

23A ** REPAIR SIZE DIMENSIONS

DRAWING No.	X	Y
3304-08-9 R1	DIA 150	2.68 ± 0.02
3304-08-9 R2	DIA 150.2	2.38 ± 0.02
3304-08-9 R3	DIA 150.2	2.68 ± 0.02

24 ** REPAIR SIZE DIMENSION

CATEGORY	DIMENSION 'S'
3304-08-09-R1	150.10
3304-08-09-R2	150.20

EXPLANATORY NOTE

23A MATERIAL QUOTED : WIRE 3.1x7.5 TY 14-4-229-72
 SQUARE GAUGE STEEL WIRE, WITH SIDES 3.1mm AND 7.5mm.
 WIRE MATERIAL : GRADE 65 G AS PER GOST 1058-76.

a) CHEMICAL COMPOSITION - AS PER GOST 1058-76.

GRADE	CONTENT OF ELEMENTS %								
	C	SI	Mn	Cr	Ni	Cu	S	P	
65 G	0.62-0.70	0.17-0.37	0.90-1.20	0.25	0.25	0.25	0.040	0.035	

b) MECHANICAL PROPERTIES
 ULTIMATE TENSILE STRENGTH : 90 - 120 Kgf/mm²

NUMBER OF BENDS : 3 (min) WHILE TESTING ON ROLLERS WITH A DIAMETER OF 20mm.

23A ** 27A. CHECK SIZE 'K' USING THE FOLLOWING SIZED WASHERS:
 - WITH A DIAMETER OF 150.10 ± 0.03 mm FOR RING 3304-08-9 R1;
 - WITH A DIAMETER OF 150.20 ± 0.03 mm FOR RINGS 3304-08-9 R2, R3

24 ** 27B. MARKS R1, R2, R3 TO BE APPLIED WITH RESPECT TO THE REPAIR.

