

NUMBER TY37.003.749-76

SHEET.....1.....OF.....35

SUPERSEDES.. 1 of 35

I. 1958 ~~1958~~

1097

~~I. 1958 - TY 37.003.749-76~~

~~I. 1959 - TY 37.003.749-76~~

~~I. 1960 - OCT 37.002.001.76~~

~~I. 1961 - TY 21.001.573-79~~

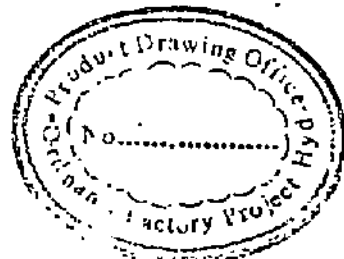
~~I. 1962 - TY 16.535.852-79~~

Entered in
OCT Reg. SNo. 216

MASTER COPY

Ty 37.003-749-76

I 1958 to I 1962



TRANSLATED	P. Pathak			Ordnance Factory Project Hyderabad.	
AUTHENTICATED	ALLANDEEV				
TYPED	R.M. Rao				
EDITED	D.C. JOTIN	16.535	16.535	APPROVED	
	NAME	SIGN.	DATE		

Date:02.05.87.

NOTIFICATION OF AMENDMENTS TO SPECIFICATIONS

The following Corrections/Amendments are now required to be carried out in the documents as below:

Documents details : TY37.003.749-76

CFPM Regn.No. : I 1959

Details of amendments:-Sl.No. Details

1. Ref : page No.28 of 62, section-1, Tech.requirements

a)Item 1-22 ; 3rd line

Delete : 'coutact'

Add : "CONTACT"

b)Ref : Item 1-24, 1st line

Delete : 'In reised edition'

Add : "IN REVISED EDITION"

c)Ref : Point 1.24, last line

Delete : These specifications requirements

Add : "Requirements of these specifications"

2. Ref : page No. 29 of 62, from top of the sheet

2nd line

Delete : B carried out

Add : "is carried out"

3. Ref : page No.29 of 62, Item 2.3; 1st line

Delete : 'growing'

Add : "glowing"

Contd.2/-

SED

Library

4/5

I. 1958-1962

These technical specifications pertain to head lights of type 125, 126, 127, intended for operation in the conditions.

- a) infrared spectrum.
- b) visible light without blacking out;
- c) Visible light with blacking out;

Example of description for ordering and in documentation:

Head light ϕ 125 or 45 7372 1211 (code KΠ) as per TY 37.003---		
Head light ϕ 125 or 45 7372 1454	"	"
Head light ϕ 126 or 45 7372 1214	"	"
Head light ϕ 127 or 45 7372 1217	"	"

1. TECHNICAL REQUIREMENTS

- 1.1. The head lights should correspond to the requirements of these technical specifications and requirements of the set of design documentation, approved in a set order.

Requirements of Gost 134 3940 - 73 car and tractor electric equipments general technical specifications covered in these technical specifications.

MAIN PARAMETERS AND DIMENSIONS

- 1.2. The main parameters and dimensions of head light overall and connecting dimensions, voltage, wattage of lamps, weight) should correspond to the assembly

Sl.No. Details

4. Ref : page No.33 of 62, Table 2, Main head lines,
5th column.

Delete : Type and quality tests

Add : Type and qualification tests

5. Ref : page No. 33 of 62, Table 2
against Sl.No.1

a) Delete: OF (after - check) to read as "Check the
article"

b) Delete: OF (after - articles)

Add : for

6. Ref : page No.33 of 62, Table 2, against Sl.No.5
Column - 2

Delete: FOR (after test for insulation)

7. Ref : page No.34 of 62, Table 2 , against Sl.No.10
column - 3

Delete: 1.9.10

Add : 2.9.1b

8. Ref : page No.34 of 62, Table 2, against Sl.No.14
column - 2nd

Delete: heat resistance

Add : Wet strength

9. Ref : page No.34 & 35 of 62, Table
against Sl.Nos. 16,17,21,22,23 column 2nd

Delete: OF (after ; check test)

Add : for

Contd.3/-

I.1958-1962

drawing or outline drawing approved in ^a set order.

CHARACTERISTICS

- 1.3. The head lights should be able to withstand ambient temperature variation from minus 50°C to plus 40°C and should maintain their efficiency when they are subjected to ambient temperature up to $+55^{\circ}\text{C}$ in non-working conditions (when the lamp is switched off).

Remark: Articles of "Y" and "T" versions should be tested at temperature of minus 40°C .

- 1.4. Head lights should operate efficiently after cyclic variation in ambient temperature from plus 65°C to 50°C .

- 1.5. Head lights should operate efficient at excess relative humidity up to 98% at temperature up to 35°C .

- 1.6. A glass of head light should withstand the effect of air wave impact on then checking pressure should be

- 1.7. ^{2 atm. gauge} The head light should be water proof and withstand effects of water with excessive pressure of 0.7 etc.

- 1.7.1 Head lights should maintain their efficiency after being in the conditions of excessive dust laden air (up to 5 g/M^3)

Remark: Waterproof version head lights should not be tested for the given point.

- 1.8. The head lights, connected in the ^{across} with voltage corresponding to the design voltage of lamp and heated up to the steady set temperature when the ambient temperature is $+30^{\circ}\text{C}$ should maintain their efficiency

Sl.No. Details

10. Ref : page No.35 of 62, Table
 against Sl.No.22, column 2nd, 4th line

Delete : Vertical

Add : Vertical

(T.M.O. (A.W.M.) P.O.)


