

1. Заменитель материала сталь марок 08; 08кп; 10кп ГОСТ 1050-74. Допускается изготавливать из листа ГОСТ 19904-74.
2. Требования, предъявляемые к штамповке, по нормам 82050-16.
3. Покрытие Ц12±24.хр по ИЛ-483-82 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.
4. В тропическом исполнении покрытие Кд 9.хр по ИЦЛ-104 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.
- 5.\* Размеры для справок.

- 1 ALTERNATE MATERIAL : STEEL, GRADES 08, 08Kp 10Kp GOST 1050-74. MAY BE MANUFACTURED FROM SHEET GOST 19904-74.
- 2 REQUIREMENTS FOR STAMPING IN ACCORDANCE WITH STANDARD 82050-16.
- 3 COATING : Zn 12 ... 24, CHROMATIZING AS PER ИЛ - 483-82 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT OR VARNISH ГФ - 95 AS PER ИЛ - 09-73.
4. IN TROPICALIZED CONSTRUCTION:  
COATING : Cd 9, CHROMATIZING IN ACCORDANCE WITH ИЦЛ 104 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT OR GLYPHAL VARNISH ГФ 95 IN ACCORDANCE WITH ИЛ - 09-73.
- 5 \*DIMENSIONS FOR REFERENCE

(A) EQUIVALENT MATERIAL  
Gr.DD 15:513-1994

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. 0.0115 Kg TO BE STAMPED OR MARKED WHERE INDICATED THIS = (LETTERS)

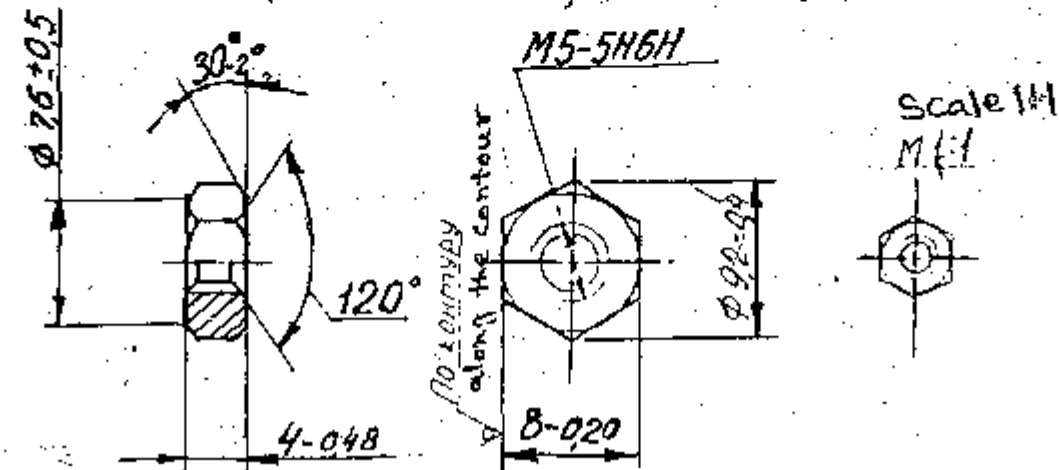
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

ERN	DATE	MATERIAL :- STRIP 08nc - M - 2 - 1x12 GOST 503-81	USED ON :- CB 322-14-4 CB 322-15-4
APPD	DATE 29-3-88	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A O I	
SCALE :- 2 : 1		DIMENSIONS IN mm.	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69		TITLE CLIP OF 6 PIPES	
A	10.03.10	Alt. Conn. Mr. Minutas Pt. No. 1 Dh. 26/10/09	D S CAT NUMBER
ISSUE	DATE	NATURE OF AMENDMENTS	DRAWING NUMBER 322-69

3. 08кп 03.114. 1/16/88. 1/16/88.  
ИЗМ. ЛУСТ. В ОБЪЕМ. ПОДП. ДОК.



rolled stock of group B class 4 GOST 1051-73 may be used. To ensure high quality of coating, it is allowed to eliminate surface defects of rolled stock with decrease of dimension as per accuracy class-5.



1. The component may be manufactured from Steel GOST 1050-74.
2. Chamfer 120° should be made up to the major diameter of thread.
3. Shift of hole axis up to 0.25 mm. is permitted.
4. The thread may be checked before coating.
5. Coating :- Cd 9, Chromating as per VZ 1-104 with elimination of Hydrogen embrittlement.
6. The rest of the technical requirements as per standard GOST 2052-00.
7. Alternate material :- Steel, grades 40 and 50 GOST 1050-74.

### EXPLANATORY NOTE

9. REFERENCE MATERIAL QUOTED:
- i) GAUGED HEXAGONAL STEEL BAR CLASS OF ACCURACY 4, (0.01-0.100)mm A/F TO GOST 8560-78 FROM HIGH GRADE SIZED STEEL SURFACE QUALITY '5' TO GOST 1051-73 AND MANUFACTURED IN ACCORDANCE WITH QUALITY CARBON STRUCTURAL STEEL GRADE 45 TO GOST 1050-74
  - ii) REFERENCE NOTE ON ALTERNATE MATERIAL : QUALITY CARBON STRUCTURAL STEEL GRADES 40 AND 50 TO GOST 1050-74
  - a) CHEMICAL COMPOSITION : AS PER GOST 1050-74

GRADE OF STEEL	CONTENT OF ELEMENTS %						REMARKS
	C	Si	Mn	Cr	S	P	
45	0.42-0.50	0.17-0.37	0.50-0.80	0.25	0.040	0.035	REF MATL
40	0.37-0.45	0.17-0.37	0.50-0.80	0.25	0.040	0.035	ALT MATL
50	0.47-0.55	0.17-0.37	0.50-0.80	0.25	0.040	0.035	ALT MATL

RESIDUAL CONTENT OF COPPER AND NICKEL SHOULD NOT EXCEED 0.25% EACH

b) MECHANICAL PROPERTIES : AS PER GOST 1050-74

GRADE OF STEEL	ULTIMATE TENSILE STRENGTH Kgf/mm <sup>2</sup>	YIELD POINT Kgf/mm <sup>2</sup>	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH Kgf/cm <sup>2</sup>	HARDNESS BHN MAX	REMARKS
45	61	36	16	40	5	229	REF MATL
40	58	34	19	45	6	217	ALT MATL
50	64	38	14	40	4	241	ALT MATL

(A) Material: STEEL 709M40 (EN-19) TO BS-970 Pt-1-1983

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. MASS. 0.0812 Kg TO BE STAMPED OR MARKED WHERE INDICATED THIS \* LETTERS)

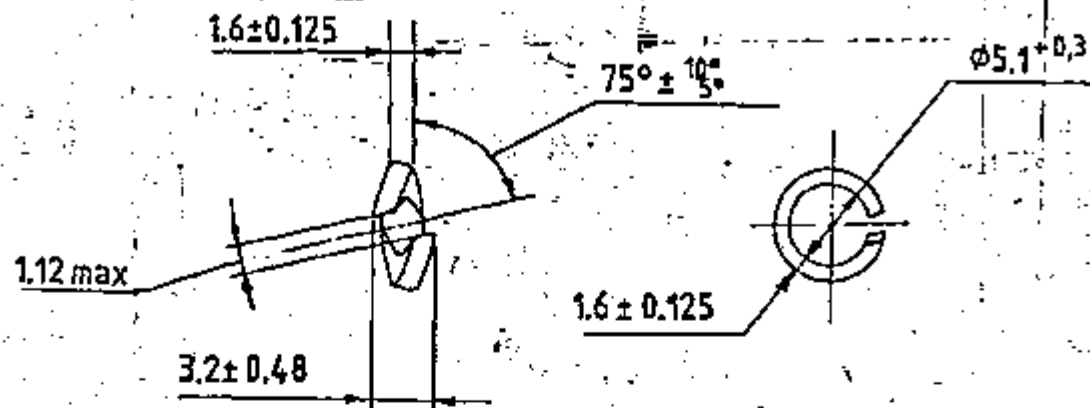
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRN	DRN	MATERIAL: HEXAGON BAR	USED ON:
CMO	DRN	45 GOST 8560-78	CE-20-35-00-5
TCD	DRN	45 GOST 1051-73	CB 3335 00 24
APPD	DRN	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)	
DATE	DRN	AVADI	
SCALE - 2 : 1	DRN	TITLE:-	
DIMENSIONS IN mm.	DRN	NUT M5	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	DRN	D S CAT NUMBER	DRAWING NUMBER
A 18.5.09	Authy: Third Alt. Comm. Minutes Point: 5		351 13
ISSUE	DATE	NATURE OF AMENDMENTS	



