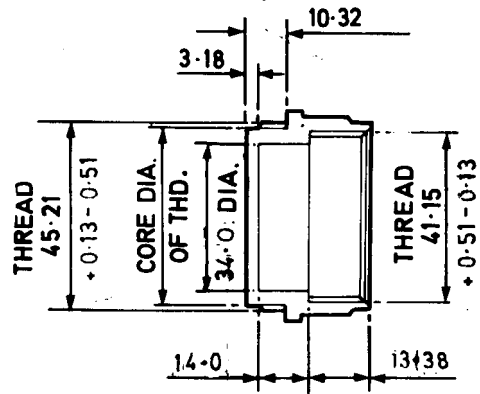
7. Page 17, Table, col headed MATERIAL, items number 19, 20 and 21

Delete: Sheet

8. Page 18, FIG 4 (18), BATTERY END CAP

Delete existing drawing

Substitute new drawing:



Section on C/L of

(18) BATTERY END CAP

9. Page 23, Table I(B), SERVICE MANAGEMENT CODE columns

Delete NAVY, ARMY and AIR FORCE columns

Substitute new columns:

SERVICE MANAGEMENT CODE OR DOMESTIC REFERENCE NUMBER		
NAVY	ARMY	AIR FORCE
- -	X2	- -
0583	- -	- -
- -	- -	5A
- -	- -	
- -	- -	
- -	- -	
0583 0583	- - - -	- - - -