A.W.M./DS

AF/P.D.O

✓ Copy to: CI,ICV.

when plunged the to the water with temperature $+15^{\circ}\text{C}$.

1.9. Head lights should withstand the vibration loads with acceleration of 5 g within frequency range of 10 to 50 HZ. Vibration strength is tested with acceleration of 5 g to frequency 50 Hz. for 8 hours.

1.10. The head lights should be impact resistant when subjected to impact load with acceleration of 15 g and duration of ~~or~~ impulse from 10 to 15 ~~ms~~ M.sec. with frequency of impacts from 80 to 100 per min.

Total number of impacts during the test should be 2000.

1.11. Illumination characteristics (light distribution) of lights of type ϕ 126 should meet following requirements:

a)

Direction as regards to direction of maximum light intensity

Min. light intensity

25000

0° in light 5° (Total scattering angle)

25000

9000

3° downwards, 0° in horizontal

4000

3° downwards, 15° (total scattering angle)

2500

3° downwards, 27° (total angle of dispersion)

1200

I, 1958 ~~1958~~

Remark: Asymmetry of light dispersion as regards to direction of maximum light intensity is allowed.

Required light intensity should be maintained within the limits of total scattering angle.

b) Illumination characteristics of head light of type

ϕ 125 are checked by colourless diffusor and should

meet the requirements of para 1.11. (a) - *(c) Illumination characteristics of light of type ϕ 125 should meet following requirements.*

(1) black out door closed (condition of partical

black out) the maximum light intensity should be

directed at angle from 2° ~~30~~ 5° below the horizontal axis and should not exceed 1000 cd.

The light intensity at checking points should correspond to following characteristics.

Angle	Light intensity cd	
	Vertical	Horizontal
3° downwards	0°	300
4° 30 downwards	0°	300
5° downwards	20° to the left	30
	20° to right	

black out door

2. With opened (non black out conditions) maximum intensity of light should not exceed 15000 cd scattering angle should be : in a vertical plane 5° above ~~maxi~~ 4° below ~~maxi~~

Scattering

In horizontal plane total angle for head light should be 30° min.

Remark: 1. The angle within the limits of which the luminous intensity decreases.

to 0.1 of its max. value is called scattering angle.

1.11.1. Illumination characteristics of head light are checked by standard lamps TR 28-40-1 ~~checked~~ as per technical specification TY16.535.853-74, as per ~~technical spec~~ with standard light flux of 680lm standard height of filament light centre.

1.12. Design of head light should provide the opportunity of mounting the optical elements ^{through} vertically in vertical as well as in the rotated the angle of 90° position of head light body.

1.13 Painting of visible surfaces of external parts should be done with varnishes and enamels as per Gost.9.032-74 ^{the remaining surfaces should be painted} class IV, group ~~III~~ surfaces near the holes should be painted as per class, V group ~~III~~.

* as per Gost 9032-74, class IV, group

traces of drawing dies may remain on visible surfaces on the external (not visible) and internal surfaces may have traces at hanges technological collars, enamel and varnish flow, formed during painting by pouring or dipping traces due to hangers should be re-painted.

If both sides agree head lights can be delivered with parts in primed condition for further painting by customer.

I. 1958-~~1959~~

1.14. Anti corrosive protective coating of steel parts by cadmium ~~and~~ zinc and chromate should have thickness as described below:

6 microns

a) for external and internal threaded parts ~~6 microns~~ ^{15 microns}

b) ~~15 microns~~ for internal parts and also external and internal fastening parts (~~nuts~~, washers, bush etc)

c) 24 microns for ~~external~~ external parts.

Quality of surface of parts having undergone galvanic coating and also their corrosion resistant properties should correspond to the requirements of Cost 3002-700

1.15. Optical elements of head lights are dismountable reflectors (pots) of optical elements should be varnished and phosphate coated. Surface reflecting light should have aluminium coating over the varnish sub-layer.

Aluminium coating should have mirror finish.

Aluminized reflecting surface of reflectors may have

small spreaded contamination and black spots with diameters up to 1mm provided maximum 3 such spots at 10 to 15 mm from edge of hole for

lamp holder;

The central portion of reflector may have 2 spots max. spots and contaminations do not affect the operational characteristics of reflector.

Illumination tests results are deciding characteristics for the quality of reflecting surface of reflectors.

1.16 Aluminium coating of reflecting surface of reflectors should with stand the test for chemical stability.

1.17. A glass of head light optical element should be manufactured in accordance with the requirements of technical specification TY 21-PC 002-593-73.

1.18. Electric filaments lamps provided in the head lights should correspond to the standard or technical specifications specified in approved or all dimensional outline.

1.19. Insulated parts made of plastic should be manufactured in accordance with the requirements ^{above} of Cost 327-55 ~~the requirements~~ as per technical specifications concurred and approved in set order.

1.20 Insulation ~~resistance~~ ⁱⁿ should be min 2 meg.ohm after head light being the ~~hydrostat~~ for 24 hours.

1.21. Insulation of current carrying parts of head light with respect to body should withstand a.c. test voltage of 220 V, 50Hz. for ~~min.~~ ^{1 min.} ⁸⁵

1.22. Connection of electric net work head light should be reliable.

All units and parts should be securely fastened. Parts having threaded joints should be secured against self loosening.

