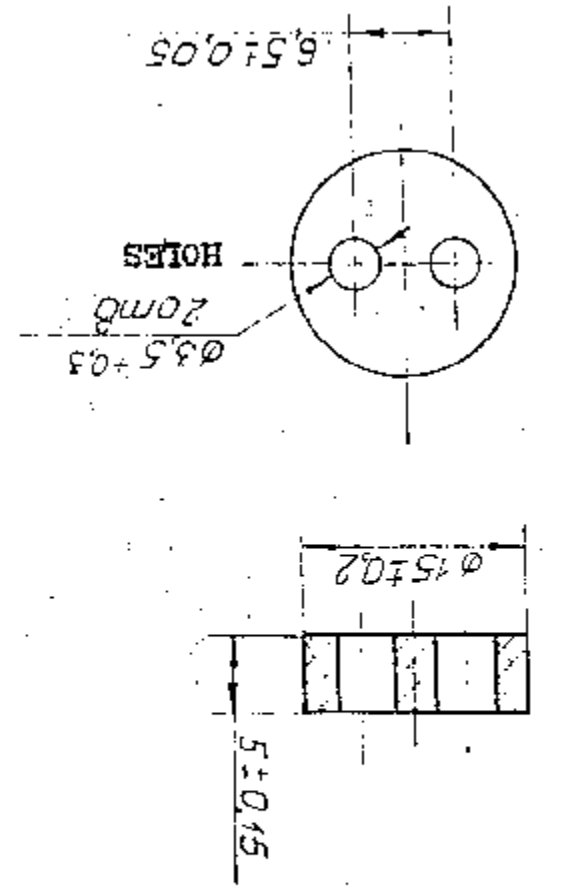


MATERIAL: PHENOLIC PLASTIC 03-010-02	
ALL THREADS TO CONFORM TO SPECIFICATION	STAMP OR ETCH, PART NO. OF MANUFACTURERS NAME & YEAR
DRG. NOT TO BE SCALED	SCALE: 2:1
DATE: 28-8-97	
DRG. # 0.001	WT. (KG) 87B.710.137
CHD. #	WASHER
App. 2/137	CONTROL RATE OF QUALITY ASSURANCE (INFANTRY COMBAT VEHICLES) - MID OF 137

1. The part may be made from phenolic plastic 92-350-02.  
 2. Longkamez chumpe packy 05x45  
 no mopy c bpe cmcda  
 2. Chamfering 0.5x45° on both sides of the butt ends is allowed



was  
 78

87B.710.137

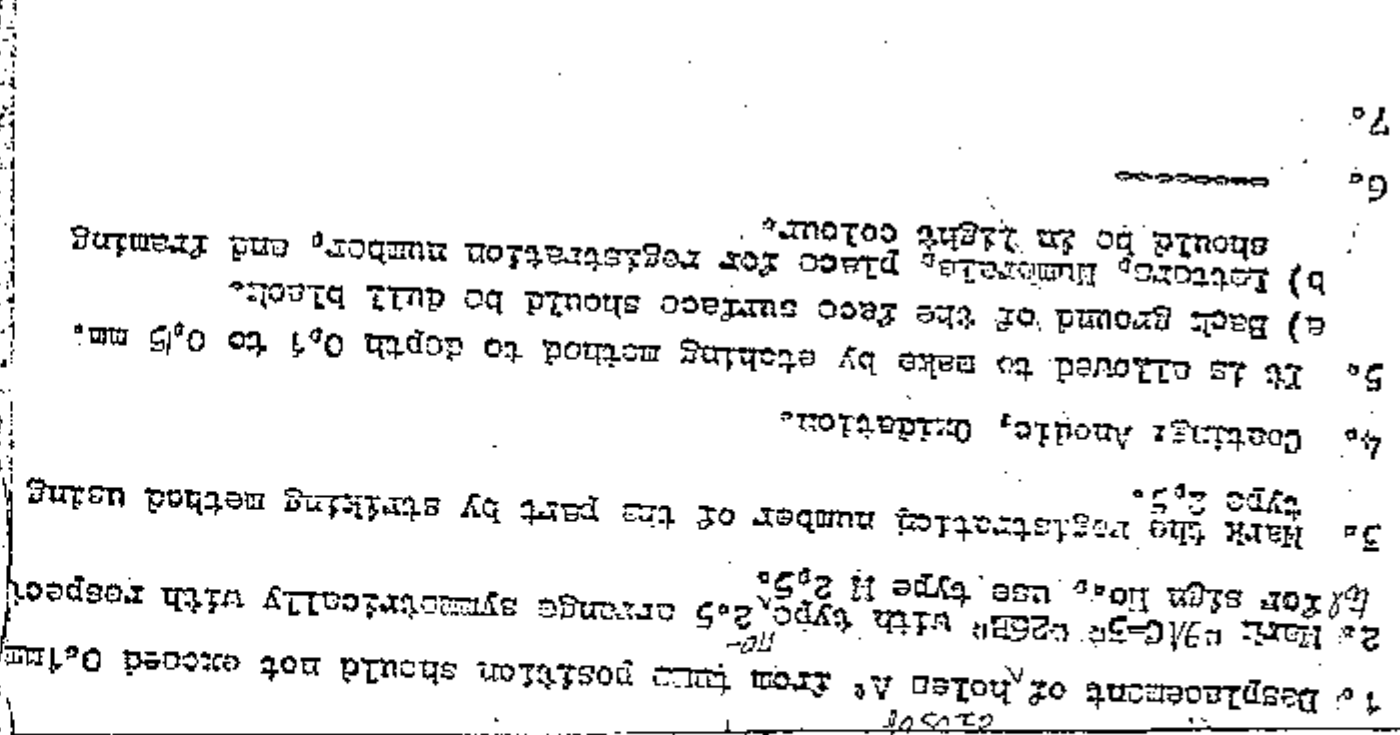
MUDHAKI LAKSHMINARAYAN P. GANNA

C.12204 N° 1930 NPUMES

SHEET AP.1M-0.8  
 CONTRACTOR'S NAME: 815.860.040  
 CONTRACTOR'S ADDRESS: (MILITARY COMMAND) 111 DE 131  
 DATE: 28-8-97  
 SCALE: 2:1  
 SHEET TO BE SCALED: [ ]  
 ALL DIMENSIONS IN MILLIMETERS  
 DIMENSIONS TO BE SCALED: [ ]  
 DATE OF ISSUE: [ ]  
 DATE OF REVISION: [ ]  
 DATE OF APPROVAL: [ ]

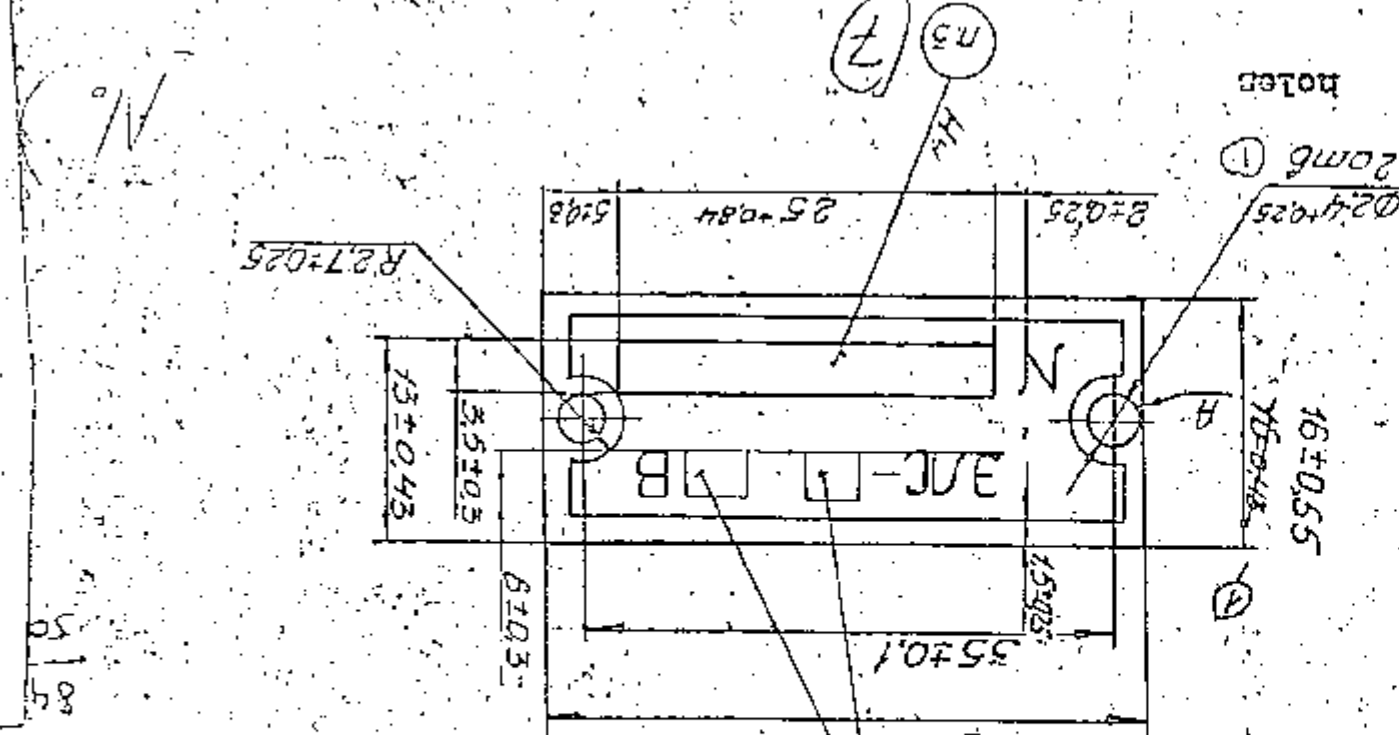
1. Displacement of holes A from their position should not exceed 0.1mm  
 2. Mark V/C-3E with type 2.5 arrange symmetrically with respect to center line, use type H 2.5  
 3. Mark the registration number of the part by etching method using type 2.5  
 4. Coating: Anodic Oxidation  
 5. It is allowed to make by etching method to depth 0.1 to 0.5 mm.  
 a) Back ground of the face surface should be dull black.  
 b) Letters, numbers, place for registration number, and framing should be in light colour.  
 6.

7.



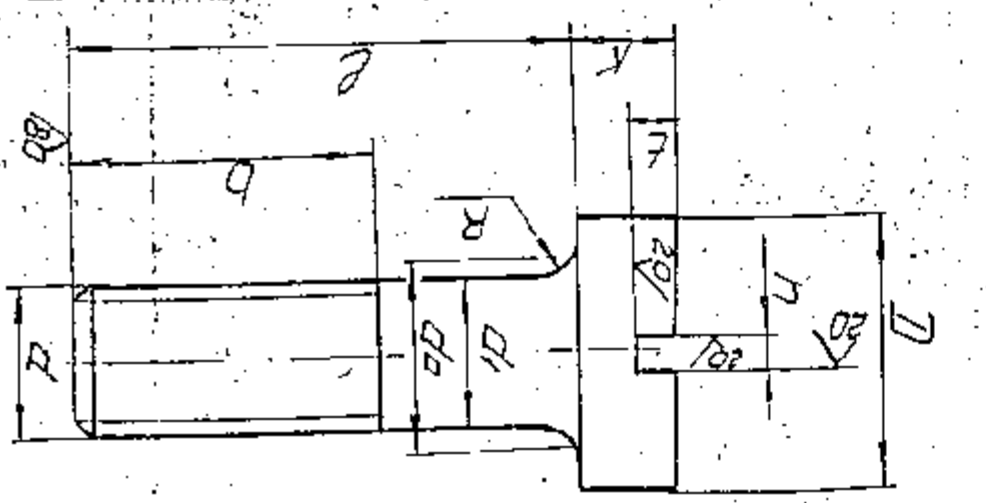
815.860.040	815.860.040
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815.860.040	815.860.040	815.860.040	815.860.040
815.860.040	815.860.040	815.860.040	815.860.040



815.860.040	815.860.040
815.860.040	815.860.040

100  
 875.900.070



1. Screw marked with sign 'x' should have threads to full length of rod.
2. ...
3. Unthreaded rod diameter d<sub>1</sub> should be with in limits from major diameter to angle diameter of thread.

