

DRAWING NUMBER

20 13 15-1

UNLESS OTHERWISE SPECIFIED R<sub>z</sub>80

✓(V)

**EXPLANATORY NOTE :-**

THE COMPONENT SHOULD BE PRODUCED FROM COLD DEFORMED CARBON AND ALLOY SEAMLESS STEEL TUBE GRADE 20 TO GOST 8733-74. TOLERANCE ON EXTERNAL  $\phi 20 \pm 0.3 \text{mm}$  TO GOST 8734-75.

ALTERNATIVELY IT CAN BE PRODUCED FROM CARBON STRUCTURAL KILLED STEEL OF GRADES 15,25&30 TO GOST 1050-74. AND STEEL OF GRADE 45 TO GOST 8733-74.

CHEMICAL COMPOSITION: % AS PER GOST 1050-74.

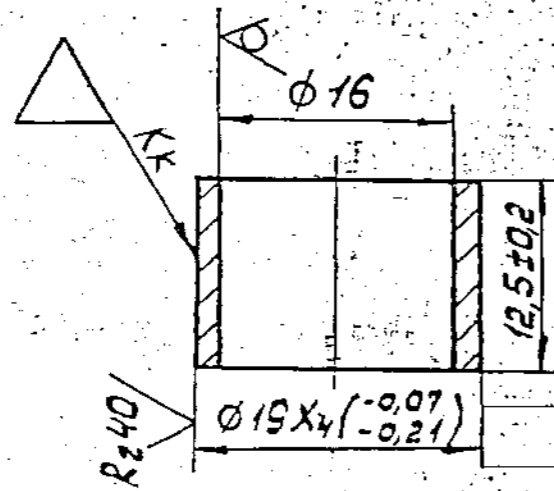
GRADE OF STEEL	C	Si	Mn	Cr (MAX)
20	0.17-0.24	0.17-0.37	0.35-0.65	0.25
15	0.12-0.19	0.17-0.37	0.35-0.65	0.25
25	0.22-0.30	0.17-0.37	0.50-0.80	0.25
30	0.27-0.35	0.17-0.37	0.50-0.80	0.25
45	0.42-0.50	0.17-0.37	0.50-0.80	0.25

**NOTE:-**

- a) CONTENTS OF SULPHUR 0.040% (MAX) & PHOSPHORUS 0.035% (MAX)
- b) RESIDUAL CONTENTS OF COPPER & NICKEL SHOULD NOT EXCEED 0.25% EACH.

MECHANICAL PROPERTIES AS PER GOST 1050-74.

GRADE OF STEEL	YIELD POINT Kg/mm <sup>2</sup>	U T S Kgf/mm <sup>2</sup>	ELONGATION%		IMPACT STRENGTH Kcm/cm <sup>2</sup>
			MINIMUM	OF AREA %	
20	25	42	25	55	-
15	23	38	27	55	-
25	28	46	23	50	9
30	30	50	21	50	8
45	36	61	16	40	5



- 1. ALTERNATE MATERIAL IS STEEL 15, 25, 30, GOST 1050-74 AND 45 GOST 8733-74.
- 2. COATING : CHEMICALLY OXIDIZED & OILED.

(A)

EQUIVALENT MATERIAL  
CDS-1 IS: 3074

KVD No. 63315

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

EST. WT. 0.007Kg. TO BE STAMPED OR MARKED WHERE INDICATED THUS  $\#$  (LETTERS)

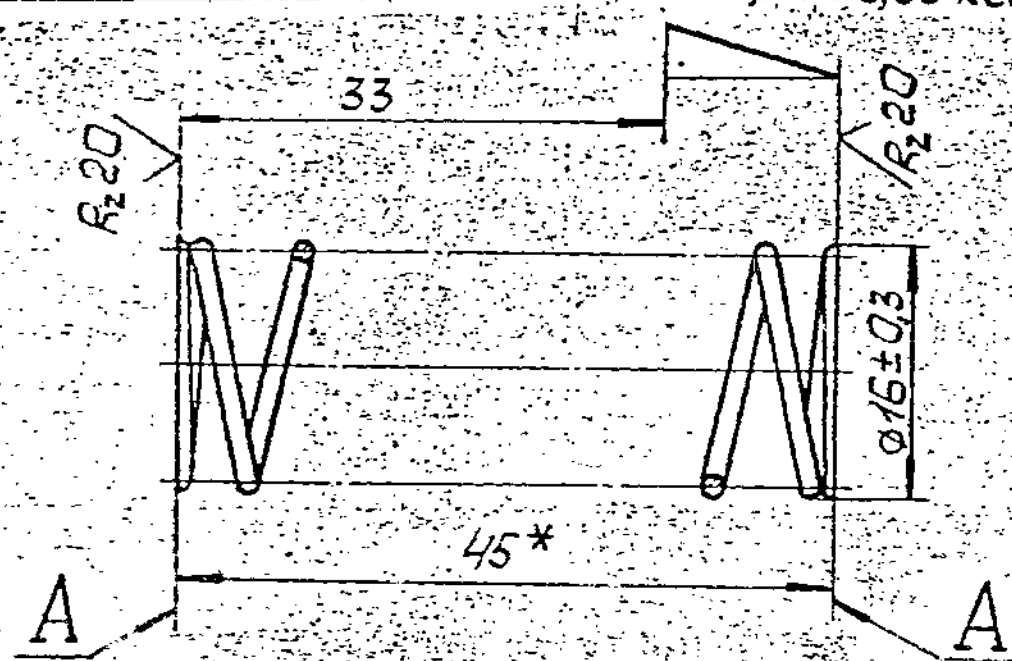
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT SIDE INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE

DRN	CHKD	TCD	APPD	DATE	SCALE	MATERIAL:- PIPE	USED ON
				28 07 89	2 : 1	20 x 2 GOST 8734-75	20-13-00-9
						20 GOST 8733-74	
						CONTROLLERATE OF QUALITY ASSURANCE(HEAVY VEHICLES)	
						AVADI	
						DIMENSIONS IN mm	TITLE
						TOLERANCE ON DIMMS UNLESS OTHERWISE STATED IS:2102-69	SPACER
						ALL THREADS TO CONFORM TO	D S CAT NUMBER
						4 <sup>th</sup> ALT. COMM. MEg. MINUTE	DRAWING NUMBER
						POINT No 4 DT. 26.10.09	20 13 15-1
						ISSUE DATE	NATURE OF AMENDMENTS



SIZE A3

DRAWING NUMBER  
20 13 61



1.  $G = 810^3 \text{ Kgf/mm}^2$
2.  $E_s = 192 \text{ Kgf/mm}^2$
3. SPRING WINDING DIRECTION IS CLOCK-WISE
4.  $n = 10$
5.  $n_1 = 14.85$
6. TOTAL LENGTH OF SPRINGS IS  $L \approx 660\text{mm}$
7. NON UNIFORMITY OF PITCH 'T' SHOULD NOT EXCEED 1.0mm,
8. NON-SQUARENESS OF SURFACES 'A' WITH RESPECT TO GENERATRIX IS 1.0mm OVER THE SPRING LENGTH.
9. MAJOR DIAMETER OF BEARING COILS MAY INCREASE UPTO 16.5mm.
10. GAP BETWEEN COMPRESSED COILS SHOULD NOT EXCEED 0.25mm,
11. BEARING SURFACE OF COIL SHOULD BE ATLEAST 0.75 OF THE CIRCUMFERENCE LENGTH. THICKNESS OF THE BEARING COIL END SHOULD BE ATLEAST 0.3mm
- 12.\* DIMENSION IS GIVEN FOR REFERENCE.
13. COATING : CHEMICALLY OXIDIZED&OILED.

**EXPLANATORY NOTE :-**

THE COMPONENT SHOULD BE PRODUCED FROM CARBON STEEL COLD DRAWN WIRE TOLERANCE ON SPRING WIRE  $\phi 1 \pm 0.02$  AS PER NORMAL MANUFACTURING ACCURACY. CHEMICAL COMPOSITION SHOULD BE STEEL OF GRADE KT-2 & SK-7 AND MECHANICAL PROPERTIES AS PER CATEGORY-I TO GOST 9389-75 ARE AS UNDER.