24 SIZE CATEGORY USING SOLUTION NO. 5 PREPARED ACCORDING TO
 ИЛ-16-73. LETTERING И0-3, GOST 2930-62

TECHNICAL REQUIREMENTS - TRANSLATED

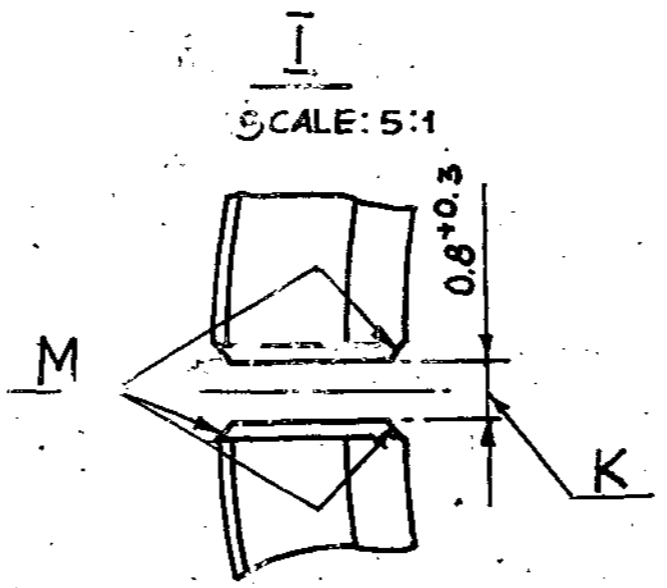
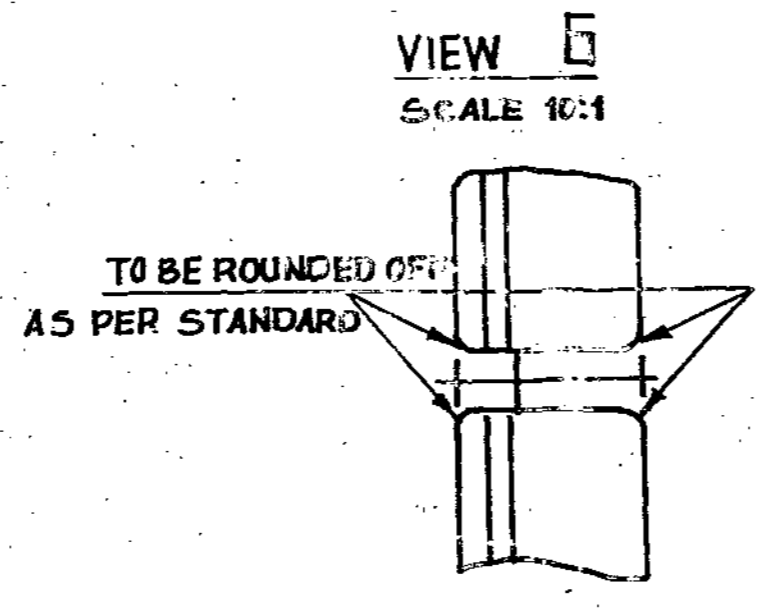
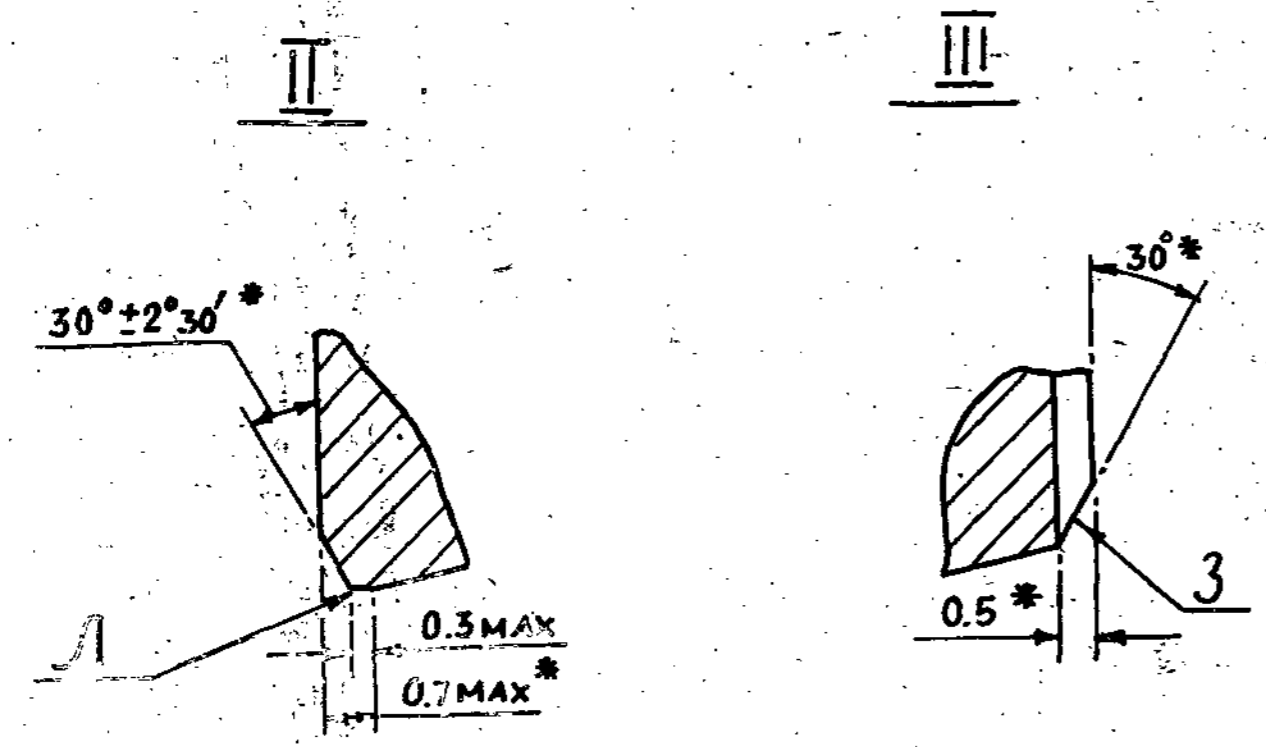
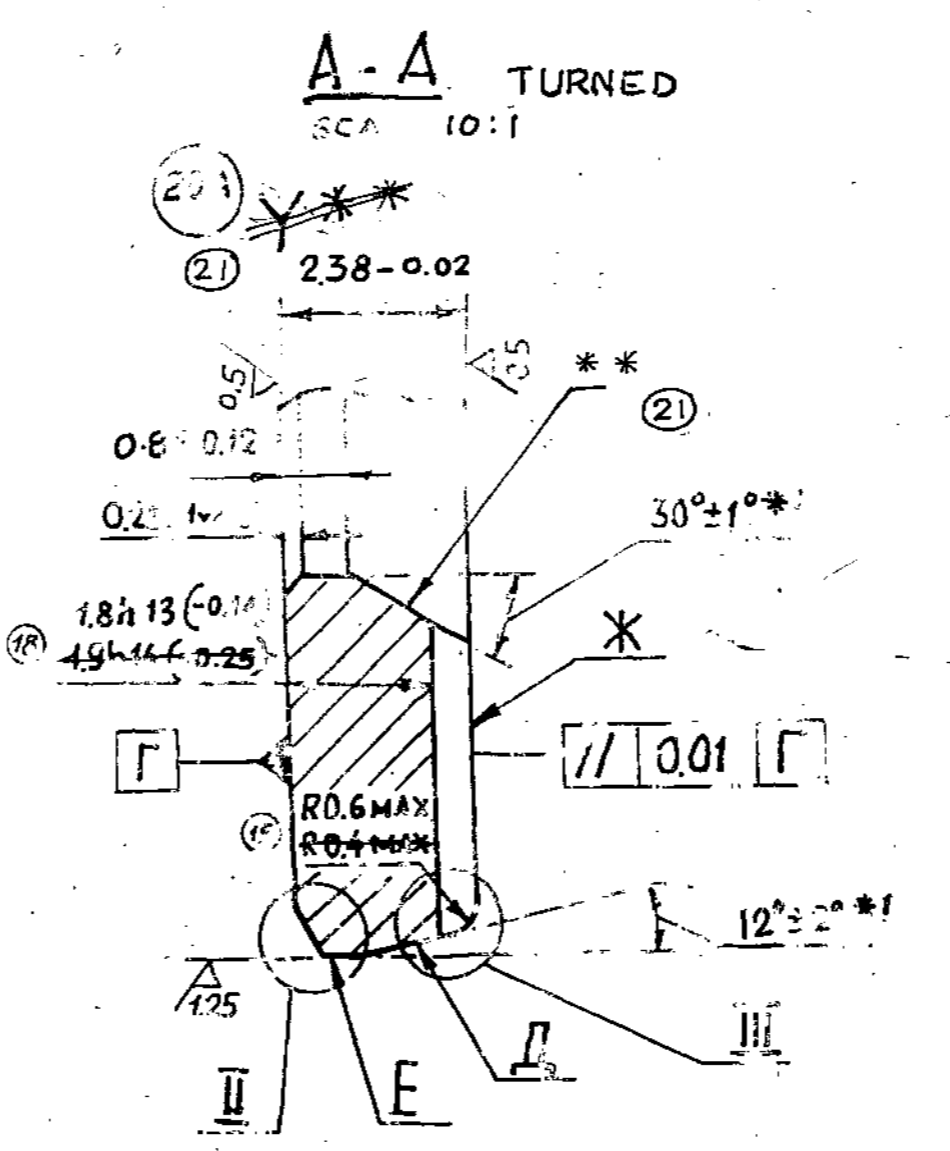
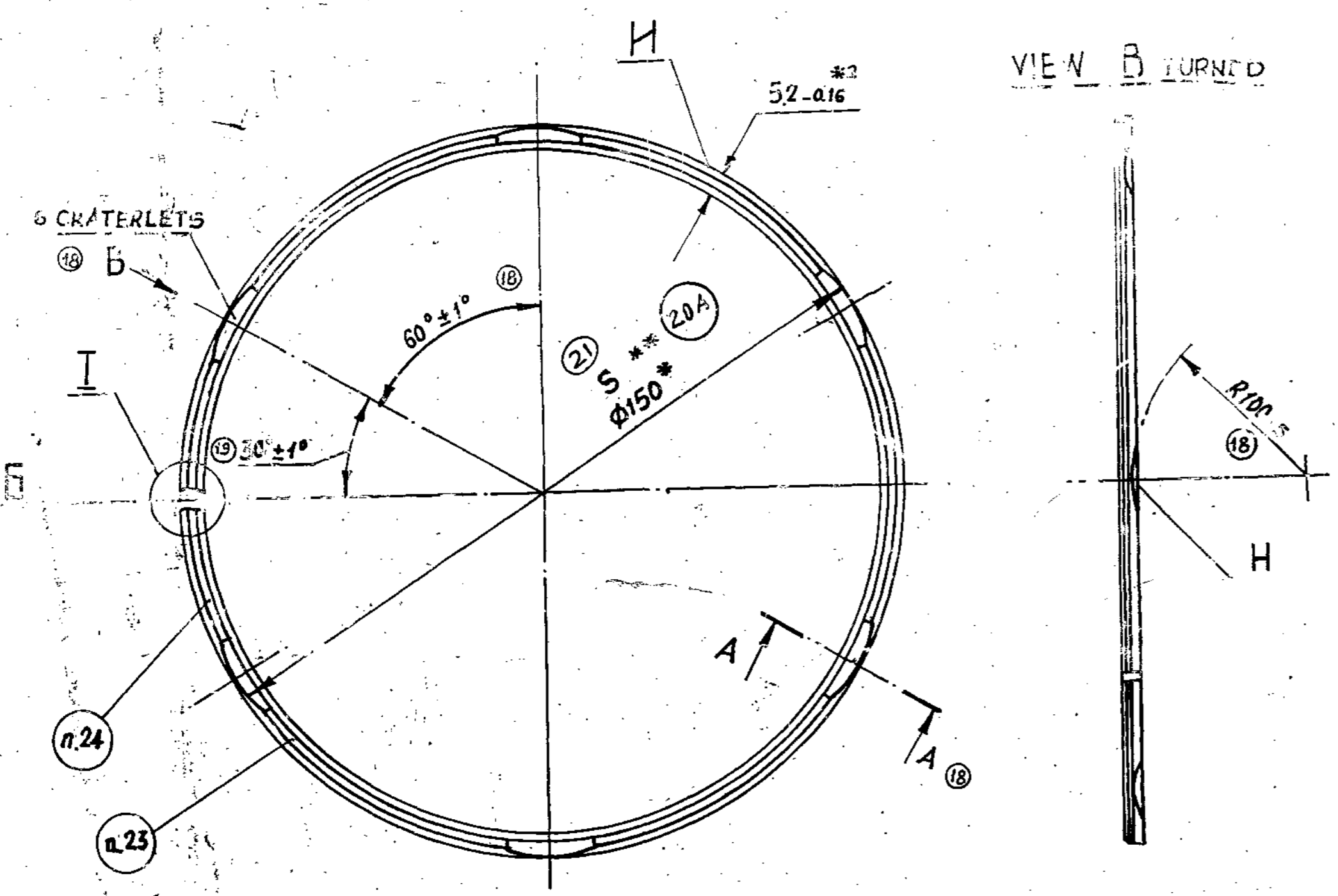
- INSPECTION GROUP AS PER IT-11.
- HRC₂ 21 TO 29 WITH HRC₃ ≤ 22 MEASUREMENTS ARE TO BE TAKEN ON SCALE B, IN THIS CASE HRB ≥ 96.
- REQUIREMENTS FOR BLANK AS PER TY 14-4-229-72.
- VARIATION IN WIDTH OF DIMENSION U SHOULD NOT EXCEED 0.1 mm.
- ROUGHNESS OF SURFACE E AFTER CHROMIUM MOLYBDENUM COATING IS 0.32.
- CRACKS, ROUGH SPOTS, DENTS AND METALLURGICAL DEFECTS ARE NOT PERMISSIBLE ON THE SURFACE OF SLINGER.
- COATING OF SURFACE A AND E Cr.Mo AS THICK AS 60-120 MICRONS AS PER UA-212-76 COATING IS TO BE APPLIED (WITH SLINGER) IN COMPRESSED STATE.