(9) (10) (11) (12)

Designation	Designation as per standards	Max	da	D	d	H	F	R	Coarse	Fine	exp	reson	kg
875.900.070	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.024	
-01	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.084	
-02	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.096	
-03	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.107	
-04	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.186	
-05	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.163	
-06	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.178	
-07	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.196	

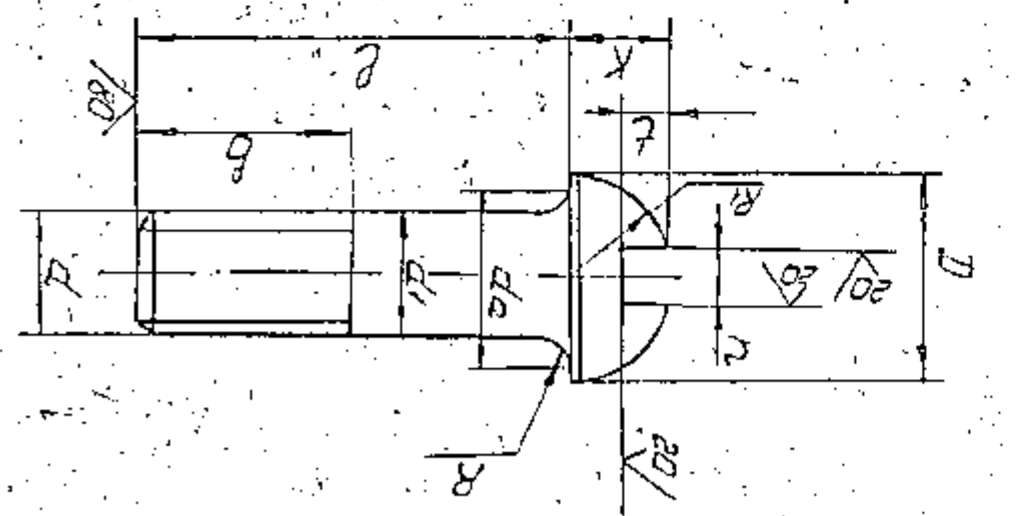
Designation	Designation as per standards	Max	da	D	d	H	F	R	Coarse	Fine	exp	reson	kg
875.900.070	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.024	
-01	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.084	
-02	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.096	
-03	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.107	
-04	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.186	
-05	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.163	
-06	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.178	
-07	875.900.070	4H	2-0.10	0.07	0.04	0.03	0.04	0.03	0.25	-	Coating	0.196	

MATERIAL: -	
ALL THREADS TO CONFORM TO SPECIFICATION	STAMP OR ETCH PART NO. OF MANUFACTURERS NAME & YEAR
DRG. NOT TO BE SCALED	SCALE: -
DATE: 28-8-77	DATE: 28-8-77
DRG. NO. 875.900.070	DRG. NO. 875.900.070
CHD. 100	CHD. 100
APD. 100	APD. 100

CONTROL RATE OF QUALITY ASSURANCE  
 INFANTRY (COMBAT VEHICLES) 112 OF 137







1. Screws marked with sign 'X' should have thread to full length of rod.  
 2. Unthreaded rod diameter  $d_1$  should be with  $\pm 0.1$  mm from major diameter to angle diameter of thread.

Толерансе за диаметра на главата на винта се дава в отношение към диаметра на главата на винта. Толерансе за диаметра на главата на винта се дава в отношение към диаметра на главата на винта.

№ на винта	Диаметър на главата на винта	Диаметър на винта	Дължина	Материал	Забелужки
876.903.076	11.5XP	11.5XP	11.5XP	1000P23	Лазерно обработен
-01	11.5XP	11.5XP	11.5XP	1000P23	Лазерно обработен
-02	11.5XP	11.5XP	11.5XP	1000P23	Лазерно обработен
-03	11.5XP	11.5XP	11.5XP	1000P23	Лазерно обработен
-04	11.5XP	11.5XP	11.5XP	1000P23	Лазерно обработен
-05	11.5XP	11.5XP	11.5XP	1000P23	Лазерно обработен

CONTROL RATE OF QUALITY ASSURANCE (INFANTRY COMBAT VEHICLES) 115 OF 131

876.903.076 SCREW

DATE: 28-2-97

SCALE: 1:1

DRG. NOT TO BE SCALED

ALL THREADS TO CONFORM TO SPECIFICATION

STAMP OR ETCH, PART NO. OF MANUFACTURERS NAME & YEAR

TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED

USE ON: 10F5

18666



CONTROL RATE OF QUALITY ASSURANCE  
(INFANTRY COMBAT VEHICLES)

Item No.	Part Name	QTY	Unit Price	Total Price	Material	Remarks
26	БУИМ ВЛМ-69x18.58.016	1	147055	147055	X	
27	БУИМ ВЛМ-69x14.32.036	1	147055	147055	X	
28	БУИМ ВЛМ-69x16.58.016	1	67055	67055	X	
29	БУИМ ВЛМ-69x18.58.016	1	87055	87055	И	
30	БУИМ ВЛМ-69x18.32.036	1	87055	87055	И	
31	БУИМ ВЛМ-69x22.58.016	1	227055	227055	И	
32	БУИМ ВЛМ-69x30.58.016	1	307055	307055	И	
33	БУИМ ВЛМ-69x10.58.016	1	107055	107055	И	
34	БУИМ ВЛМ-69x16.58.026	1	67055	67055	X	
35	БУИМ ВЛМ-69x12.58.016	1	127055	127055	X	
39	БУИМ ВЛМ-69x8.58.016	57	87045	497115	X	
40	БУИМ ВЛМ-69x10.58.016	107	107045	1145391	X	
41	БУИМ ВЛМ-69x10.32.036	107	107045	1145391	X	
42	БУИМ ВЛМ-69x12.58.016	16	167055	267288	X	
43	БУИМ ВЛМ-69x14.32.036	17	177055	300993	X	
44	БУИМ ВЛМ-69x16.58.016	18	187055	336699	X	
45	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
46	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
47	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
48	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
49	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
50	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
51	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
52	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
53	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
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68	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
69	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
70	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
71	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
72	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
73	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
74	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
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76	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
77	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
78	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
79	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
80	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
81	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
82	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
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84	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
85	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
86	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
87	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
88	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
89	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
90	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
91	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
92	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
93	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
94	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
95	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
96	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
97	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
98	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
99	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	
100	БУИМ ВЛМ-69x18.58.016	18	187055	336699	X	

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Подготвено от: [Blank]  
 Проверено от: [Blank]  
 Удобрено от: [Blank]  
 117 of 137



9. Tolerance for alignment of head with respect to rod in diameter expression

10) Tolerance for symmetry of slot with respect to rod in diameter expression

13) Nickel plated, 3 microns

14. Zinc plated, 3 microns thick.

16. Cadmium plated, 3 microns thick, chromitized.

19. Zinc plated 6 microns thick, chromitized.

17. Cadmium plated, 6 microns thick, chromitized.

87  
509

Обозначение DESIGNATION	Обозначение по стандарту Designation as per standard	Размеры Dimensions										Pitch of thread		Coating	Weight		
		l	б	da	r <sub>1</sub>	r <sub>2</sub>	r <sub>3</sub>	r <sub>4</sub>	t	R	к <sub>р<sub>1</sub></sub>	к <sub>р<sub>2</sub></sub>					
875 923 076 - 66				Max													
-67	Винт А1 М12-Б9х3.58.013	3±0.3	X	1.6	1.3	2.3±0.25	0.8±0.07	0.35 <sup>+0.04</sup>	0.25±0.3	0.1	0.25					14	4.3XP 0.03Y
-68	Винт А1 М12-Б9х6.58.013	6±0.38	X	2.6	2.0	3.8±0.30	1.4±0.12	0.35 <sup>+0.04</sup>	0.15±0.3	0.1	0.4					14	4.3XP 0.175
-70	Винт А1 М12-Б9х10.58.013	10±0.45	X	3.6	2.9	5.5±0.24	2.1±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5					14	4.3XP 0.247
-71	Винт В1 М3-Б9х6.58.026	6±0.38	X	3.6	2.9	5.5±0.24	2.1±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.474
-72	Винт В1 М3-Б9х10.58.026	10±0.45	X	5.7	4.4	8.5±0.29	3.5±0.24	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.8		0.72	0.50		14	4.3XP 0.547
-73	Винт В1 М5-Б9х14.58.016	14±0.55	X	3.6	2.9	5.5±0.24	2.1±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.557
-74	Винт В1 М5-Б9х14.58.026	14±0.55	X	4.7	3.6	7.0±0.29	2.8±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.7		0.72	0.60		14	4.3XP 0.807
-75	Винт В1 М3-Б9х16.32.033	16±0.55	X	4.7	3.6	7.0±0.29	2.8±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.7		0.72	0.60		14	4.3XP 2.359
-76	Винт В1 М4-Б9х25.58.016	25±0.65	X	3.6	2.9	5.5±0.24	2.1±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.820
-77	Винт В1 М3-Б9х14.58.015	14±0.55	X	3.1	2.4	4.5±0.24	1.7	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.820
-78	Винт В1 М3-Б9х14.58.025	14±0.55	X	4.7	3.6	7.0±0.29	2.8±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.7		0.72	0.60		14	4.3XP 0.820
-79	Винт В1 М2.5-Б9х4.58.023	4±0.38	X	3.1	2.4	4.5±0.24	1.7	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.820
-80	Винт В1 М4-Б9х6.58.026	6±0.38	X	4.7	3.6	7.0±0.29	2.8±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.7		0.72	0.60		14	4.3XP 0.916
-81	Винт В1 М3-Б9х10.32.033	10±0.45	X	3.6	2.9	5.5±0.24	2.1±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.947
-82	Винт В1 М4-Б9х18.58.026	18±0.55	X	4.7	3.6	7.0±0.29	2.8±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.7		0.72	0.60		14	4.3XP 1.83Y
-83	Винт В1 М3-Б9х12.58.023	12±0.55	X	3.6	2.9	5.5±0.24	2.1±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.73Y
-84	Винт В1 М4-Б9х14.58.023	14±0.55	X	4.7	3.6	7.0±0.29	2.8±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.7		0.72	0.60		14	4.3XP 1.528
-85	Винт В1 М2.5-Б9х10.58.013	10±0.45	X	3.1	2.4	4.5±0.24	1.7	0.35 <sup>+0.04</sup>	0.1±0.3	0.1	0.5		0.60	0.50		14	4.3XP 0.407
-86	Винт В1 М2.5-Б9х14.58.013	14±0.55	X	4.7	3.6	7.0±0.29	2.8±0.2	0.35 <sup>+0.04</sup>	0.1±0.3	0.2	0.7		0.72	0.60		14	4.3XP 0.525

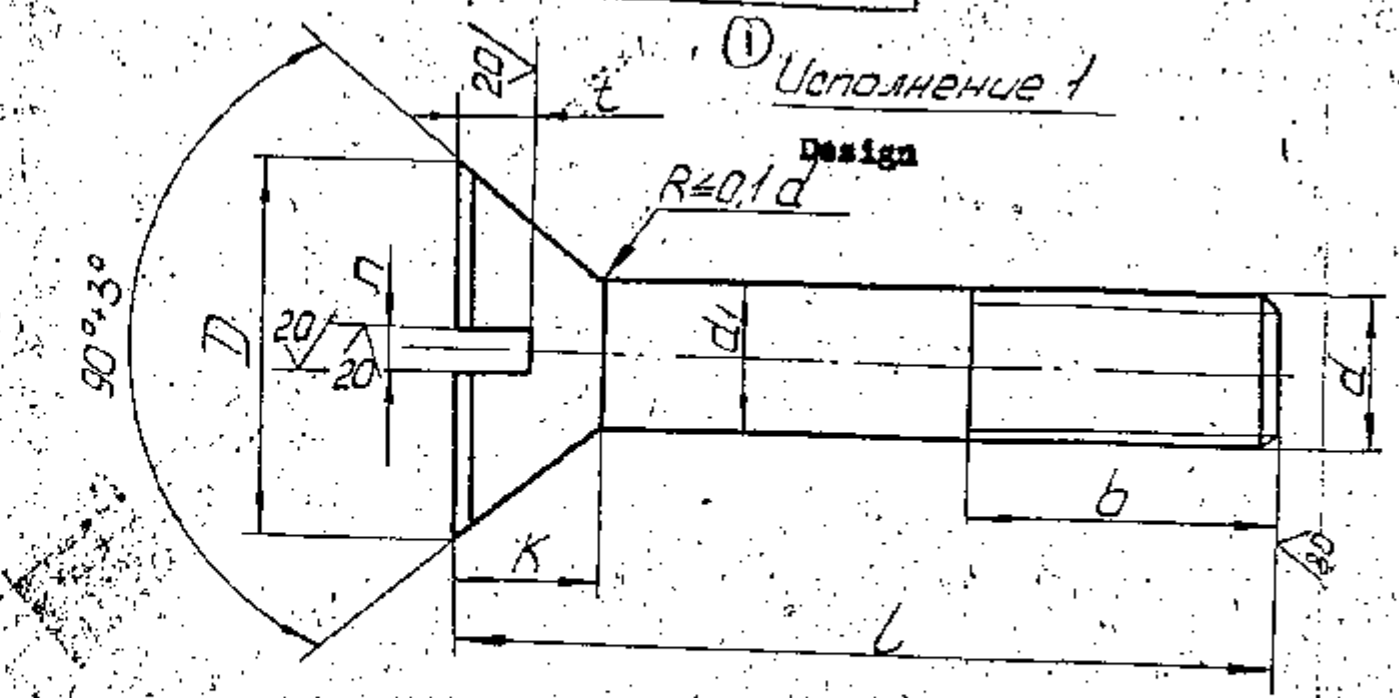
CONTROLLERATE OF QUALITY ASSURANCE  
(INFANTRY COMBAT VEHICLES)

875 923 075 119 DF 137

5

900 105 918 T-030-77  
A683-71

84  
509  
100(V)



1. Screws marked with sign 'X' should have thread to full length of
2. Unthreaded rod diameter d1 should be with inlimits from major diameter to angle diameter of thread.