1.23. Head light wiring should eliminates the possibility of discontinuity of contacts and also tension in the wires. The design of the place where conductors -

I.1958-49

are lead inside the head light should protect cable from break and rubbing.

1.24. Articles intended for prolong storage in customer's store houses of "C" Group of storage conditions as per Gost 15150-69 should on expiry at their storage period meet the requirements of these technical specifications provided the preservation packing storage and transportation ~~was~~ carried out in accordance with OST 37,002.001-73.

1.25. Service life at head light (except the electric filament ~~lamp~~) taking into account prolong storage as per item 1.24, should be equal to the original life of vehicle or which they are installed. It is allowed to carry out maintenance operations during the period.

Ordnance Factory
Project
Hyderabad.

NUMBER T.Y. 37.003.749-76

SHEET 10 OF 62

I. 1958-1959

COMPLETENESS

1.26. Depending on the order head lights can be supplied in following versions.

Sl. No.	Index of head light	Version	Code	Main characteristics and purpose.
1	φ Γ 125	Y D T	45 7372 1211 45 7372 1212 45 7372 1213	Head light as an assembly optical element designed for operation in intrared condition (light).
2	φ Γ 125-b	Y D T	45 7372 1454 45 7372 1455 45 7372 1456	Head light in assembly with optical element for operation in visible condition (light).
3	φ Γ 126	Y D T	45 7372 1214 45 7372 1215 45 7373 1216	Head light in assembly with optical demand and black out door.
4	φ Γ 127	Y D T	45 7372 1217 45 7372 1218 45 7372 1219	

Remark:- Optical elements of head lights depending on the quality order can be supplied separately (with the body of head light).

MARKING

1.27. On each head light following should be marked.

- a) Manufacturers trade mark;
- b) type of article;

I.1958-~~450E~~

- c) year and month of manufacture,
- d) TID stamp,
- e) climatic version,

version "Y" is not marked.
Marking should be clear in keep its quality
till the guaranteed service period expires.
PACKING

1.28 Head lights should be wrapped in wrapping paper as per

Cost 8273-75 and put into the cardboard box made as per

Cost 9142-59 on which following should be specified;

- a) Description of manufacturer;
- b) Designation of the type of article;
- c) Quantity of articles
- d) Date of packing (month and year)
- e) Handle with care - do not throw
- f) storage conditions
- g) Preservation period;
- h) The technical specifications number;

1.2.9. Boxes containing article should be kept in containers or durable wooden braced boxes.

Method of stocking of boxes in containers or wooden braced boxes should ensure that boxes during transportation the boxes would not be displaced in the boxes containing or box.

Remark: Packing of article in torg (solid) and durable boxes instead of packing in cardboard boxes may be allowed in exclusive cases under the special permission of the manufacturer. Horizontal and ^{Vertical} ~~vertical~~ spaces both between articles are the walls of packing should be filled with wooden cutting.

I. 1958-1959

~~filled with wooden ritting.~~

1.30- Packing should protect the articles from damage during transportation.

1.31- ~~ALT~~ Weight of box with article packed in ^{it} should not exceed 60 Kgs.

1.32. Packing list ^{Specifying} ~~specifying~~ following information should

be enclosed in each container or box;

a) Packers number;

b) Description and number of articles;

c) Date of packing;

1.33. With a stable (durable) paints following should be clearly marked on the boxes;

a) Description or trade make of manufacturer;

b) Description and number of articles.

c) GLASS -HANDLE WITH CARE.

2. ACCEPTANCE RULES

2.1. Acceptance rules of head lights are as per Gost 3940-73.

2.2. Acceptance test at articles by customer's representative is carried out as per plan of single stage random inspection as per Gost B. 18370 -73.

2.2.1. 500 units is the size of the batch to be presented to customer's representative.

2.2.2. Number of specimens for acceptance test should be ^{minimum} 5% but five pieces.

Ordinance Factory Project Hyderabad.		I 1958		NUMBER TY 37.003.749-70		
		SHEET 15 OF 62				
Continuation table 1.						
1	2	3	4	5	6	7
9	Testing for cyclic Temperature variation effects	TY П.1.4	TY П.3.4	+	+	-
10.	Test for ^{heat} frost and moisture effects	Gost BП 3940-73 П.1.4.10	Gost BП 3940-73 П.3.15	+	-	-
11.	Test for solar radiation effect	Gost BП 3940-73 П.1.3	Gost BП 3940-73 П.3.3.	+	-	-
12.	Test for heat resistance	TY П.1.3	TY П.3.3.	+	+	-
13.	Testing for cold resistance	TY П.1.3	TY П.3.3.	+	+	-
14.	Testing for heat resistance	TY П.1.5.	TY П.3.6.	+	+	-
15.	Checking for varnish coating	TY П.1.13	GOST 39.40-71 П.3.15.	+	+	-
16.	Checking of Protective metallic ^{coating} creativity П.1.4.	TY П.1.4.	TY П.3.13	+	+	-
17.	Check of efficiency at reduced atmospheric pressure.	Gost BП 39.40-73 П.1.9(х)	Gost BП 3940-73 П.3.22.1.	+	+	-
18.	Check for air portability	Gost BП 3940-73 П.1.9.10	Gost BП 3940-73 П.3.22.2	+	-	-
19.	Check for mould resistance	Gost BП 3940-73 П.1.9.13	Gost BП 3940-73 П.3.25.	+	-	-
20.	Test for the effect of sea salt fog	Gost BП 3940-73 П.1.9.10	Gost BП 3940-73 П.3.26.	+	+	-
21.	Test of head light lenses for effect of airway impact	TY П.1.6.	TY П.3.5.	+	-	-

I. 1958

Table 1.