CHEMICAL COMPOSITION : %

GRADE OF STEEL	C	Mn	Si	S	P	Cr	Ni	Cu
				M A X I M U M				
KT-2	0.86 0.91	0.20 0.40	0.17 0.37	0.020	0.020	0.05	0.05	0.10
SK-7	0.68 0.76	0.50 0.80	0.17 0.37	0.030	0.020	0.05	0.05	0.04

MECHANICAL PROPERTIES :

WIRE DIA	CATEGORY	TENSILE STRENGTH Kgf/mm <sup>2</sup>	NO. OF BENDS ( MIN )	NO. OF TWISTS ( MIN )
1.0	I	250-280	9	16

KVD.No. 63319

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

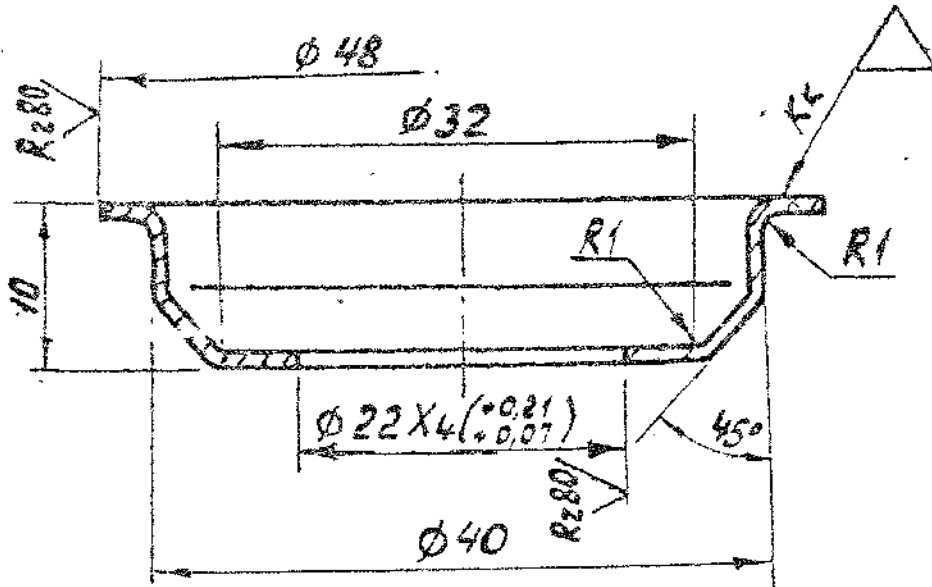
EST. WT. 0.004Kg. TO BE STAMPED OR MARKED WHERE INDICATED THUS # 1 LETTERS)

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

DRN	<i>[Signature]</i>	MATERIAL:-	USED ON
CHKD	<i>[Signature]</i>	WIRE-I-1 GOST 9389-75.	CB 20-13-01-8
TED	<i>[Signature]</i>	CONTROLLERATE OF QUALITY ASSURANCE(HEAVY VEHICLES)	
APPD	<i>[Signature]</i>	AVAD	
DATE	26 07 89	TITLE	
SCALE:-	2 : 1	SPRING	
DIMENSIONS IN mm		D S CAT NUMBER	
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS:2102-69		DRAWING NUMBER	
ALL THREADS TO CONFORM TO		20 13 61	
ISSUE DATE	NATURE OF AMENDMENTS		



SIZE A3



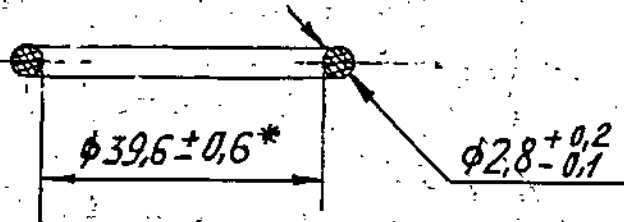
1. ALTERNATE MATERIAL IS STEEL SHEET 08nc GOST 9045-80 AND 08, 10 kn, 10nc, 10, 15, 20 GOST 16523-70, 5 - IV - Γ.
2. REQUIREMENTS PLACED UPON STAMPING ARE AS PER STANDARD 82050-16.
3. COATING IS 06.

~~34~~  
27

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

	EST. WT. 0.020kg	TO BE STAMPED OR MARKED WHERE INDICATED THUS # 1 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:- steel 5 1.0 GOST 19904-74 II-BΓ-08cn GOST 9045-80	USED ON CS 20-13-05-1
NATURE OF AMENDMENTS		
SCALE:- 2:1		
DIMENSIONS IN mm	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.	
TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102-69		TITLE RIM
ALL THREADS CONFORM TO	D S CAT NUMBER	DRAWING NUMBER 20-13-67-1

DRAWING NUMBER  
20-12-90



- 1\* PROVIDE DIMENSION WITH TOOLS.
- 2. MARK ON THE TAG.
- 3. OTHER REQUIREMENTS ARE AS PER TECHNICAL SPECIFICATION STY 005 216-75 FOR ARTICLES CODE 25 3111 HP.

**EXPLANATORY NOTE:-**

**MATERIAL QUOTED:**

RUBBER H.O 68-1 TY 005-216-75  
H068-1-GRADE OF RUBBER

**PARAMETERS:**

- 1. WORKING MEDIUM = AIR, FUELS, OILS AND GASOLINE
- 2. WORKING TEMPERATURE = - 50°C TO + 100°C
- 3. ULTIMATE STRENGTH AT RUPTURE  $\text{Kgf/cm}^2$  (MIN) = 90
- 4. ELONGATION AT RUPTURE % (MIN) = 250
- 5. HARDNESS AGAINST HARDNESS GAUGE TYP UNITS = 55-70
- 6. DENSITY  $\text{g/cm}^3$  = 1.24 ± 0.05
- 7. RESIDUAL ELONGATION AFTER RUPTURE (MAX) = 12

EXP NOTE ADDED QN 3-5-71 KVD NO. 63280

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

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

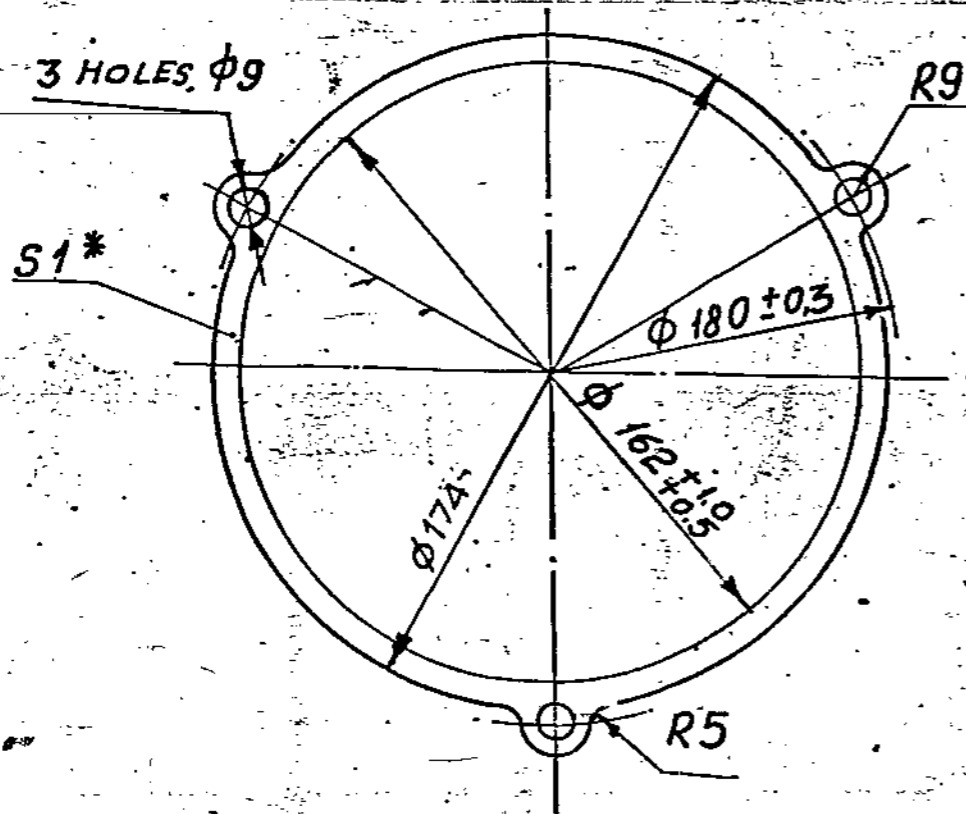
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT SIDE INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE

DRN		MATERIAL:-RUBBER	USED ON CB 20-13-01-8
CHK	<i>[Signature]</i>	H0-68-TTY 005 216-75.	CB 20-12-00-13, CB 20-12-01-13.
TCD	<i>[Signature]</i>	CONTROLLERATE OF QUALITY ASSURANCE(HEAVY VEHICLES)	
APPD	<i>[Signature]</i>	AVADI	
DATE	11-11-87	TITLE	
SCALE:-	1:1	RING	
DIMENSIONS IN mm		D S CAT NUMBER	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS:2102-69		DRAWING NUMBER	
ALL THREADS TO CONFORM TO		20-12-90	
ISSUE DATE	NATURE OF AMENDMENTS		