- TO BE COATED WITH OI AFTER CHROMIUM MOLYBDENUM ALLOY COATING IS APPLIED AS PER UA-570-84.
- HV 550 TO 800 FOR SURFACES A AND E AFTER CHROMIUM MOLYBDENUM ALLOY COATING, TO BE CHECKED AS PER UA-212-76.
- THE DEVIATION IN TOTAL THICKNESS OF CHROMIUM MOLYBDENUM ALLOY FOR ONE SLINGER SHOULD NOT EXCEED 0.04 mm.
- CHIPPING OF CHROMIUM MOLYBDENUM ALLOY IS NOT ALLOWED.
- SHARP EDGES SHOULD BE PROVIDED ALONG THE ENTIRE PERIMETER ON PLACE * ON FINISHED SLINGER. BURRS ARE NOT ALLOWED.
- BEFORE COATING WITH CHROMIUM MOLYBDENUM ALLOY THE SLINGER SHOULD BE CHECKED FOR DEFECTS BY MAGNETIC-FIELD FLAW DETECTOR AND DEMAGNETIZED.
- AFTER GRINDING, CYLINDRICAL BAND E UP TO 0.5 mm WIDE IS PERMISSIBLE AT A DISTANCE OF 12 mm FROM THE EDGE OF THE LOCK GAP.