SL. NO.	Type of test and check	Items of technical requirements as per Gost 3940-71, Gost 3940-73	Items of method of testing as per Gost 3940-71, Gost 3940-73 and the T. Specifications	Type and quality tests	Periodic acceptance tests	
1	2	3	4	5	6	7
1.	Check of the articles of appearance, overall and mounting dimensions.	TY 0.1.1	TY 0.3.2	+	+	+
2.	Check for requirements set for design	Gost 3940-73 0.1.20: I.20.6.	Set for design	+	3-	+
3.	Check for light and colour characteristics.	TY 0.1.11.	TY 0.3.10 0.3.10.1	+	+	+
4.	Check for insulation resistance	TY 0.1.20	TY 0.3.18	+	+	+
5.	Test for insulation for electric strength	TY 0.1.19	TY 0.1.18	+	+	+
6.	Test for vibration and impact strength	TY 0.1.9. 0.1.10	TY 0.3.9.	+	+	+
7.	Test: mechanical strength of terminals	Gost 3940-71 0.1.18	Gost 3940-71 0.1.18	+	+	+
8.	Testing for airtightness	TY 0.1.7	TY 0.3.7	+	+	+

2.2.3. Checking of head light as per item 3 of table 1 should be done twice a month.

2.3. Periodical test should be carried out as per Gost B 18370-73.

2.3.1. Periodicity of test is once in 12 months.

2.3.2. 5 head lights from a batch, approved by customer's representative according to item 2.2. are grouped into a representative sample for carrying out periodical tests.

2.4. Type tests are carried either new items are introduced or whenever there is a modification in design for new materials are used able to influence the quality or characteristics of the article.

2.5. The extent and the sequence of the tests are as per table 1.

Ordnance Factory Project Hyderabad.		NUMBER..... TY37.003.749.7 SHEET 16..... OF 62.....
---	--	--

I.1958.1

1 2 3 4 5 6 7

22. Check of the possibility of setting the optical elements in vortical position as well as in position when head light is rotated through the angle 90°. TY П1.12. П3.II + + -
23. Check of the efficiency of head light plunged in to the water TY П3.8 + + -
24. Check for the guarantee life TY П6.2 П3.21 + - -
25. Test for service life TY П1.25 П3.20 + - -
26. Storage tests TY П1.24 П3.22# П3.22 + - -

Symbol "+" means tests are carried out
Symbol "-" means tests are not carried out.

OF
METHOD ~~OF~~ TEST (checked)

3.1. Methods of test are as per section 3 of Gost 3940 -71 and present technical specifications.

3.2. Check of over-all--and connecting dimensions (item 1.1 should be made by universal measuring tools or special gauge).

3.3. Efficiency of head lights checked at changing ^{ambient} temperature (item 1.3) are carried out in heat chamber at temperature of $+40 \pm 5^{\circ}\text{C}$ and in cold chamber at temperature of $-50 \pm 5^{\circ}\text{C}$. The articles of 'Y' and 'T' versions should be checked at temperature of minus 40°C .

Head light in working position is kept for 3 hours in heat chamber with the lamp switched on. The head

light kept in working position in cold chamber for 3 hours with the lamp switched ^{off} and then be tested for one hour with the lamp switched on.

When the lamp is switched on the head light should not be removed from cold chamber.

Head light should operate without any failure in the heat chamber and in the cold chamber during the entire testing period.

3.4. Test for the cyclic temperature variation effect (item 1-4) an unpowered head light undergoes. 3 cycles of temperature variation continuously one after the other in succession. Each cycle is carried out head light is placed in cold chamber with a temperature in which B already brought down

Ordinance Factory
Project
Hyderabad.

NUMBER.....TY37.003.749-76

SHEET.....318 OF62

I. 1958. ~~192~~

to minus 50°C and maintained at this temperature for four hours. The head lights of 'Y' and 'T' versions are maintained at the temperature minus 40°C.

The head light taken from the cold chamber is placed to heat chamber with temperature of plus 65°C and held in it at this temperature for 4 hours. The transfer time for articles carried from cold chamber to heat chamber and vice-version should not exceed 5 minutes.

3.5. Test of glasses of head light as per item 1-6 is carried out in special fixture or in assembly with head light in the conditional of imitation of air wave impact as per item 3.6 of TY21-fclp-593-72.

3.6. Head lights are tested for heat strength (item 1-3) in hydrostatic ambient temperature of plus 25 ~~±~~ 10°C. Required ^{developed in} relative humidity is hydrostatic by evaporating water develop in hydrostatic by evaporating water poured at the bottom of chamber to a min height of 20 mm. The head light is placed in side the chamber on a grid support.

Internal volume of chamber should be at least as big as that of 3 lights.

The headed light before bringing to the chamber and water ~~exposed~~ inside should have the temperature equal ~~to~~ ambient temperature during test, see above.

After being in hydrostatic for ~~40~~ hours the head lights

Ordnance Factory Project Hyderabad.	I 1958-8/11	NUMBER TY 37.003.749-70
		SHEET 19 OF 22

should be efficient without preliminary drying and should withstand the test for conformity to the requirements, specified in these technical specifications.