Designation	Designation as per standard	Dimensions in MM MAX		Pitch of thread		Coarse		Pitch	Fine	Coating	Weight
				Coarse	Fine	Coarse	Fine				
8T5.904.006	Винт А1М12-69x358.013	3±0.2	X	2.3-0.25	0.72	0.36 <sup>+0.14</sup>	0.24 <sup>+0.11</sup>	0.25	-		11.2x2 Pcs.
	ГОСТ 17475-80										0.028
	ГОСТ										
-01	Винт А1М16-69x458.013	4±0.24	X	3-0.25	0.96	0.48 <sup>+0.14</sup>	0.32 <sup>+0.15</sup>	0.35	-	0.28	
-02	Винт А1М16-69x558.013	5±0.24	X	3-0.25	0.96	0.48 <sup>+0.14</sup>	0.32 <sup>+0.15</sup>	0.35	-	0.28	0.053
-03	Винт А1М2-69x458.013	4±0.24	X	3.8-0.3	1.2	0.58 <sup>+0.14</sup>	0.41±0.2	0.4	-	0.36	0.075
-04	Винт А1М2-69x658.013	6±0.24	X	3.8-0.3	1.2	0.58 <sup>+0.14</sup>	0.41±0.2	0.4	-	0.36	0.109
-05	Винт В1М25-69x458.013	4±0.38	X	4.7-0.3	1.5	0.68 <sup>+0.14</sup>	0.5±0.23	0.45	-	0.60	0.145
-06										0.50	0.785

MATERIAL

ALL SHARP EDGES & CORNERS TO BE BOUNDED OFF

DRG. NOT TO BE SCALED

SCALE 1:-

DATE 1- 28.8-97

DRW. [Signature]

TCO. [Signature]

CMO. [Signature]

APP. [Signature]

WT. (kg) see table

ALL THREADS TO CONFORM TO SPECIFICATION

TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED

STAMP OR ETCH, PART NO. MANUFACTURERS NAME & YEAR OF MFG.

USED ON:-

8T5.904.006

SCREW

CONTROLLERATE OF QUALITY ASSURANCE  
(INFANTRY COMBAT VEHICLES) 120 OF 137



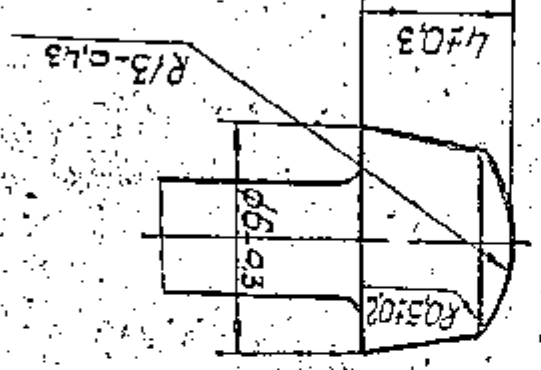
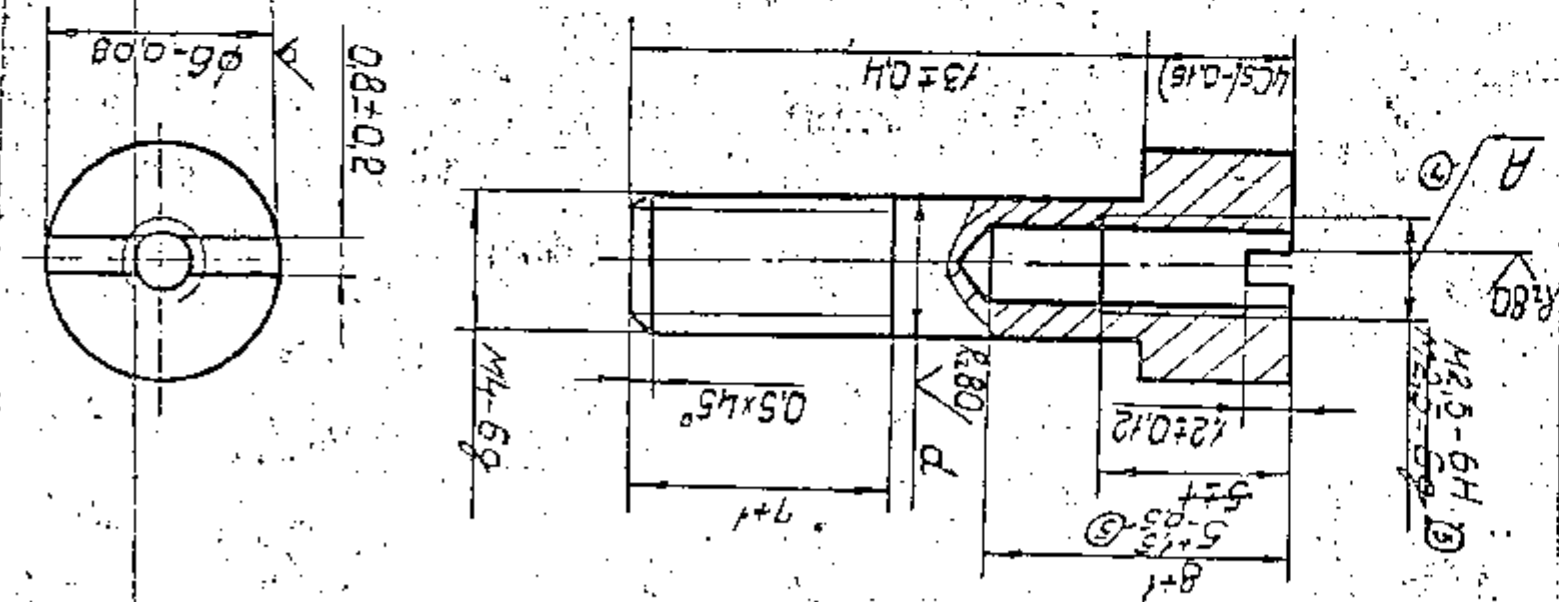




876 906 022 ©

R40  
92  
509

1. Alternate material to Steel 25, Steel 10.
2. Screw head may be made by upsetting method.
3. Coating: zinc plated, 6 micron thick; chromated.
5. Displacement of Slot with respect to axis of head and rod should be  $w$  in  $0.2mm$ .
8. Increasing of hole  $A'$  up to dimension  $B$  is allowed (see table2)



Threading process of M4-6g

①	By cutting	M4-6g
②	By rolling	5.54-0.05
③		5.80-0.05

Table 1  
① Tablitsa 1

Table 2  
② Tablitsa 2

M2.5-6g	M2.5-6g
A	E

MATERIAL: -- STEEL 45		ALL THREADS TO CONFORM TO SPECIFICATION	STAMP OR ETCH, PART NO. OF MFR.
DRG. NOT TO BE SCALED		SCALE: S:1	DATE: 28-8-97
TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED		USED ON:-	
876 906 022		SCREW	
CONTROL RATE OF QUALITY ASSURANCE		(INFANTRY COMBAT VEHICLES) 124 OF 137	

ГОСУДАРСТВЕННЫЙ СТАНДАРТ  
ГОСТ 1228-77  
14598  
ГОСТ 1228-77  
14598  
ГОСТ 1228-77  
14598

815 934 032 PIN

28-8-97

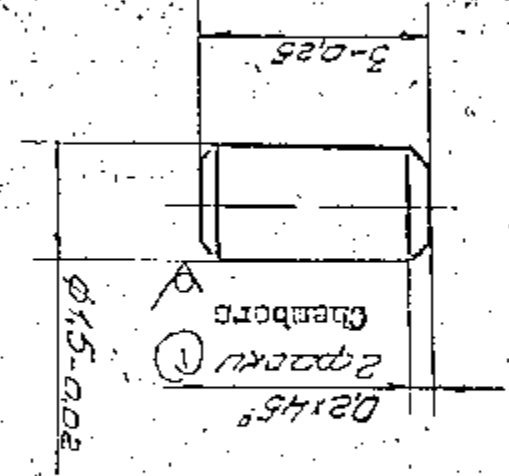
10:1

STEEL Y10A

WCH1

Partially be made from steel X 50.

1. Изготовлен из стали X 50



93

93

Rz 40

815 934 032

ГОСТ 10007-77

ГОСТ 10007-77

ГОСТ 10007-77

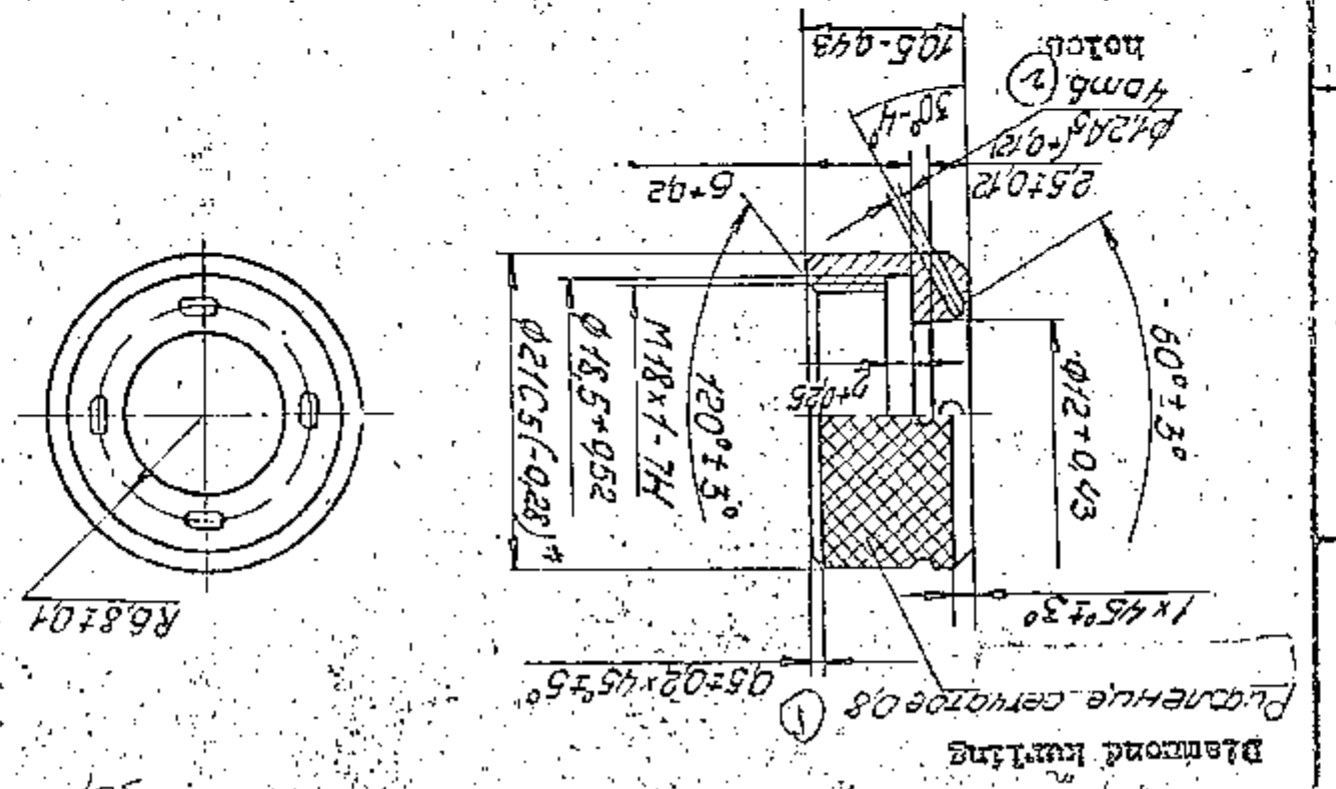




CONTROL RATE OF QUALITY ASSURANCE  
(INFANTRY COMBAT VEHICLES) 128 OF 137

MATERIAL: - BAR #16TKP24-11		ALL SHARP EDGES & CORNERS TO BE ROUNDED	
STAMP OR ETCH PART NO. OF MANUFACTURERS NAME & YEAR		SPECIFICATION	
TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED		SCALE: 2:1	
DATE: 28-8-97		DRG. NOT TO BE SCALED	
WT: 1kg		D.0038	
876.947.005		CHD. 198	
NUT		Ypd	