SIZE A3

DRAWING NUMBER  
20-13-17-2



1. REQUIREMENTS PLACED UPON STAMPING ARE AS PER STANDARD 82050-16.
2. \* DIMENSION IS GIVEN FOR REFERENCE.
3. STAMP FINAL ACCEPTANCE ON TAG (PART 540-551) FOR A BATCH OF PARTS AND SEAL

**EXPLANATORY NOTE :-**

**MATERIAL QUOTED: PARONITE ПМБ 1. GOST 481-80**  
 ПМБ = RUBBERIZED ASBESTOS FABRIC GRADE ПМБ (PMB)

1 = THICKNESS WITH TOLERANCE ± 0.10

**PHYSICAL, MECHANICAL AND TECHNICAL REQUIREMENTS:**

1. WORKING MEDIUM = OIL, FRACTION (DIESEL AUTOMOBILES AVIATION, INDUSTRIAL TURBINES AND TRANSFORMER OILS.)
2. LIMITING PRESSURE  $\text{kgf/cm}^2 = 25$  (MIN)
3. LIMITING TEMPERATURE  $^{\circ}\text{C} = 150$  (MIN)
4. DENSITY  $\text{g/cm}^3 = 1.5 - 2.0$
5. CONVENTIONAL BREAKING POINT TRANSVERSE DIRECTION  $\text{kgf/cm}^2$  (MIN) = 130  
 (a) AFTER SOAKING IN KEROSENE AT  $23^{\circ}\text{C}$  FOR 12 Hrs = 70 (MIN)  
 (b) AFTER SOAKING IN OIL MS-20 OR MK-22 AT  $150^{\circ}\text{C}$  FOR 12 Hrs. = 100. (MIN)
6. INCREASE IN WEIGHT IN LIQUID MEDIA % (MAX)  
 (a) IN KEROSENE AT  $23^{\circ}\text{C}$  FOR 12 Hrs. = 10-24  
 (b) IN OILS MS-20 OR MK-22 = 23 (MIN)
7. COMPRESSIBILITY AT  $350 \text{ kgf/cm}^2$  % = 5-16
8. RECOVERY AFTER REMOVAL OF PRESSURE  $350 \text{ kgf/cm}^2$  % = 35 (MIN)

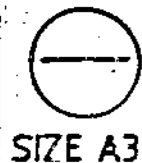
KVD NO. 63316

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

EST. WT. TO BE STAMPED OR MARKED WHERE INDICATED THIS # ( LETTERS)  
 0.007 KG.

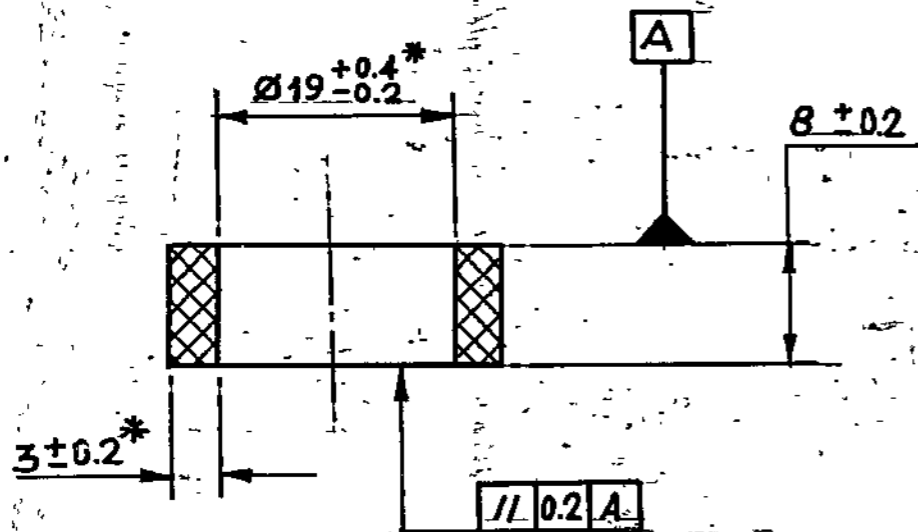
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRN	<i>V. Romanov</i>	MATERIAL - PARONITE ПМБ 1	USED ON
CHD	<i>V. Romanov</i>	GOST 481-80	CB 20-13-01-8
TCD	<i>V. Romanov</i>		
APPD	<i>V. Romanov</i>		
DATE	29-6-91	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	
SCALE	1:2	AVADL	
DIMENSIONS IN mm			TITLE
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS : 2102-69.			GASKET
ALL THREADS TO CONFORM TO		D S CAT NUMBER	DRAWING NUMBER
			20-13-17-2
ISSUE	DATE	NATURE OF AMENDMENTS	



SIZE A3

DRAWING NUMBER  
20-13-63



- 1. \* DIMENSIONS PROVIDED WITH TOOL
- 2. MARK ON THE CABLE
- 3. OTHER REQUIREMENTS ARE AS PER TECHNICAL SPECIFICATION TY.005-216-75 FOR ARTICLES, CODE 25 3113.

**EXPLANATORY NOTE:**

**MATERIAL QUOTED:**

RUBBER H.O. 68-1 TY 005-216-75

**PARAMETERS:**

- 1. WORKING MEDIUM = AIR, FUELS, OILES AND GASOLINE
- 2. WORKING TEMPERATURE = -55 °C TO +100 °C
- 3. ULTIMATE STRENGTH AT RUPTURE } = 90  
Kg.f/cm<sup>2</sup> (MIN)
- 4. ELONGATION AT RUPTURE % (MIN) = 250
- 5. HARDNESS AGAINST HARDNESS GAUGE TYP UNIT = 55-70
- 6. DENSITY g/cm<sup>3</sup> = 1.24 ± 0.05
- 7. RESIDUAL ELONGATION AFTER RUPTURE = 12 (MAX)

EXPLANATORY NOTE ADDED ON 12-3-91

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

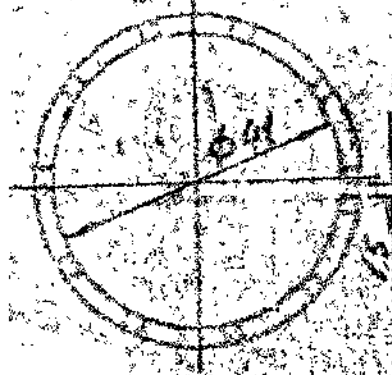
EST. WT. 0.002 kg. TO BE STAMPED OR MARKED WHERE INDICATED THUS # 1 LETTERS)

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

DRN	<i>Ramdas</i>	MATERIAL:- RUBBER HO-68-1 TY005-216-75	USED ON C5 20-01-00-8 C5 20-13-00-9
CHK	<i>Ramdas</i>	CONTROLLERATE OF QUALITY ASSURANCE(HEAVY VEHICLES) AVADI	
TCD	<i>Ramdas</i>		
APPD	<i>V. Ramadas</i>	TITLE SEALING RING	
DATE	18-3-91		
SCALE:-	2:1	D S CAT NUMBER	
DIMENSIONS IN mm TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS:2102-69 ALL THREADS TO CONFORM TO			
ISSUE DATE		DRAWING NUMBER 20-13-63	
NATURE OF AMENDMENTS			