- PLACES S ARE TO BE BLUNTED ON 2 SIDES TO RADIUS OR CHAMFER 0.3 TO 0.6 mm TO BE ACCEPTED AS PER STANDARD.
- LOCK GAP IN FREE POSITION IS 0.23 mm.
- SLINGER ELASTICITY ON BAND DEVICE IS 2000 TO 2700 gf, PROVIDED DIMENSION K IS ENSURED.
- DIMENSION K FOR NOMINAL DIAMETER.
- RADIAL CLEARANCE BETWEEN THE SLINGER AND CALIBRATED WASHER Ø150 mm WITH THE TOLERANCE FOR QUALITY OF CALIBRATED WASHER 0.0025 mm MAX. (SEMI DIFFERENCE DIAMETER) MAY BE 0.02 mm OVER AN ARC OF 45° AT ONE PLACE OR AT 2 PLACES WITH TOTAL ARC UP TO 45° WITH SUBSEQUENT SMOOTH MEMENT TO BOTH SIDES TO ZERO, TO BE ACCEPTED AS PER STANDARD.
- NON FLATNESS OF SURFACES B AND G IS TO BE CHECKED BY PAINTING BETWEEN TWO PLATES. THE WEIGHT OF TOP PLATE IS 17kg. THE IMPRINT SHOULD UNIFORMLY COVER 75% MINIMUM OF SLINGER FACE SURFACE. IN THIS CASE THE IMPRINT SHOULD BE 2mm WIDE