10. Page 24, TABLE I(C), line 3, Nato Stock Number column

Delete: 532-3819

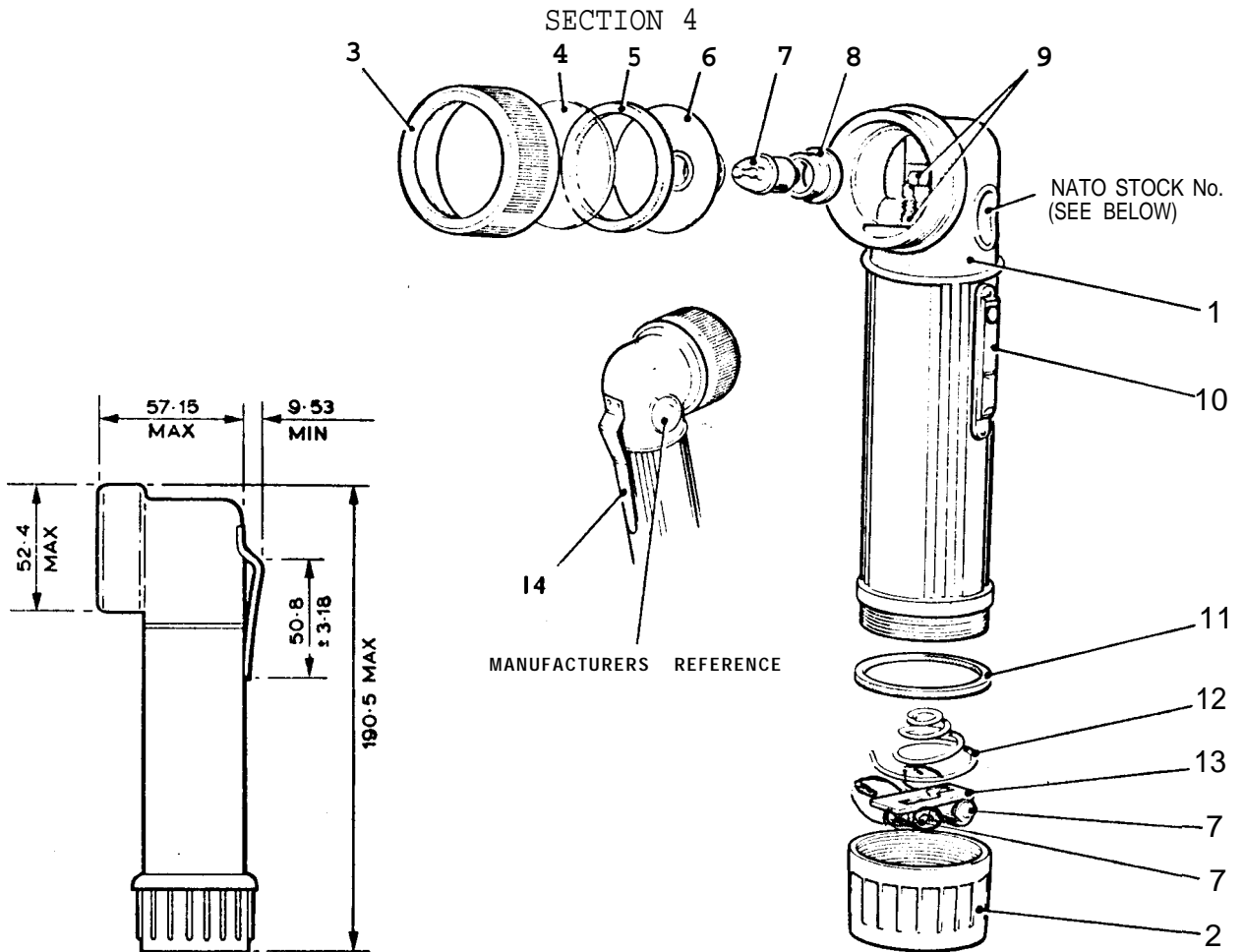
Substitute: 523-3819

11. Make a note of this Amendment on the Amendment Record.

26 APRIL 1978
DIRECTORATE OF STANDARDIZATION
MINISTRY OF DEFENCE
LONDON

D/D STAN/62-3/1 (Stan 8)
AL/294/09-AD/Stan(Air)

SECTION 4



NO	ITEM	MATERIAL	FINISH	REMARKS
1	BODY	HD Polythene	Colour 224 (Deep Bronze Green) to BS 381c	
2	BOTTOM CAP		Colour 356 (Golden Yellow) to BS 381c	
3	TOP CAP			
4	TRANSPARENT COVER DISC	To DTD 5592 or TS 437B	Clear	Thickness 1.59
5	TOP GASKET	Compound C4 to BS 2752		'U' Section to fit around edge of Reflector & Cover Disc
6	REFLECTOR	ABS	Vacuum Electro Aluminised	
7	LAMP ELECTRIC 2.5V 0.75W PREFOCUS (3 OFF)			NATO Stock No 6240-99-995-1279
8	BUSH	Brass to BS 2870	Nickel Coating to BS 1224	
9	CONTACTS	Phosphor Bronze to BS 407		0.38 thick 6.35 wide
10	SWITCH COVER	Brass to BS 2870	Chemically Blacked	
11	BOTTOM GASKET	Compound C2 to BS 2752		
12	SPRING	Brass to BS 2786	Nickel Coating to BS 1224	1.83 thick
13	SPARE LAMP CARRIER	Brass to BS 2870	Nickel Coating to BS 1224	
14	BELT CLIP	Phosphor Bronze to BS 407	Chemically Blacked	0.81 thick

Dimensions in mm

NATO STOCK No. 6230 - 99 - 910 - 5033: Green
 NATO STOCK No. 6230 - 99 - 523 - 7224: Yellow

**TORCH, HAND, ELECTRIC
 FIG.1 (TYPE A)**

DEF STAN 62 - 2(PART 2)/Issue 1

CORRIGENDA

Page 9, clause 11, line 10

Insert the word 'Authority' after 'and/or adaptors may be made to the'

Page 22, column 21, line 434 - 5391

Insert: EL 26314



Procurement Executive, Ministry of Defence

Directorate of Standardization

Room 1138, Kentigern House, 65 Brown Street, GLASGOW, G2 8EX

Telephone: 0141-224 2595 (Direct Dialling)

Fax: 0141-224 2503

0141-248 7890 (Switchboard)

Internet e-mail address: t.leaver@dstan.mod.uk

Your Reference :

Our Reference : D/DStan/11/2

Date : 9 November 1998

Removal of Product Qualification Approval

IMPORTANT ANNOUNCEMENT

1. This Standard contains a Product Qualification Approval (PQA) scheme. ⁱMOD policy requires that all PQA schemes are removed from Defence Standards called up in contracts placed after 1st January 1998.
2. Users of this Standard are to contact the Project Manager (PM), Equipment Support Manager (ESM) or Technical Service Authority (TSA) named in the contract or order, to identify whether there is a continuing need for an approvals scheme.
3. ⁱⁱProduct Conformity Certification (PCC) is a risk based process that replaces PQA. Once a risk has been identified PCC can be included as a contract clause. In exceptional circumstances agreement can be sought from AD/Stan for PCC to be included in a Defence Standard.
4. At the next revision of this Standard the PQA scheme will be removed.

T R Leaver
Head of Standards Programme Management
Tel: 0141 224 2595 FAX: 0141 224 2503

ⁱ Defence Council Instruction (General) 197/97; Quality Temporary Memorandum 5/98; Chief of Defence Procurement Instruction CDPI/TECH/250 (draft)

ⁱⁱ PCC is certification that a product meets its specification. When PC is required by the contract, the contractor is responsible for obtaining the necessary PCC. Certification shall be provided from a NAMAS accredited laboratory when appropriate. PCC shall apply where a Risk Assessment has been identified by the PM; ESM or TSA.