SIZE A3



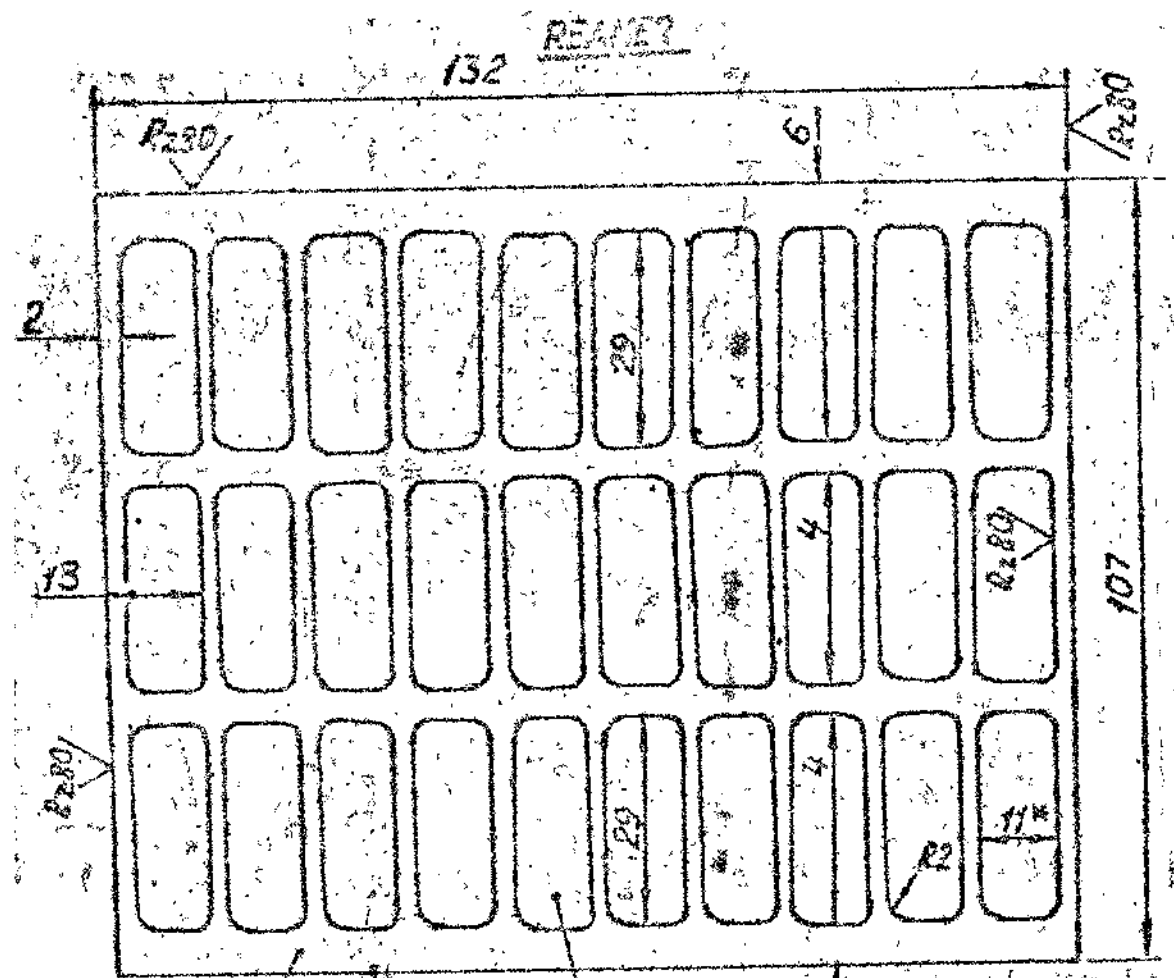
**TECHNICAL CONDITIONS**

1. FERRULE SHALL BE MANUFACTURED FROM COLD ROLL DE DD (ANNEALED) TO IS: 2030-73
2. UNSPECIFIED LIMIT OF DEVIATIONS FOR DIMENSIONS (LENGTHS AND RADII) SHALL BE  $\pm 0.3$  mm.
3. TOLERANCE ON THICKNESS OF SHEET SHALL BE  $\pm 0.05$  mm.
4. DIMENSIONS GIVEN THUS \* ARE FOR REFERENCE.
5. FERRULE SHALL BE CHEMICALLY PERKARIZED ST.
6. MARK PART NO AND MANUFACTURERS SYMBOL ON TO THE ITEM.

1. ALTERNATE MATERIAL IS STEEL SHEET 08, 08 DC, 10 KL, 10 DC, 10, 15, 20, GOST 14523-70.
2. REQUIREMENTS PLACED UPON STAMPING ARE AS PER STANDARD 82050-16.
3. \* DIMENSION IS GIVEN FOR REFERENCE.
4. COATING IS 08.