AND UNINTERRUPTED ALONG THE ENTIRE CIRCUMFERENCE TO BE SUBJECTED TO SPOT CHECKING ON THE DEMAND OF BID, BUT NOT LESS THAN 10%.
- BUCKLING OF SLINGER IS TO BE CHECKED AFTER TANNING BY PASSING IT THROUGH THE SLIT FIXTURE. THE SLINGER SHOULD FREELY PASS THROUGH THE SLIT IN THE FIXTURE BY ITS OWN WEIGHT. DIMENSION OF SLIT IS 2.44 ± 0.01 mm. TRACES LEFT OUT BY MEASURING TOOL (SLIT) ON SURFACES B AND G ARE ALLOWED.
- TOP IS TO BE MARKED WITH PAINT AS PER UA-16-73 TYPE И0-25 GOST 2930-62.
- THE LAST THREE DIGITS OF COMPONENT NUMBER ARE TO BE MARKED WITH PAINT AS PER UA-16-73, TYPE И0-25 GOST 2930-62.
- ** DIMENSIONS FOR REFERENCE.
- *1 DIMENSIONS ARE TO BE ENSURED BY TOOL.
- *2 DIMENSION AFTER CHROMIUM MOLYBDENUM COATING.
- MARKING WITH A DEPTH NOT MORE THAN 0.05 mm ON SURFACE J IS ALLOWED TO BE ACCEPTED AS PER STANDARD.

