

For knurling φ 31C3  
 Straight knurling 1.0  
 GOST 21474-75.

1. Tolerances for free dimensions are as per 22 AT 52-class 7.
2. Taper may be lapped in the armature unit
3. Turning should be done for thread M 30X1-6g as per GOST 10549-63.
4. Mutual position of key-ways is arbitrary.
5. Displacement of axis of key-way with respect to shaft axis should not exceed 0.05 mm.
6. Skewness of thread M 30X1-6 measured at ring butt-end of φ 35 should not exceed 0.08 mm.
7. Carry-out isothermal hardening upto the hardness RC 38 to 44.
8. Run-out of journal of φ 20C1 should not exceed 0.12 mm. and journal of φ 30C should not exceed 0.35 mm. when measured with respect to the taper.
9. Obtain the underlined dimensions in armature unit.

\* STEEL 30CA TY 14 -1-950-74  
 GOST 2590-71 D83

PLOT SAMPLE SHOULD BE APPROVED BY A HSP BEFORE BULK PRODUCTION

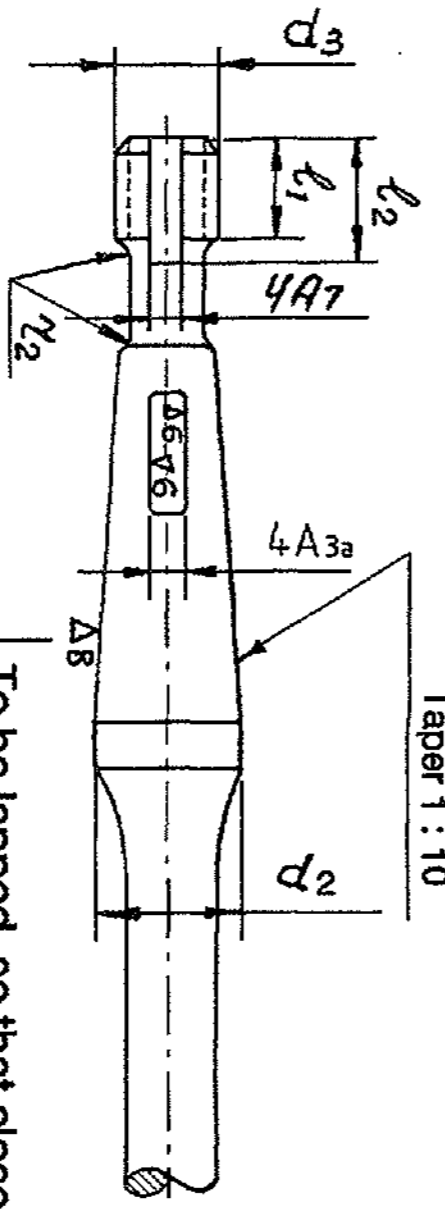
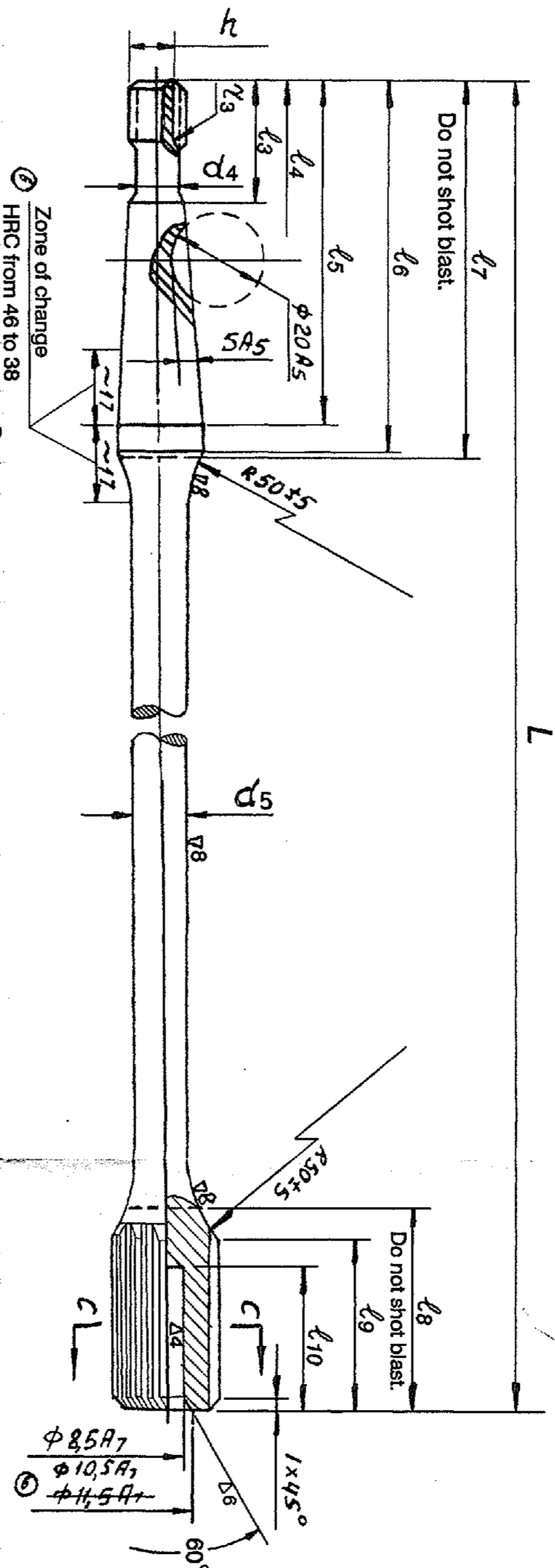
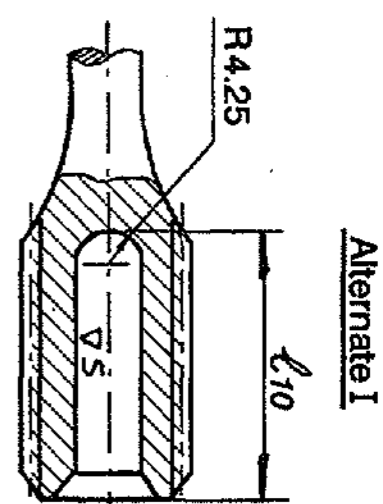
ISSUE	DATE	NATURE OF AMENDMENTS	EST. MASS <b>0.01 Kg</b>	TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)
DRN		SCALE: 1:1		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R WHERE EQUIVALENT CHAMFERS ARE PERMISSIBLE
CHKD		DIMENSIONS IN mm	* SEE ABOVE	MATERIAL USED ON: 100 006 H
TCD		TOLERANCE ON DIMS UNLESS OTHERWISE STATED	CONTROL RATE OF INSPECTION (HEAVY VEHICLES) AVAD	TITLE: <b>SHAFT</b>
APPD		ALL THREADS CONFORM TO	DRAWING NUMBER	DRAWING NUMBER
DATE 9-9-87				<b>181 139 H</b>

49

P. S. DHANARAJ  
(P.S. DHANARAJ)  
SSO-II  
ASST. CONTROLLER  
Date: 24 Aug 2017

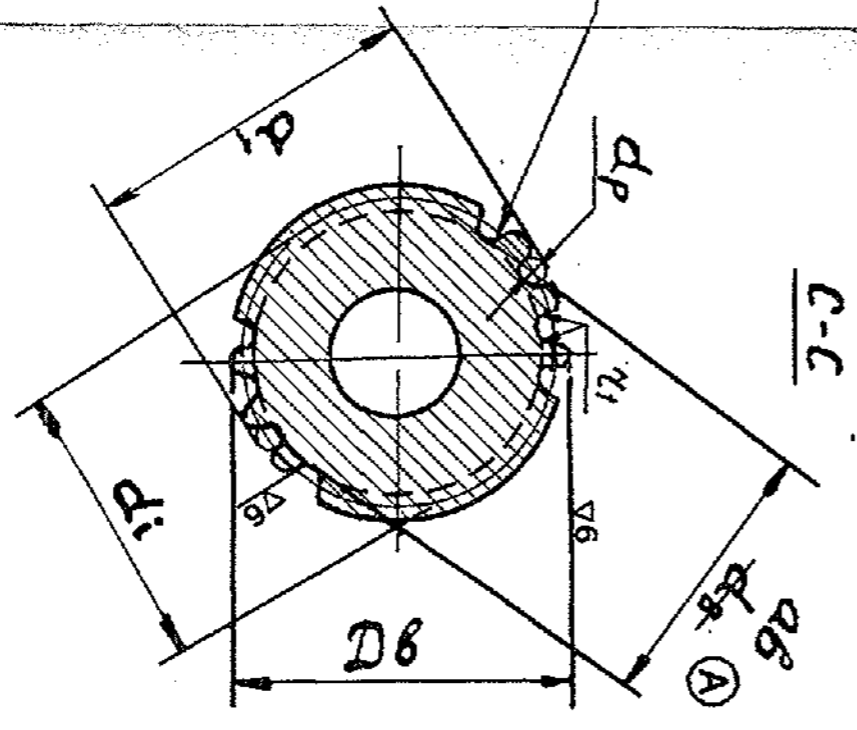
DRG. RE - INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - NIL.

SIZE A2



To be lapped, so that close fit area of surface should be atleast 65% when checked with prusion blue as per gauge. Taper in armature unit may be lapped.

Tooth profile - evolvent  
Meshing angle - 30°



1. TOLERANCE FOR FREE DIMENSIONS ARE TO BE AS PER 722 AT.
  2. CARRY OUT FORGING AND HEAT TREATMENT AS PER TL.2-18.
  3. CARRY OUT HARDENING OF TAPER PART OF SHAFT WITH HRC 38 TO 42 AND SHAFT ROD WITH HRC 42 TO 46.
  4. CHECKING FOR MECHANICAL STRENGTH AS PER TL.12 - 28 AND FOR BURNS AS PER TL.4 - 34.
  5. CENTRE HOLE SHOULD BE AS GOST 14094 - 74.
  6. MUTUAL POSITION OF SLOTS IS ARBITRARY.
  7. CARRY OUT SHOT BLASTING OF SHAFT ON SHOT - BLASTING APPARATUS.
  8. DISPLACEMENT OF SLOT AXIS OF  $\phi A_{3a}$  WITH RESPECT TO THE AXIS SHOULD NOT EXCEED 0.05 MM.
  9. PLAY OF TAPER SURFACE WITH RESPECT TO THE AXIS SHOULD NOT EXCEED 0.05MM. PERMISSIBLE PLAY DIFFERENTIAL SHOULD NOT EXCEED 0.02MM OVER THE LENGTH OF TAPER.
  10. PERMISSIBLE PLAY OF  $d_5$  WITH RESPECT TO THE AXIS SHOULD NOT EXCEED 0.1MM.
  11. MIS-ALIGNMENT OF THREAD  $d_3$  WITH RESPECT TO THE AXIS, MEASURED AT THE BUTT-END OF RING OF  $\phi 22$ MM SHOULD NOT EXCEED 0.05MM.
  12. LENGTH  $l_6$  IS GIVEN RESPECTIVELY UP TO THE DIAMETERS  $14 \pm 0.005$  MM ;  $16 \pm 0.005$  MM OR  $17 \pm 0.005$  MM FOR GAUGE.
  13. PERMISSIBLE PLAY OF PITCH CIRCLE  $d_1$  SHOULD NOT EXCEED 0.05MM AND FOR SHAFTS, REFERENCE NOS: 1,2,3,4,5 AND 10 (SEE SHEET NO.2) SHOULD NOT EXCEED 0.07 MM.
  15. FOR SHAFTS HAVING METALLIC COATING:
    - a) SPLINE DIMENSIONS SHOULD BE MAINTAINED AFTER COATING.
    - b) COATING MAY BE ABSENT ON CONE, CENTRE HOLES AND PARTIALLY ON THE TEETH.
  16. CHECK SPLINES WITH COMBINATION TOOTH (SPLINE) GAUGE. PROVIDE COMBINATION TOOTH (SPLINE) GAUGE FOR SHAFTS WITH MODULE 1.27 WITH THE SAME DEVIATIONS AS FOR THE SHAFTS WITH MODULE 1.25 AS PER STANDARD 108 MT 50.
  17. THREAD CHAMFER SHOULD BE AS PER GOST 10549 - 63.
- COATING : SEE TABLE ON SHEET No.2.