1. Dimension boxes limiting
  2. Coating mode oxidation, anodizing.
- 1\* Размер до бурения  
2. Покрытие ин. ок. пр.  
3. Технические требования к покрытию

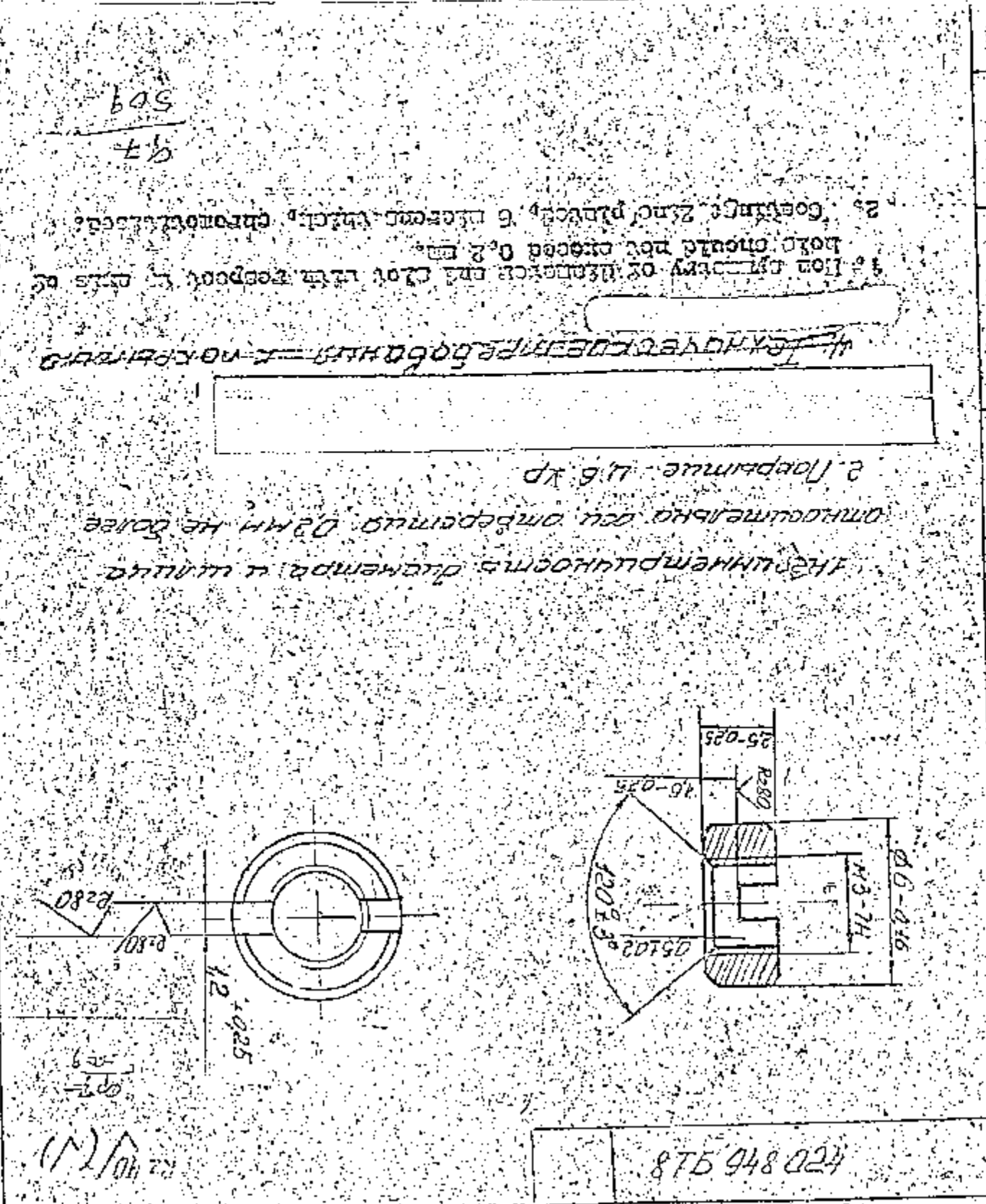


876.947.005

46

CONTROL RATE OF QUALITY ASSURANCE  
(INFANTRY WEAPON VEHICLES)  
129 OF 137

DATE: 28-8-97	SCALE: 6:1	PROJECT: 875 948 024
DRG. NOT TO BE SCALED	STAIN ON EACH PART NO.	ALL DIMENSIONS IN MILLIMETERS TO NEAREST 0.1
MATERIAL: STEEL A12	STAIN ON EACH PART NO.	STAIN ON EACH PART NO.
USE OF DIMENSIONS	USE OF DIMENSIONS	USE OF DIMENSIONS
USE OF DIMENSIONS	USE OF DIMENSIONS	USE OF DIMENSIONS



Исполнитель: [Signature]  
 Проверено: [Signature]  
 Проверено: [Signature]  
 Проверено: [Signature]

Исполнитель: [Signature]  
 Проверено: [Signature]  
 Проверено: [Signature]  
 Проверено: [Signature]

875 948 024



Designation Обозначение	Designation as per standard Обозначение по стандарту	d	Пред. откл. Δ	Пред. откл. S	Пред. ради. вын. S	Material Материал	Temp. масса 1000 шт. кг
			Limits of deviation	Limits of deviation	Limits radial run-out		Theoretical weight of 1000 pcs. in kg approx.
876.950.378-12	Шайба 2,5.32.033		+0,25	6,5	0,58	Латунь Л63	0,127
-13	Шайба 2,5.32.036					Brass	0,119
-14	Шайба 2,5.32.0312	-2,7				Латунь Л63	0,119
-15	Шайба 2,5.32.11					Brass	0,119
-16	Шайба 3.32.11				0,5	Латунь Л63	0,127
-17	Шайба 3.01.016				0,5		0,119
-18	Шайба 3x0,8.01.016				0,8	Brass	0,191
-19	Шайба 3.01.016	3,2	+0,3	7	0,5	Лист БС 4-III-Н-10	0,119
-20	Шайба 3.01.026				0,5	Sheet	0,119
-21	Шайба 3x7.01.016				1		0,238
-22	Шайба 3x0,8.01.026				0,8		0,191
-23	Шайба 4.01.0115						0,308
-24	Шайба 4.01.016				0,8		0,308
-25	Шайба 4.01.026						0,308
-26	Шайба 4.32.033					Латунь Л63	0,333
-27	Шайба 4x1.32.036	4,5	+0,3	9	-0,36	1	0,413
-28	Шайба 4.32.036					Латунь Л63	0,333
-29	Шайба 4.32.0312					Brass	0,333
-30	Шайба 4.01.016				0,8	Лист БС 4-III-Н-10	0,308
-31	Шайба 4.32.11					Латунь Л63	0,333
-32	Шайба 4x1.0112					Brass	0,402
-33	Шайба 5.01.016				1	Лист БС 4-III-Н-10	0,443
-34	Шайба 5.01.012					Sheet	0,443
-35	Шайба 5.32.033					Латунь Л63	0,48
-36	Шайба 5x2.32.033	5,3		10	-0,36	2	0,96
-37	Шайба 5x2.01.016					Brass БС 4-III-Н-10	0,886
-38	Шайба 5x1,2.32.33				1,2	Латунь Л63	0,578

Шайба  
Латунь Л63  
Лист БС 4-III-Н-10  
Sheet  
Brass

Waste

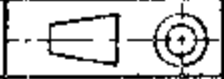
Обозначение Designation	Обозначение по стандарту Designation as per standard	d	Пред. откл. Limits of deviation	D	Пред. откл. Limits of deviation	S	Пред. радиальное Limits of radial runout	Материал Material	Теорет. масса 1000 шт. кг. ~ Theoretical weight of 1000 pcs. in approx.
87Б.950.378-39									
-40									
-41									
-42	WASHER								
-43	Шайба 6 x 1,01,016	6,4	+0,36	12,5	-0,43	1	0,7	Лист 5S 4-III-H10	0,683
-44	Шайба 6x1,32,033					1		Латунь Л63	0,739
-45								Brass	
-46									
-47	Шайба 8x1,5,01,016							Лист 5S 4-III-H10	2,32
-48	Шайба 8x1,5,32,033	8,4	+0,36	17	-0,43	1,5		Латунь Л63	2,65
-49	Шайба 8x1,5,01,016							Лист 5S 4-III-H10	2,159
-50									
-51									
-52									
-53	Шайба 10,01,016	10,5	+0,43	21	-0,52	2	0,84	Лист 5S 4-III-H10	4,05
-54									
-55									
-56									
-57									
-58									
-59									
-60	Шайба 12,32,033	12,5	+0,43	24	-0,52	2,5	0,84	Латунь Л63	7,705
-61								Brass	
-62									