3.7. Head light is checked for water proofness by dipping an unpowered head light in working position in to near metric chamber filled with water.
Excess pressure of water of 0.7 atm gauge is developed in the chamber.

Head light should remain under excess pressure in the chamber for two hours. Test results are considered satisfactory if water is not observed inside optical element and max 1 cm³ of water has ^{penetrated} inside the body of head light permetrated.

3.8. The efficiency of head light in the water is checked in following manner:

The head light should be switch on at normal operating voltage and heated up to steady thermal condition, then the head light with switch on lamp should be plunged into water having temperature of 15°C and kept in for 10 minutes. Head light should maintain its serviceability after the check.

3.9. The head light should be tested for effects of vibration and impacts loads on special stands which onwards parameters ^{specified} mentioned in item 1.9 and 1.10.

When head light is tested light is tested for above mentioned effects it is ^{imposed} ~~move~~ and fastened on the stand in operational position.

Ordnance Factory Project Hyderabad.	1958-2152	NUMBER TY-37.003.749-76
		SHEET 18 OF 82

3.10. The head lights should be checked for illumination engineering characteristics as per item 1-11 a and b on spectral rotating stand. Intensity of light is measured by direct observation (lenstype) photometer with selenium photo element (luxmeter) set at a distance of 15 m from head light.

3.10.1. Illumination tests as per item 1-11- 'C' are carried out in following manner.

- a) Light intensity is measured by luxmeter its photocell should be at a distance of min. 6m from head light under test.
- b) Head light with black out door is mounted ^{so} that the top edge of light ^{beam} (shade of visor) would be arranged horizontally.

Coordinates of check points of light spots are determined from two mutually perpendicular axes vertical and horizontal.

The vertical line passing through the centre of light spots is called vertical axis.

The centre of the spot is determined ^{by} luxmeter.

The horizontal line passing over the edge of light spot through spot on vertical axis having light intensity of 30 cd is called horizontal axis.

3.11. The possibility of mounting optical element vertically in vertical as well as in rotated through the angle of 90°C of a position head light body (item 1.1.2) is also

Ordnance Factory Project Hyderabad.	NUMBER TY 37.003.749-76
	SHEET 20 OF 62
I. 1958-1959	

Checked
by visual inspection, parts dismounted
(by removing optical element) and reassembly.

- 3.12. Presence of coating quality of visible surface of external parts should be checked by visual inspection.
- 3.13. Varnish and enamel painting is checked as per
Gost 15440-59. 15440-59.
- 3.14. Quality and thickness of metallic coating is checked as per Gost 3002.70 and Gost 16875-71.
- 3.15. Corrosion resistance of head lights is checked in corrosion chamber by spraying 20% solution of sodium chloride at temperature of $+20^{\circ}\text{C}$ to $+30^{\circ}\text{C}$ for 48 hrs. spraying at salt solution is carried out hourly for 10 minutes each in counts of 7 hours test.
- 3.16. Immunity to chemical of aluminium coating of reflecting surface of reflectors (item 1.16) is checked by applying 5 cm³ 1% solution of sodium hydroxide on reflecting surface.
The time required for complete dissolution of aluminium should be min 2 minute.
- 3.17. Quality of the parts listed in item. 1.17, 1.18, 1.19 is checked as per technical specifications or standard on these parts.
- 3.18. Insulation resistance (item 1-20) and electric insulation of strength current carrying parts (item 1.21) are checked in the following manner.

Ordnance Factory Project Hyderabad.		NUMBER.TY.37.003.749.76 SHEET.29 OF 62
---	--	---

I.1958-~~4562~~.

Head light without Jamp is placed in hydrystate with relative humidity of 98%-3% for 24 hours.

Insulation resistance of current carrying parts is measured by stat 500 V d.c. by megger .

Electrical insulation strength of current carrying parts of head light is checked in 50Hz, 220V, AC circuit. Transformer power should be 0.5 KVA min. voltage of sub-station ~~requiredly~~ switched lamp of min should be 60 Ω W.

During the test alternating current is fed to the body of head light current carrying contact. Voltage is increased gradually there should not be insulation breakdown during this.

Insulation resistance and electrical strength should be measured only within 10 minutes after removal of head light from hydrystate .

Quality check for ability of connections of wires in head lights to in discontinuity caused by wire tension (item 1.22, 1.23,) is checked by pulling out let leads of the lamp in switched on conditions.

During this, the lamp should not go off.

Quality check of ability of head lights lead in to protect conductor from and ^{break} tubing should be carried out usually .

320- Head light is checked for life in service tests.

It is allowed to carryout accelerated tests as per method approved by customer's representative.

Ordnance Factory
Project
Hyderabad.

NUMBER TY37.003.749-76.

SHEET 23 OF 82

I.1958-1959

3.2.1. Guaranteed service life (Item 6.2) is checked by means of service life or stand tests as per method approved by customer's representative.

3.2.2. Storage tests are (item 1-24) are carried out as per programme acceleration tests approved by customer.

of -1m2 Lead Light

~~element of the head light.~~

6, MANUFACTURERS GUARANTEE ~~E E~~

6.1. Manufacturer should guarantee the conformity of head light (except electric lamps) to the requirements of these technical specifications provided customer has observed the rule of transportation storage (in preserved condition) mounting and operation.