▽ 5 UNLESS OTHERWISE SPECIFIED

EST. WT.  
0.300 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 OUT. SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

ISSUE	DATE	NATURE OF AMENDMENTS	DRAWN	SCALE	TITLE
A	22.8.17	AUTHY. COACHV NOTING No. 81240/COACHV/DENGA/MDT. d.19.8.17			SHAFT

DRN	Sd/=	MATERIAL: STEEL 60X0A (A) TY 14-1 950-74	USED ON: 500 155 H
APPD	Sd/=	CONTROLLEATE OF QUALITY ASSURANCE (BRAVY VEHICLES) AVADI	
DATE	18.08.87		
DIMENSIONS IN mm			
TOLERANCE ON DIMENS UNLESS OTHERWISE STATED IS : 2102 - 69			
ALL THREADS TO CONFORM TO			
D S CAT NUMBER			
DRAWING NUMBER Sh1 OF 2			

SHAFT

P. S. Dhanaraj  
(P.S. DHANARAJ)  
SSO-II  
ASST. CONTROLLER  
Date: / 24 Aug 2017

DRAWING NUMBER  
**181-223H-1**

SHEET No. 2 OF 2

1.27	Module m
16	No. of teeth Z
22J14	$\alpha$
20.32	$d_i$
18B7	$a_b$
2.311	$d_p$
23.71 <sup>-0.06</sup> <sub>-0.16</sub>	$d_f$
1.99 <sup>-0.04</sup> <sub>-0.10</sub>	Tooth thickness over arc of pitch circle
16C3	$d_2$
M12x1.25-6g	$d_3$
10.25C4	$d_4$
10C4	$d_5$
338±0.3	L
16	$l_1$
16.5±0.25	$l_2$
27±0.4	$l_3$
37±0.2	$l_4$
67B4	$l_5$
68B5	$l_6$
70±1.5	$l_7$
42±0.5	$l_8$
38B8	$l_9$
35	$l_{10}$
-	$l_{11}$
1	$l_{12}$
10	$l_{13}$
9.6	h
Chemical Oxidation	Coating

EST. WT. (Kg) 0.300 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.

ISSUE	DATE	NATURE OF AMENDMENTS

DRN Sd/=  
CHD Sd/=  
APPD Sd/=  
DATE 18.08.87  
SCALE:-  
DIMENSIONS IN mm  
TOLERANCE ON DIMENS UNLESS OTHERWISE STATED IS : 2102-69  
ALL THREADS TO CONFORM TO IS:4218.PART-4

MATERIAL:-  
USED ON:- 500 155 H  
CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI  
TITLE:-  
D S CAT NUMBER  
DRAWING NUMBER SH 2 OF 2  
**181-223H-1**  
**SHAFT**



SIZE A3

218.211H

IND

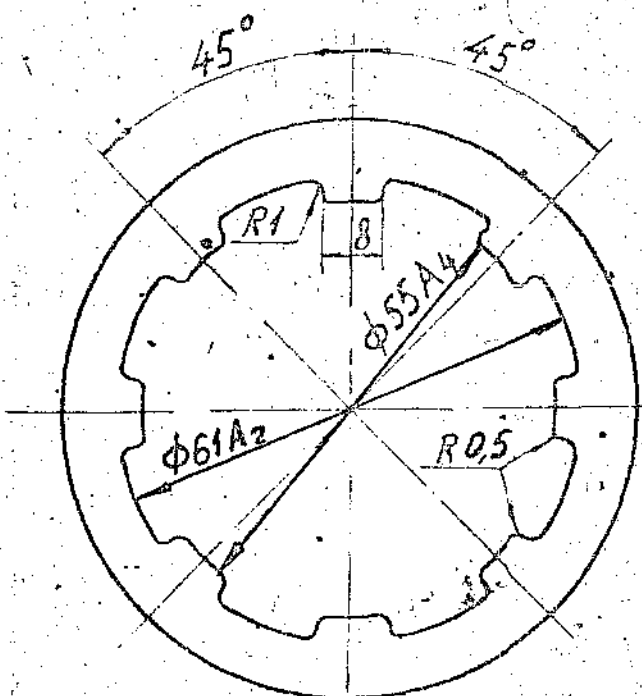
1. TOLERANCES FOR FREE DIMENSIONS ARE AS PER 22 AT 52.
2. SHINING ZINC-PLATING, 12 TO 20 MICRONS THICK, PASSIVATE.

Восстановленный подлинник № 1

Первичный образец

5

42



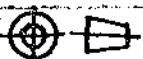
\* PLATE 5 - GOST 19904 -74  
 II-F 10 GOST 16523 -70

56

PILOT SAMPLE SHOULD BE APPROVED BY AHS P BEFORE BULK PRODUCTION

D83

ISSUE	DATE	NATURE OF AMENDMENTS	EST. MASS 0.04 Kg	TO BE STAMPED OR RELOCATED THIS W/
DRN		SCALE:- 1:1		(LETTERS)
CHD		DIMENSIONS IN mm	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED FACED CORNER TO HAVE R OUTSIDE	
TCD		TOLERANCE ON DRSS UNLESS OTHERWISE STATED	MATERIAL - *SEE ABOVE	USED ON:- 505 117 H.
APPD		ALL THREADS TO CONFORM TO	CONTROL RATE OF INSPECTION (HEAVY VEHICLES) AVADI	
DATE	9-9-07		D S CAT NUMBER	DRAWING NUMBER 218 211 H

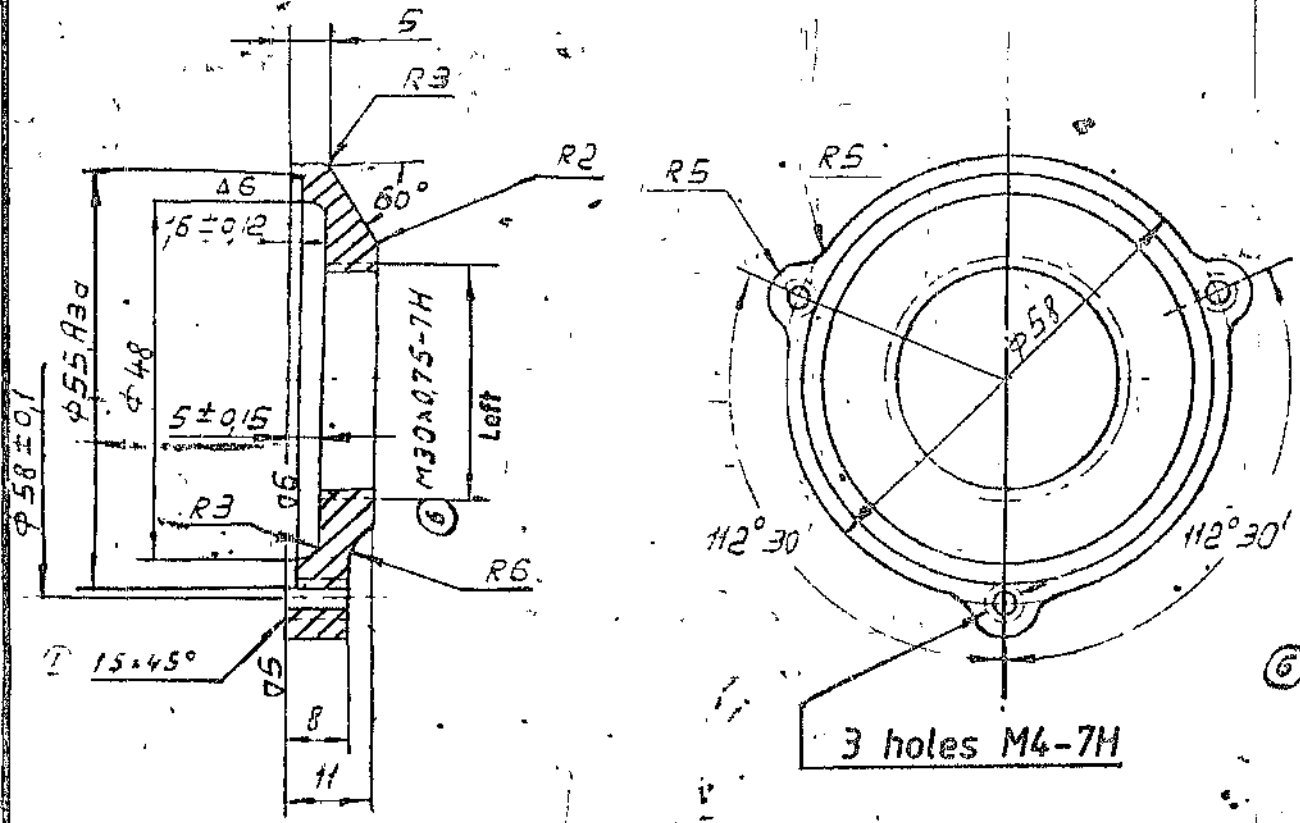


V-RING

232 142 H

Unless otherwise specified

- 1 Tolerance for free dimensions are as per 22 AT 52 and Class 7.
- 2 Tolerances for casting and allowances for machining are as per accuracy class 5 of standards 56-15 and 56-16 MAF.
- 3 Pattern taper should be 2°.
- 4 Casting radii should be 1,5 mm.
- 5 Coating:- Anodic-oxidization, chromatiation.
- 6 Technical requirements for casting are as per OST 190021-71, group 3.



\* Aluminium alloy AA9  
GOST 2685 -75

D-83

PHOT SAIZLE SHOULD BE APPROVED BY A N S P BEFORE BULK PRODUCTION

		EST. MASS <b>0.001 Kg</b>	TO BE STAMPED OR MARKED WHERE INDICATED THUS (LETTERS)
		(58)	
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R UNLESS EQUIVALENT CHAMFERS ARE PERMISSIBLE	
ISS JO	DATE	NATURE OF AMENDMENTS	MATERIAL
DRW		SCALE - 1:1	* SEE ABOVE
CHD		DIMENSIONS IN mm	USED ON - 500 155 H
TCD		TOLERANCE ON DIMS UNLESS OTHERWISE STATED	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
APPD		ALL THREADS CONFORM TO	TITLE <b>FLANGE</b>
DATE 9-9-07			D S CAT NUMBER
			DRAWING NUMBER <b>232 142 H</b>

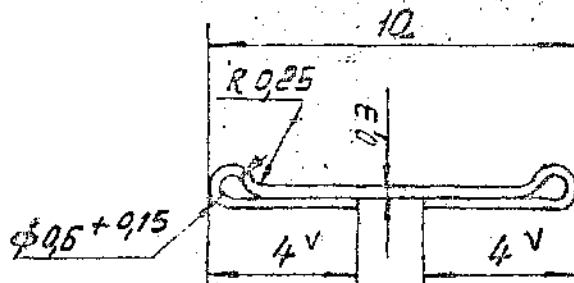
0 H962 91E

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Form 93

TRIPKTON.

- 1 Tolerance for free dimensions are as per 22AT52.
- 2 Apply silver plating, 2 to 4 microns thick.  
With 3 to 5 microns thick Copper sub layer.



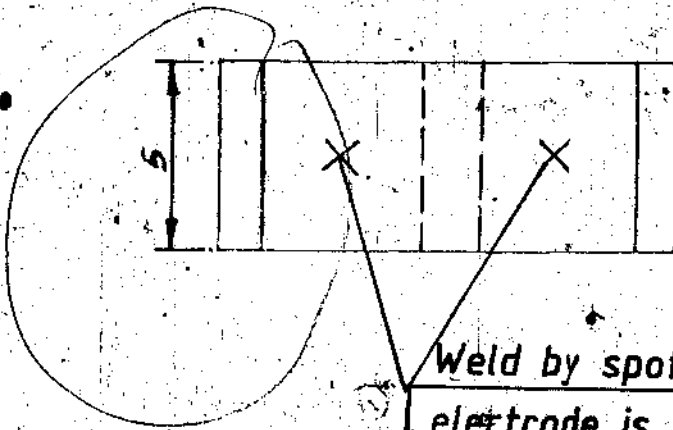
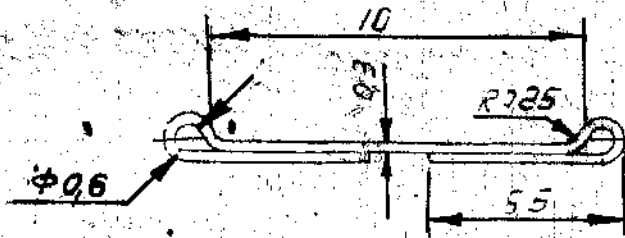
Weld at two points by electric spot welding. Diameter of electrode is φ 2 mm.