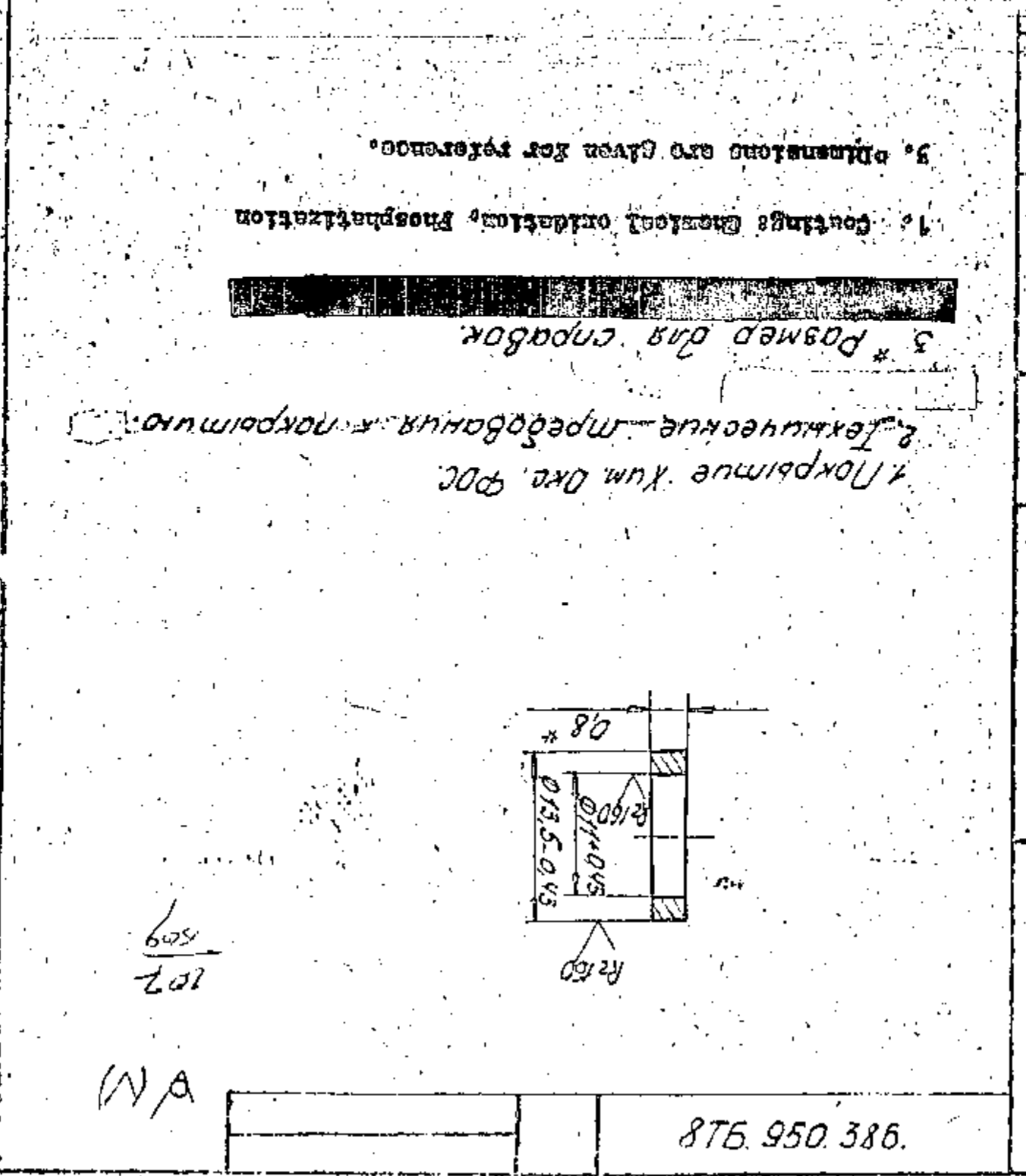
Шайба под шпатель  
 15066

① Обозначение Designation	② Обозначение по стандарту Designation as per standard	d	③ Пред. откл. of deviation	Δ	③ Пред. откл. of deviation	S	④ Пред. рад. бужение Limits of radial runout	⑤ Материал material	⑤ Теорет. масса 1000 Theoretical weight of 1000 Pcs. APPROX
875.950.378-63	Шайба 16 x 3.01.016							Лист 5 S 4-III-H-10	1000 Pcs. APPROX
-64	Шайба 16 x 3.01.016								
-65	Шайба 16 x 3.32.033	17	+0.43	30	-0.52	3	0.34	Лист 163 Brass	12.1
-66	Шайба 16 x 3.32.039								
-67									
-68									
-69									
-70									
-71									
-72									
-73									
-74									
-75									
-76									
-77									
-78									
-79									
-80									

Шайба под чаша  
 15660  
 ВЗДМ ИНОМШ-6 НАУС  
 под шайба

CONTROLERATE OF QUALITY ASSURANCE  
(INFANTRY COMBAT VEHICLES) 134 DF 131

WASHER			
8TB.95D.386		DRM # 0.0005	WT 1.100
TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED		DATE: 28-8-77	SCALE: 2:1
STAMP OR ETCH, PART NO. OF YEAR		DRG. NOT TO BE SCALED	
MANUFACTURERS MAKE & YEAR		ALL THREADS TO CONFORM TO SPECIFICATION	
USED ENL.		MATERIAL: SHEET PLAT-0.8	



WA

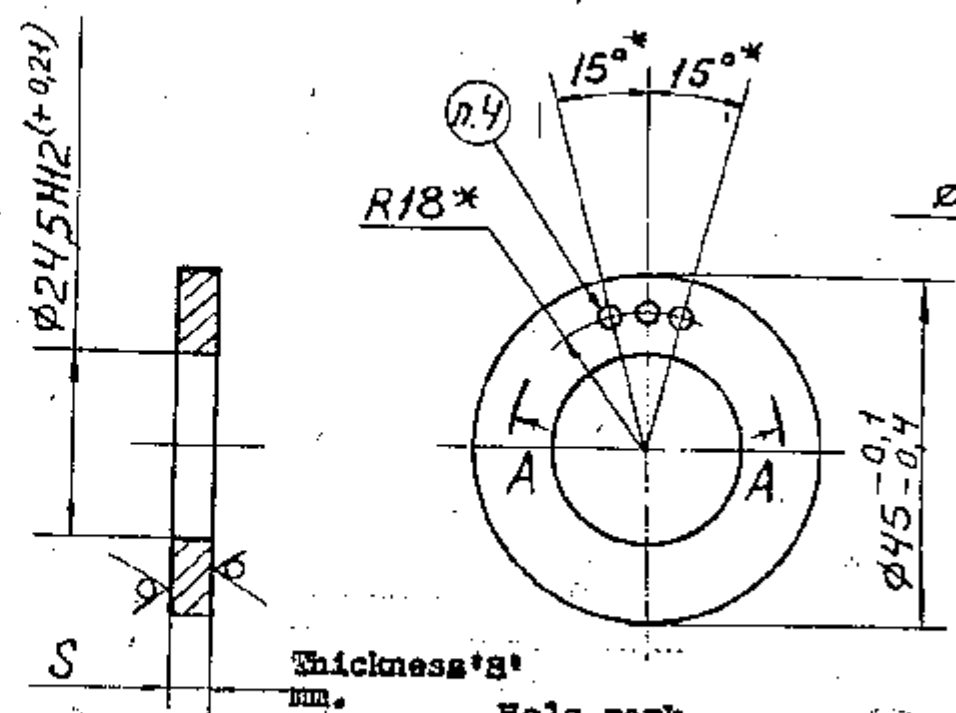
8TB.95D.386

Восстановительный завод №1

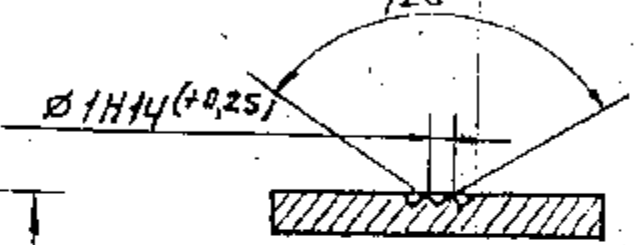
Лист № 1  
Исполн. № 10  
Деталь № 876.95D.386  
Спроект. № 107  
Дата: 28.08.77

815 950 388

Справ. № перб. притем.



A-A  
развернуто ①  
Development \*



Rz80  
✓(✓)

103  
509

1. Dimensions are given for reference
2. Coatings: Zinc plated 15 microns thick, chromotized.
4. Mark the number of holes as stated in the table.

Обозначение Designation	Толщина S, мм	Марки робка отб.	Материал MATERIAL
815950388	0,4-0,03	—	Лента 10-Н-2-0,4 Band
-01	0,6-0,04	1	Лента 10-Н-2-0,6 Band
-02	0,8-0,05	2	Лента 10-Н-2-0,8 Band
-03	1-0,05	3	Лента 10-Н-2-1 Band

Продолжение

Материал заменитель	Масса, кг
Лента 08 КП-Н-2-0,4	0,0035
Лента 08 КП-Н-2-0,6	0,0057
Лист Б-ПЧ-0,8 sheet 4-10-Н-10	0,0077
Лист Б-ПЧ-1 4-10-Н-10	0,0085

Изм. № Дата Подп. и дата Изм. № Дата Подп. и дата

MATERIAL: SEE TABLE	ALL SHARP EDGES & CORNERS TO BE ROUNDED OFF	ALL THREADS TO CONFORM TO SPECIFICATION	CAST OR ETCH, PART NO. MANUFACTURERS NAME & YEAR OF MFG.
DRG: NOT TO BE SCALED	SCALE: 1:1	TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED	USED ON:
DATE: 28-8-97	DRN: [Signature]	WT: (kg)	
CD: [Signature]	CHD: [Signature]	815.950.388	
APD: [Signature]	WASHER		

CONTROLLERATE OF QUALITY ASSURANCE  
(INFANTRY COMBAT VEHICLES) 135 OF 137

875.953.105

- Note: 4. Rod diameter of fastening part. 5. dimensions in mm. 6. Limits of deviation 7. Nominal 8. Coating 9. Theoretical weight of 1000 Pcs. kg. approx. 10. Chemical oxidation oiled.

105  
292

Обозначение Designation	Обозначение по стандарту Designation as per standard	Диаметр стержня крепеж- ной де- тали	Размеры в мм				Покрyтие	Теорет. масса 1000 шт kg ≈
			d	през. откл.	S=B			
				ном.	през. откл.			
875.953.105 - 20	Washer Шайба 4.65 Г.029	4	4,1	+0,3	1,2	+0,125	0,189	
- 21	Шайба 5.65 Г.029	5	5,1		1,4		0,315	
- 22	Шайба 5.65 Г.016	5	5,1	+0,3	1,4	+0,125	0,315	
- 23	Шайба 4.65 Г.016	4	4,1		1,2		0,189	
- 24	Шайба 3.65 Г.016	3	3,1	+0,3	0,8	+0,008	0,08	
- 25	Шайба 2.565 Г.	2,5	2,6	+0,25	0,5	+0,07	0,028	

Хим. Окс. прм.

Подл. Подпись и дата. Взам. инв. №. Днев. №.

122 /подп./27.3.79

CONTROLLERATE OF QUALITY ASSURANCE  
(INFANTRY COMBAT VEHICLES)

875.953.105

2

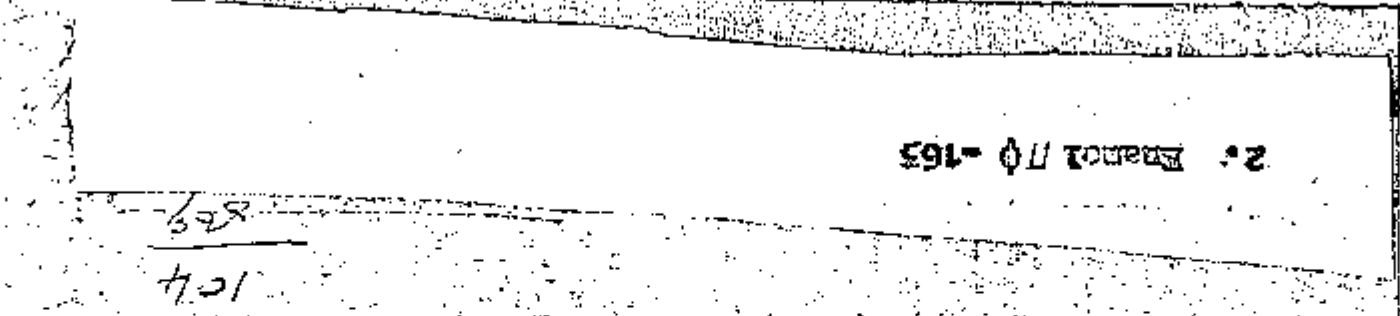
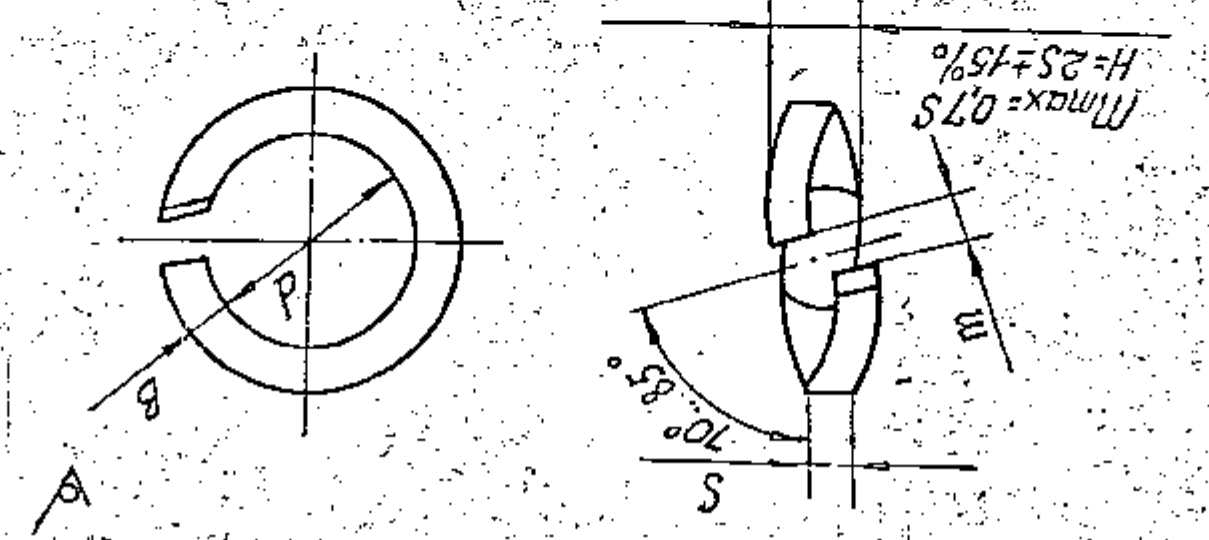
137 OF 137

875.953.105

R-00660-76

10. Theoretical weight of 1000 pcs. in approx.  
 11. Chemically prepared enamel 110 IV 2  
 12. Chemical oxidation, oil.