**NOTE:-**

ALL DIMENSIONS ARE IN MILLIMETRES

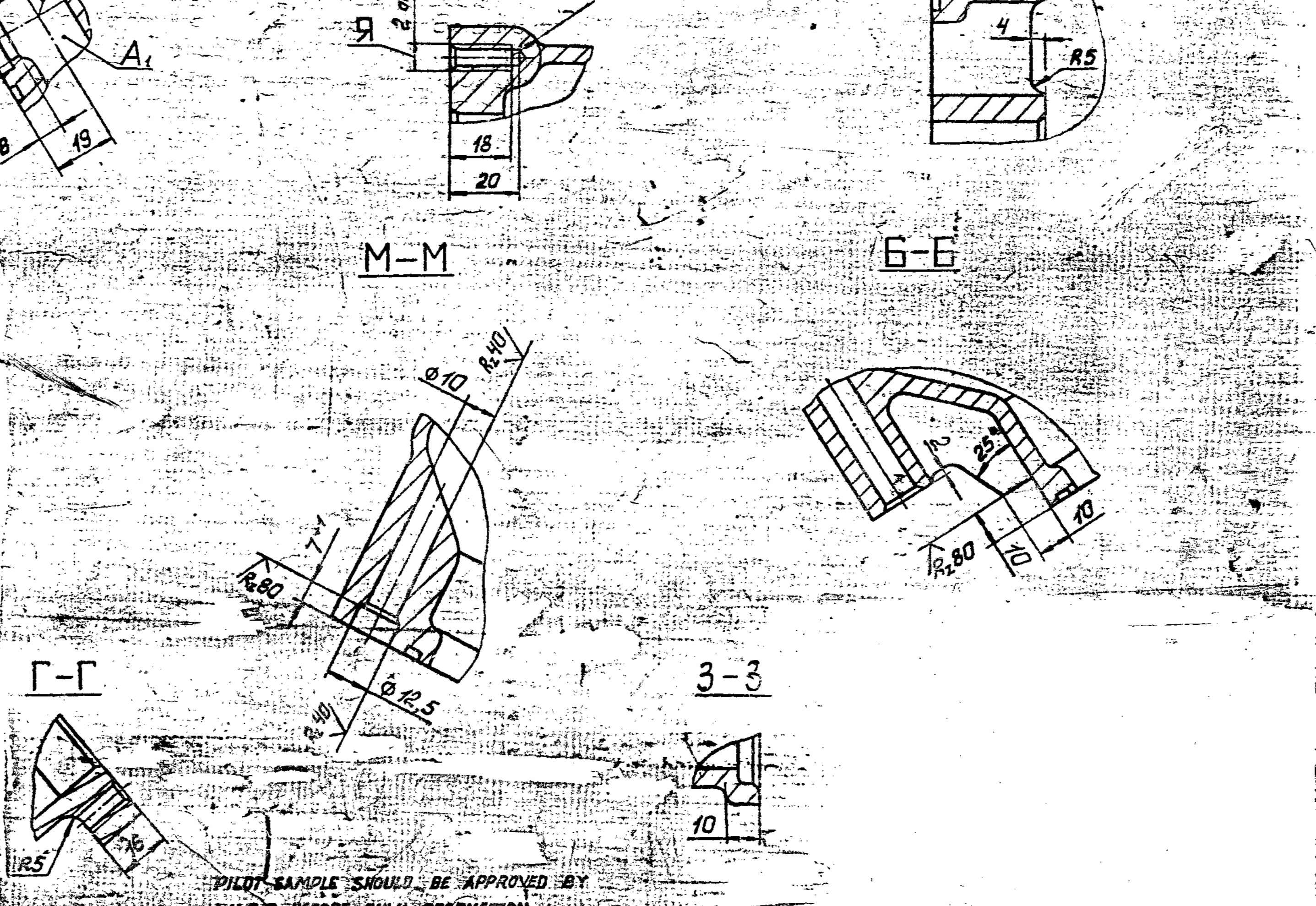
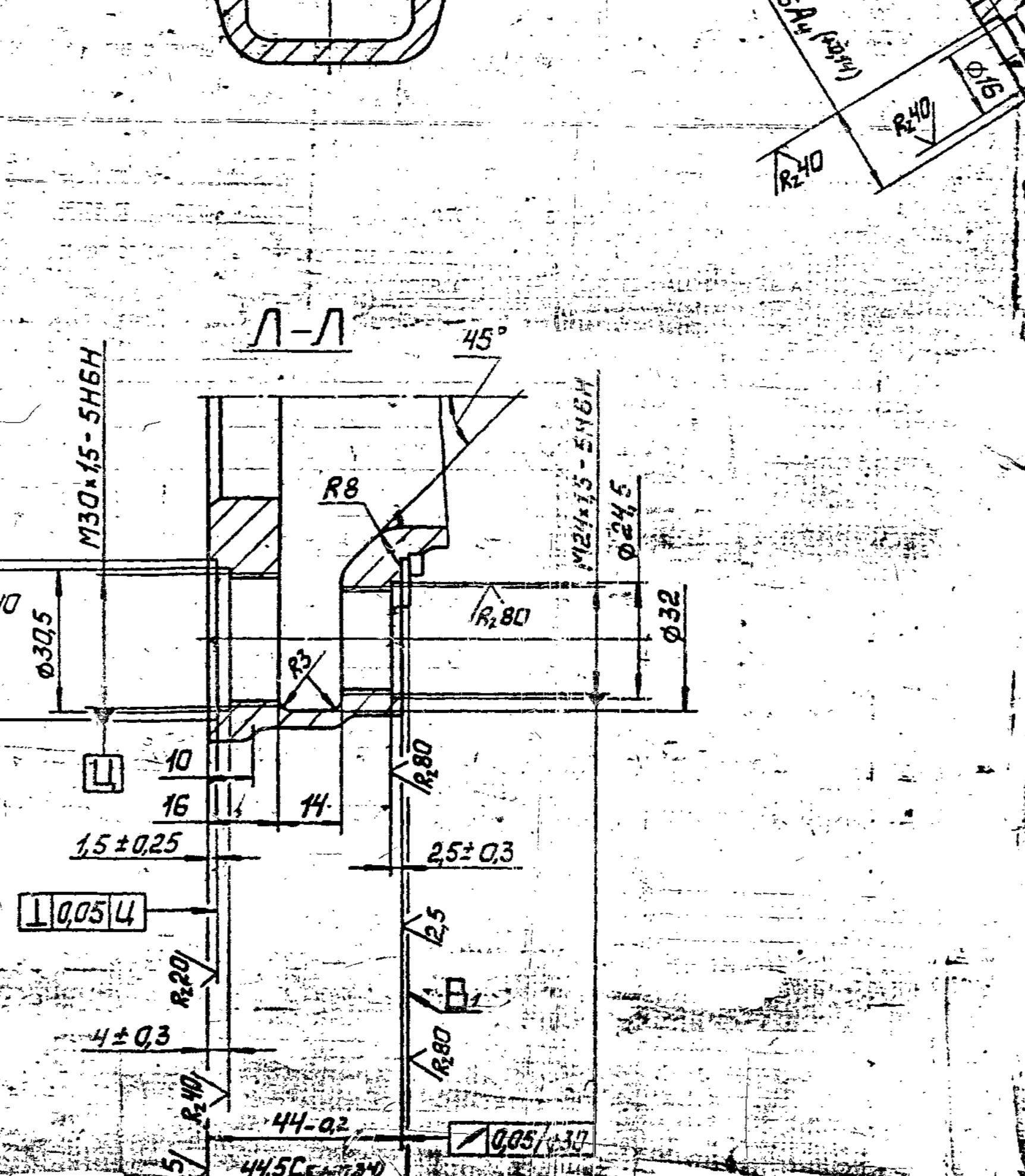