PLOT SAMPLE SHOULD BE APPROVED BY A SHOP BEFORE THE PRODUCTION.

		EST. MASS 0-00023 Kg	TO BE KEPT ON GATED LMS OF (LETTERS)
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MATERIAL FORMER TO HAVE A OUTSIDE R BEING EQUIVALENT TO THREES ARE PERMISSIBLE	
ISSUE	DATE	NATURE OF AMENDMENTS	MATERIAL: <b>STEEL 10</b> <b>GOST 503-71</b>
DRW		SCALE: 5 : 1	USED ON: <b>500 155 H</b>
CHD		DIMENSIONS IN mm	CONTROLLEAF OF INSPECTION (HEAVY VEHICLES) AVADI
TCO		TOLEANCE OF DIMS UNLESS OTHERWISE STATED	<b>CLAMP</b>
APPD		ALL THREADS TO CONFORM TO	DRAWING NUMBER <b>316 296 H</b>
DATE	<b>9-9-07</b>		

D03

- 1 Provide dimensions without deviations as per 22 AT 52.
- 2 Apply silver coating, 2 to 4 microns thick, with 3 to 5 microns thick copper sub layer.



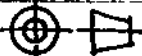
Weld by spot welding. Diameter of electrode is 3 mm.

AMDT, NOTN, No: 250-76

D-03

127

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

			EST. MASS <b>0.00028.Kg</b>	TO BE STAMPED OR MARKED WHERE INDICATED THUS $\Phi$ .
				LETTERS I
			ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE	
ISSUE DATE	NATURE OF AMENDMENTS		MATERIAL -- <b>STEEL 10 GOST 503 -71</b>	USED ON -- <b>500 155 H</b>
DRN	SCALE:-- 5 : 1		CONTROLLERATE OF INSPECTION(HEAVY VEHICLES) AVADI	
CHD	DIMENSIONS IN mm			TITLE: <b>CLAMP</b>
TCD	TOLERANCE ON DIMS UNLESS OTHERWISE STATED		D*S CAT NUMBER	DRAWING NUMBER <b>316 516 H</b>
APPD	ALL THREADS CONFORM TO			
DATE	9-87			



H. 501-7L7

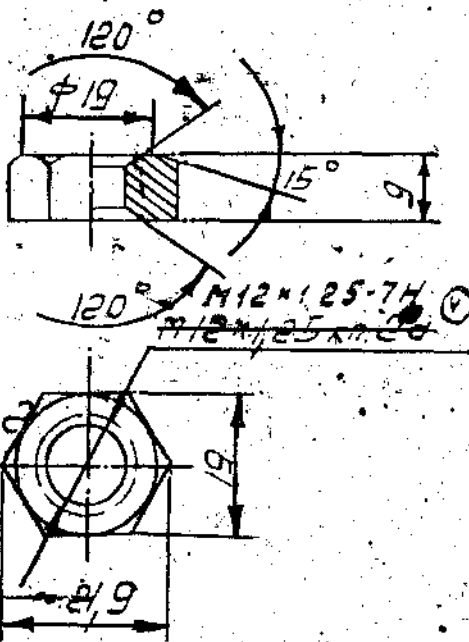
INDI

IND

▽4 UNLESS OTHERWISE SPECIFIED

1. TOLERANCES FOR FREE DIMENSIONS ARE AS PER ACCURACY CLASS 7, OST 1010.
2. MAKE CHAMFERS AT DEPTH OF THREAD.
3. FLAT END PLAY OF NUT WITH RESPECT TO THREAD SHOULD NOT EXCEED 0.08mm OVER  $\phi$  18mm.
4. COATING: ZINC-PLATING, 6 MICRONS THICK, CHROMATIZATION

7/4/1  
69



AMDT, NOTN, No: 0189-80

Amdt. Notn. No.

0-83

81

PILOT SAMPLE SHOULD BE APPROVED BY A HSP BEFORE BULK PRODUCTION

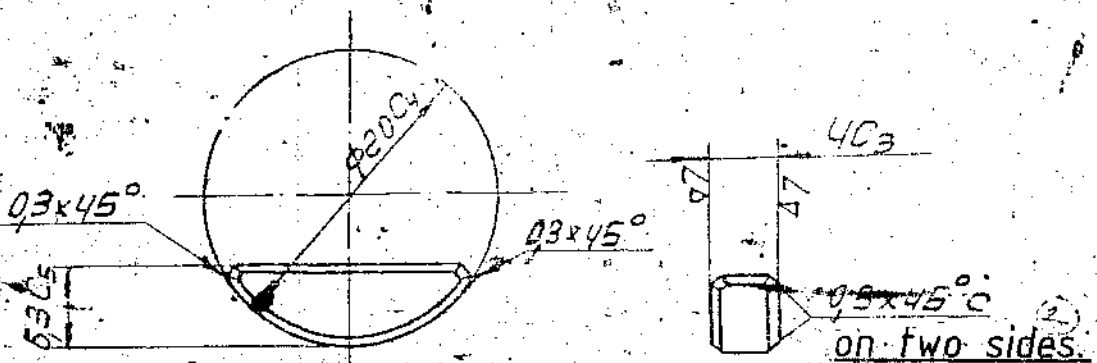
ISSUE DATE	NATURE OF AMENDMENTS	EST. MASS <b>0.015 Kg</b>	TO BE STAMPED OR MARKED WHERE INDICATED THIS WAY (LETTERS)
DRN	SCALE: 1:1	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE	
CHK	DIMENSIONS IN mm	MATERIAL <b>STEEL 45 GOST 8560 -78</b>	USED ON <b>500 155 H</b>
TCO	TOLERANCE ON DIMS UNLESS OTHERWISE STATED	CONTROLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	<b>NUT</b>
APPD	ALL THREADS CONFORM TO	D S CAT NUMBER	DRAWING NUMBER <b>474 105 H</b>
DATE 9-9-87			

H.020-8L7

▽6 Unless otherwise specified.

Carry out heat treatment, HRC 30 to 34.

X141  
7/



\* STEEL 30X Γ CA GOST 7417 -75  
TY 14 -1 -950 -74

AMDT. NOTIN No: 002A-79

D-83

83

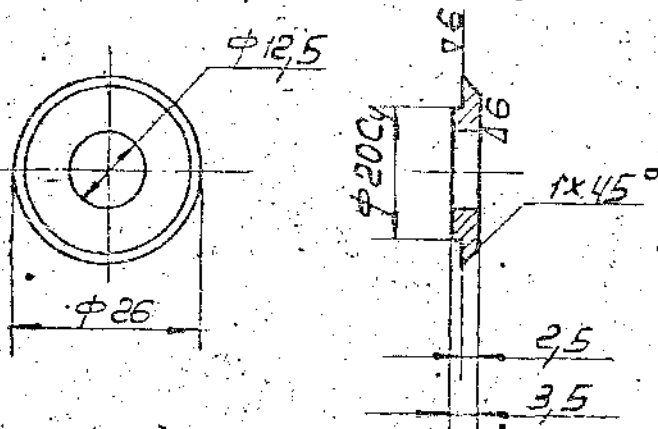
PROT SAMPLE SHOULD BE APPROVED BY A.H.S.P BEFORE BULK PRODUCTION

		NET MASS 0.003 Kg	TO BE STAMPED OR MARKED WHERE INDICATED THUS (P (LETTERS))
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R GUIDE EQUIVALENT CHARGERS ARE PERMISSIBLE	
ISSUE DATE	NATURE OF AMENDMENTS	MATERIAL * SEE ABOVE	USED ON - 500 155 H
DRN	SCALE - 2:1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
CHD	DIMENSIONS IN mm	TITLE: KEY	
TCD	TOLERANCE ON DIMS UNLESS OTHERWISE STATED	D'S CAT NUMBER	
APPD	ALL THREADS CONFORM TO	DRAWING NUMBER 478 020 H	
DATE	9-9-87		

H 817-187

▽ 4-Unless otherwise specified.

1. Tolerances for free dimensions are as per accuracy class 7 OST 1010.
2. Carry-out heat treatment. HRC 30 to 36.



Coating: Zinc-plating, 9 microns thick, chromization.

\* STEEL 30X CA GOST 7417 -75  
TY 14 -1 -950 -74

AHTI NOIN No-0024-79

D-83

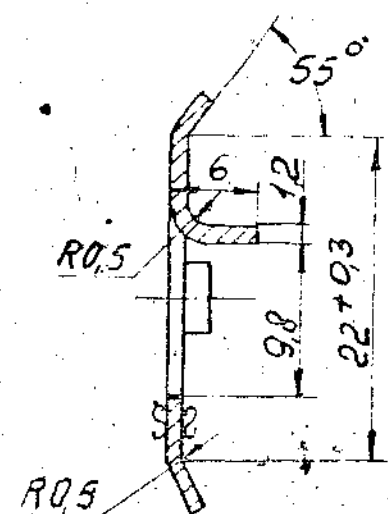
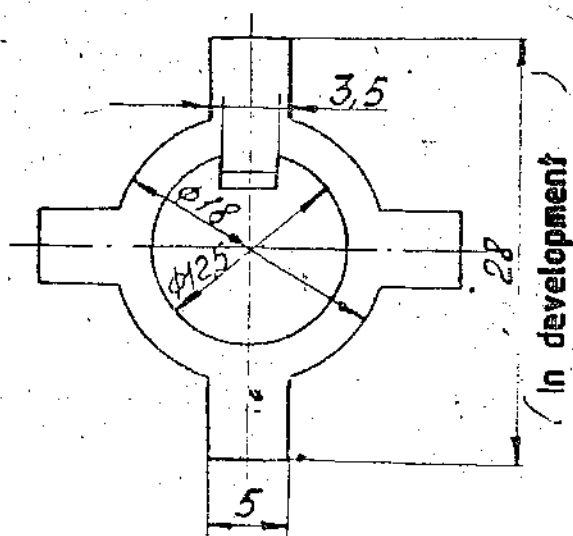
PROT SAMPLE SHOULD BE APPROVED BY AHS P BEFORE BULK PRODUCTION

			EST. MASS	TO BE STAMPED OR MARKED WHERE INDICATED THUS ( LETTERS )
			0-008 Kg	
			ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED EDGERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT DIAMETERS ARE PERMISSIBLE	
ISSUE	DATE	NATURE OF AMENDMENTS	MATERIAL	USED ON :-
DRN		SCALE:- 1:1	* SEE ABOVE	500 155 H
CHD		DIMENSIONS IN mm	CONTROL RATE OF INSPECTION (HEAVY VEHICLES ) AVADI	
TCO		TOLERANCE ON DIMS UNLESS OTHERWISE STATED	⊕ ⊖	TITLE
APPD		ALL THREADS CONFORM TO		WASHER
DATE	9-9-87		D S CAT NUMBER	DRAWING NUMBER
				481 418 H

1. Tolerances for free dimensions are as per accuracy Class 7, OST 1010.
2. Dehydrogenate.

COATING: ZINC-PLATING, 9 MICRONS THICK, CHROMATZATION.