KVD.No. 78696

DRAWING NUMBER  
353-93-1



1. IN TROPICAL MANUFACTURE, COATING Cd 9 Cr AS PER U/L-104 WITH REMOVAL OF HYDROGEN EMBRITTLEMENT.
2. WASHER ST65Γ09.GOST 6402-70 MAY BE USED, IN VISUAL AND TROPICAL MANUFACTURE.

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. 1000 Pcs TO BE STAMPED OR MARKED WHERE INDICATED THUS  $\oplus$  ( LETTERS)

ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

MATERIAL:-  
ST 65 Γ 06  
GOST 6402-70

USED ON  
CB 200-18-4  
Cb 200-18-4

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADL

TITLE  
WASHER

D S CAT NUMBER  
DRAWING NUMBER  
353-93-1

**EXPLANATORY NOTE:**

**MATERIAL QUOTED:** WASHER ST. 65Γ. 06 GOST 6402-70.

CORRESPONDS DESIGN AND DIMENSIONS OF SPRING (LOCK) WASHERS.

06 : CONVENTIONAL SYMBOL OF FINISH. (PARKERISING FOLLOWED

5 : NOMINAL THREAD DIA OF BOLT OR SCREW BY OILING).

T = HEAVY ; 65Γ = GRADE OF STEEL AS PER GOST 1050-74.  
(65G)

CHEMICAL COMPOSITION: AS PER GOST 1050-74.

CONTENT OF ELEMENTS %							
C	Si	Mn	Cr	S	P	Cu	Ni
MAXIMUM							
0.62-0.70	0.17-0.37	0.90-1.20	0.25	0.040	0.035	0.25	0.25

**WEIGHT OF STEEL WASHERS AND THEIR RESILIENCE PROPERTIES AS PER GOST 6402-70.**

THEORITICAL WEIGHT OF 1000 STEEL WASHERS IN kg = 0.424.

ESTIMATED RESILIENCE OF WASHERS FROM STEEL GRADE 65G = 28.7.  
IN kg

**MECHANICAL PROPERTIES:** AS PER GRADE 65G GOST 1050-74.

YIELD POINT kgf/mm<sup>2</sup> (MIN) = 44

ULTIMATE TENSILE STRENGTH (MIN) = 75  
kgf/mm<sup>2</sup>.

ELONGATION % (MIN) = 9

REFERENCE NOTE: 09 = ZINC PLATING (CONVENTIONAL SYMBOLOF FINISH)

Ⓐ EQUIVALENT MATERIAL  
75 C6 TO IS: 2507/EN 42 J BS: 970

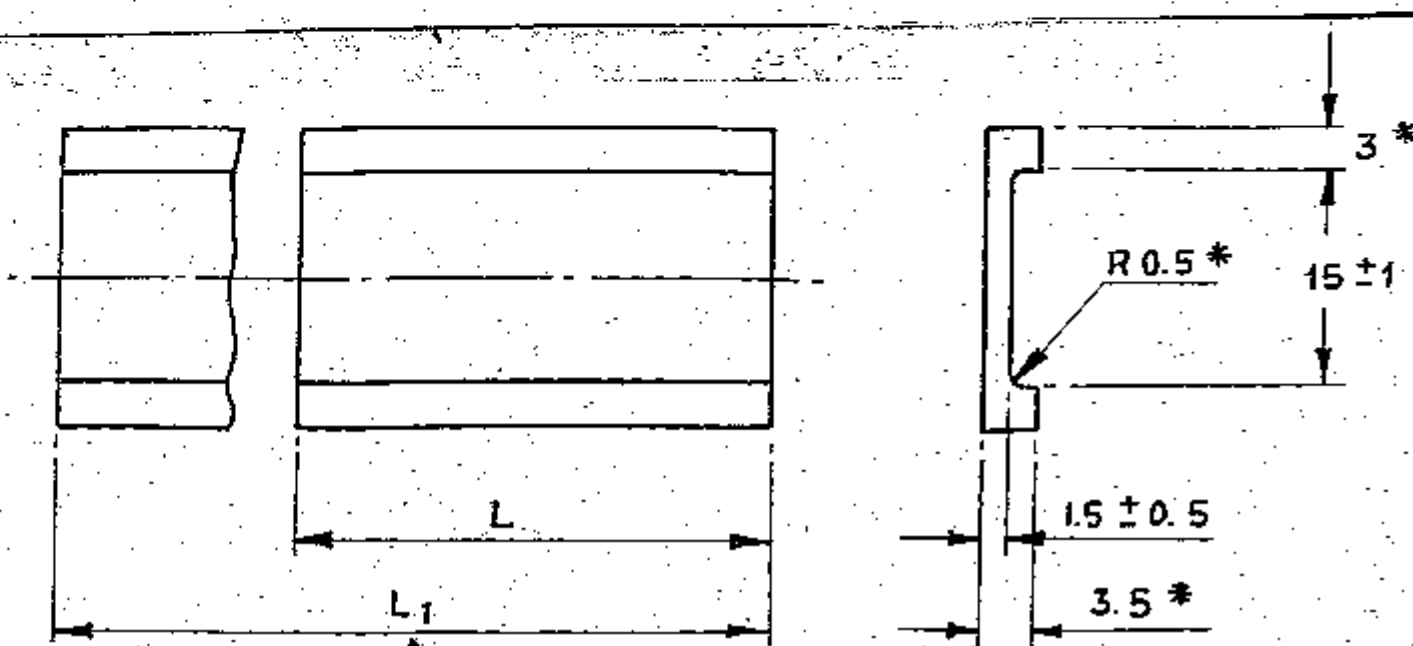
ISSUE	DATE	NATURE OF AMENDMENTS
A	16.8.10	1 <sup>st</sup> Alt. Comm. Meeting Minutes Point No. 12 Dt: 26-10-09
DRN	16.8.10	SCALE: - 2 : 1 DIMENSIONS IN mm
CHOC	16.8.10	TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102 -69
TCD	16.8.10	ALL THREADS CONFORM TO
APPO	16.8.10	
DATE	16.8.10	
SIZE	A4	







DRAWING NUMBER  
3335-38-3 TO  
3335-38-6



PART No.	L MM	MASS Kg.	USED ON	KVD No.
3335-38-3	26 ± 1	0.002		
3335-38-4	31 ± 2	0.0024	CS 3335-00-2430	78315
3335-38-5	42 ± 2	0.0032	CS 3335-00-2430	78435
3335-38-6	55 ± 0.2	0.0042		

- DIMENSIONS ARE TO BE ENSURED WITH TOOL.
- LENGTH OF DELIVERED BAND  $L_1$  SHOULD NOT BE LESS THAN 1000 mm.
- MARK "3335-38-3" SHOULD BE PUT ON TAG OF COMPONENT TO BE DELIVERED.
- TO BE MADE AS PER TT III H 100 GOST 15152-69.
- THE REST OF THE REQUIREMENTS AS PER TY 005 216-75.