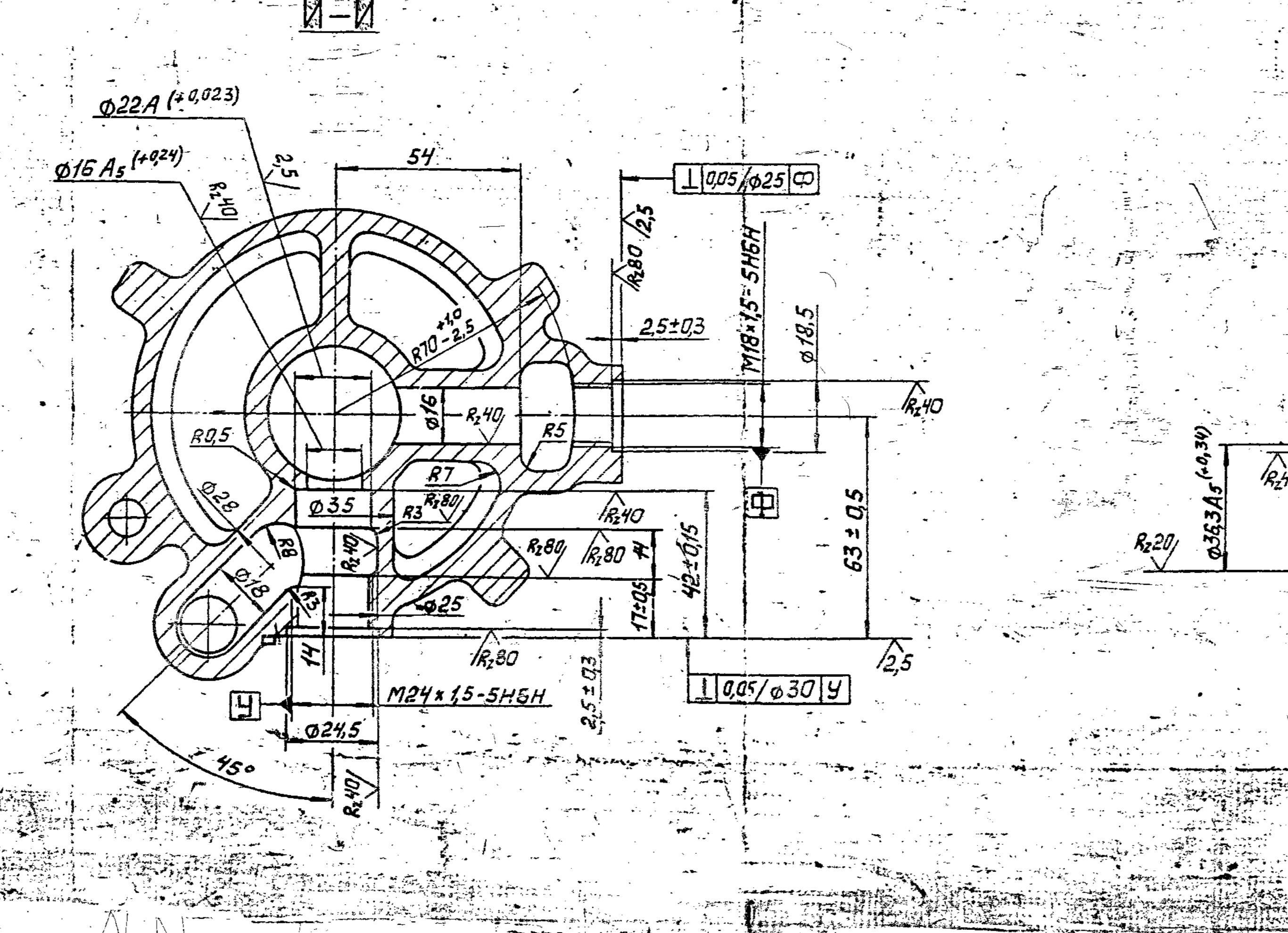
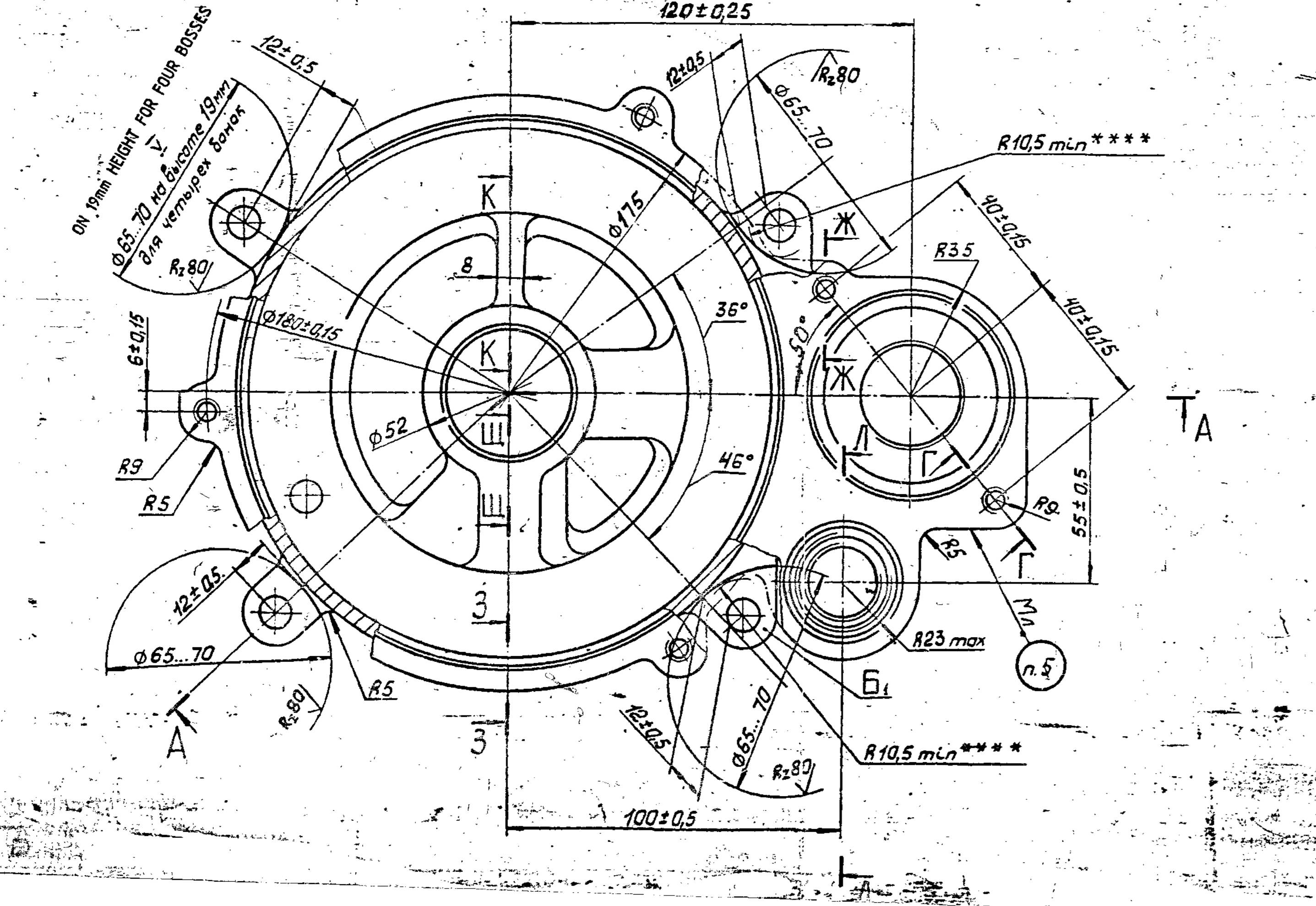
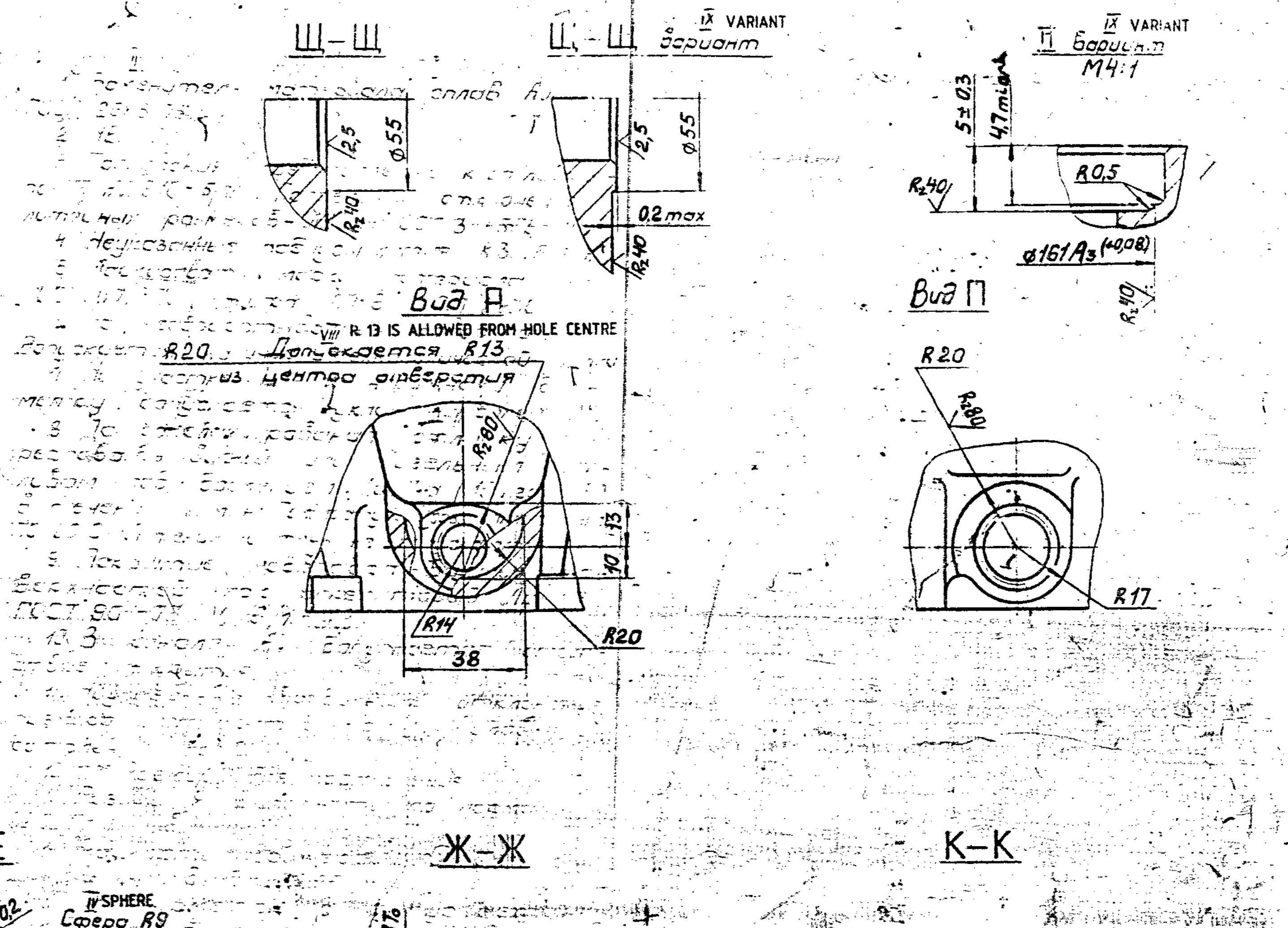