№	Допускание по стандарту	Допускание по стандарту	Лимиты отклонения			Допускание по стандарту	Допускание по стандарту	Допускание по стандарту	Допускание по стандарту
			max	nom	min				
01	Wada 25.65T.022T	Wada 25.65T	2.5	2.6	+0.05	0.001	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0228
02	Wada 3.65T	Wada 3.65T	3	3.1	0.08	0.008	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	006
03	Wada 3.65T	Wada 3.65T	3	3.1	0.08	0.008	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	006
04	Wada 3.65T.026	Wada 3.65T.026	3	3.1	0.08	0.008	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	006
05	Wada 3.65T.022T	Wada 3.65T.022T	3	3.1	0.08	0.008	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	006
06	Wada 4.65T	Wada 4.65T.022T	4	4.1	0.03	0.12	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0189
07	Wada 4.65T.022T	Wada 4.65T	4	4.1	0.03	0.12	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0189
08	Wada 4.65T	Wada 4.65T	4	4.1	0.03	0.12	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0189
09	Wada 5.65T	Wada 5.65T	5	5.1	0.14	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0315
10	Wada 5.65T.022T	Wada 5.65T	5	5.1	0.14	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0315
11	Wada 5.65T	Wada 5.65T	5	5.1	0.14	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0315
12	Wada 6.65T	Wada 6.65T.022T	6	6.1	0.16	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0487
13	Wada 6.65T.022T	Wada 6.65T	6	6.1	0.16	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0487
14	Wada 6.65T	Wada 6.65T	6	6.1	0.16	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0487
15	Wada 8.65T	Wada 8.65T	8	8.1	0.2	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0998
16	Wada 8.65T.022T	Wada 8.65T	8	8.1	0.2	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0998
17	Wada 8.65T.029	Wada 8.65T	8	8.1	0.2	0.25	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0998
18	Wada 16.65T	Wada 16.65T	16	16.3	+0.10	0.15	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	8.022
19	Wada 25.65T	Wada 25.65T	25	26	+0.25	0.08	(1) XUM. ФOC	3M. П.Ф. 163. IV. T° 150T. 2x KOPAMHOE	0228



CONTROL RATE OF QUALITY ASSURANCE (INFANTRY COMBAT VEHICLES) 136 OF 137

WASHERS SPRING

875.953.105

DATE: 28-8-97

SCALE: 1:1

DRG. NOT TO BE SCALED

ALL THREADS TO CONFORM TO SPECIFICATION

STAMP OR ETCH PART NO. OF MFR.

TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED

USED UNIT: MM

MATERIAL: STEEL 65T

Ordnance Factory  
Project  
Hyderabad.

NUMBER... D. 509

SHEET... OF ...

ELECTRIC TRIGER 2A C-3  
(Nomenclature, article code)

CERTIFICATE

3 TB .013.011-01 n c  
(designation)

For article No. \_\_\_\_\_

310F 137

10F5  
509

ELECTRIC TRIGGER DAC-3

Technical description and instruction for operation

Edition 1

Checked by  
GSE  
21-11-85  
G. SEBASTIAN

41 DP 137

GENERAL CONDITIONS

Prepare certificate form by printing, electrographic method or by photocopying on paper, ensuring clarity of ints. All notes in certificates should be made *clearly* without corrections (pencil writing is not allowed) Date, month and year should be written in arabic figures.

When making certificate by printing method it should have four sheets including cover.

Certificate size is 143x165 mm use of other sizes is not allowed. Certificate should have margin of 10mm width.

Pages of certificate should be numbered serially and <sup>bound</sup> ~~bound~~ with clips. It is permitted to paste the internal sheets of certificate while making by printing. Prepare certificate by printing on offset paper, white writing paper No.1, white label type paper of grade A and B. Printing paper is allowed if the certificate is made by printing method.

1. BASIC TECHNICAL DATA.

PARAMETERS	CHARACTERISTIC
Working voltage, V	26 + 10%
Current to be utilized at voltage 26 V and temperature 20°C while connecting of first winding, max.	12,5
and second winding, max	2,2 A
Tractive force at temperature 20°C and voltage 26 B, min	7,5 Kgf.
Armature travel	13 ± 0,5 mm
Mass, max	1,3 Kg.

1. Purpose and Technical data Purpose.

The electric trigger (relay  $\mathcal{M}C-3$  is an electromagnetic p-power relay designed actuate the plugged of automatic valve of the fire fighting equipment.

TECHNICAL DATA.

1. Power is supplied from 36-V, D.C. mains.
2. Intensity of current at voltage 26 V should not exceed 12,5A at the time of switching on and should not exceed 2,2A during operation of the device.
3. Tractive force at voltage 26V should not be less than 7,5 Kg.
4. Elasticity of return spring should be 0,4 to 1.0 Kg.
5. Movement of Armature should be  $13 \pm 0,5$  mm.

II PRINCIPLE OF OPERATION

Electric trigger (relay  $\mathcal{M}C-3$ ) operation is based on the plunger type relay principle.

In order to start by means of  $\mathcal{M}C-3$ , it is necessary to press the push button which closes the circuit of Electromagnet. It causes the current in the circuit to pass through the coils as a result of which the armature under the action of Electromagnetic field of coil is pulled into it at the end of its movement the armature disconnects the contact system and the current starts passing through auxiliary winding and in this case the consumption of electrical energy is reduced for the full period of operation of the device. In the same position the armature remains until the push button is depressed.

By releasing push button the supply in the circuit to the coil is disconnected, and the armature is returned back in its initial position by the ~~armature~~ return spring.

2. Delivery Set  
Electric trigger.  
Certificate.

3. Acceptance Certificate.  
Electric trigger D/C-3.  
(Nomenclature and code of article)

No. \_\_\_\_\_ is manufactured serial  
No. of article.  
and accepted in compliance with technical papers and found  
it for service

Chief of T I D

\_\_\_\_\_  
(Signature)

Date:

WINDING PARAMETERS

Winding data	Main winding	Auxiliary winding
Wire diameter, mm	0.83	0.5
Wire length, m	75	4.8
No. of turns	670-40	16 <sup>+2</sup>
No. of rows.	10	1
Wire grade	ПДВ-1	ПДВМММ
Resistance, Oh	2,2+ 2,5	10

III CONSTRUCTION

Electric trigger consists of Body 21, coil 3, Armature 22 and contact system 4 and 5.

Coil 3 consists of two windings.

Winding ends are brought out to the plastic block 1, on which the contact system consisting of two brass springs with contacts is installed.

The voltage of 26V is applied across contacts and winding coils through plug connector 6.

Armature 22. moves freely inside the coil. The <sup>axle</sup> is secured in armature with help of pin. When the axle is return spring 24 whose one end bears <sup>up</sup> against shoulder on axle and other end bears up against the stop. Axle is terminated with fibre pin with the help of which the Armature presses the contact system.

The pin prevents rotation the guiding bush from. <sup>rotation</sup>

IV ASSEMBLY OF DEVICE.

The electric trigger (relay 3AC-3) is mounted on verticle at any place and in any attitude, in doing so, ensure free access to the plug connector.

After installation of electric trigger check the travel of the armature. The travel of armature should be with in

4. LIFE, SERVICE LIFE AND STORAGE LIFE.

Life of electric trigger before disposing is 3000 cycles (switching on) storage life of article if it is preserved (in manufacturers package) is 1.5 years.

5. DATA FOR PRESERVATION (PACKING) AND DE-PRESERVATION

Date	Name of operation	Effective for	Signature of preservation incharge
	Preservation	2-years.	

Grease QUATUM - 201

- Note:-
1. Check the condition of preservation and note the result in the certificate after one year of storage in the store house.
  2. Sleeve, body, and plug connector nut should be subjected to preservation.

6. SERVICE RECORD OF ARTICLE.

Installed on object, system and unit.	Date of Removal	No. of working hours from the starting of operation	Reason for Removal	Signature of the person who installed or removed article

Date	Code and No. of object				
1	2	3	4	5	6

*in the limits of  $13 \pm 0.5$  mm*  
without fail. If this requirement is not met the main coil is get over heated, because the coils are not switched over to series connection.

Check the travel of armature with standard measuring tool having accuracy up to 0,1 mm. Carry out the checking in the following way. Measure the projecting shaft at its initial position and at the pulled in position of armature. *The difference in reading is the actual travel of the armature.*

Over all dimensions of electric trigger JAC-3 is referred in drawing 3 T5013 01174.

V-BRIEF DESCRIPTION OF ASSEMBLY AND DISASSEMBLY OF  
DEVICE.

Insert the coil together with stopin to body. Mount the terminal block and solder the ends of winding to the contact system. Insert insulating pin into armature axle and fix it. Put spring on the armature axle. Place washer at the end of coil and insert the assembled armature with spring into the coil, set ring on washer and put guide bush in to the ring, screw up the cover on the device body and fasten bush with pin preliminarily. Fasten cover with two screws, out of which one can be used for seal. Put cover on terminal block and fasten with three screws out of which are can be used for seal.

Device should be disassembled in reverse sequence..

VI POSSIBLE DEFECTS IN DEVICE AND METHODS  
OF THEIR ELIMINATION.

Type of defect	Method of elimination
1. Falling of insulating pin	1. Insert insulating pin in to armature axle and fix it.
2. Wearing of insulating pin.	2. Change insulating pin.
3. Jamming of spring shoulder of armature axle (armature gets Jam)	3. Take out armature, remove spring and make diameter of turns <i>Proper</i> or change it by new one, see that the two tightly pressed turns are available at the ends of spring so as to ensure tight pressing of spring to the shoulder of armature axle and prevent it from jumping over the shoulder.
4. Burning of contacts due to low speed of armature with slide bar.	4. Thoroughly clean the surfaces of contacts and adjust armature travel.
5. While pressing button device is inoperative.	5. a) check mains for voltage. b) Check whether any breakage is in the supply wires. If voltage and wire are in order, then winding of the device is burned out. In this case change the device by new one.

Appendix: 1 drawing . 3T 5013.01105  
drawing 3T5013.01103  
drawing 3T5013.01104

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		SHEET... 1... OF... 20
		SUPERSEDES..

ELECTRIC TRIGGER

(RELAY 3AC-3)Y

UNIFIED

TECHNICAL SPECIFICATIONS

1969

TRANSLATED	V. S. Sharma	<i>M. S.</i>		Ordnance Factory Project Hyderabad.
AUTHENTICATED				
TYPED	L. Devi		7/8/65	
EDITED	V. S. Sharma	<i>M. S.</i>		APPROVED
	NAME	SIGN	DATE	<i>(Signature)</i>

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I. INTRODUCTION

- 1.1 The given technical specifications deal with electric trigger relay SAC-3) used for actuating automatic valve plunger.
- 1.2 The given technical specifications together with the drawing of item the article in question and other technical documents, indicated in <sup>parts list</sup> 379.013.011-01 are the basic documents on manufacture and acceptance of electric triggers  
SAC -3

Overall mounting and connecting dimensions should meet the requirements of drawing 379.013.011-01/4. Electric circuit should conform to the requirements of drawing 379.013.011-3.

- 1.3 Program and procedure for testing electric trigger at the manufacturer's and as well as technological limit of parameters tolerances are not a subjects of approval of the users. They may be revised by the master copy holding plant during a period <sup>the</sup> technical specifications are in force.

2. TECHNICAL REQUIREMENTS

- 2.1 General requirements
  - 2.1.1 In the absence of instructions in drawing see as to the value of radii of change from one section to the other they are to be performed with a radius, which is equal to the blun-

equal to the blunting radius of the ~~component~~<sup>face</sup> upto 0.2 mm.

2.1.2 In the absence of instructions in drawing as to the value of bending radii, bending is to be performed with a radius not exceeding 2/3 thickness of the material.

2.1.3 Burrs are not allowed on the components of the article.

2.1.4 The sharp edges of the component of the articles if it is not specified in the ~~drawing~~<sup>drawing</sup> should be blunted with a chamfer upto 0.2-0.5x45° or with radius of 0.2-0.5 mm. Shape of blunting is to be indicated in process sheet for parts having thickness less than 0.4 mm.

<sup>Blunting of</sup> sharp edges and chamfers <sup>blunting</sup> production with a radius not exceeding 0.2 mm if not other radius is specified in the drawing should be specified process sheet ~~is~~ and provided.

~~During~~ all the chamfers and blunting radii of inner angles and outer sharp edges upto 2 mm, specified in the drawings, can be made with a tolerance of ± 30% as to rating.

Size of chamfer on cylindrical surfaces should be checked on the cylinder generatrix.