X/4-1  
7/3



AMDT. NOTN. No. 0020-79

553

D-83

\* SHEET 6 GOST 19904 -74  
II T 10 GOST -16523-70

PROT SAMPLE SHOULD BE APPROVED BY AHS P BEFORE BULK PRODUCTION

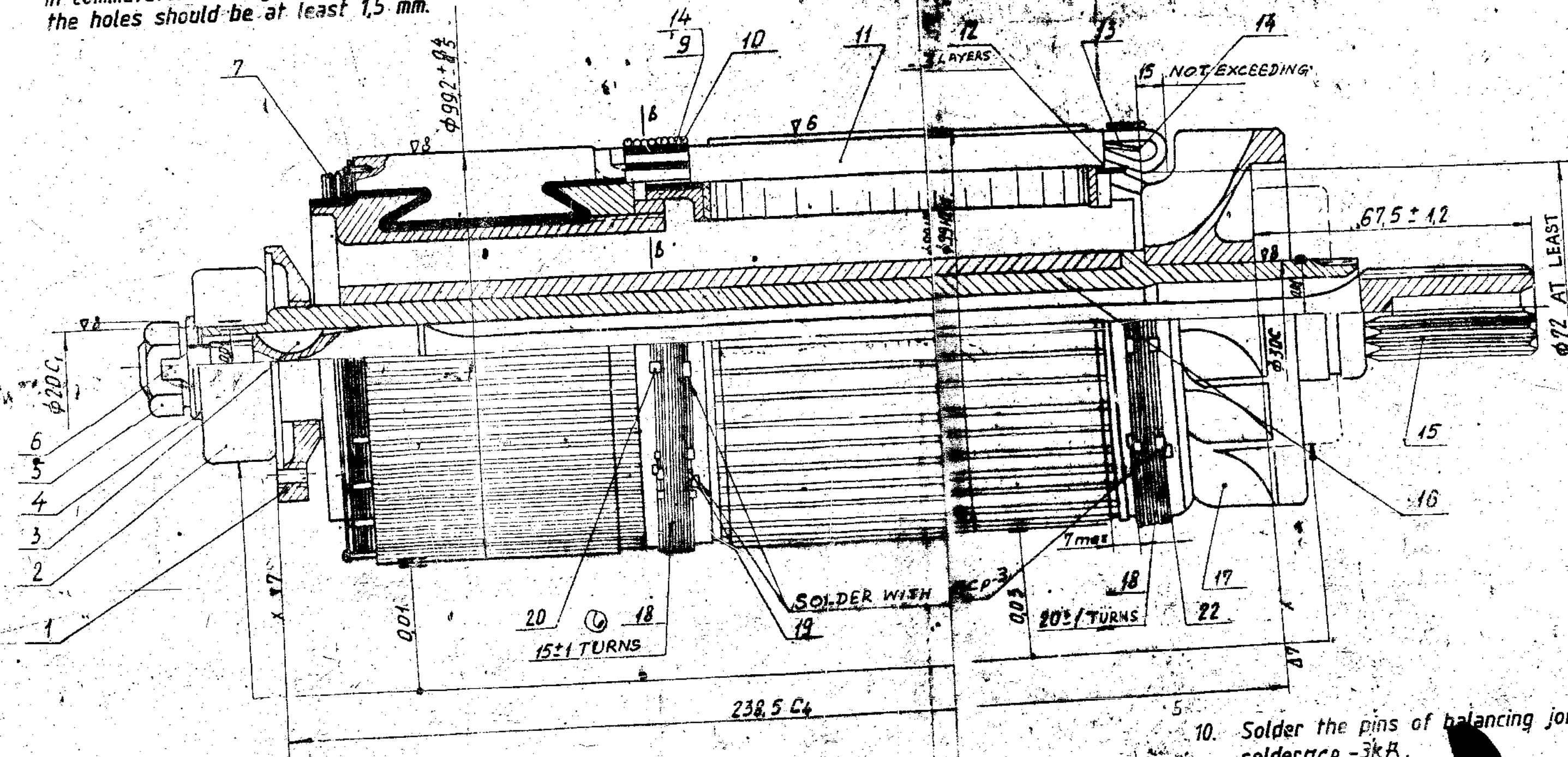
		EST. MASS <b>0.006 Kg</b>	TO BE STAMPED OR MARKED WHERE INDICATED THUS (LETTERS)
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE	
ISSUE DATE	NATURE OF AMENDMENTS	MATERIAL * SEE ABOVE	USED ON :- <b>500 155 H</b>
DRM	SCALE:- <b>2 : 1</b>	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
CHD	DIMENSIONS IN mm	TITLE: <b>LOCK WASHER</b>	
TCD	TOLERANCE ON DRIMS UNLESS OTHERWISE STATED	D S CAT NUMBER	
APPO	ALL THREADS CONFORM TO	DRAWING NUMBER <b>483 093 H</b>	
DATE	9-9-87		

H551-005

1. Weld the ends of sections to the commutator as per instructions TV 11-71.
2. Impregnate as per H8A 002 8005 by using third item of remarks.
3. Make groove on commutator insulation to depth of 1 mm. See remark "XX", depth of grooving of inter bar insulation should be at least 0.8mm when grooved repeatedly.
4. Balance the armature from fan side by milling the bead of fan or by drilling holes of  $\phi 5$ mm to depth not exceeding 9mm over  $\phi 87 \pm 0.5$ mm in fan, by drilling holes of  $\phi 5$  mm to depth not exceeding 7 mm over  $\phi 66 \pm 0.5$  mm in commutator bushing on commutator side, welds between the holes should be at least 1.5 mm.

5. Run-out of surface "X" with respect to axis should not exceed 0.04 mm.
6. Coat surface  $\phi 99$  H2a after machining as per instructions Tu3-62.
7. Serving should not project beyond the limits of armature iron from the fan side, permissible projection of serving from the commutator side over the armature iron level should not exceed 0.5 mm.
8. Unbalance of armature may be 1 gm, cm, when balanced on balancing machine and 2.5gm, cm while checking before placing in generator.
9. During the first final grooving of commutator use technologically, the upper half of tolerance zone.

16. Coat the holes drilled for balancing with primer 2D-076, yellow, III-H8AD. 050.001-3.
17. To make winding taper proper, it is allowed to wind glass band, REF.NO.23, under the serving.
18. Before mounting the ball-bearing, apply a thin layer of grease of the same grade which is used in the ball-bearing, onto locating place on shaft.
19. While winding the armature, the straight part of sections at the outlet from groove should be at least 2 mm.
20. Radial run-out of external diameter of splined end of shaft REF.NO.15, while rotating the armature on ball-bearings, should not exceed 0.55mm.
21. Milling cutter-traces over length of 1.5 mm are permitted while milling the inter bar insulation on the commutator.
22. Gasket REF.NO.21 may be shortened length wise as required providing close-fit to the commutator butt-ends and end insulation, sheet.
23. Partial mica chipping not exceeding 2.5 mm is allowed from the side of sections while removing the milling cutter.



SECTION BB

10. Solder the pins of balancing joints to commutator with solderncp-3kA.
11. Bend the clamps, REF.NO.20, on serving by catching 3 to 4 turns.
12. Join the electric-grade card-board, REF.NO.9 from its external side with glass fabric, REF.NO.14, using adhesive Sp-2, GOST 12172-74.
13. Single-point tool mark, 1mm long, are allowed at the butt-ends for ball-bearings, diameter  $\phi 20$  and  $\phi 30$ .
14. While installing the fan, its rib should coincide with the rib of armature iron, tolerance is  $\pm 2$  mm.
15. Parts REF.NOS 13 AND 14, should be glued with adhesive Sp-2, GOST 12172-74.

"XX" AFTER GROOVING COMMUTATOR  
MAKE CHAMFERS AS PER SPECIFIED  
DIMENSIONS ON GROOVES.

S NO	DESIGNATION	DESCRIPTION	QTY	REMARKS	S NO	DESIGNATION	DESCRIPTION	QTY	REMARKS
23	GLASS BAND 0.8x0.1 GOST 5937-81	AS PER R. EQUIPMENT	13	500.155H-4	GLASS MYCANITE				
22	316.516H/CLAMP		7	500.155H-3	GLASS MICHANITE F&C-T-20			2	WITH OUT DRAWING
	SOLDERTIC-3K A GOST 19738-74		12	500.155H-3	GLASS MICHANITE F&C-T-20			1	WITH OUT DRAWING
	SOLDERTIC-3 GOST 19738-74		11	810.079H/SECTION				57	
21	893.746H/GASKET		228	500.155H-2	GLASS MICHANITE F&C-T-20			2	WITH OUT DRAWING
20	500.155H-6 BRASS 0.63 0.3X5X50 GOST 2208-75.		10	500.155H-1	ELECTRIC GRADE F&C-T-20			2	WITH OUT DRAWING
19	316.296H/CLAMP		1	381 GOST 2024-75	ADHESIVE			2	WITH OUT DRAWING
18	500.155H-5 BINDING STEEL WIRE GOST 9124-55. GRADE "M"	REMOVE FROM SILVER PLATING 2 TO 4 MICRONS THICK.	0.5	750.171H/CONTACT PL.				1	
17	381.044H/FAN		1	474.105H/NUY				1	
16	505.117H/ARMATURE WITHOUT WINDING		1	481.418H/WASHER				1	
15	181.223H-1 SHAFT (9.95mm)		1	478.020H/KEY				1	
14	500.155H-7 FABRIC 3-100	WITHOUT DRAWING	2	7A180504ETC/BALL-BEARING				1	COMM. SERIAL
	GOST 19907-74		4	232.142H/FLANGE				1	

EST. MASS 9.85 Kg TO BE STAMPED OR INDICATED THUS (LETTERS)