6.2. Guaranteed service ~~ag~~ life of head light including prolong storage period according to items 1.24 and

4.2. should be equal to the original life of ~~guarantee~~ the vehicle but not more than .

a) 500 hours of operation for tracked vehicles,
b) 20,000 of run for wheeled vehicles,
scheduled maintenance working as allowed "guarantee" does not cover electric in condenser lamp.

6.3. Guaranteed period of storage of article intended for storage at customer's store is specified for 5 years from the day the article is released from the plant.

Ordinance Factory Project Hyderabad.		NUMBER TY37-003 749.76
		SHEET 26 OF 62
I. 1953 1952		
LIST OF STANDARDS TECHNICAL SPECIFICATIONS WHICH ARE REFERRED IN THE GIVEN TECHNICAL SPECIFICATIONS.		
Sl. NO.	Standard and Technical specification No.	Description of standards and technical specifications.
1.	Gost B43940-73	Car and tractor electric equipments general technical specifications.
2	Gost 3940-71	-
3.	TY 16.535.853-74	Incandescent lamps for special transport vehicles.
4.	Gost 9.032.74	Standard system of protection from corrosion and ageing vernish coatings, classification and marking.
5.	Gost 3002.70	Inorganic, metallic and non-metallic coatings technical requirements acceptance rules.
6.	TY 21-PCPCP-593.73	Head lights glasses and lenses for head light.
7-	Gost 927-55	Parts made of plastic for automobiles and tractors.
8.	Gost 15150.69	Machines, instruments and other technical devices various climatic regions models.
9.	OST 37.002.001-73	Preservation of article of automobile industries.
10.	Gost 8273-75	Cover paper
11.	Gost 9142-59	Boxes made of corrugated cardboard types general technical requirements.
12.	Gost 18370-73	Electrical items general requirements ensuring and checking quality and rules of acceptance.

Ordnance Factory
Project
Hyderabad.

NUMBER 37.003.749-76

SHEET 28 OF 62

I.1958-~~1952~~

1

2

3

13. Gost 10875-71

Inorganic metallic and non-metallic
coatings method of checking.

14. Gost 15140-69

Point-and- vernish materials methods
adhesion checks.

I.1959-1960

The date of introduction 06 02.80

Validity up to 01-01.84

MODIFICATION No.1

SECTION 1. TECHNICAL REQUIREMENTS

Item 1-11-1 is stated in new edition thus;

Item 1-11-1 Illumination characteristics of head lights are checked by standard lamps A-28-40 as per technical specifications TY16.535. 852-74; emitting standard light flux of 600 lm and having standard height of filament light centre.

Item 1.22 add following

Item 1-22 terminals of the conductors should withstand it the tensile force of 19.6 N (1 kgf) without loosening contact.)

Item 1-24 state in revised edition

1.24. Articles intended in conformity with production order for storage provided preservation packing and storage are as per OST 37-002.00176 (except the electric filament lamps on expiry of 50 years storage should meet the these specifications requirements.

Item 1-2-7. Add sub-point e) in following edition.

e) Number of these technical specifications TY.

SECTION 2 ACCEPTANCE RULES

Introduce in the new edition:

2.1. Article acceptance rules should follow Gost

B4394-73

Item 2.2. Articles quality control and acceptance rules

I. 1958-~~1959~~

are as per Gost B43940-73 and sections 1 and 2 of

this operation checking of assembly units
Gost B 18370 -73, During ^utests and parts B carried out

randomly according to technological process with the usage of modern means of non-destructive checking.

inspection
Item 2.3. Each lamp is ^ufor appearance and checked for growing of lamp (Inspection by TID on conveyer). ~~Item~~.

Item 2.4. Acceptance tests of article are carried out as per

Gost B 18370-73 section 2.

Plan of checking is single stage as per table 1 of ~~these~~
technical specifications.

Item 2.4.1. The volume of the batch to be submitted to customer representative is 500 pieces.

I.1959-1962

Ordnance Factory
Project
Hyderabad.

Table 1

SL. No.	Characteristics of quality	Classification of defects	(Size) Volume of Batch (pieces)	The extent of sampling (pieces)	✓ Acceptance number.
1.	Illumination characteristics, checking of adjustment angles checking of glowing of lamps	Critical	500	5	0
2.	Mounting dimensions, inter changeability of parts and units	Critical	"	5	0
3.	Electrical insulation strength	Critical	"	5	0
4.	Tensile ^{force} of outlet ^{ends} ends of conductors.	Critical	"	5	0
5.	Tightness of head light	Critical	"	15	0
6.	Appearance	Low significance	"	30	2
7.	Packing	Low significance	"	30	3

I. 1959

Table 2.

SL. NO.	Type of test and check	Items of technical requirements as per Cost 3940-71, Gost 3940-73, and Technical specification	Items of method of testing as per Gost 3940-71, Gost 3940-73 and the T. Specifications	Type and quality tests	Periodic tests	Acceptance test
1	2	3	4	5	6	7
1.	Check of the articles of appearance, overall and mounting dimensions.	TY П. I. I	TY П. 3.2	+	+	+
2.	Check for requirements for design	Gost B 3940-73 П. I. 20; I. 20. 6.	Set for design	+	3-	+
3.	Check for light and colour characteristics	TY П. I. II.	TY П. 3. 10 П. 3. 10. I	+	+	+
4.	Check for insulation resistance	TY П. I. 20	TY П. 3. 18	+	+	+
5.	Test for insulation for electric strength	TY П. I. 24	TY П. 3. 18	+	+	+
6.	Test for vibration and impact strength	TY П. 1. 9. П. I. 10	TY П. 3. 9.	+	+	+
7.	Test mechanical strength of terminals	Gost 3940-71 П. 1. 13 П. I. 22	Gost 3040-71 П. 1. 18 П. 3. 19	+	+	+
8.	Testing for airtightness	TY П. I. 7	TY П. 3. 7	+	+	+

Ordnance Factory
Project
Hyderabad.