### EXPLANATORY NOTE :-

6. REFERENCE MATERIAL QUOTED :  
UNVULCANISED OIL AND PETROL RESISTANT  
RUBBER CODE OF CLASSIFIER 25-1231,  
RUBBER GRADE HO-68-1 TO TY 005-216-75.

### 3. MECHANICAL PARAMETERS :

- RUPTURE STRENGTH  $Kgf/cm^2$  ..... 90 Min
  - ELONGATION OF RUPTURE % ..... 250 Min
  - RESIDUAL ELONGATION AFTER RUPTURE % ..... 12 Max.
  - HARDNESS No PP TO TH P DEVICE ARBITORY ..... 55-70
7. LIKELY EQUIVALENT GRADE / SPECIFICATION FOR  
NITRILE CHLOROPRENE BASE TO BA 60 BS 2751-82  
AND C 60 BS 2752-82.

\* 02.0-27.000

3335-38-3

EXPLANATORY ADDED ON 4-6-92

(A) ALT. MATL: RUBBER GRADE BNC TO SPECN. CQA(HV)/NBR+CR

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT.	TO BE STAMPED OR MARKED WHERE INDICATED THUS (LETTERS)
ALL SHARP EDGES AND CORNERS TO BE REMOVED. UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT - SIDE R INSIDE. EQUIVALENT CHAMFERS ARE PERMISSIBLE.	

DRN	—	MATERIAL	RUBBER HO-68-1	USED ON	—
CHD	—		TY 005 216-75		
TCO	—	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)			
APPD	—	A V A D I			
DATE	8-7-86	TITLE: GASKET			
SCALE	2:1	D.S. CAT NUMBER:			
DIMENSIONS IN mm		DRAWING NUMBER			
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69		3335-38-3 TO			
ALL THREADS TO CONFORM TO		3335-38-6			
A	27.05.08	Lt. No. TC/GEN/IND-III Dt. 02.04.08			
ISSUE	DATE	NATURE OF AMENDMENTS:			

A-9  
A2







4-9

ENGINE FACTORY, AVADI  
P D O

MASTER COPY

F-7  
12A

GOST 6402-70

(139) 156

SPRING (LOCK) WASHERS

GOST 6402-70

SUPERSEDES GOST 6402-61

SHT 1 OF 10

MASTER COPY

F-1  
129

1. DESIGN AND DIMENSIONS

1.1. Design and dimensions of spring(lock) washers should correspond to those given in fig. 1, and in table 1.

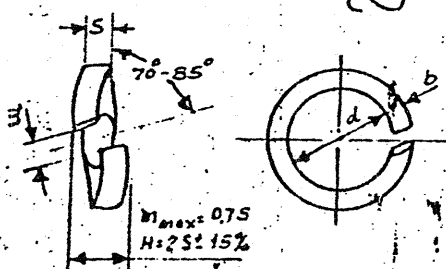
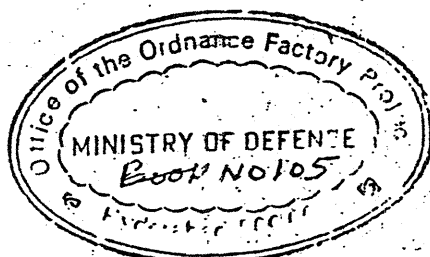


Fig. : 1

ENGINE FACTORY, AVADI  
P.D.O.

FOR REFERENCE ONLY

APPROVED	<i>[Signature]</i>	30/10/80	MATL./SPECN.			
ENGINEER / GP. INCHARGE	<i>[Signature]</i>	30/10/80	HEAT TREAT			
CHECKED	<i>[Signature]</i>	14/10/80	FINISH			
DRAWN	<i>[Signature]</i>	25/10/80		ISS. NO.	ISSD. BY	APPRD.

Table : 1

Nominal thread diameters of bolt, screw, stud	d		Light washers (L)		Medium washers (M)		Heavy washers (T)		Very heavy washers (OT)	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
2	2.1	+0.25	-	-	0.5	-	0.5	+0.07	0.5	+0.07
2.5	2.6	-	-	-	0.6	-	0.6	+0.07	0.8	+0.08
3	3.1	-	0.6	+0.07	0.8	+0.08	1.0	-	1.0	-
4	4.1	+0.30	1.0	-	1.2	-	1.4	-	1.4	-
5	5.1	-	1.2	-	1.4	-	1.6	+0.125	1.6	+0.125
6	6.1	+0.58	1.4	+0.125	1.6	+0.125	2.0	-	2.0	-
8	8.1	-	1.6	+0.125	2.0	-	2.5	-	2.5	-
10	10.1	-	2.0	-	2.5	-	3.0	-	3.0	-
12	12.1	+0.70	2.5	-	3.0	-	3.5	-	3.5	-
14	14.2	-	3.0	-	3.5	-	4.0	-	4.0	-
16	16.3	-	3.2	-	4.0	+0.15	4.5	+0.24	4.5	-
18	18.3	-	3.5	-	4.5	+0.15	5.0	-	5.5	-
20	20.5	-	4.0	-	5.0	-	5.5	-	6.0	-
22	22.5	+0.84	4.5	+0.15	5.5	-	6.0	-	7.0	+0.29
24	24.5	-	5.0	-	6.0	-	7.0	-	8.0	-
27	27.5	-	5.5	-	7.0	+0.18	8.0	-	10	-
30	30.5	-	6.0	-	8.0	-	9.0	+0.29	12	+0.35
36	36.5	+1.00	-	-	9.0	-	10	-	-	-
42	42.5	-	-	-	10	-	12	+0.35	-	-
48	48.5	-	-	-	12	+0.215	-	-	-	-

NOTE : Increase of dimension S by 10% of the nominal dimension is allowed for section of washers made from wire 2.5 mm, and above.

(Revised edition - "Standards information catalogue No.3 of 1973")

Examples of method of calling the spring (lock) washer for bolt, screw, stud with diameter of thread 12 mm:

light washer from bronze of grade BrKM<sub>15</sub> 3-1 without finish;

Washer 12L BrKM<sub>15</sub> 3-1 GOST 6402-70;

medium washer from steel of grade 65G with cad-plating of thickness 9 microns :

Washer 12<sup>N</sup> 65G 02 9 GOST 6402-70;

heavy washer from steel of grade 3KH13 with passivation;

Washer 12T 3KH13 11 GOST 6402-70;

Very heavy washer from steel of grade 65G, nickel plating of thickness 3 microns, with sublayer of copper of thickness 12 microns:

Washer 12OT 65G 03 M12N3 GOST 6402-70.

## 2. TECHNICAL REQUIREMENTS

2.1. Spring (lock) washers should be manufactured from steel of grade 65G to GOST 1050-74, heat-resistant spring (lock) washers should be fabricated from steel of grade 3KH13 to GOST 5949-61 or other steels with physico-mechanical properties not below the given grades.

In technically valid cases it is allowed to manufacture spring (lock) washers from bronze of grade BrKM<sub>15</sub> 3-1 to GOST 18175-72 or <sup>from</sup> other non-ferrous alloys.

2.2. Weight of steel washers and estimated elasticity of washers from steel of grade 65G are given in the ref. appendix.

2.3. Steel spring (lock) washers should have hardness <sup>washers</sup> HRC 40-50, bronze <sub>A</sub> - not less than HRB 90. 3

2.4. The surfaces of washers should not have traces of corrugation due to feed mechanisms, burrs, cracks, blow-holes, laminations, flaps and scales.