2.1.5 If permissible non-symmetry for location of an article component with respect to the axis of symmetry is not specified in the drawing, then in such cases non-symmetry is allowed with in limits of 1/2 of the biggest tolerance in the dimensional chain in question.

2.1.6 In case of there is an instruction in the drawing "check during machining", the method of checking is to be stated in technological documents.

Measurement may be done by "go" side of the gauge of a higher class of accuracy, than specified in the manufacturing process and instructions chart.

2.1.7 Components of the article machined by grinding or magnetic tables, should not be magnetized after finishing.

2.1.8 Anti-corrosion coatings specified in the drawings should ensure reliable protection of articles and their components from corrosion.

2.1.9 All the components, units and articles should conform to the drawings. The components, unit, articles should be inter changeable. Adjustments provided for by the drawings are allowed.

2.1.10 Traces of pouring gates, mould pushers (ejectors), traces of trimming of parting line of a mould and machining of pouring gates, pattern drafts etc. on non-mating surfaces of the components of articles should not go beyond the limit of tolerances for dimensions of the part, if no specific instructions are given in the drawing.

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- 2.1.11 All the parts and units, going into an assembly, should conform to the drawings and bear the required stamps, they also should be thoroughly cleaned from contamination (dust, chips). Components of the products with traces of corrosion should not be allowed for assembly.
- 2.1.12 During assembly, riveting and adjustment, partial disruption of passivated film of the components is allowed at the places where they come into contact with assembling tool (screw driver, wrench, hammer, fixture or any other tool).
- 2.1.13 Selection and adjustment of components of the article during assembly and mounting are permitted only in the case, necessary instructions are in the drawing.
- 2.1.4 Fitting of industrial holders and fasteners (screws, nuts, bolts etc.) should not be a cause of stripping of slots, thread, or rounding off the hexagonal heads. Slight buckling of metal in the slots of screws is allowed.
- 2.1.5 During assembly the fasteners should be tightened upto stop with a normal tool, specified for production method or with a special tool, if the drawing specifies a force to be applied during mounting.

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- 2.1.16 Components of the articles should be <sup>reliability</sup> ~~reliability~~ & tightened; self-unscrewing of screws and nuts, is not allowed; when paint, <sup>putty</sup> ~~putty~~ etc. are used to prevent the self-unscrewing of threaded joints, it is required to take measures to exclude the possibility of paint, ~~putties~~ etc. getting inside the article.
- 2.1.17 Components of the articles, fastened with nuts, should not turn over.
- 2.1.18 Counter sunk heads of screws and rivets as well as locking screw ends after being set at their places, should not project above the components of ~~shells~~ the articles if there is no specific instructions stated in the drawings.
- 2.1.19 All the inscriptions on articles <sup>parts</sup> components, executed by engraving, stamping, photocopying and etching should be legible and easy to read. places of inscriptions, executed by engraving or by punch should be coated with anti-corrosion colourless varnish (for increasing legibility of inscriptions, anticorrosion colour varnishes and enamels may be used as well)
- 2.1.20 Polish working contact surfaces of contacts to metallic lustre, if no other specific instructions are stated ~~and~~ in drawings.

Methods of polishing and materials to be used should be

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specified in the process sheets.

- 2.2 Basic parameters.
- 2.2.1 The electric trigger should work trouble-free at an ambient temperature of  $-50$  to  $+70^{\circ}\text{C}$ .
- 2.2.2 Supply voltage of electric voltage is  $26\text{ V} \pm 15\%$  DC
- 2.2.3 Strength of current, consumed by electric trigger at the rated voltage and temperature ( $+20 \pm 5^{\circ}\text{C}$ ) should not exceed :
- ~~a) for switch~~
  - a) 12.5 A for switching on one coil
  - b) 22 A for switching on two coils
- 2.2.4 Insulation resistance of electric circuits <sup>as</sup> are to be the body should be not less than:
- a) 20 Mohm at ( $+20 \pm 5^{\circ}\text{C}$ ) and relative humidity upto 80%.
  - b) 2 M ohm at ( $+20 \pm 5^{\circ}\text{C}$ ) and relative humidity from 95 to 98%.
- 2.2.5 Insulation of electric circuits of electric trigger relatively to the body should with stand and voltage of 500 AC of effective value with frequency 50Hz for a period of 1 minute at a relative humidity of 80% without break down and spark over.

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2.2.5	The electric trigger components should withstand vibrations parallel to the axis at any of the frequencies from 20 to 80 Hz with over load 4g for a period of 50 hours.	
2.2.7	The electric trigger should withstand minimum 3000 triggerings at a supply voltage of 26V ± 10% and load of 7.5 kgf on the armature.	
2.2.8	The electric trigger armature should move freely without jerks and jamming under the action of magnetic field of the coil and opposing spring. In withdrawn position, the armature should not touch a stop.	
2.2.9	Travel of electric trigger armature should be ( 13 ± 0.5)mm	
2.2.10	Maximum pull developed by the electric trigger at an ambient temperature of + 20 ± 5°C and supply voltage 26 ± 1 V, should not be less than 10.5 kgf.	
2.2.11	The electric trigger should function reliably at least 50 times with 7.5 kgf load at supply voltage 22 ± 1 V and ambient temperature + 20 ± 5°C	
2.2.12	Electric trigger should reliably function 3 or 4 times at a supply voltage of (22 ± 1) V with 7.5 kgf load on armature and ambient temperature ( -50 ± 1) °C - 5 °C.	
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2.2.13	Electric trigger should withstand 50 successive triggerings	
	at ( 22 + 1)V supply voltage, temperature $(+ 20 \pm 5)^{\circ}C$ and 5.5 kgf load on armature	
2.2.14	Opposing force of spring should ensure return of	
	armature upto stop.	
2.2.15	Plug leading of electric triggers should be splash-proof	
2.2.16	Contact resistance between the contacts of plug and rece-	
	tacle should not exceed 0.01 ohm after 200 switchings-in.	
2.2.17	Mass of electric trigger with plug should not exceed 1.3 kg.	
	<u>Remarks:</u> Class of devices, required for measuring current and voltage is to be above 1 and for measuring <sup>pull</sup> <del>pull</del> is to be above 2.	
2.2.18	Electric triggers should be dust-proof.	
2.2.19	Pull of electric trigger at the end of armature travel at	
	$+ 20 \pm 5^{\circ}C$ ambient temperature and supply voltage (24+1)V should be not less than 18 kgf.	
2.3	<u>Completeness</u> the following items comprise the delivery set.	
2.3.1	Electric trigger.	
2.3.2	Certificate.	
	<u>Remark:</u> Articles to be exported are accompanied by operating, technical and accompanying documents as per instructions on design, execution and sending of	
	Contd... 10	

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operating technical and accompanying documentation  
on articles to be <sup>shipped</sup> shipped for export.

2.4 Marking.

- 2.4.1 The electric trigger body should have a plate, containing the following:
- a) index of article
  - b) supply voltage
  - c) factory No of article.

2.4.2 Stamps, confirming acceptance of electric trigger by TID are to be put in paint at the places, specified in the assembly drawing.

2.5 PACKING

2.5.1 Electric triggers should be packed in boxes lined with moisture proof inter-layer, specified by the technical documents, weight of packed box should not exceed 50 kg.

2.5.2 Before packing in boxes, the electric triggers are to be arranged in a container specified by the technical document. Packing should prevent displacement of article.  
Remark: The container and packing of products, being exported, are to be made as per the requirements of production order.

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3 ACCEPTANCE RULES

3.1 The articles are to be submitted to the customer representative in batches as per the submitting document, signed by the director or factory chief engineer and chief of TID, with the statement on ~~specif~~ special tests log book of prescribed form along with the TID test results.

Volume of batch is to be fixed by the manufacturer in the size not exceeding monthly programme.

Presentation of a batch can be done in parts, as a rule not less than 10 articles in each with a report of the size of the batch at first presentation.

Quantity of submitted articles per batch may be reduced the as well at duplicate presentation at the expense of rejection.

In case of small batch production presentation of a ~~batch~~ <sup>batch</sup> may be carried out in parts of not less than 5 articles. Acceptance includes disassembly of 1 to 2 articles from a set up batch, which is to be conducted by TID

3.2 Approval tests are to be conducted by TID as per the programme and procedure specified in the present technical specifications.

3.2.1 The test results are deemed satisfactory if:

Contd. 12

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3.6 Submittance of one and the same article of one and the same batch of articles should not be repeated more than twice.

3.7 Periodic tests are to be conducted by TID of manufacturing firm on articles which are selected from the submitted batch.

3.8 Periodic tests are to be conducted as per the programme specified in the present technical specifications.

3.9 Periodic tests are conducted once in 1/2 year. Three electric triggers are to be selected for test from the subsequent batch submitted for acceptance.

3.10 The articles which have undergone periodic tests, may be disassembled with the aim to improve the accuracy of the test results and check for compliance of the articles to the technical papers. During disjoining of preliminarily painted surfaces, transfer of joint from one surface to the other is allowed.

Decision as to the results of periodic tests is to be taken after conducting the control disassembly.

3.11 During periodic tests even if a single article <sup>is</sup> not satisfying the requirements for even one of the items of the present technical specifications, then the tests are to be ~~CEASED~~ <sup>discontinued</sup> till the causes of defects are detected and removed.

3.6 Submittance of one and the same article of one and the same batch of articles should not be repeated more than twice.

3.7 Periodic tests are to be conducted by TID of manufacturing firm on articles which are selected from the submitted batch.

3.8 Periodic tests are to be conducted as per the programme specified in the present technical specifications.

3.9 Periodic tests are conducted once in 1/2 year. Three electric triggers are to be selected for test from the subsequent batch submitted for acceptance.

3.10 The articles which have undergone periodic tests, may be disassembled with the aim to improve the accuracy of the test results and check for compliance of the articles to the technical papers. During disjoining of preliminarily painted surfaces, transfer of joint from one surface to the other is allowed.

Decision as to the results of periodic tests is to be taken after conducting the control disassembly.

3.11 During periodic tests even if a single article <sup>does</sup> not satisfy the requirements for even one of the items of the present technical specifications, then the tests are to be ~~CEASED~~ <sup>ceased</sup> till the causes of defects are detected and removed.

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3.12 Duplicate periodic tests are to be conducted on doubled quantity of articles, tests are to be conducted after detecting and removing the causes of defects and ~~clearing the~~ clearing the defects.

3.14 If during duplicate periodic tests even a single article is found not to meet the requirements of present technical specifications then the whole batch of articles is to be rejected and returned to the manufacturer.

At the same time further acceptance and delivery are to be ~~cleared~~ <sup>CEASED</sup> till causes of defects are detected and rectified.

After removing of causes of defect and resuming of acceptance, the periodic tests are to be conducted on two subsequent batches. In case of positive results of the above mentioned periodic tests, further tests are to be carried out in the established order.

3.15 Packed and sealed articles which have under gone approval and periodic tests as a part of a given batch are considered finally accepted and ready for delivery in case of positive results. The articles which have under gone approval tests and in case of obtaining positive results, the periodic tests are considered finally accepted and ready for delivery as well.

3.16 Approval tests.

3.16.1 Approval tests are carried out as per the programme and in sequence stated in table 2.

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Table 2

Description of tests	Requirements of Technical Specifications	Procedure as per Technical specifications	Remarks
Visual inspection and measure of armature travel	1.2 2.2.9	4.8 4.1	
Smoothness of armature travel	2.2.8	4.2	
Opposing force of spring	2.2.14		
Maximum pull at ambient temperature (+20±5)°C and supply voltage (26±1) V	2.2.10	4.3	
Power of consumed current	2.2.3	4.4	
Reliability of triggering at supply voltage ( 22 + 1 ) V and ambient temperature (+20±5)°C with load 7.5 kg	2.2.11	4.5	
Checking of insulation electric strength.	2.2.5	4.7	
Checking of insulation resistance.	2.2.4 a)	4.6	

Remarks: 1. The percentage of articles to be checked to be sample from the total number of submitted electric triggers

2. The selected articles meant for random tests should not be replaced with others during acceptance.

3. - 3 TY

- 3.22.1 Periodic tests.
- 3.22.2 Periodic tests are to be carried out as per the programme and order specified in table 3.