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

ISSUE DATE NATURE OF AMENDMENTS

DRN QTY SCALE: 1:1

TCD TOLERANCE ON DIMS UNLESS OTHERWISE STATED

APPO ALL THREADS TO CONFORM TO

DATE 9-9-87

CONTROL RATE OF INSPECTION (HEAVY VEHICLES) AVAO

TITLE: ARMATURE BF-7500 H

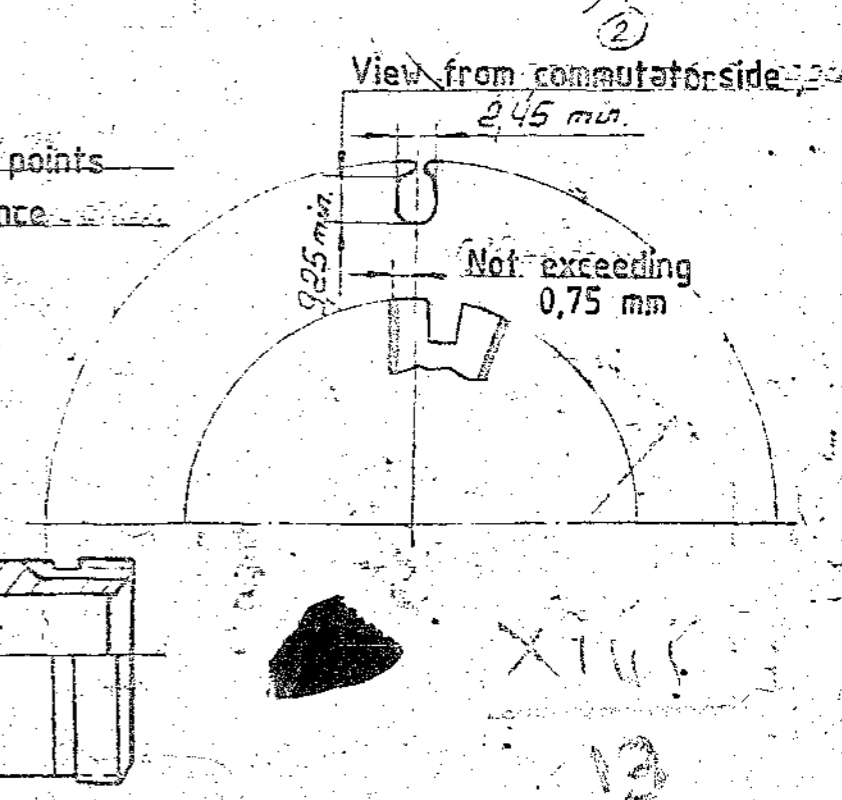
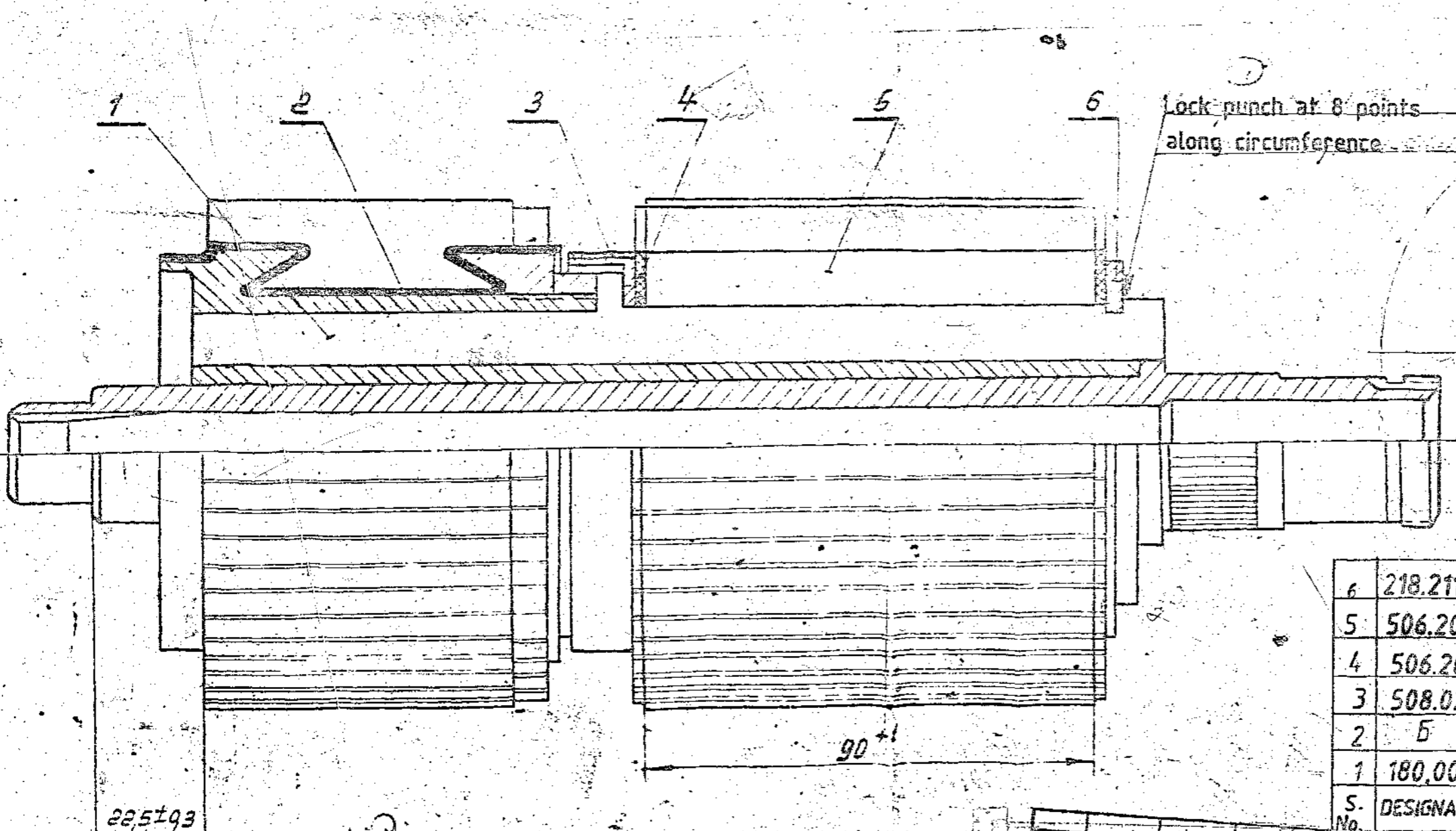
D S CAT NUMBER

DRAWING NUMBER 500 155 H

002\*145/80

X/14/12

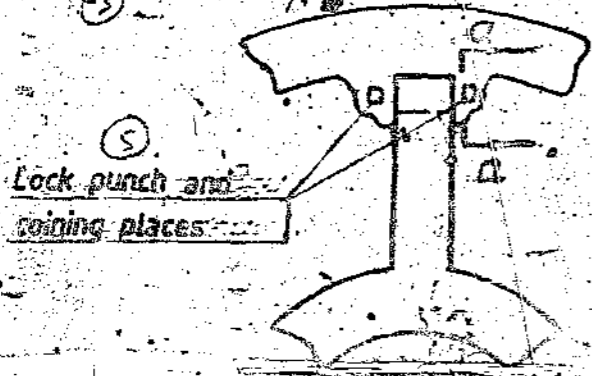
Commutator packing is to be placed as follows:  
 Insulation of commutator bar should be opposite to centre of slot.  
 Slot axis, at maximum displacement should be aligned to the right of interlaminated insulation by 0,75 mm if viewed from the commutator side.  
 Weight of armature core with varnished plates and with allowance for grinding of 0,4 mm along the external diameter should be equal to 2415-70 gms. Non parallelity of commutator bars with respect to axis of shaft should not exceed 0,5 mm over commutator length.



6	218.211H	V-Ring	1
5	506.201H	Outer plate of Armature	257
4	506.200H	Edge plate of Armature	2
3	508.025H	Winding support	1
2	B	Commutator	1 See table
1	180.006H	Shaft	1
S. No.	DESIGNATION	DESCRIPTION	QTY REMARKS

22,5±0,3

(For checking) Lock punch of v-ring



As per

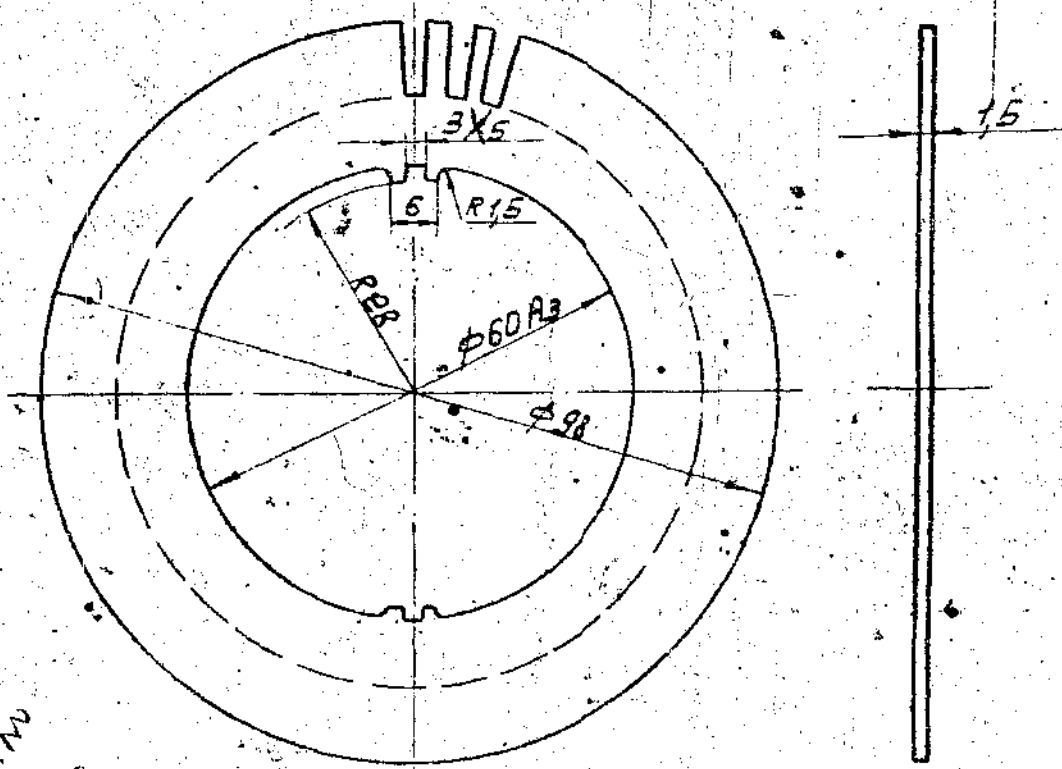
Designation of alternate	Code of article	5
505.117H	BF-7507	520.05
-01	BF-7500B	520.05
	BF-7500A	

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

EST. HASS	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	
ISSUE DATE	NATURE OF AMENDMENTS
DRN	SCALE:-
CHD	DIMENSIONS IN mm
TCO	TOLERANCE ON DIMS UNLESS OTHERWISE STATED
APPD	ALL THREADS CONFORM TO
DATE 9-9-07	
MATERIAL :-	
USED ON :- 500-155 H	
CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
TITLE: ARMATURE WITHOUT WINDING	
D S CAT NUMBER	DRAWING NUMBER 505 117 H

506 200 H

1. Tolerances for free dimensions are as per 22 AT 52
2. Die of middle plate of armature may be used. Drawing 506.201.
3. Alternate material is Glass Textolite CT3Φ-1 GOST 12652-74, Glass Textolite CT3Φ GOST 12652-74.



ANDI. NOTN. No. 250-78

*Handwritten notes:*  
 D-25  
 1/14/78  
 1/14/78  
 1/14/78

**GLASS TEXTOLITE OF GRADE CT -1  
 GOST 12652 -74**

96

PILOT SAMPLE SHOULD BE APPROVED BY AHS P BEFORE BULK PRODUCTION

EST. MASS <b>0.006 Kg</b>	TO BE STAMPED OR INDICATED THIS W/ I
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNER TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE	
ISSUE DATE NATURE OF AMENDMENTS	MATERIAL:- <b>* SEE ABOVE</b>
DRN SCALE:- 1:1	USED ON:- 505 117 H
CHD DIMENSIONS IN mm	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
TCD TOLERANCE ON DIMS UNLESS OTHERWISE STATED	TITLE: <b>ARMATURE EDGE PLATE</b>
APPO ALL THREADS TO CONFORM TO	D S CAT NUMBER
DATE 9-9-87	DRAWING NUMBER <b>506 200 H</b>

506 201H

Tolerances for free dimensions are as per accuracy Class 4, OST 1014 (A4 : C4),

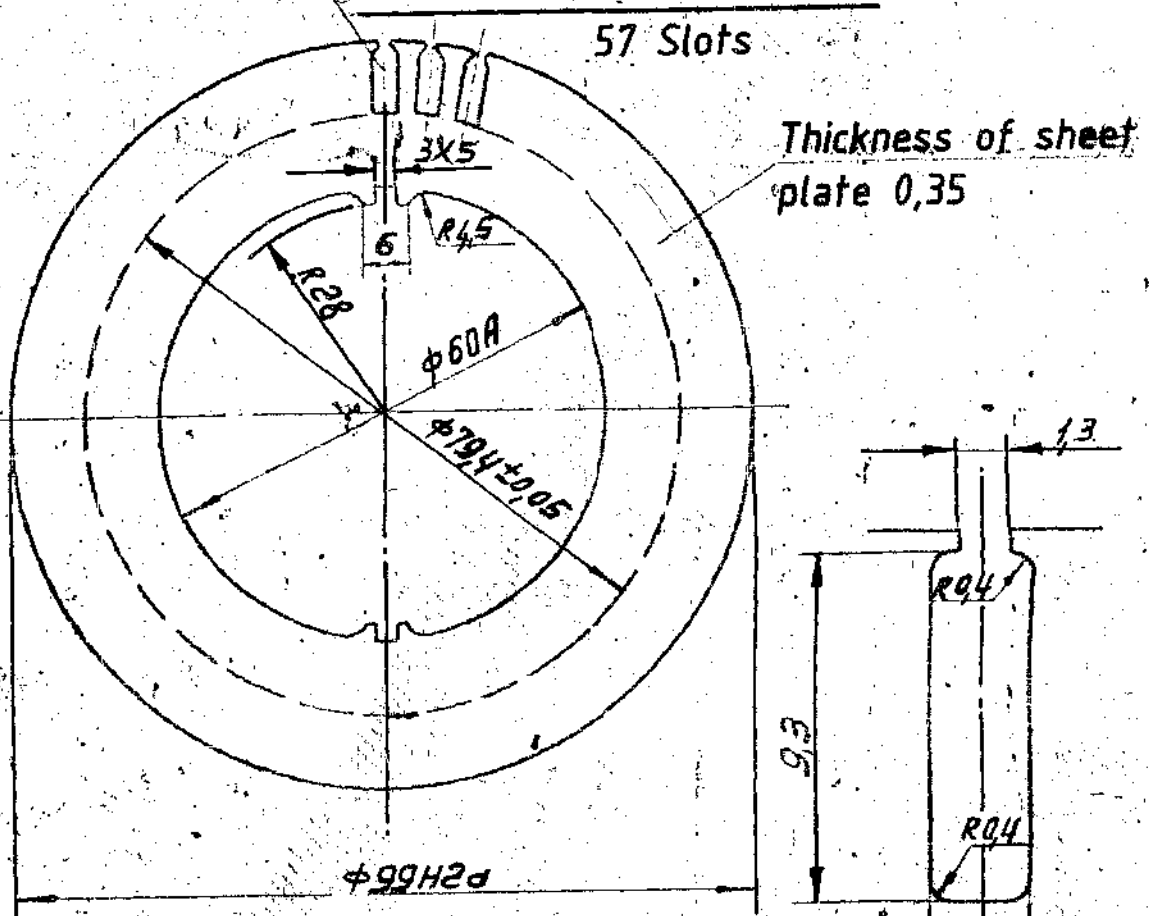
Anneal iron in hydrogen medium as per TU 2-20.