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

EST. MASS TO BE STAMPED OR MARKED WHERE INDICATED IN THIS DRAWING.
 0.04 kg.

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

DRN	EHD	TCC	APPD	DATE	SCALE	DIMENSIONS IN mm	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IN 2102-69	TITLE	D S CAT NUMBER	DRAWING NUMBER
				23.8.87	4:1			OIL SLINGER RING PISTON		3304-08-9
MATERIAL : WIRE 3.1x7.5 TY 14-4-229-72						USED ON : C6 3304-01-Bc6		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI		
AUTHY LT No. 83353/CQA(CVE)/IND IV dt 6-12-94						V46-6/IND IV dt 31-1-92		NATURE OF AMENDMENTS		
24	10-12-94									
23A	19-3-92									
ISSUE	DATE									



20A ** REPAIR SIZE DIMENSIONS 21

DRAWING NUMBER	X	Y
3304-08-11 R1	DIA 150	2.68 ± 0.02
3304-08-11 R2	DIA 150.2	2.38 ± 0.02
3304-08-11 R3	DIA 150.2	2.68 ± 0.02

21 ** REPAIR SIZE DIMENSIONS

CATEGORY	DIMENSION 'S'
3304-08-11-R1	150.10
3304-08-11-R2	150.20

- INSPECTION GROUP III AS PER TT-11.
- HRC₃ 21 TO 29. WITH HRC₃ ≤ 22 MEASUREMENTS ARE TO BE TAKEN ON SCALE 'B' IN THIS CASE HRB ≥ 96.
- REQUIREMENTS TO BLANK AS PER TY 14-4-229-72.
- DIFFERENCE IN DIMENSION 'U' SHOULD NOT EXCEED 0.1 mm BEFORE CHROMIUM MOLYBDENUM COATING.
- ROUGHNESS OF SURFACE 'E' AFTER CHROMIUM MOLYBDENUM COATING IS TO BE PERMISSIBLE ON OIL SLINGER SURFACE.
- CRACKS, ROUGH SPOTS, DENTS AND METALLURGICAL DEFECTS ARE NOT PERMISSIBLE ON OIL SLINGER SURFACE.
- COATING OF SURFACES 'A' AND 'E', Cr. Mo. AS THICK AS 60-120 MICRONS AS PER U17-212-76. COATING IS TO BE APPLIED IN COMPRESSED STATE.
- TO BE COATED WITH O1 AFTER CHROMIUM MOLYBDENUM ALLOY IS APPLIED TO AS PER U17-212-76.
- HV 550-800 FOR SURFACE 'A' AND 'E' AFTER CHROMIUM MOLYBDENUM ALLOY IS APPLIED, TO BE CHECKED AS PER U17-212-76.
- DIFFERENCE IN TOTAL THICKNESS OF CHROMIUM MOLYBDENUM LAYER FOR ONE SLINGER SHOULD NOT EXCEED 0.04 mm.
- SPALLING OF CHROMIUM MOLYBDENUM LAYER IS NOT ALLOWED.
- CHROMIUM MOLYBDENUM COATING MAY NOT BE APPLIED ON TO SURFACE '3'.
- SHARP EDGE IS TO BE PROVIDED ALONG THE ENTIRE PERIMETER OF THE FINISHED SLINGER AT PLACE 'J', BURRS ARE NOT ALLOWED.
- BEFORE COATING WITH CHROMIUM MOLYBDENUM ALLOY THE RING SHOULD BE CHECKED FOR DEFECTS BY MAGNETIC FIELD FLAW DETECTOR AND DEMAGNETIZED.
- CHIPPING OF CHROMIUM MOLYBDENUM COATING IS ALLOWED ON SURFACE 'A' AT PLACES 'H' UP TO 0.8 mm FROM SURFACE 'K' TO BE ACCEPTED AS PER STANDARD.
- PLACES 'M' ARE TO BE ROUNDED ON 2 SIDES TO RADIUS OR CHAMFER 0.3 TO 0.6 mm TO BE ACCEPTED AS PER STANDARD.
- RING GAP IS 18 TO 23 mm IN A FREE STATE.
- ELASTICITY OF RING ON A BAND DEVICE 18...25 N (1.8...2.5 kgf) WITH DIMENSION K.
- DIMENSION K FOR NOMINAL DIAMETER.
- RADIAL CLEARANCE BETWEEN THE SLINGER AND CALIBRATED WASHER $\phi 150 \pm 0.013$ mm WITH TOLERANCE FOR OVALITY OF CALIBRATED WASHER NOT MORE THAN 0.0025 mm (SEMI-DIFFERENCE OF DIAMETER) MAY BE 0.02 mm OVER AN ARC OF 45° AT ONE PLACE OR AT 2 PLACES WITH TOTAL ARC UP TO 45° WITH SUBSEQUENT SMOOTH MERGING TO BOTH SIDES TO ZERO, CLEARANCE WITH 0.01 mm IS ALLOWED ON ONE OR 2 SIDES OF THE LOCK GAP OVER A LENGTH UP TO 8 mm GAP TO BE ACCEPTED AS PER STANDARD.
- DEVIATION FROM FLATNESS OF SURFACES 'G' AND 'K' TO BE CHECKED BY BLUEING BETWEEN TWO PLATES. THE WEIGHT OF TOP PLATE IS 1.7 kg, THE IMPRINT SHOULD BE UNIFORMLY SPREAD OVER AT LEAST 75% OF THE SLINGER FACE SURFACE. IN THIS CASE THE IMPRINT SHOULD BE 2 mm WIDE AND UNINTERRUPTED ALONG THE ENTIRE CIRCUMFERENCE. TO BE CHECKED AT RANDOM ON THE DEMAND OF QID BUT NOT LESS THAN 10%.
- TOP IS TO BE MARKED.
- THE LAST THREE DIGITS OF COMPONENT NUMBER TO BE MARKED.
- DURING MARKING - SOLUTION N8 AS PER U17-581-85, TYPE J TO 2.5 GOST 2930-62.
- DIMENSIONS FOR REFERENCE.
- DIMENSIONS ARE TO BE ENSURED WITH TOOL.
- DIMENSIONS AFTER CHROMIUM MOLYBDENUM COATING.
- BUCKLING OF SLINGER IS TO BE CHECKED AFTER TIN PLATING, BY PASSING IT THROUGH THE SLOT FIXTURE, SLINGER SHOULD READILY PASS THROUGH THE SLOT IN THE FIXTURE BY GRAVITY, DIMENSION OF SLOT IS 2.44 ± 0.01 mm MARKS FROM MEASURING TOOL (SLOT) ARE ALLOWED ON SURFACES 'K' AND 'G'.