Dents at the place of cut on external and internal diameter of washers, local increase of cross section from the side of supporting surface and ribs (fins), which do not render the dimensions of cross section beyond the limits of 1.5<sup>times</sup> the tolerance, given in table 1, burrs at the place of cut on external lateral surface of washers of value not exceeding the tolerances on width of section b, and ridges on inner lateral surface of washers are allowed.

It is permitted to manufacture washers with traces of corrugation having depth not above 0.1 mm, by mutual agreement between the parties.

2.5. The washer ends should have a flat cut; chipping up of metal, which does not render dimension 'm' beyond the tolerances, is not a cause for rejection.

The edge, formed with the plane of cut and supporting surface of washer, should be sharp.

2.6. Trapezoidal form of washer section within the limit of height 'S' is not considered as a defect.

The maximum dimension of height 'S' is taken as the actual thickness.

2.7. Radius of curvature of inner and outer edges of washer section should not be more than the values given in table 2.

MM

Table : 2

Width of supporting side 'b'	Radius of curvature	Width of supporting side 'b'	Radius of curvature
0.5-0.6	0.15	4.5-5.0	1.0
0.8-1.4	0.25	5.5-6.0	1.2
1.6-2.0	0.50	7.0-10.0	1.5
2.5-4.0	0.60	12.0	2.0

2.8. Washers should have finish. Types and conventional symbols of finishes, should correspond to those given in table 3.

Table : 3

Conventional symbol of finish	Type of finish.
00	Without finish.
01	Zinc-plating followed by chromate passivation
02	Cad-plating followed by chromate passivation
03	Nickel-plating.
	Multilayer - copper-nickel plating
04	Multilayer-nickel-chrome plating.
	Multilayer-copper-nickel-chrome plating.
05	Oxide coating.
06	Parkerising followed by oiling
09	Zinc-plating.
10	Oxy-anodizing followed by chromate passivation
11	Passivation

## Notes:

1. Type and thickness of finish are set by agreement between manufacturer and customer.

2. Type of finish 00 (without finish) - is not indicated in the method of calling.

(Revised edition - "Standards information catalogue" No.3 of 1973).

2.9. Hydrogen embrittlement of washers, caused during plating, should be eliminated.

2.10. Height 'H' of the washer after its 3 - fold compression to flat condition and holding in this state for 24 hours, should not be less than 1.65 of the actual thickness of washer.

2.11. Washers should not have breaks and should not have cracks when the ends are bent to  $45^{\circ}$ .

2.12. The finished spring (lock) washers should be accepted by the quality control department of the manufacturing plant. The manufacturer should guarantee the conformity of all washers to the requirements of this standard.

### 3. TEST METHODS

3.1. For inspection of spring (lock) washer quality and their conformity to the requirements of this standard, the customer should use the rules of sampling (GOST 17769-72) and test methods, given below.

3.2. From each batch, meant for delivery, washers are selected for checking:

- a) appearance;
- b) dimensions;
- c) hardness;
- d) tenacity (strength);
- e) resilience properties;
- f) thickness of finish.

3.3. Appearance of washers is checked by visual examination with naked eye or <sup>by</sup> using 2.5-3<sup>x</sup> magnifying glass.

(Revised edition "Standards information catalogue" No. 3 of 1973).

3.4. Dimensions should be checked with universal measuring instruments or limit gauges.

Note : Radius of curvature of inner and outer edges of washer sections (table 2) is not checked. 6

3.5. Method of measuring the hardness of:  
steel washers - to GOST 9013-59,  
brnze washers - to GOST 9012-59.

Hardness of washers having dimension 'b' less than 6 mm is not checked.

3.6. For testing the tenacity, one end of the washer is clamped in vise, its other end is bent with monkey wrench or handle having a slot to the side of increase of dimension 'H'. During the test, dimension 'h' should be maintained (between the jaws of vise and wrench) equal to half the inner diameter of washer (see fig. 2,3,4).

3.7. Testing of resilience property of washers is done in the following order :

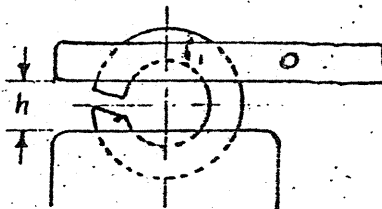


FIG. 2

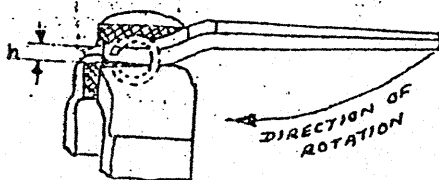


FIG. 3

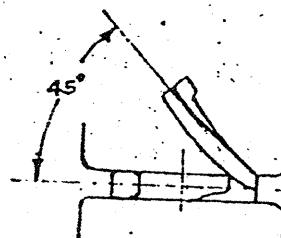


FIG. 4

- a) washers are pressed 3 - times to flat condition;
- b) spring washers, separated from each other by flat washers, are mounted on the stem of a bolt of corresponding diameter and tightened with a nut till the parted ends of washers are completely compressed.

The washers are held in this condition for 24 hours.

3.8. Methods of checking the quality and thickness of finish - to GOST 16875-71. Selection of the method of testing - at the discretion of manufacturer.

#### 4. ACCEPTANCE, PACKING AND MARKING

4.1. Rules of acceptance, packing of spring (lock) washers and marking of tare - to GOST 17769-72, GOST 18160-72.

.....

8

APPENDIX TO GOST 6402-70.

(Reference)

Weight of steel washers and their resilience properties

Theoretical wt. of 1000 steel washers, in kg. ≈

Estimated resilience of washers from steel of grade 65G, kg ≈

Nominal diameters of bolt, screw, in mm.	Theoretical wt. of 1000 steel washers, in kg. ≈						Estimated resilience of washers from steel of grade 65G, kg ≈					
	Light (L)	Medium (N)	Heavy (T)	Very heavy (OT)	Light (L)	Medium (N)	Heavy (T)	Very heavy (OT)	Light (L)	Medium (N)	Heavy (T)	Very heavy (OT)
2	-	0.016	0.024	-	-	-	-	-	-	1.6	3.5	-
2.5	-	0.028	0.054	-	-	-	-	-	-	2.1	7.2	-
3	0.061	0.062	0.101	-	-	-	-	-	0.9	4.7	12.3	-
4	0.190	0.189	0.267	-	-	-	-	-	5.1	13.9	26.9	-
5	0.318	0.315	0.424	-	-	-	-	-	6.0	16.1	28.7	-
6	0.560	0.487	0.801	-	-	-	-	-	8.3	18.8	49.2	-
8	1.046	0.998	1.638	-	-	-	-	-	7.1	25.2	66.4	-
10	1.940	1.945	2.914	-	-	-	-	-	11.5	39.3	87.0	168
12	3.369	3.357	4.723	4.122	-	-	-	-	20.9	56.6	111	197
14	5.391	5.355	7.196	9.361	-	-	-	-	33.3	77.1	138	229
16	7.392	8.022	10.41	13.16	-	-	-	-	31.0	101	168	265
18	10.06	11.40	14.39	17.80	-	-	-	-	34.3	128	202	305
20	14.12	15.75	19.43	23.58	-	-	-	-	49.3	157	238	348
22	18.99	20.92	25.35	35.73	-	-	-	-	67.2	190	279	542
24	27.21	27.12	38.14	61.43	-	-	-	-	83.5	227	444	787
27	38.55	41.76	56.15	73.10	-	-	-	-	93.0	336	601	996
30	52.64	60.87	79.07	100.1	-	-	-	-	103	470	783	1229
36	-	91.03	114.9	172.7	-	-	-	-	-	510	808	1770
42	-	129.7	192.9	-	-	-	-	-	-	560	1243	-
48	-	215.2	-	-	-	-	-	-	-	906	-	-

For determining weight of washers from bronze, the values of weight given in the table should be multiplied by coefficient 1.08.