Description of tests	Requirement of Technical Specifications	Requirements as per Technical Specifications	Remarks
(1)	(2)	(3)	(4)
Approval tests	1.2, 2.2.9 2.2.14 2.2.10 2.2.3 2.2.11 <del>2.2.4</del>	4.1, 4.2 4.3, 4.4 4.5, 4.6	
Checking for pull at lower temperature	2.2.12	4.9	
Checking for put at higher temperature	2.2.13	4.10	
Tests at high humidity	2.2.4 E)	4.11	
Checking for splash proofness of plug leading <i>lead-ins</i>	2.2.15	4.12	
Tests for vibration strength	2.2.6	4.14	
Tests for service life	2.2.7	4.15	
Checking for mass	2.2.17	4.16	

1	2	3
Checking of pull of electric trigger at the end of armature travel	2. 19	4.19
Checking for dust proofness	2. 18	4.18
Checking of value of contact resistance between the plug contacts and receptacle.	2. 16	4.13
Test for transportation		4.20
Check disassembly	1.2	4.8, 4.17

4 TESTS PROCEDURE

4.1 Armature travel is checked by measure with measuring tool having an accuracy of 0.1 mm.

The projecting part of armature shank is measured first in OFF position and then in pulled-in position of armature. The differential of the measured values is armature travel, it should be within limits of  $(13 \pm 0.5)$  mm.

4.2 Smoothness of armature travel and opposing force of spring are to be checked by putting weights on the armature shank in its vertical position. Jerks and jamming should not occur during armature movement. Opposing force of spring should be within limits of 0.4 to 1 kg.

- 3 TY

- 4.3 Checking for maximum pull at  $(+20 \pm 5)^{\circ}\text{C}$  temperature and supply voltage  $(26 \pm 1)\text{V}$  is to be carried out by to 2 to 3 triggerings of the electric trigger mounted on a special stand.

The electric trigger is considered serviceable, if it functions with a load of 10.5 kgf.

- 4.4 Check for strength of current, consumed by the electric trigger is carried out simultaneously with the test as per item No. 4.3 of the given procedure, at the last triggering of electric trigger.

Strength of current, consumed by the electric trigger should not exceed 12.5 A when one coil is switched on and 2.2 A when two coils are switched on.

Further tests of electric triggers are to be carried out after keeping them for 1 hour at the temperature  $(+20 \pm 5)^{\circ}\text{C}$ .

- 4.5 Reliability of triggering at a supply of voltage of  $(22 \pm 1)\text{V}$  and ambient temperature  $(+20 \pm 5)^{\circ}\text{C}$  with 7.5 kgf load is to be checked on a special stand. The electric trigger is switched on 50 times in succession. Duration of each switching should not exceed 12 sec.

Internals between to successive switchings should be  $1 \pm 10\%$ . When the electric trigger is in operation jamming joining of armature and its sticking to stop should not occur.

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4.6 Insulation resistance is to be checked at  $(+20 \pm 5)^{\circ}\text{C}$  temperature by means of megohmmeter of a rated voltage of 500 V. The check is carried out between the current conducting circuits and body. The test is conducted at a relative humidity of 80%. The insulation resistance should not be less than 20 M ohm.

4.7 Insulation electric strength between any terminal of the coil and the body is to be checked on a special unit having a power supply source of 0.5 kv.A at a rated voltage of 500 V and frequency 50 Hz.

Voltage is to be fed gradually up to the rated value and similarly gradually reduced after keeping the voltage at this level for 1 min. The test is carried out at  $(+20 \pm 5)^{\circ}\text{C}$  temperature and relative humidity upto 80%. Duration of test can be reduced to ~~10~~<sup>5</sup> provided the testing voltage is increased by 25%.

4.8 Overall, mounting and connecting dimensions of electric triggers are checked in 10% of the submitted batch. One electric trigger is to be subjected to a check disassembly, reliability of assembly, tightening and locking of screws as well as compliance of basic dimensions to drawing are checked.

External appearance is checked for compliance with requirements of drawings. During testing of appearance of electric triggers, check marking and filling of submitting

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documents as well as confirmity of date of manufacture, time of submittance and numbers of electric triggers indicated on the factory inscription plate and in certificate. Time interval between <sup>time</sup> of manufacture and time of submittance for acceptance should not exceed one month.

4.9 Pull at a low temperature of  $- (50 \pm 1)^\circ\text{C}$  is to be checked at a supply voltage of  $(22 \pm 1)\text{V}$  on a special stand.

To do this the electric triggers are to be preliminarily kept in cold chamber for 2 hours from the moment the required temperature is obtained. The check is to be carried out not later than three minutes after the electric triggers are taken out of the chamber. The electric trigger should operate with a load of 7.5 kgf. for 3 to 4 times.

4.10 Checking of pull at a high <sup>temperature of  $(+20 \pm 5)^\circ\text{C}$  is limited out</sup> on a special stand after keeping in heat chamber for 2 hours from the moment the required temperature is obtained. The check is to be carried out not later than three minutes after the electric triggers are taken out of the chamber. The electric trigger should withstand 50 successive triggerings with 5.5 kgf load, during which there should be no jamming of armature or sticking of armature to stop.

-3 TY

4.11 The test for moisture resistance in moist chamber at a relative humidity of  $95 \pm 3\%$  and ambient temperature of  $+20^{\circ} \pm 5^{\circ}\text{C}$ . for 48 h.r. Insulation resistance of electric circuits as to body is measured with megohmmeter of rated voltage 500 V at the time of removal of triggers out of the chamber (but not later than 3 minutes after the removal) The resistance should be not less than 2 M ohm.

Corrosion should not be on the components of devices.

4.12 Splash-proofness of plug lead-ins is to be checked on a special unit, which ensures an artificial rain in- with an intensity of 5 mm per min at  $45 \pm 10^{\circ}$  angle to the horizon for a period of one hour. Water temperature should be below the temperature of the article by (5 to 10) $^{\circ}\text{C}$ . After test the plug connectors are to be wiped and opened. Absence of traces of water on contacts under the rubber pad confirms splash proofness of plug connector.

Remarks: A plug connector wired with a standard with ~~W/22~~ ~~W/22~~ 1x1.5 is to be taken for the check. The top nut of plug connector should be drawn up tightly.

Contd...22

When testing plug lead-ins in electric triggering, the bottom nut should be sealed along its <sup>perimeter</sup> ~~perimeter~~ with plasticine or with any other comparable material.

- 4.13 The contact resistance value between the contacts of plug and receptacle is to be checked on a special unit, which permits to carry through the contacts currents with a strength of  $5A \pm 10\%$  - and voltage  $36 V \pm 10\%$  for a period of 3 h.M. There after 200 successive insertings of plug into receptacle are performed then contact resistance value is measured between each contact of plug and receptacle. The plug and receptacle should be de-energized during insertings.

Remarks: Contact resistance of plug lead-ins contacts is to be checked separately if plug lead-in, taken from the article under the test after completion of type tests. The test set up is rheostatic.

- 4.14 Test for vibration resistance is to be carried out at any of the frequencies ranging from 20 to 8 Hz with 4 g overload on two electric triggers for a period of 50 h. After every 10 hrs of exposure to vibrations the check for reliability of triggering as per the procedure, <sup>as well as</sup> specified in value of armature travel as per the procedure, specified in item No.1 should be conducted.

-3 TY

- 4.15 The electric triggers should withstand 3000 triggerings at  $26\text{ V} \pm 10\%$  supply voltage and 7.5 kgf load on armature. The tests are carried out in series, each series consists of 10 cycles, & each cycle consists of 30 triggerings for  $(15 \pm 5)$ . The time interval between cycles is to be not less than 1 hr.
- 4.16 The mass is to be checked by weighing fer on 4 kg industrial balances with weighing limit upto 5 kg.
- 4.17 During a check disassembly the electric triggers, are checked for compliance with design by visual inspection and by measuring geometrical dimensions of components and units. List of components and units, which should be measured and checked for compliance of material is to be established for each approval test by the customer.
- 4.18 During the test of dust-proofness, the electric triggers are placed in a cubic box of  $1\text{ m}^3$ , containing 4 kg of cement powder. The test lasts for 5 hrs during which the cement is stirred up with a current of air every 25 min. on completion of test the electric triggers are wiped clean from dust on the outside and disassembled. The electric triggers are considered to have passed the tests if the amount of dust penetrated inside the electric triggers is not visible to the naked eye.

- 3 TY

4.19 Pull on of electric trigger at the end of armature travel is determined by switching twice <sup>or</sup> thrice on a special stand ( at the temperature of  $20 \pm 5^{\circ}\text{c}$ ). The electric trigger is considered serviceable, if it with holds in switched state at  $(22 \pm 1)$  V supply voltage <sup>a</sup> load of 18 kgf and at  $(24 \pm 1)$  V supply voltage a load of 20 kgf.

4.20 Transportation test are conducted on impact test stands in packing, specified in the technical documents in de-energized state of articles, in position perpendicular to the axis of electric trigger. With frequency 40 to 75 impacts per minute there should 15000 impacts <sup>it should be</sup> ~~it be done~~ <sup>at</sup> acceleration  $10 \text{ g} \pm 2 \text{ g}$  and 5000 impact at acceleration  $15 \text{ g} \pm 1$ .

Transportation tests may be carried out using articles selected for periodic tests. In this case check the article before and after transportation as per programme for approval tests and then conduct periodic tests.

Transportation test is conducted with the first three batches of articles as well as in case of changes <sup>in</sup> design, production process, basic materials of components and assembly units of the article or change in the packing design provided they may affect transportability of article.

The chief engineer of master copies holder plant decides if it is necessary to conduct tests in each of the cases.

- 3 TY

The test necessity, as this takes place should be stated in release for change as well as a quantity of batches to be used for the test.

5 TRANSPORTATION AND STORAGE

5.1 The electric trigger should <sup>meet</sup> ~~meet~~ the requirements of ~~+~~ the present technical specifications after transportation by any means of transport to any distances at any speed in assembled article <sup>or</sup> ~~on~~ packing of manufacturer.

5.2 Electric triggers, packed in boxes before delivering to the <sup>consignee</sup> ~~consignee~~ are to be stored in closed premises. This premises should be free from chemical <sup>residue</sup> ~~residue~~ which may harmfully affect manufactured articles.

5.3 Storage with electric triggers should be stored in the stock rooms on special racks, preventing any damage. Temperature in a stock room should be maintained from ~~at~~ range + 5 to + 35°C at relative humidity of 80%.

6. LIST OF APPENDICES

- 6.1 General drawing 37F .013.00105
- 6.2 Outline drawing 37F.013.0111.4
- 6.3 Circuit diagram 37F.013.0111.3

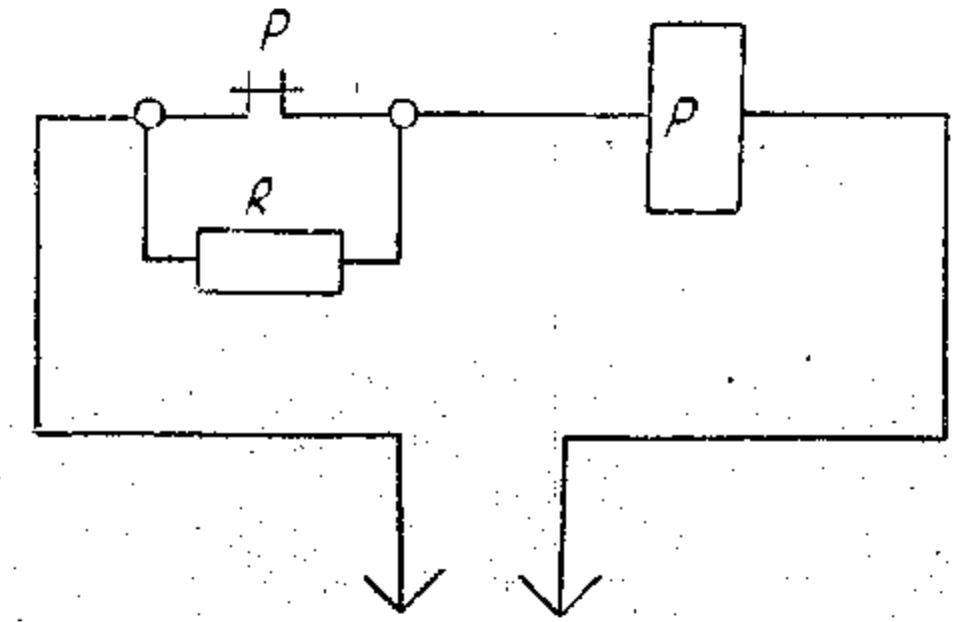
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sheet 28 of 32

Лс. 314

И. 2931



28  
 Electric trigger  
 Schematic ~~How Electric circuit diagram~~

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 Схема принципи-  
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