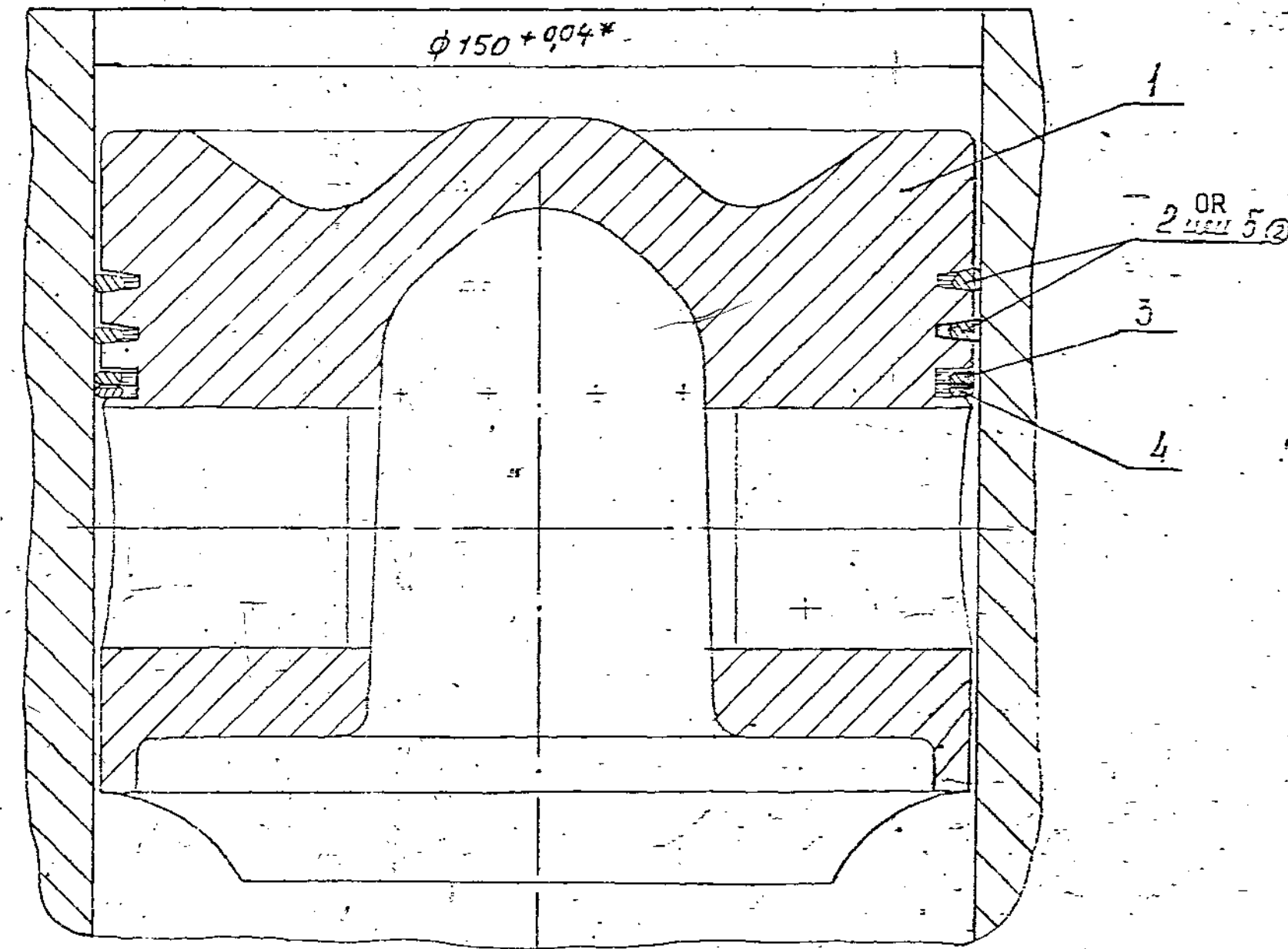
- ** 29A. CHECK SIZE 'K' USING THE FOLLOWING SIZED WASHERS:
- 21 - WITH A DIAMETER OF 150.10 ± 0.03 mm FOR RING 3304-08-11 R1.
 - 21 - WITH A DIAMETER OF 150.20 ± 0.03 mm FOR RINGS 3304-08-11 R2, R3.
- ** 29B. MARKS R1, R2, R3 TO BE APPLIED WITH RESPECT TO THE REPAIR SIZE CATEGORY USING SOLUTION NO.5 PREPARED ACCORDING TO U17-16-73. LETTERING n0-3, GOST 2930-62.