(Revised edition - "Standards information catalogue" No. 3 of 1973).

.....

Other standards referred to in this standard :

GOST 1050-74

GOST 18175-72

GOST 9013-59

GOST 16875-71

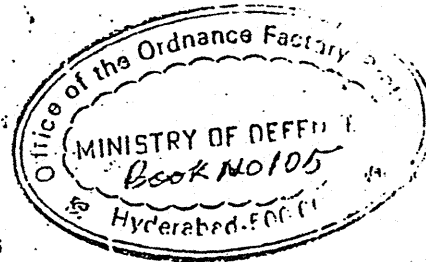
GOST 5949-61

GOST 17769-72

GOST 9012-59

GOST 18160-72.

.....



ENGINE FACTORY, AVAD,  
F.O.

10

RD.





USED ON

Cb 322-00-9

W/L CREATED BASED ON RUSSIAN ORIGINAL ISSUE - 3

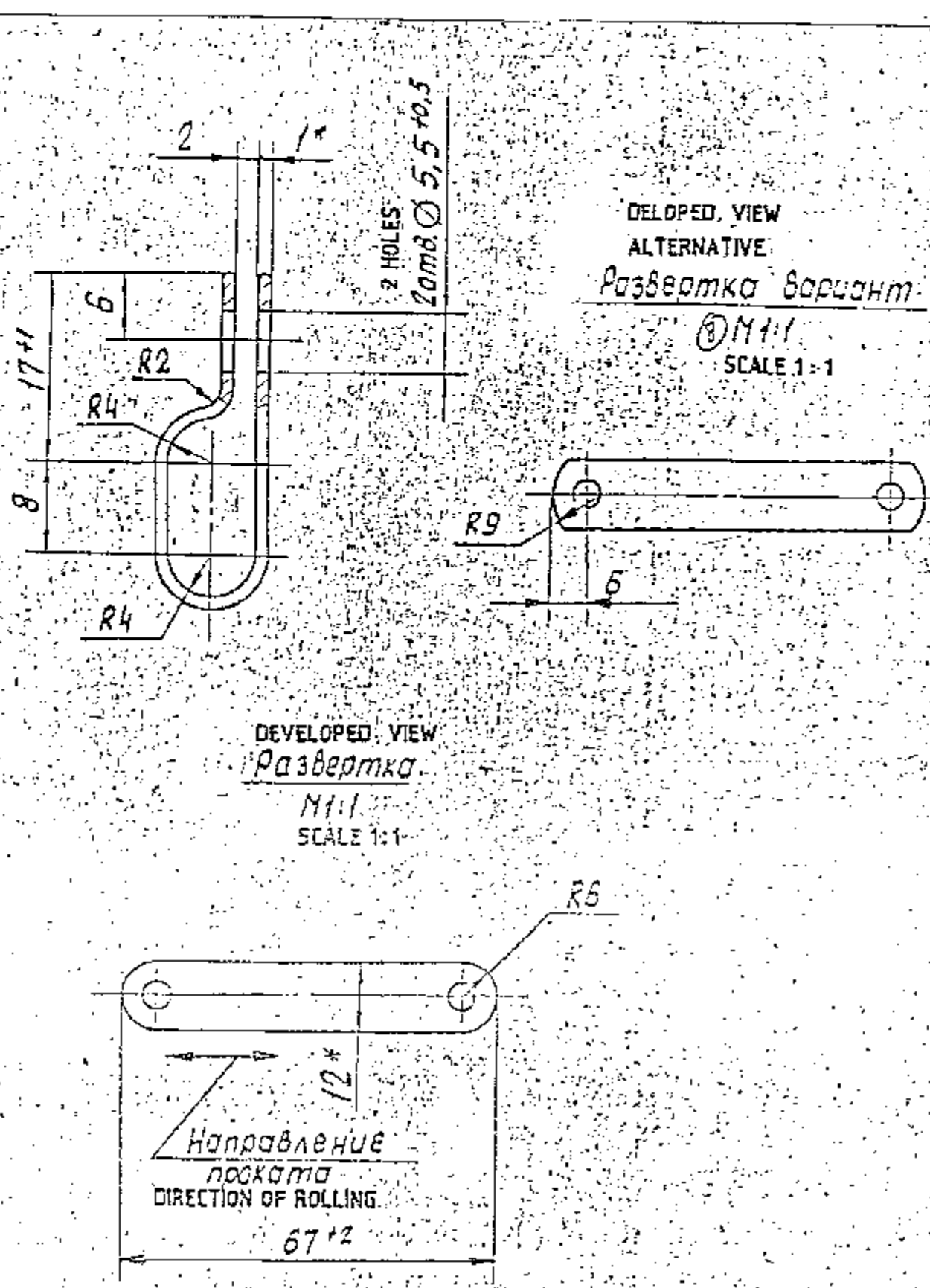
ZONE	ITEM NO	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	QTY	REMARKS
	9	322-66		CLIP FOR 3 TUBES	1	Tropical make
	10	322-67		CLIP FOR 4 TUBES	1	Tropical make
	11	322-68		CLIP FOR 5 TUBES	1	Tropical make
	12	322-69		CLIP FOR 6 TUBES	2	Tropical make
	13	351-13		NUT M5	6	Tropical make
	14	356-22-2		SCREW M5x12	6	Tropical make
	15	3335-38-5		GASKET	1	
	21	353.93.1		WASHER 5T65Г		6 Pcs ARE
				GOST 6402-70		ALLOWED TO
						CHANGE TO
						Pos.22 Tropical make
	22	- ND -		WASHER 5H65Г05		6 Pcs ARE
				GOST 6402-70		ALLOWED TO
						CHANGE TO
						Pos.21


ISSUE	DATE	NATURE OF AMENDMENTS	ISSUE	DATE	NATURE OF AMENDMENTS
-------	------	----------------------	-------	------	----------------------

DRN		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.			
CHD	<i>[Signature]</i>	TITLE : <b>COMPRESSED AIR STARTING TUBING L H ASSY</b>			
APPD	<i>[Signature]</i>				
DATE	28.6.07	SHT. NO. 2 OF 2	D S CAT NUMBER	ITEM LIST FOR <b>Cb.322-14-9</b>	

F-4  
170/253





1. Заменитель материала - сталь марок 08 ; 08кп ; 10кп ГОСТ 1050-74. Допускается изготавливать из листа ГОСТ 19904-74.  
 2. Требования, предъявляемые к штамповке, по нормам 82050-16.  
 3. Покрытие Ц12... 24 хр по ИЛ-483-82 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.  
 4. В тропическом исполнении покрытие К89 хр по ИЦЛ-104 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.  
 5. Размеры для справок.

- 1) ALTERNATE MATERIAL - STEEL, GRADES 08; 08KP; 10KP, GOST 1050-74, MAY BE MADE FROM SHEET GOST 19904-74.
- 2) REQUIREMENTS FOR STAMPING IN ACCORDANCE WITH STANDARD 82050-16.
- 3) COATING - Zn 12... 24 CHROMATIZING, AS PER ИЛ-483-82 WITH ELIMINATION OF HYDROGEN BRITTLENESS OR VARNISH ГФ-95 AS ИЛ-09-73.
- 4) IN TROPICALIZED CONSTRUCTION, COATING Z-C8 9, CHROMATIZING IN ACCORDANCE WITH ИЦЛ-104 WITH ELIMINATION OF HYDROGEN BRITTLENESS OR VARNISH ГФ-95 IN ACCORDANCE WITH ИЛ-109-73.
- 5) \* DIMENSIONS FOR REFERENCE.