Use compound die.

Apply varnish coating on 100 % of the sheets from one side or on 50% of the sheets from two sides with varnish KΦ-965 TU 1-92.

Maintain dimension  $\phi 99H2a$  in armature unit.

Dimension R 1,5 mm may be absent.



\* STEEL 1311  
TY 14-1-2528

PROT SAMPLE SHOULD BE APPROVED BY A NSP BEFORE BULK PRODUCTION

D83

ISSUE	DATE	NATURE OF AMENDMENTS	EST. MASS 0,02 Kg	TO BE STAMPED OR RELOCATED THIS
DRW		SCALE:- 1:1		
CHK		DIMENSIONS IN mm		
TCO		TOLERANCE ON DIMS UNLESS OTHERWISE STATED	MATERIAL: * SEE ABOVE	USED IN: 505 117 H
APPO		ALL THREADS TO CONFORM TO	CONTROL POINT OF INSPECTION (HEAVY VEHICLES) AVADI	
DATE	9-9-87		FILE: MIDDLE ARMATURE PLATE	
			DRAWING NUMBER	
			506-201 H	

97

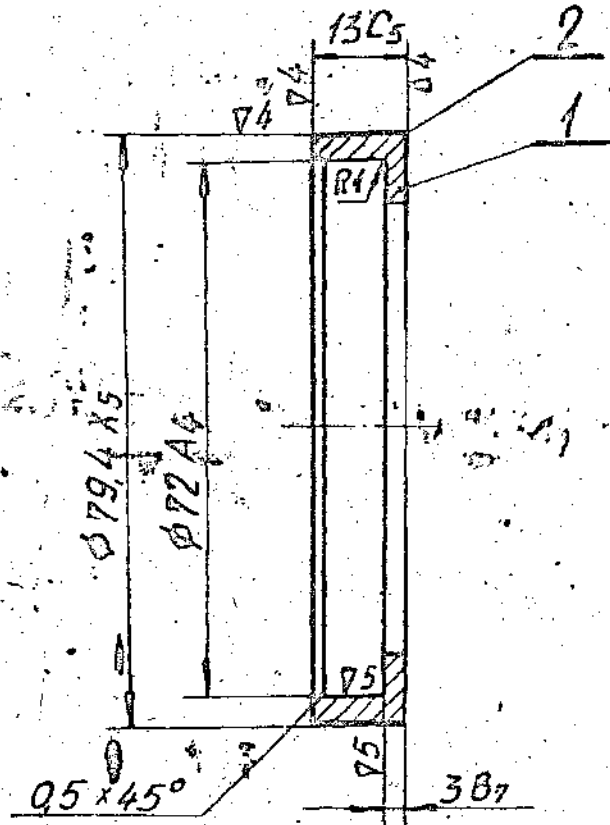
508 025 H

Unless otherwise specified,

Alternate material is 508-025 H-1

Moulding material is AL-4 GOST 20437-75

~~149~~



8390 Diagram 23.08.82

3577

D-03

Boi de  
line

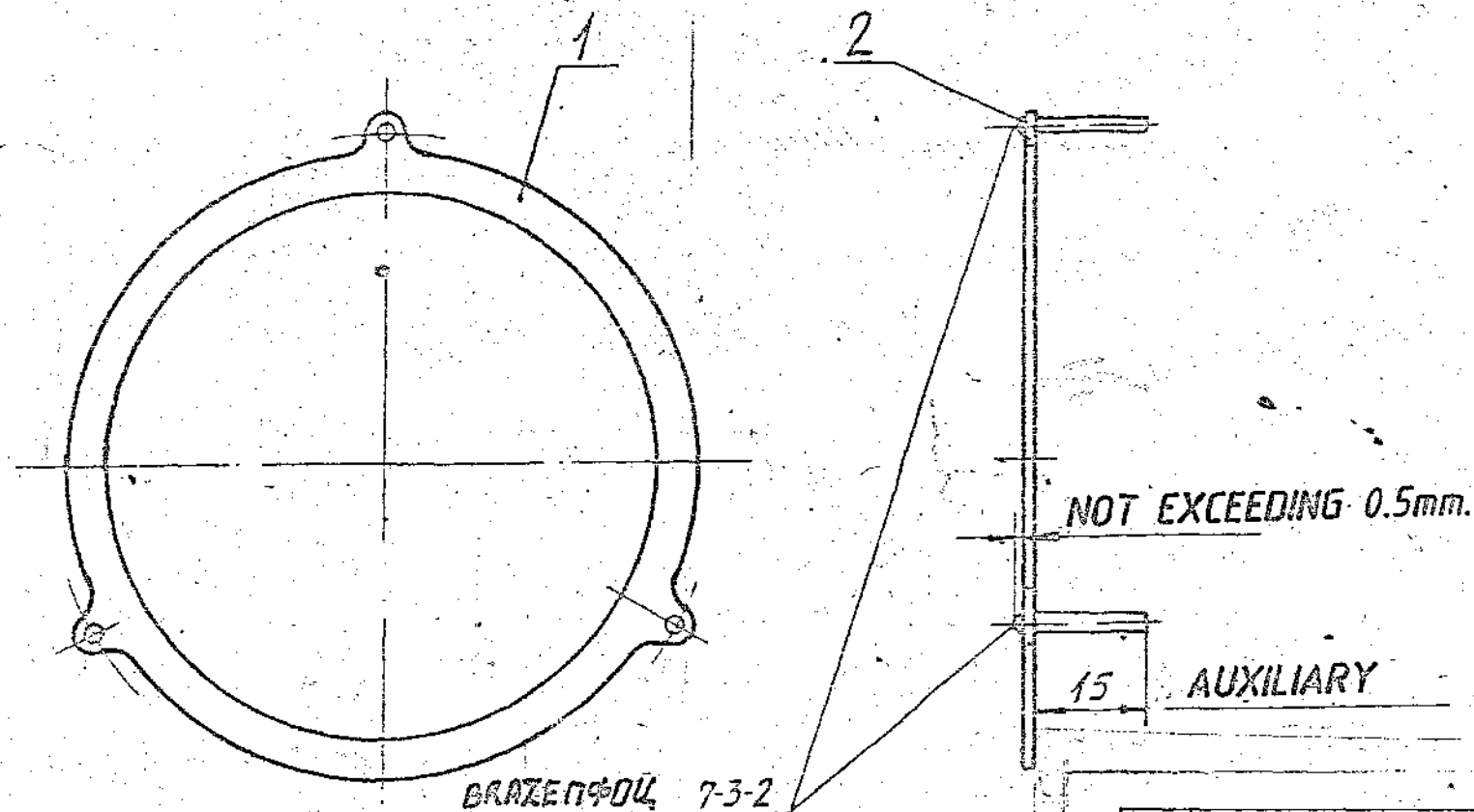
QTY	DESIGNATION	DESCRIPTION	MATERIAL	QTY	REMARKS
2	508.025H-1	Glass fabric			
		TB93-2 TY16-503.509-75		1	
1	508.024H ✓	WINDING SUPPORT		1	

PHOT SAMPLE SHOULD BE APPROVED BY AMSY BEFORE BULK PRODUCTION

EST. MASS 0.04 kg	TO BE STAMPED (INDICATED ITEMS)	<span style="font-size: 2em;">29</span>
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED. MATCHED CORNER TO HAVE R OUTSIDE OF BENCH EQUIPMENT PARTS ARE PERMISSIBLE.		
ISSUE DATE	NATURE OF ATTACHMENTS	MATERIAL
DRN	SCALE: 1:1	USED ON: 505-117 H
ECO	TOLERANCE ON DIMS UNLESS OTHERWISE STATED	CONTROLLED BY INSPECTION (BY VEHICLE) AVADI
APPD	ALL TITREADS TO COMPLY TO	TITLE: WINDING SUPPORT-ASSY
DATE: 9-9-87		D'S LAB NUMBER: 508-025 H

МОН 056

1. Carry-out pickling.
2. Bulging of solder is allowed to be upto 1 mm. in zone beyond  $\phi 90,2$  MM.
3. Pins may be made with heads of diameter  $1,0 B_5$ . Height  $0,5_{-0,2}$  and semicircular-form,



S. L. NO.	Designation	Description	Qty	Remarks
2	750-170H-1	Solder n $\phi_{04}$ 7-3-2 OST190056-72	3	
1	751-237H	Wire MT -120 GOST 2112-79	1	
		Contact plate	1	