NUMBER TW37.003.749-76

SHEET 31 OF 62

I.1959-1960

during uasge (item 1.25).

SECTION 6 MANUFACTURER'S GUARANTEE

Item 6.2. delite following words.

scheduled maintenance works, are allowed.

Continuation table 2.

1	2	3	4	5	6	7
9	Testing for cyclic temperature variation effects	TY П.1.4	TY П.3.4	+	+	-
10	Test for ^{heat} frost and moisture effects	Gost 88 3940-73 П.1.4.10	Gost 88 3940-73 П.3.15	+	-	-
11	Test for solar radiation effect	Gost 88 3940-73 П.1.3	Gost 88 3940-73 П.3.3.	+	-	-
12	Test for heat resistance	TY П.1.3	TY П.3.3.	+	+	-
13	Testing for cold resistance	TY П.1.3	TY П.3.3.	+	+	-
14	Testing for heat resistance	TY П.1.5.	TY П.3.6.	+	+	-
15	Checking for varnish coating	TY П.1.13	Gost 88 3940-71 П.3.15. TY П.3.13	+	+	-
16	Checking of protective metallic capacity coating	TY П.1.16	TY П.3.14 П.3.16	+	+	-
17	Check of efficiency at reduced atmospheric pressure.	Gost 88 3940-73 П.1.9(х)	Gost 88 3940-73 П.3.22.1.	+	-	-
18	Check for air portability	Gost 88 3940-73 П.1.9.14	Gost 88 3940-73 П.3.22.2	+	-	-
19	Check for mould resistance	Gost 88 3940-73 П.1.9.13	Gost 88 3940-73 П.3.25.	+	-	-
20	Test for the effect of sea salt fog	Gost 88 3940-73 П.1.9.17	Gost 88 3940-73 П.3.26.	+	+	-
21	Test of head light lenses for effect of wave impact	TY П.1.6.	TY П.3.5.	+	-	-

I.1959-~~458~~

Item 2.5. Periodical tests should be carried out as per
Gost B 18370-73.

Item 2.5.1. Periodicity of carrying out test is once in
12 months as per plan of two stage random checking in
table 2,
accordance with code M Gost B 18370-73.

Item 2.5.2. Articles, picked up for periodical testing
are tested as per items 1,2,3,4,5,6 picked up articles
are divided in to two groups -

First group is tested as per

Item 7,8,15,16,22.

-the second group is tested as per item 9,12,13,14,23.

Item 2.6. Type tests are carried out when design or mat-

erials changes may influence the quality or characteristics
of articles.

Item 2.7. The extent of type and periodic ^{type} tests should

correspond to the table 2 of these technical specifications.

SECTION 3. METHOD OF TESTING

Item 3.21 Introduce in the new edition:

Item 3.21 guaranteed service life (item 6.2) is checked in
service tests of the ^{vehicle} accelerated stand tests as per
method approved by customers representative may be
carried out.

SECTION 5. OPERATIONAL INSTRUCTIONS

Item 5.2. Introduce in the new edition :

Item 5.2. maintenance operations are carried out if felt ne-
cessary after 5 years of ^{service} ~~stand~~ life (item 2.24; 4.2;6.3)

1 2 3 4 5 6 7

22. Check of the possibility of setting the optical elements in vertical position as well as in position when head light is rotated through the angle 90°.

TY
П3.11

+

+

-

23. Check of the efficiency of head light plunged in to the water

TY
П3.8

+

+

-

24. Check for the guaranteed life.

TY
П3.21

+

-

-

25. Test for service life.

TY
П3.20

+

-

-

26. Storage tests

TY
П1.24
34.24
П3.22.

+

-

-

Symbol "+" means tests are carried out
Symbol "-" means test is not carried out.

Date:13.05.'87.

NOTIFICATION OF AMENDMENTS TO SPECIFICATIONS

The following Corrections/Amendments are now required to be carried out in the documents as below:

Documents details : MXTY 37.003.749-76

OFFPM Regn.No. : I 1958

Details of amendments:-Sl.No. Details

1. Ref : Page No.2 of 62, 1st para, 2nd line

Insert : ϕ Γ (before:125 ; 126, 127)

To read as " ϕ Γ 125, ϕ Γ 126, ϕ Γ 127

2. Ref : page No.2 of 62, from the top of the sheet - 10th line

Insert : $\bar{b}$ (after : ϕ Γ 125)

To read as " Head light ϕ Γ 125- $\bar{b}$ or 45
7372 1454 etc.,"

3. Ref : page No.2 of 62, point 1-1, 2nd para, 1st line

Delete : 13 R 3940 -73

Add : B R 3940-73

4. Ref : page No.3 of 62, point 1.4, 3rd line

Insert : Minus (before 50°C)