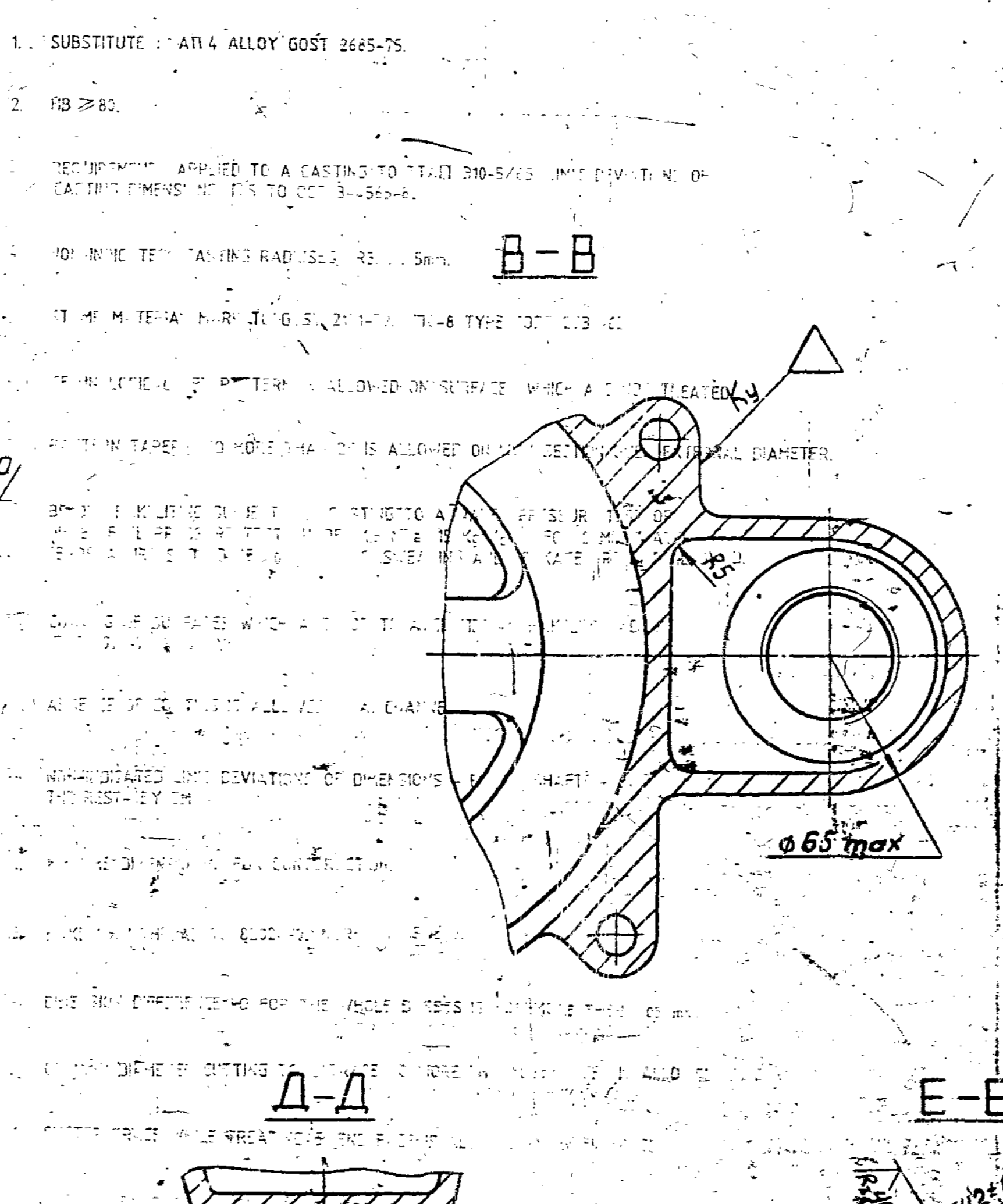
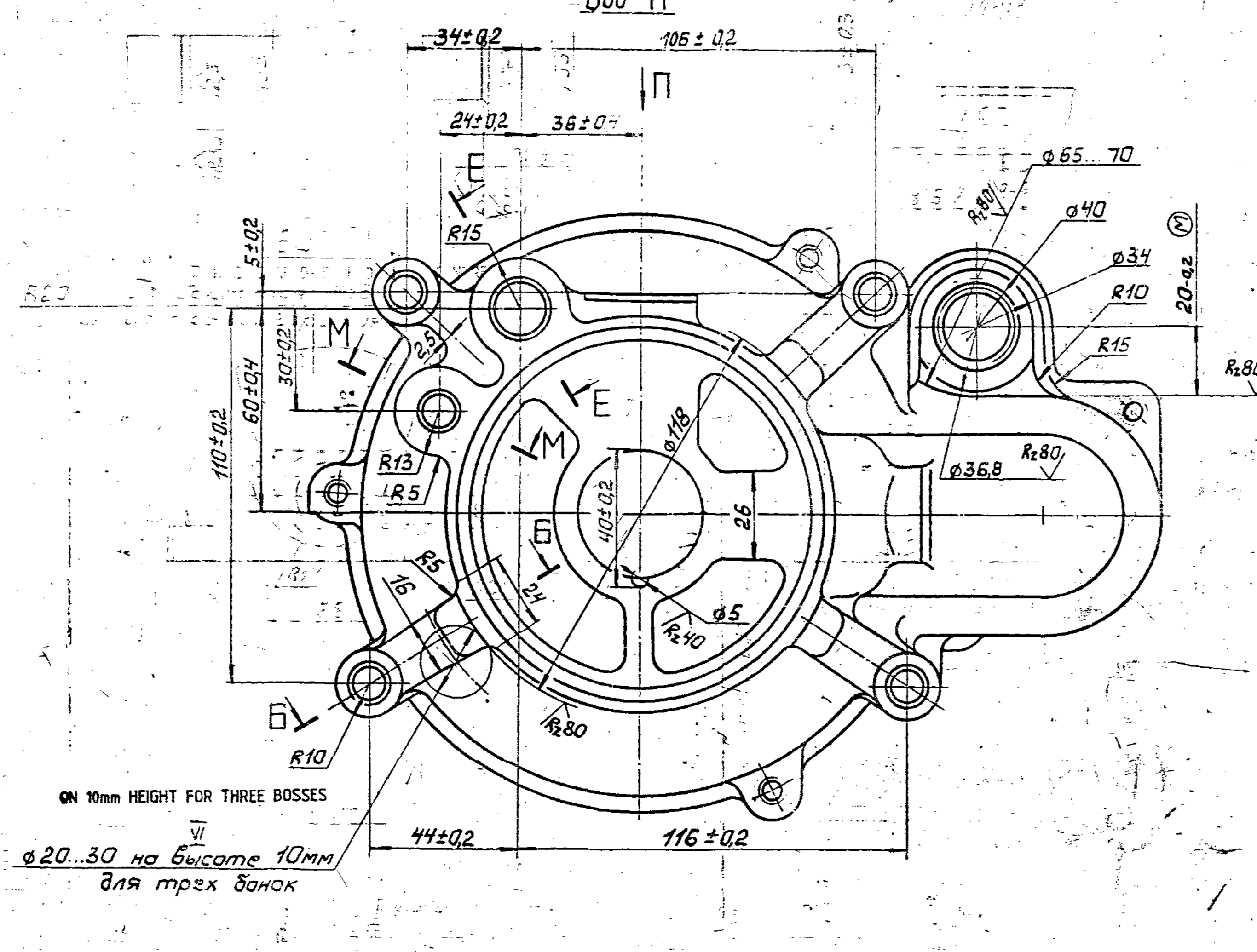
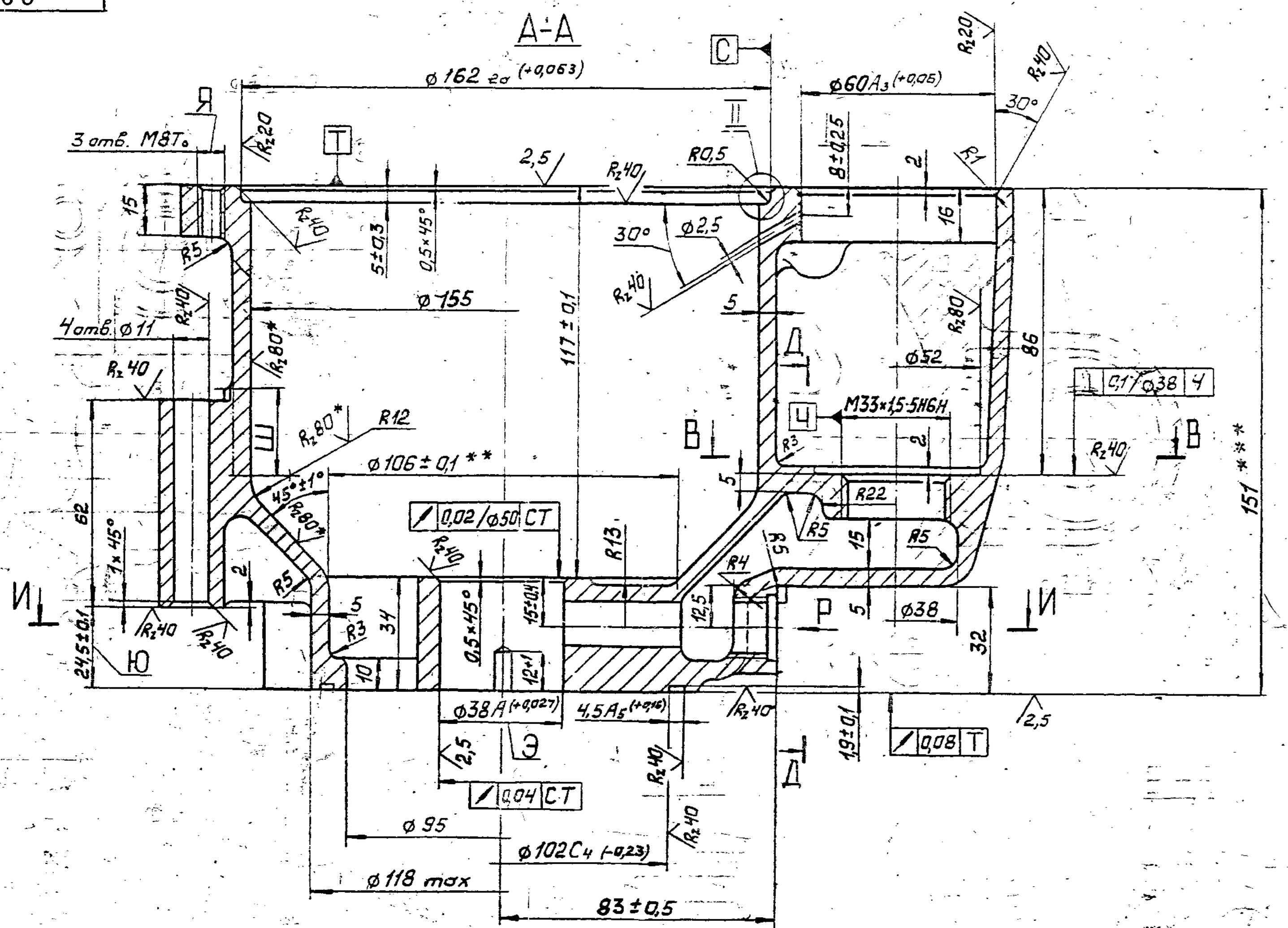