PROT SAMPLE SHOULD BE APPROVED BY AUTHORITY BEFORE BEING PRODUCED

ISSUE DATE: \_\_\_\_\_ NATURE OF AMENDMENTS: \_\_\_\_\_

DATE: 9-9-07 SCALE: 1:1

DESIGNER: \_\_\_\_\_ DIMENSIONS IN mm: \_\_\_\_\_

TOLERANCE ON DIMS UNLESS OTHERWISE STATED: \_\_\_\_\_

DATE: 9-9-07 ALL THREADS TO CONFORM TO: \_\_\_\_\_

ISSUE: CONTACT PLATE

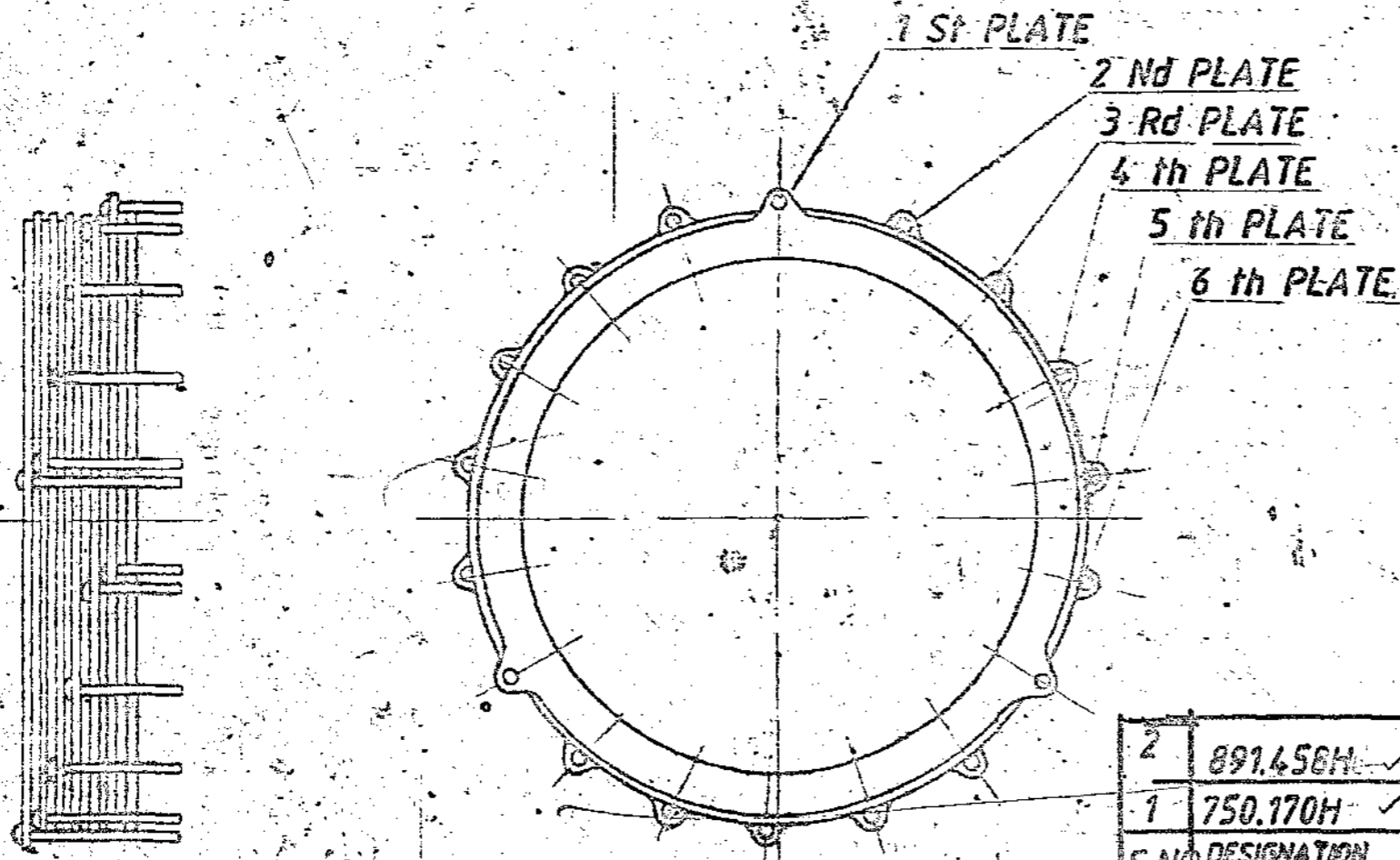
DESIGNER NUMBER: 750 171 H

38

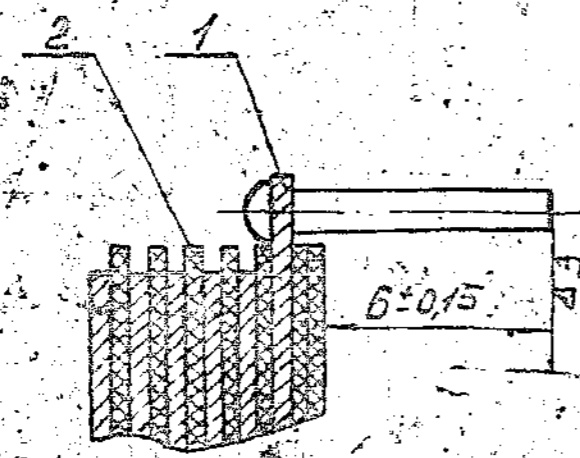
750.171H

Резерв 30  
Укреплен

1. After welding <sup>pins</sup> of contact plates, Ref. No. 1, should be cut to obtain dimension  $6 \pm 0,15\text{mm}$ ,
2. Contact plates, Ref.No. 1 and washer, Ref.No.2 should be placed on armature in sequence as shown in drawing,



S.NO	DESIGNATION	DESCRIPTION	QTY	REMARKS
2	891.456H	INSULATION WASHER	7	
1	750.170H	CONTACT PLATE	6	



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

ISSUE	DATE	NATURE OF AMENDMENTS	EST. MARK	TO BE STAMPED OR FORWARDED THIS W/
DRG		SCALE: 1:1		LETTERS
CHK		DIMENSIONS IN mm		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED. ROUNDED CORNER TO HAVE R OUTSIDE
TCU		TOLERANCE ON DIMS UNLESS OTHERWISE STATED		A WIDE EQUIPMENT DIMENSIONS ARE PERMISSIBLE
APP		ALL THREADS TO CONFORM TO		MATERIAL: — USED ON: 500 155 H
DATE	9-9-87			CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
				⊕ ⊞ TITLE: CONTACT PLATE
				D S CAT NUMBER DRAWING NUMBER 750 171 H

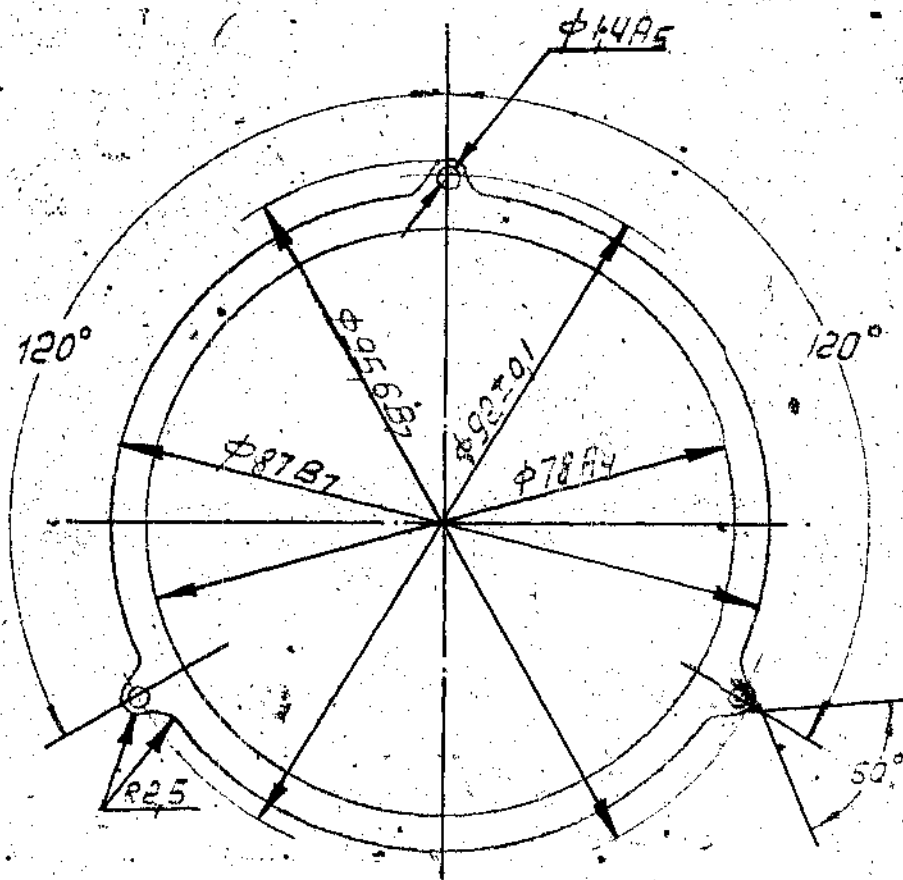
39

D83

751 237 H

2

141  
104



Alternate material is sheet  $\Delta$ PHM M1 GOST 495-77  
of thickness 0,5 mm.

0-83

115

PROT SAMPLE SHOULD BE APPROVED BY AHSB BEFORE BULK PRODUCTION

		NET MASS 0.004 Kg		TO BE STAMPED OR INDICATED THIS SIDE (LETTERS)	
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED FACED CORNER TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE			
ISSUE	DATE	NATURE OF AMENDMENTS		MATERIAL: SHEET PLATE PHM M1 GOST 495-77	
DRN		SCALE: 1:1		USED ON: 750 170 H	
END		DIMENSIONS IN mm		CONTROLLER OF INSPECTION (HEAVY VEHICLES) AVADI	
TCO		TOLERANCE ON DIMS UNLESS OTHERWISE STATED		TITLE: CONTACT PLATE	
APPD		ALL THREADS TO CONFORM TO		D/S CAT NUMBER	
DATE: 9-9-87				DRAWING NUMBER 751 237 H	

- 7. Electric-grade card-board 3BT 0.1 GOST 2824-75 may be placed instead of electric-grade card-board 3BT 0.1 GOST 2824-75, ref.nos. 3,4.
- 8. Dimension is given for reference.

9. Dimension given in brackets should comply with the dimension of section placed in armature slot and is given for fixture.

- 1. Orientation: Centre of commutator insulation should be at the centre of slot.
- 2. Insulation of slot ref. no.4 should be cut in the longitudinal direction of fibres and for ref no.3 in the transversal direction of fibres.
- 3. Apply varnish on insulation of slot, ref.nos 3 and 4 on two sides as per instruction TU3-21.
- 4. Insulate every other heads of section on fan side with glass varnished fabric 155 ref.no.6, and insulate the other heads of section upto the entrance into slot with film  $\phi = 4$ , ref.No.7.
- 5. Strip the insulation upto the dimension 10.
- 6. Electric-grade card-board Ref.no.5 of thickness 0.3mm may be replaced by electric-grade card-board ref.No.5 of thickness 0.5mm.