DRG. REDRAWN BASED ON NEW ISSUE  
 DRG. INDICISED BASED ON RUSSIAN ORIGINAL ISSUE No. 8 (83-114)

KVD 66762  
 A-7

(A) EQUIVALENT MATERIAL  
 Gr. DD IS: 513-1994

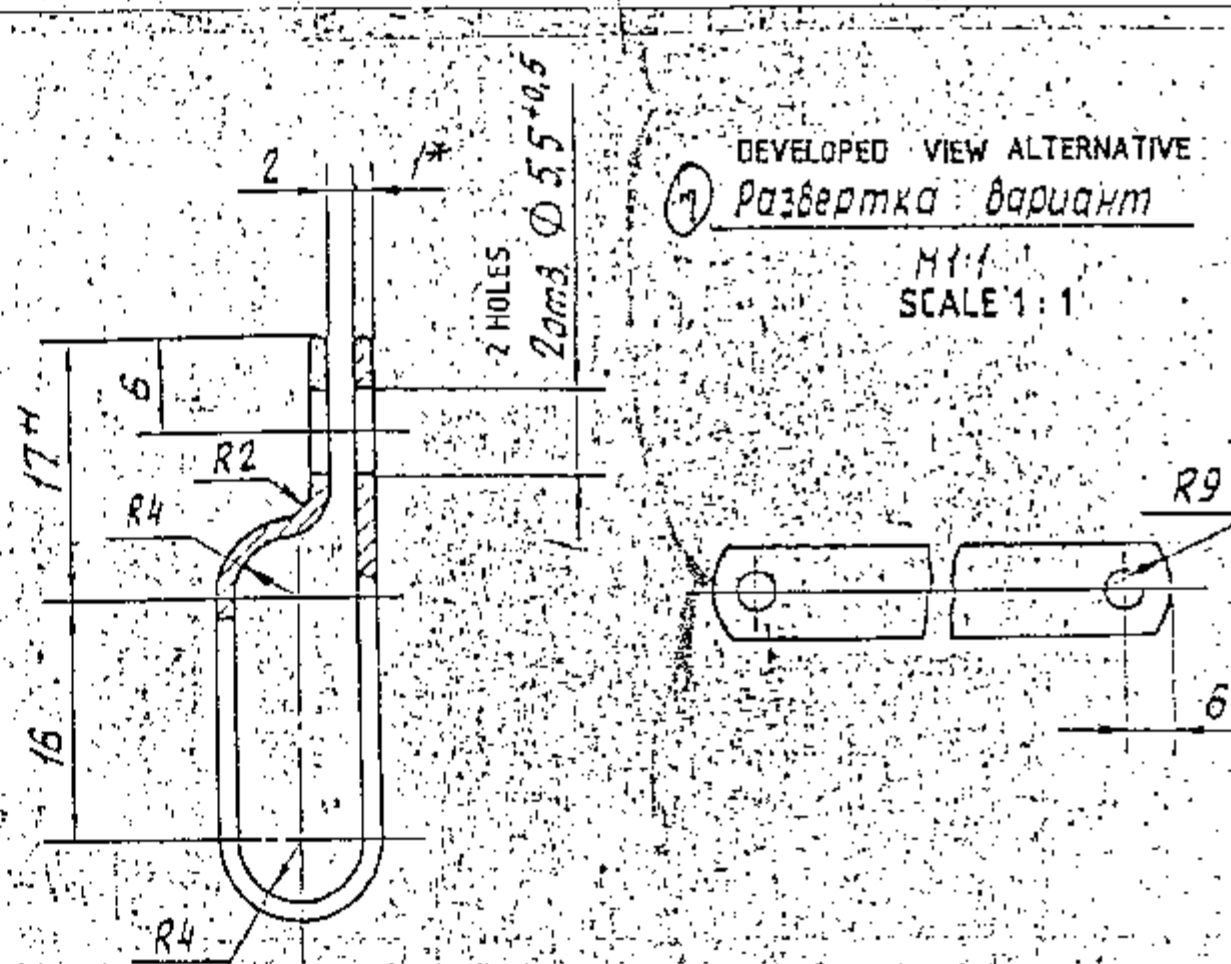
PILOT SAMPLE SHOULD BE APPROVED BY A H S F BEFORE BULK PRODUCTION.

8 85-114 ИЛ-09-73  
 ИЛ-09-73 ИЛ-09-73 ИЛ-09-73

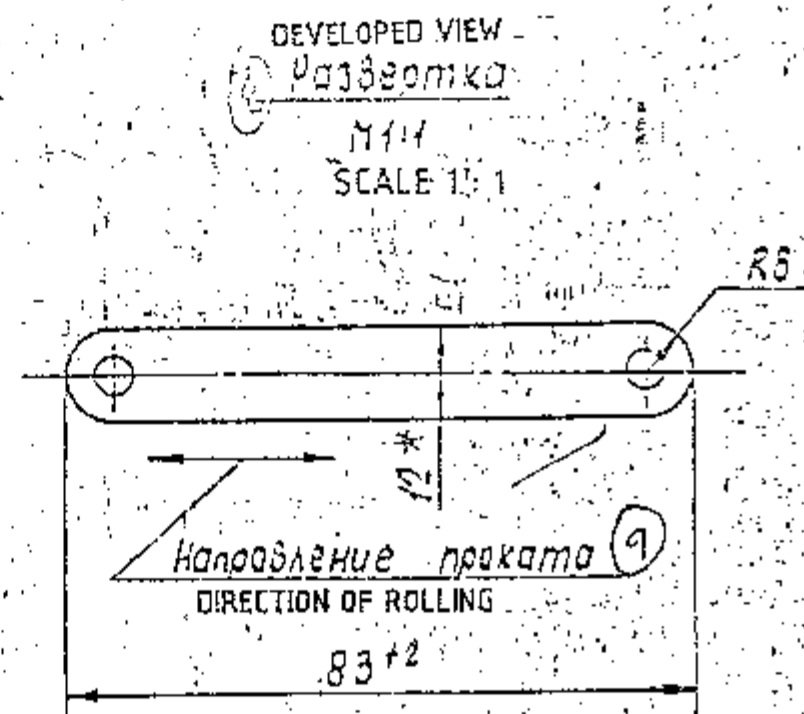
EST. WT. 0,0052 Kg.  
 TO BE STAMPED OR MARKED WHERE INDICATED THIS ≡ LETTERS)  
 ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DESIGN	DATE	MATERIAL	USED ON
STRIP. 080E-M-2-1x12		GOST 503-81	СБ 322-15-4
DATE 29-3-88			CONTROLLER OF QUALITY ASSURANCE (HEAVY VEHICLES)
SCALE 2:1			AVADI
DIMENSIONS IN mm			TITLE
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS 2102-69			CLIP OF 2 PIPES
ALL THREADS TO CONFORM TO			S CAT NUMBER
A 10.03.10 5th Alt. Comm. Mt. Minutes Pt. No. 1 D1. 26.10.09			DRAWING NUMBER
ISSUE	DATE	NATURE OF AMENDMENTS	322-65





DEVELOPED VIEW ALTERNATIVE  
Развертка вариант  
M1:1  
SCALE 1:1



DEVELOPED VIEW  
Развертка  
M1:1  
SCALE 1:1

1. Заменить материал на сталь марок 08, 08кп, 10кп ГОСТ 1050-74. Допускается изготавливать из листа ГОСТ 19904-74.

2. Требования, предъявляемые к штамповке, по нормам 82050-16.