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

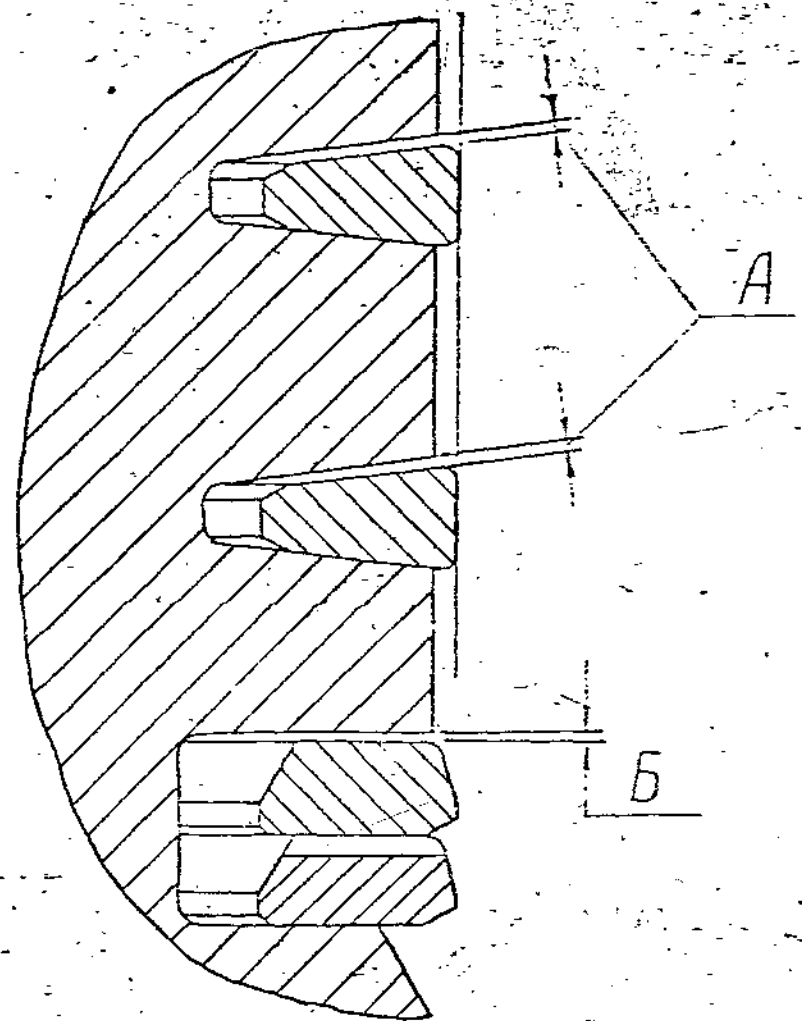
EST. MASS 0.037 kg TO BE STAMPED OR MARKED WHERE INDICATED THUS * (LETTERS)

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

DRN	MATERIAL	USED ON
CHD	WIRE 3.1 x 7.5	3304-01-8 G5
TCD	TY 14-4-229-72	
APPD	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
DATE	29.8.87	
SCALE	1:1	
DIMENSIONS IN mm		
TOLERANCE ON DIMS UNLESS OTHERWISE STATED		
TITLE: OIL CONTROL RING, PISTON		
D S. CAT NUMBER		
DRAWING NUMBER 3304-08-11		



CHECK POINTS
Схема контроля
M5:1 SCALE 5:1



1. При надевании колец на поршень пользоваться специальным приспособлением. Максимальный разбег кольца в приспособлении не более 41 мм.
2. При надевании колец на поршень маркировка "ВЕРХ" должна быть обращена в сторону камеры сгорания.
3. После комплектовки поршневых колец на поршне произвести проверку на закусывание всех колец в канавках. Кольца при перемещении в канавках не должны заклиниваться.
4. Зазор А $0,13 \dots 0,07$ мм в плоскости перпендикулярной оси поршневого пальца замерять в специальном приспособлении гильзе с окнами. Замеры производить без колец в 3^{ей} канавке. Гильзу поршня прижать к стороне шльзы, где производится замеры.
5. Зазор Б 0,10 мм, не более, замерять на поршне.
- 6.* Размер для справок.

- 1 TO PUT THE RINGS ON PISTON, SPECIAL FIXTURE SHOULD BE USED. MAXIMUM SPREADING OF RING ENDS IN THE FIXTURE SHOULD NOT EXCEED 41mm
- 2 RINGS SHOULD BE PUT WITH A MARK "TOP" FACING COMBUSTION CHAMBERS
- 3 AFTER INSTALLATION OF PISTON RINGS ON PISTON, RINGS SHOULD BE CHECKED FOR BITING IN ALL THE GROOVES. THE RINGS SHOULD NOT BE JAMMED WHEN MOVING IN THE GROOVES
- 4 CLEARANCE A 0.13 0.07 mm IN THE PLACE PERPENDICULAR TO THE AXIS OF PISTON PIN SHOULD BE CHECKED IN SPECIAL FIXTURE. LINER WITH OPENINGS. MEASUREMENTS ARE TO BE TAKEN WITHOUT RINGS IN THE 3rd GROOVE. PISTON SKIRT SHOULD BE PRESSED AGAINST THAT SIDE OF THE LINER WHERE MEASUREMENTS ARE TAKEN.
- 5 CLEARANCE B 0.10 mm MAX IS TO BE MEASURED ON PISTON.
- 6 * DIMENSIONS FOR REFERENCE

2	БК 84-172	30.01.87
1	БК 84-215	14.02.87

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

EST. MASS 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	CHD	TCD	APPD	DATE	SCALE	DIMENSIONS	TOLERANCE	ALL THREADS	ISSUE	DATE	NATURE OF AMENDMENTS
				29-8-87	1:1	IN mm	ON DIMNS UNLESS OTHERWISE STATED	CONFORM TO			
MATERIAL:-								USED ON:-		C6 3305-00-18	
CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)								AVADI		DRAWING NUMBER	
TITLE:-								D S CAT NUMBER		C63304-01-8C6	
PISTON WITH RINGS											

AUTHY: BK 82-429A