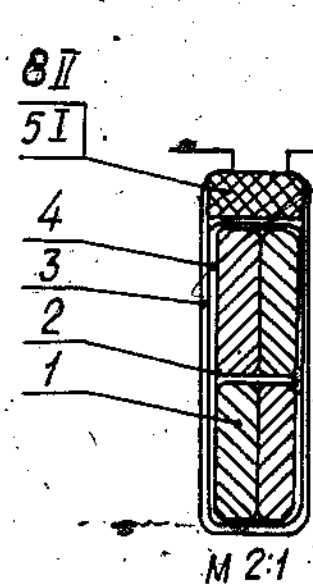
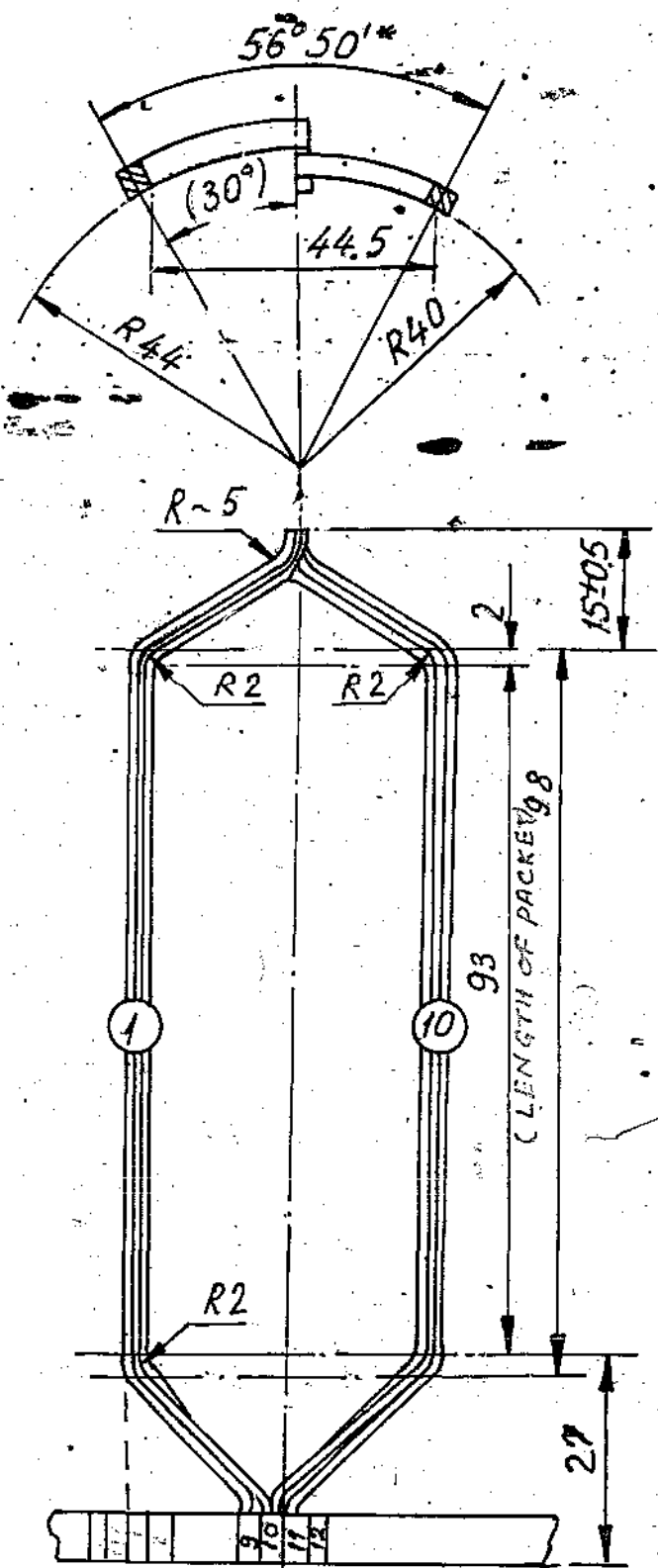
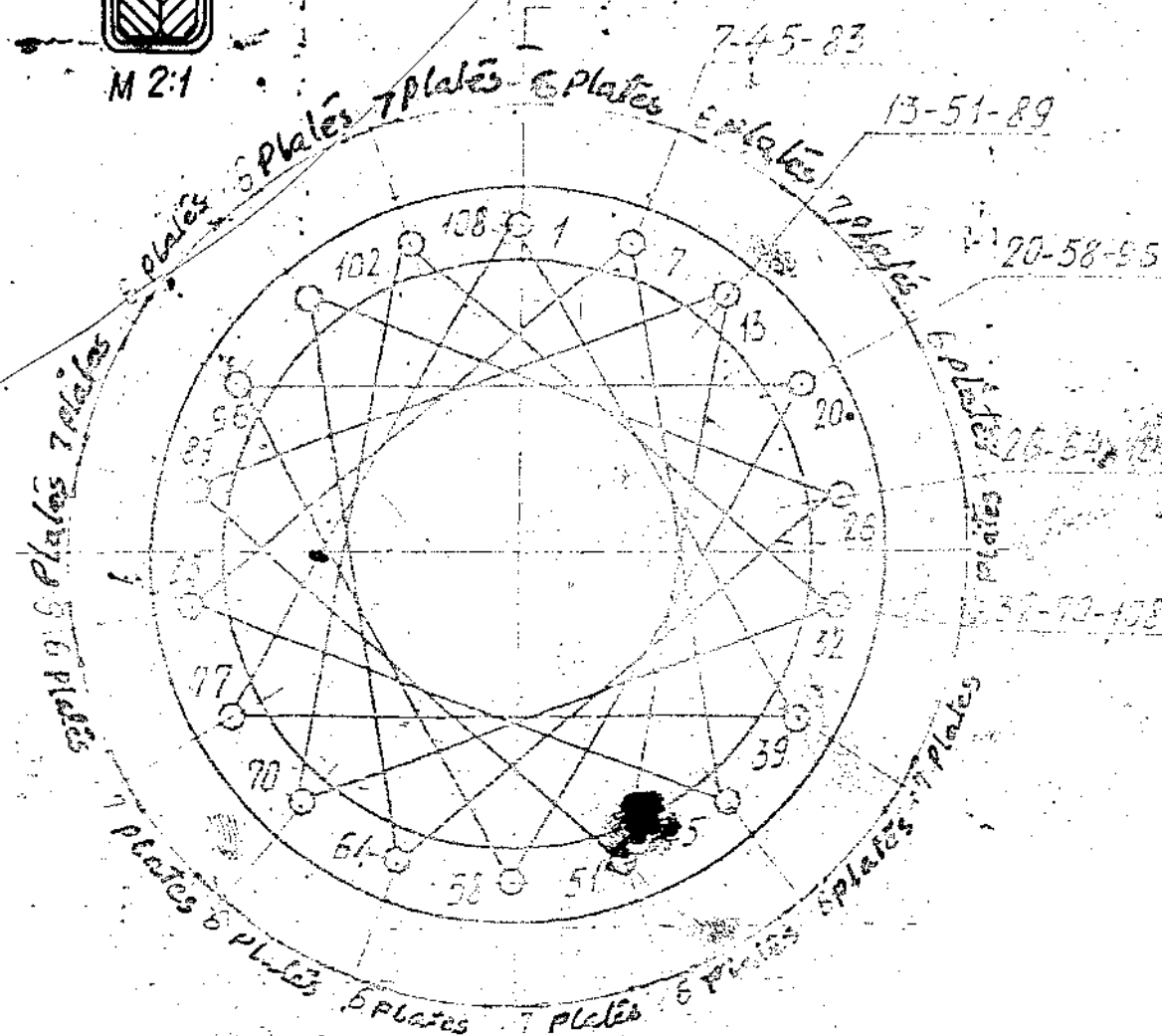


DIAGRAM SHOWING EQUIPOTENTIAL CONNECTIONS TO COMMUTATOR



VIEW FROM THE COMMUTATOR END

S.No	Designation	Description	Qty	Remarks
8		Electric-grade card-board 3BT 0.5 GOST 2824-75		alternate
7	810.079H-7	Film $\phi = 4$ grade-1 0.040x10		Without drawing
6	810.079H-6	Glass varnished fabric 155 -155 10x10 GOST 10156-78		Without drawing
5	810.079H-3	Electric-grade card-board 3BT 0.1 GOST 2824-75		alternate
4	810.079H-4	Electric-grade card-board 3BT 0.1 GOST 2824-75		Without drawing
3	810.079H-5	Electric-grade card-board 3BT 0.1 GOST 2824-75		Without drawing
2	810.079H-2	Glass micener 22 GOST 8727-78		Without drawing
1	810.079H-1	Wire mark COT-10.80X3.5 TY 16-705.074-70		Without drawing

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

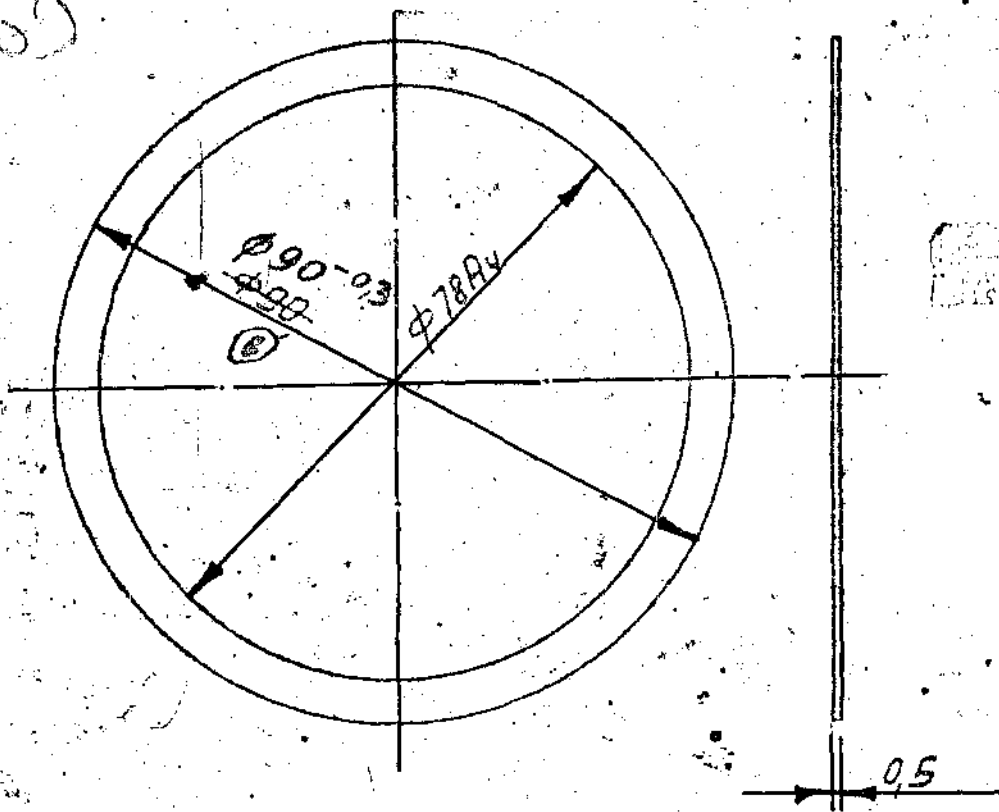
43

ISSUE	DATE	NATURE OF AMENDMENTS	EST. MASS 0.02 Kg	TO BE STAMPED ON INDICATED THUS $\phi$ (LETTERS)
DRN		SCALE: 1:1		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNER TO HAVE R OUTSIDE A RIGID EQUIVALENT CHAMFERS ARE PERMISSIBLE
CHD		DIMENSIONS IN mm		MATERIAL: - USED ON: 500-155 H
TED		TOLERANCE ON DIMS UNLESS OTHERWISE STATED		CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
APPD		ALL THREADS TO CONFORM TO		$\phi$ TITLE: SECTION
DATE: 9-87				D'S CAT NUMBER: DRAWING NUMBER: 810 079 H

H 857-168

Alternate material is glass textolite CT-II  
Gost 12652-74.

XIII  
109



AMDI. NOTN. No: 250-78

*Amidt modifikas  
Bolder lines*

D-83

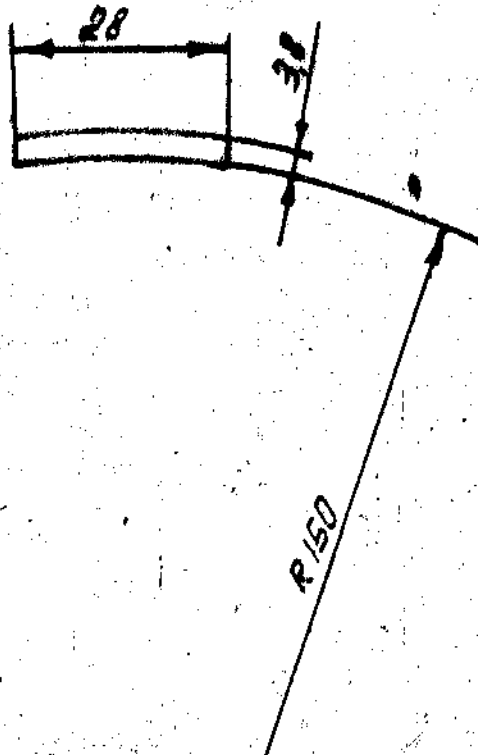
\* GLASS TEXTOLITE OF GRADE CT-1  
GOST 12652-74

PILOT SAMPLE SHOULD BE APPROVED BY AHS P. BEFORE-BULK PRODUCTION

		EST. MASS 0.0011 Kg	(TO BE STAMPED OR MARKED WHERE DEDICATED THUS IN LETTERS)
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE	
ISSUE DATE	NATURE OF AMENDMENTS	MATERIAL * SEE ABOVE	USED ON: 750 171 H
DRN	SCALE: 1:1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
CHD	DIMENSIONS IN mm	TITLE: INSULATION WASHER	
TCD	TOLERANCE ON DIMS UNLESS OTHERWISE STATED	D S CAT NUMBER	DRAWING NUMBER 891 458 H
ARP	ALL THREADS CONFORM TO		
DATE: 9-9-87			

H9hL E68

1. Tolerances for free dimensions are as per accuracy Class 7, OST 1010.
2. Alternate material is Mica C/M-1 TY 21-25-2574.



*Border line*

Thickness 0,15 mm.

D-83

X141

PROT. SAMPLE SHOULD BE APPROVED BY AHEP BEFORE MASS PRODUCTION

126

EST. MASS	0-00005 Kg	TO BE STAMPED ON LOCATED THRS	(LETTERS)
ISSUE DATE	NATURE OF ASSIGNMENT	ALL SHARP EDGES AND CORNERS TO BE RELIEVED UNLESS OTHERWISE STATED	RADIUS EQUIVALENT CHAMFER ARE PERMISSIBLE
DRAWN <i>[Signature]</i>	SCALE - 1:1	MATERIAL - MICA C/M-1	USED ON - 500 155 H
CHECKED <i>[Signature]</i>	DIMENSIONS IN mm	TY 21 - 25 - 2574	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
TCD <i>[Signature]</i>	TOLERANCE ON DIMS UNLESS OTHERWISE STATED	TITLE: GASKET	DRAWING NUMBER 893766 H
APPD <i>[Signature]</i>	ALL THREADS TO	D S CAT NUMBER	