3. Покрытие цинк 12...24 хр по ИЛ-483-82 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.

4. В тропическом исполнении покрытие кадмий 9 хр по ИЦЛ-104 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.

5. Размеры - для справки.

- 1) ALTERNATE MATERIAL : STEEL, GRADES 08, 08KP, 10KP, GOST 1050-74 MAY BE MANUFACTURED FROM SHEET GOST 19904-74 .
- 2) REQUIREMENTS FOR STAMPING IN ACCORDANCE WITH STANDARD 82050-16 .
- 3) COATING : Zn 12 ... 24 CHROMATIZING AS PER ИЛ - 483-82 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT OR VARNISH ГФ-95 , AS PER ИЛ -09-73 .
- 4) IN TROPICALIZED CONSTRUCTION COATING : Cd 9, CHROMATIZING IN ACCORDANCE WITH ИЦЛ -104 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT OR CRYPTAL VARNISH ГФ 95 IN ACCORDANCE WITH ИЛ -09-73 .
- 5) \* DIMENSIONS FOR REFERENCE .

(A) EQUIVALENT MATERIAL  
G.I.D.D IS : 513-1994

8	кон.	РЗ-714	19.02.77	19.07.77
10	кон.	А.В.С.А.М.	19.02.77	19.07.77

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. 0.0065 Kg TO BE STAMPED OR MARKED WHERE INDICATED THUS # LETTERS)

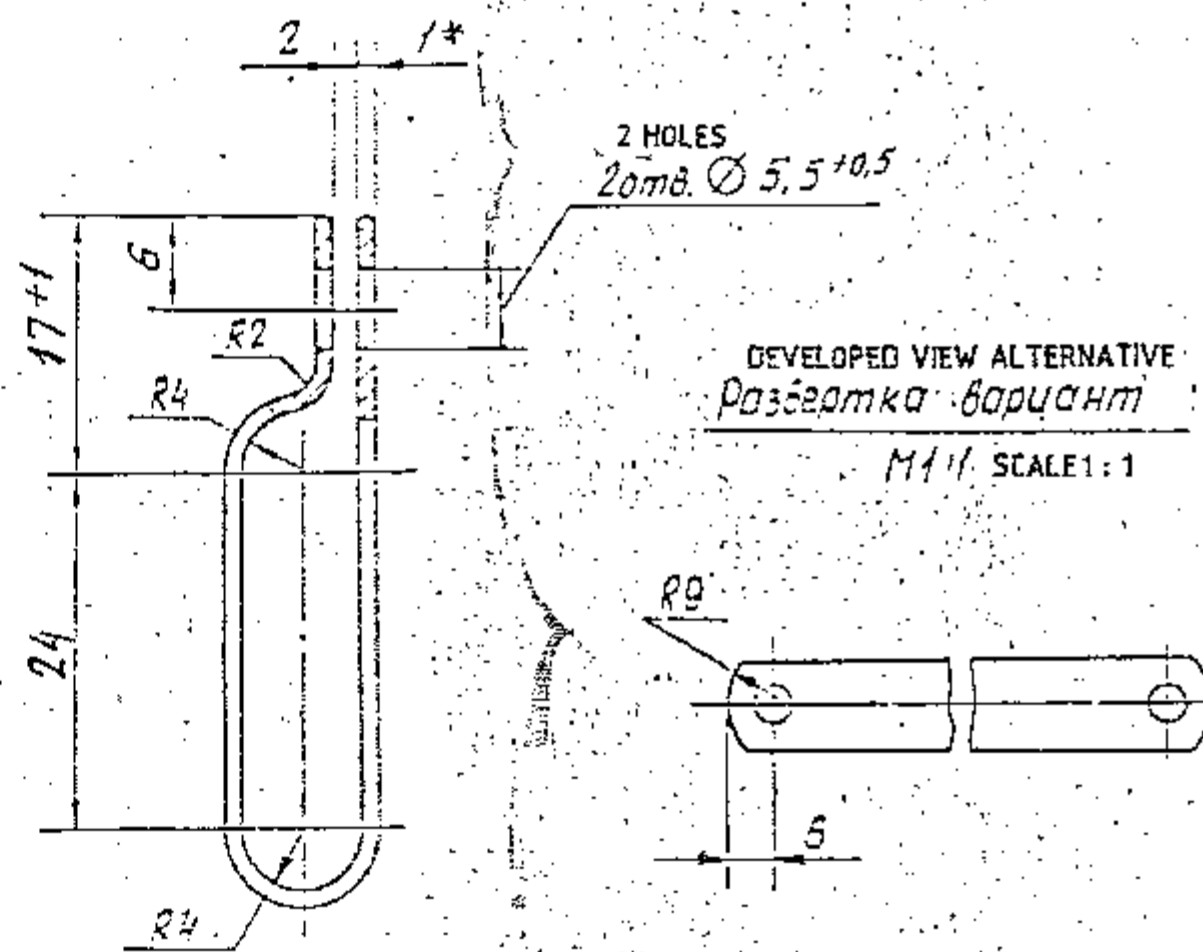
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DATE	19.03.77	4th Alt. Comm. Pt. Minuteg Pt. No. 1 Dt. 26.10.09	NATURE OF AMENDMENTS
ISSUE	DATE	NATURE OF AMENDMENTS	
MATERIAL :- STRIP 08ЛС-М-2-1x12 GOST 503-81		USED ON :- CB 20-35-00-5 CB 322-14-4	
SCALE :- 2:1		DIMENSIONS IN mm.	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69		TITLE CLIP OF 3 PIPES	
D S CAT NUMBER		DRAWING NUMBER 322-66	

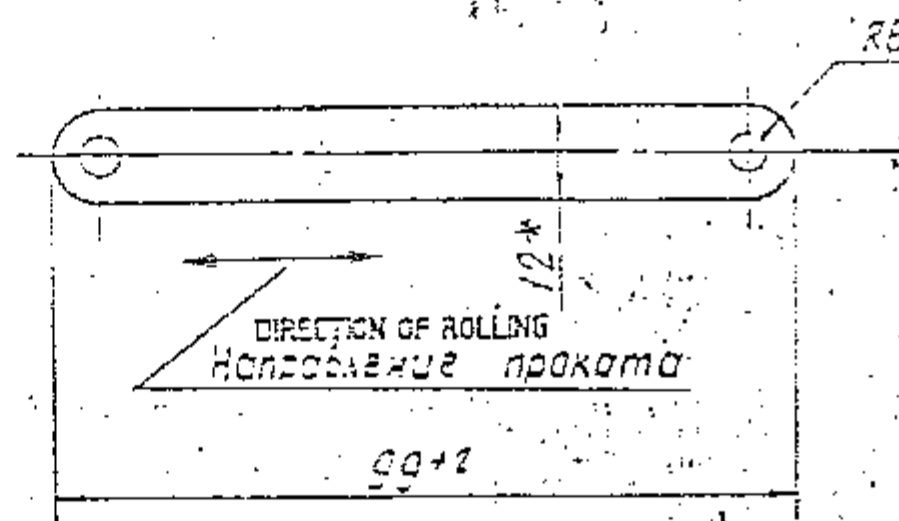


DRAWING NUMBER

322-67



DEVELOPED VIEW  
Разборка  
M11 SCALE 1:1



DIRECTION OF ROLLING  
Направление проката

1. Заменитель материала сталь марок 08; 08кп; 10кп ГОСТ 1050-74. Допускается изготовлять из листа ГОСТ 19904-74.

2. Требования, предъявляемые к штамповке, по нормам 82050-16.

3. Покрытие цинк... 24. хр по ИЛ-483-82 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.

4. В тропическом исполнении покрытие кад 9. хр по ИЦЛ-104 с удалением водородной хрупкости или лак ГФ-95 по ИЛ-09-73.