To read as " from plus 65°C to minus 50°C

5. Ref : page No.3 of 62, point 1.5, 1st line

Delete : 'efficient'

Add : "EFFICIENTLY"

(Signature)

Sl.No. Details

6. Ref : page No.3 of 62, point 1.6, 2nd line
Delete: checking (Delete - small letter 'c')
Add : Checking (C - capital)

7. Ref : page No.4 of 62, point 1.8, In this page 1st line
Delete: THE to the water
Add : IN to the water

8. Ref : page No.5 of 62, point 1.11; sub - point 1, 1st line
Delete: partial
Add : Partial

9. Ref : page No.5 of 62, point 1.11; sub-point 2,2nd line
Delete: 15000 cd
Add : 1500 cd

10. Ref : page No.7 of 62, point 1.14, sub - point - C)
2nd line

Delete: gulfvanic
Add : galvanic

11. Ref : page No. 8 of 62, point 1.18, line 4th
Insert: drawings (after - outline)

12. Ref : page No. 10 of 62, (pl.see Table)
a)against - ϕ 125

Insert: with (after - assembly)

To read as " Head lights as an assembly with
optical etc.

13.b) Against - ϕ 126
column - code OK
version - T

Delete: 45 7373-1216

Add : 45 7372-1216

c) Against - ϕ 127
column - Main characteristics and purpose

Sl.No. Details

Delete : demand

Add : element - To read as "Head ~~ing~~ light in assembly with optical element and black out door".

13. Ref : page No.10 of 62 , pl.see Remark: 2nd line

a) Delete : cab be

Add : can be

b) Delete : With the body body etc.

Add : without the body etc.

14. Ref : page No.11 of 62, point 1.29 2nd para

Delete : boxes (before - during transportation etc.)

15. Ref : page No. 11 of 62 pl.see remark, 1st line

Delete : tough

Add : tough

16. Ref : page No.15 of 62, point 2.4

a) 1st line

Insert : out (after carried) to read as "carried out"

b) 2nd line

Delete : thre

Add : there

c) 3rd line

delete : materis

add : materials

17. Ref : page No.12 of 62, point - ~~2.4~~ 1.32, 2nd line

Delete : endosed

Add : enclosed

18. Ref : page No. 14 of, 15 of 62, point 2.4

a) ~~Examine~~ Sl.No.5 , 4th column

Delete : ~~1~~ 1.18

Add : ~~1~~ 3.18

Sl.No. Details

Sl.No. 5, column-2

Delete : for (after: insulation)

b) Sl.No.7, 4th column

Delete : GOST 3040-71

Add : GOST 3940-71

c) Sl.No.8, 2nd column

Delete : testing

Add : test

d) Sl.No.10, 3rd column

Delete : 1.9.10

Add : 1.9.1 b

e) Sl.No.14, 2nd column

Delete : heat resistance

Add : wet strength

f) Sl.No.22, column - 2nd, 4th line

Delete : vortical

Add : vertical

19. Ref : page No.17 of 62, point 3.3, last para, 1st line

Delete : operate

Add : operate

20. Ref : page No. 17 of 62, point 3.4, 4th line

Insert : in following sequence : (after each cycle is
carried outetc.,)

21. Ref : page No.18 of 62, point 3.5, 3rd line

Delete : conditional

Add : conditions

22. Ref : page No.18 of 62, point 3.6, 2nd line

Insert : at (before - ambient temperature)

23. Ref : page No.19 of 62 - from the top, 2nd line

Delete : conformity

Add : conformity

Sl.No. Details

24. Ref : page No.19 of 62, point 3.9

a) 3rd line

Delete : onwards

Add : ensures

b) 4th line

Delete : is tested light (after - when head light)

25. Ref : page No.20 of 62, point 3.10.1, last para, 1st line
Insert : top Ø(after - over the etc.)

To read as " over the top edge etc.,"

26 Ref : page No.20 of 62, point 3.11

a) 2nd line

Delete : will Delete : thorough

Add : well Add : through

b) 3rd line

Delete : of a (after - 90°C)

Add : of a (after - 90°C position of a)

27. Ref : page No.22 of 62, point 3.19, 2nd line

Delete : in

Add : exclude

28. Ref : page No.22 of 62, point 3.20, & 1st line

Insert : service (after-checked for)

x To read as "checked for service life etc.,"

Insert : (iter 1.25) (after - service life)

29. Ref : page No.23 of 62, point 3.2.2, 1st line

Delete : are (after - storage tests)

30. Ref : page No.24 of 62, point 4.1, 2nd line

Delete : supplied customer

Add : supplier to customer

31. -Ref : page No.24 of 62, point 5.2.2, 1st line

Delete : preventive

Add : maintenance Delete : correction
Add : connection

Sl.No. Description

32. Ref : page No.24 of 62, point 5.2.3, 2nd line ---
Delete : 25%
Add : 20%
33. Ref : page No.25 of 62, from top of the sheet,
1st line
Delete : element of the head light
34. Ref : page No.26 of 62, list of standards technical
specifications.
- a) against - Sl.No.4, GOST 9.032-74
3rd column, 2nd line
Delete : vernish
Add : varnish
- b) against - Sl.No. 14 GOST 15140-69, 3rd column, 1st line
Delete : joint and vernish
Add : paint and varnish


A.M./DS

'Thro AWI/FDC'

AF/P.D.C

Copy to:CI,ICV.