5.\* Размеры для справок.

- 1) ALTERNATE MATERIAL : STEEL, GRADES 08, 08КП, 10КП GOST 1050-74 MAY BE MANUFACTURED FROM SHEET GOST 19904-74 .
- 2) REQUIREMENTS FOR STAMPING IN ACCORDANCE WITH STANDARD 82050-16 .
- 3) COATING : Zn, 12 . . . 24, CHROMATIZING AS PER ИЛ-483-82 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT OR VARNISH ГФ - 95 AS PER ИЛ-09-73 .
- 4) IN TROPICALIZED CONSTRUCTION COATING : Cd 9, CHROMATIZING IN ACCORDANCE WITH ИЦЛ-104 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT OR GLYPTAL VARNISH ГФ - 95 IN ACCORDANCE WITH ИЛ -09-73 .
- 5) \* DIMENSIONS FOR REFERENCE .

**(A) EQUIVALENT MATERIAL**  
GrDD IS:513-1994

DRN	CHD	TCD	APPD	DATE	SCALE	DIMENSIONS IN mm	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69	ALL THREADS TO CONFORM TO
				127-3-8*	- 2 : 1			
MATERIAL :- STRIP 08ПC-M-2-1x12 GOST 503-81.							USED ON :- СБ 322-14-4 СБ 322-15-4	
CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)							A V A D I	
TITLE							CLIP OF 4 PIPES	
D S CAT NUMBER							DRAWING NUMBER	
							322-67	
ISSUE	DATE	NATURE OF AMENDMENTS						
A	10.03.10	4 <sup>th</sup> Alt. Comm. Mt. Minutes Pt. No. 1 Df. 24.10.09						

PLOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT.  
0,0075 Kg.

TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)

ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

8	10.03.10	10.03.10	10.03.10
ИИ	ИИ	ИИ	ИИ

DRAWING BASED ON RUSSIAN ORIGINAL ISSUE No. 8.1.83-114

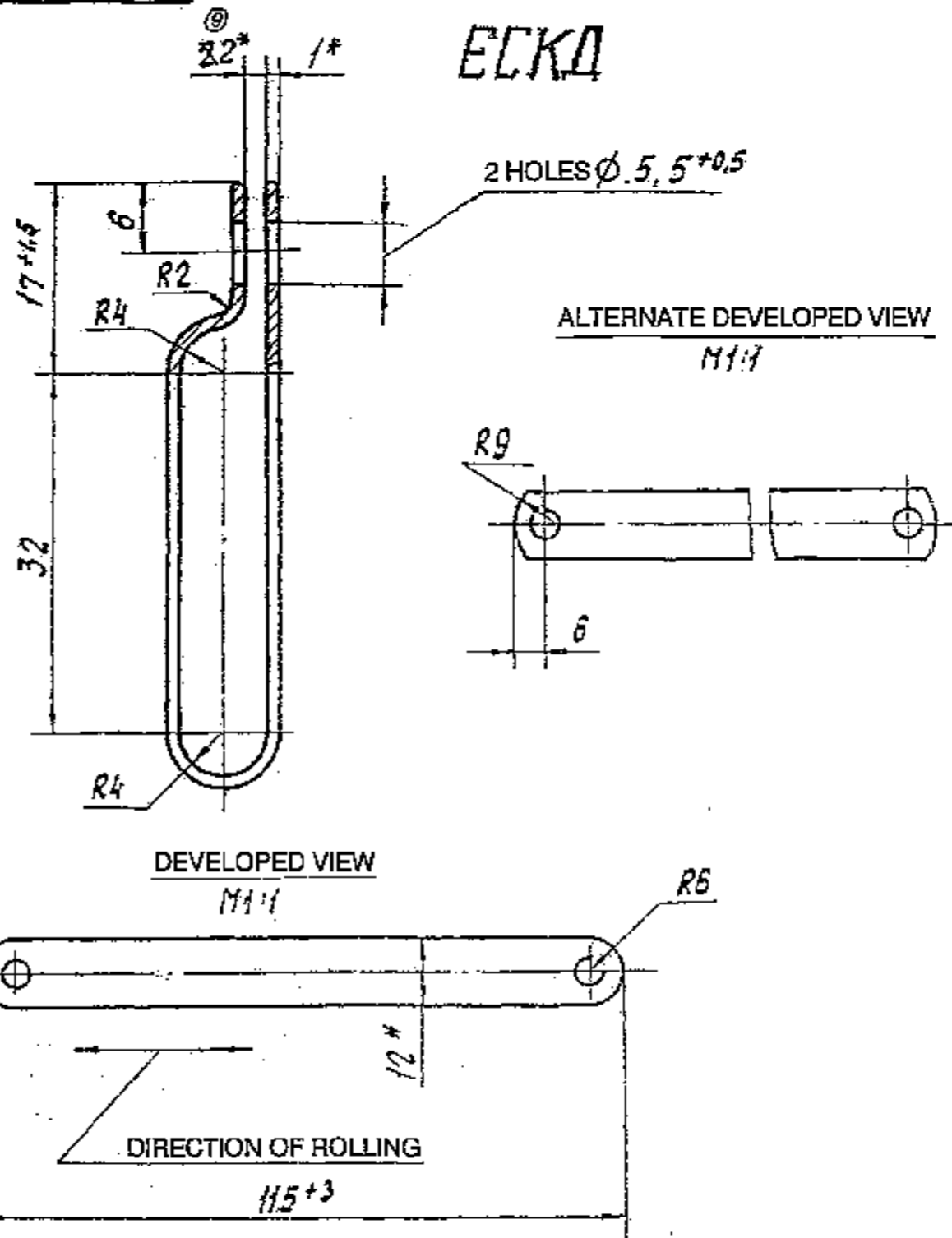
1-7



DRAWING NUMBER  
322-68

SHEET No. 1 OF 1

ЕСКД



1. ALTERNATE MATERIAL : STEEL GRADES 08 КП, 10 КП, 15 КП TO GOST 1050-74.
2. REQUIREMENTS FOR STAMPING AS PER STANDARD 82050-16.
3. COATING : Zn 9, CHROMATIZING IN ACCORDANCE WITH ЦА-483-82 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT. OR  $\Lambda$ аКГ $\phi$ -95 AS PER ЦА628-86
4. IN TROPICALIZED MAKE THE COATING IS CADMIUM 9 MICRONS AS PER U 569-84 WITH REMOVAL OF HYDROGEN EMBRITTLEMENT OR  $\Lambda$ аКГ $\phi$  95 AS PER ЦА628-86
5. \* DIMENSION FOR REFERENCE.

Ⓐ EQUIVALENT MATERIAL Gr. DD  
IS: 513-1994

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. (Kg) 0.01  
TO BE STAMPED OR MARKED WHERE INDICATED THUS # ( LETTERS)

ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRN	Sd/=	MATERIAL :- STRIP	USED ON:- Cb 322-14-9
CIID	Sd/=	08nc-M-2-1x12 GOST 503-81	Cb 322-15-9
APPD	Sd/=	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
DATE	Nov 2010		
SCALE:- 2 : 1		TITLE :- <b>CLIP FOR 5 PIPES</b>	
DIMENSIONS IN mm			
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS: 2102-69			
A	13.11.10	4 <sup>th</sup> Alf. Comm. Mfg. Minutes Point No.1 Dated 26.10.09	D S CAT NUMBER
ISSUE	DATE	NATURE OF AMENDMENTS	DRAWING NUMBER 322-68

P. JANARDHANAN  
 Dt. 15 Nov 10 JTO (D)

DRG. REINDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - NIL

F-  
SIZE A3