20-13-68-1			
FERRULE		6.058 11	
AF, DC SR, NAIR		82 17/8	
VOPFR, V, H, IYER		C, M, N, P	
NAME SIGN DATE		SIGN DATE	
SHEET 5-114-008-FOLT 14523-70		ORDNANCE FACTORY PROJECT HYDERABAD	

20-13-68-1

FERRULE

CONTROLLERATE OF INSPECTION



- SUBSTITUTE : Al 4 ALLOY GOST 2685-75.
- HB  $\geq 80$ .
- REQUIREMENT APPLIED TO A CASTING TO ITAFI 310-5/65. LIMIT DEVIATIONS OF CASTING DIMENSIONS, IT5 TO OCT 3-4565-80.
- NON-INDICATED CASTING RADII  $R3 \dots 5mm$ .
- STAMP MATERIAL MARK TO GOST 2171-79. IT0-B TYPE GOST 2930-82.
- TECHNOLOGICAL NET PATTERN IN ALLOWED ON SURFACES WHICH ARE NOT TREATED.
- PATTERN TAPER, NO MORE THAN 2° IS ALLOWED ON 'B' SECTION OVER EXTERNAL DIAMETER.
- BEFORE BAKELING SUBJECT THE CASTING TO A WATER PRESSURE TEST OR DIESEL FUEL PRESSURE TEST UNDER 15 MPa (15 kgf/cm<sup>2</sup>) FOR 2 MIN. WATER TEMPERATURE SHOULD BE 70...80° C. SWEATING AND LEAKAGE ARE NOT ALLOWED.
- COATING OF SURFACES WHICH ARE NOT TREATED FIBR - 1 BAKELITE LACQUER GOST 901-78. V. 6/1-1/2.
- ABSENCE OF COATING IS ALLOWED IN A CHANNEL.
- NON-INDICATED LIMIT DEVIATIONS OF DIMENSIONS - BY A), SHAFTS - BY B), THE REST - BY CM.
- \*\*\* THE DIMENSION IS FOR CONSTRUCTION.
- MAKE 'R' THREAD TO 82020-12 NORMAL, ISSUE 7.
- DIMENSION DIFFERENCE  $\pm 0.02$  FOR THE WHOLE BOSSES IS NOT MORE THAN 0.05 mm.
- ON  $\phi 3$  DIAMETER CUTTING TOOL TRACE NO MORE THAN 0.3mm DEEP IS ALLOWED.
- CUTTER TRACE WHILE TREATING BY END FACE IS ALLOWED ON END FACE.
- \* CHECK BY CUTTING TOOL (BLACKNESS IS ALLOWED).
- \*\*\* CHECK BY A GAUGE WITH R 10.5 MIN.
- \*\*\* THE DIMENSION IS FOR REFERENCES.

EXPLANATORY NOTE :

20. REFERENCE MATERIAL QUOTED : ALUMINUM TO A/9 GOST 2685-75.  
 METHOD OF CASTING = PRESSURE DIE CASTING.  
 MATERIAL GRADE = A/9. ALTERNATE MATERIAL QUOTED : ALUMINUM TO A/4 GOST 2685-75.

a) CHEMICAL COMPOSITION : %

ELEMENTS	A/9	A/4
ALUMINUM	BASE	BASE
MAGNESIUM	0.2 - 0.4	0.17 - 0.3
SILICON	6.0 - 8.0	8.0 - 10.5
MANGANESE	NIL	0.2 - 0.5
OTHER IMPURITIES	0.60 (max)	1.0 (max)

b) PHYSICAL PROPERTIES

	A/9	A/4
PARTIAL RESISTANCE $\Omega \cdot \text{cm}$	17	20
SPECIFIC ELONGATION %	1	1.5
HARDNESS (H B)	50	70

Заменил материала сплав АЛ4  
 ГОСТ 2685-75  
 2. HB  $\geq 80$   
 3. Требования, предъявляемые к отливке, по ТТ АЛ 310-5/65. Предельные отклонения литейных размеров - IT5 по ГОСТ 3-4565-80.  
 4. Неуказанные радиусы литья  $R3 \dots 5$  мм.  
 5. Наклеивать марки материала по ГОСТ 2171-79, шрифт И0-В ГОСТ 2930-82.  
 6. Технологический нет-паттерн в допущен на поверхности, которые не обработаны.  
 7. Паттерн taper, no more than 2° is allowed on 'B' section over external diameter.  
 8. Before bakeling subject the casting to a water pressure test or diesel fuel pressure test under 15 MPa (15 kgf/cm<sup>2</sup>) for 2 min. Water temperature should be 70...80° C. Sweating and leakage are not allowed.  
 9. Coating of surfaces which are not treated fibr - 1 bakelite lacquer GOST 901-78. V. 6/1-1/2.  
 10. Absence of coating is allowed in a channel.  
 11. Non-indicated limit deviations of dimensions - by A), shafts - by B), the rest - by CM.  
 12. \*\*\* The dimension is for construction.  
 13. Make 'R' thread to 82020-12 normal, issue 7.  
 14. Dimension difference  $\pm 0.02$  for the whole bosses is not more than 0.05 mm.  
 15. On  $\phi 3$  diameter cutting tool trace no more than 0.3mm deep is allowed.  
 16. Cutter trace while treating by end face is allowed on end face.  
 17. \* Check by cutting tool (blackness is allowed).  
 18. \*\*\* Check by a gauge with R 10.5 min.  
 19. \*\*\* The dimension is for references.  
 10. В канале А, допускается отсутствие покрытия.  
 11. Неуказанные предельные отклонения размеров отливки - по А), валов - по В, остальных - по СМ.  
 12. \*\*\* Размер для построения.  
 13. Резьбу Я выполнять по нормам 82020-12, выпуск 7.  
 14. Разность размеров по длине банок не более 0.05 мм.  
 15. По диаметру  $\phi 3$  допускается след от выхода резца глубиной не более 0.3 мм.  
 16. На торце В, допускается след от фрезы при обработке торца В.  
 17. \* Проверить резцом (допускается чернота).  
 18. \*\*\* Проверить калибр  $R 10.5$  мин.  
 19. \*\*\* Размер для справки.

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

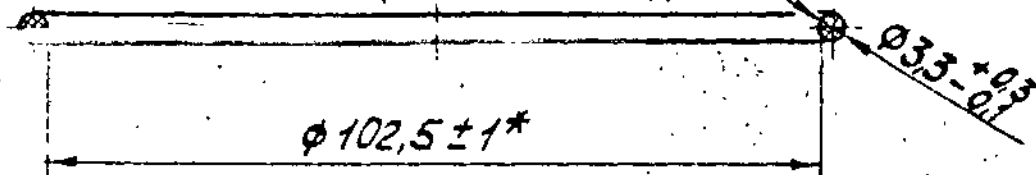
EST. MASS TO BE STAMPED OR MARKED WHERE INDICATED THUS  $\phi 10$  LETTERS: ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE

ISSUE	DATE	NATURE OF AMENDMENTS

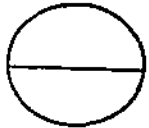
MATERIAL : A/9 GOST 2685-75  
 USED ON : EB 20-13-02-11  
 CONTROLLER OF QUALITY ASSURANCE (HEAVY VEHICLES) : A V A D I  
 TITLE : FILTER HOUSING  
 D S CAT NUMBER : 20-13-10-9



DRAWING NUMBER  
20-13-28



1. \* DIMENSIONS ARE PROVIDED WITH TOOLS.
2. MARK ON THE LABEL.
3. OTHER REQUIREMENTS ARE AS PER TECHNICAL SPECIFICATION TY 005 216-75 FOR ARTICLES CODE 25 3111 HП.



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

		EST. WT. 0.004 kg	TO BE STAMPED OR MARKED WHERE INDICATED THUS $\neq$ ( 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.	
		MATERIAL:- RUBBER H0-68-1 TY 005 216-75	USED ON CS 20-13-00-9
ISSUE	DATE	NATURE OF AMENDMENTS	
DRN	—	SCALE:- 1:1	
CHD	<i>g. naryz</i>	DIMENSIONS IN mm	
TCD	<i>Asli</i>	TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102 -69	
APPO	<i>KTW</i>	ALL THREADS CONFORM TO	
DATE	2-8-02	D S CAT NUMBER	DRAWING NUMBER 20-13-28
SIZE A4			

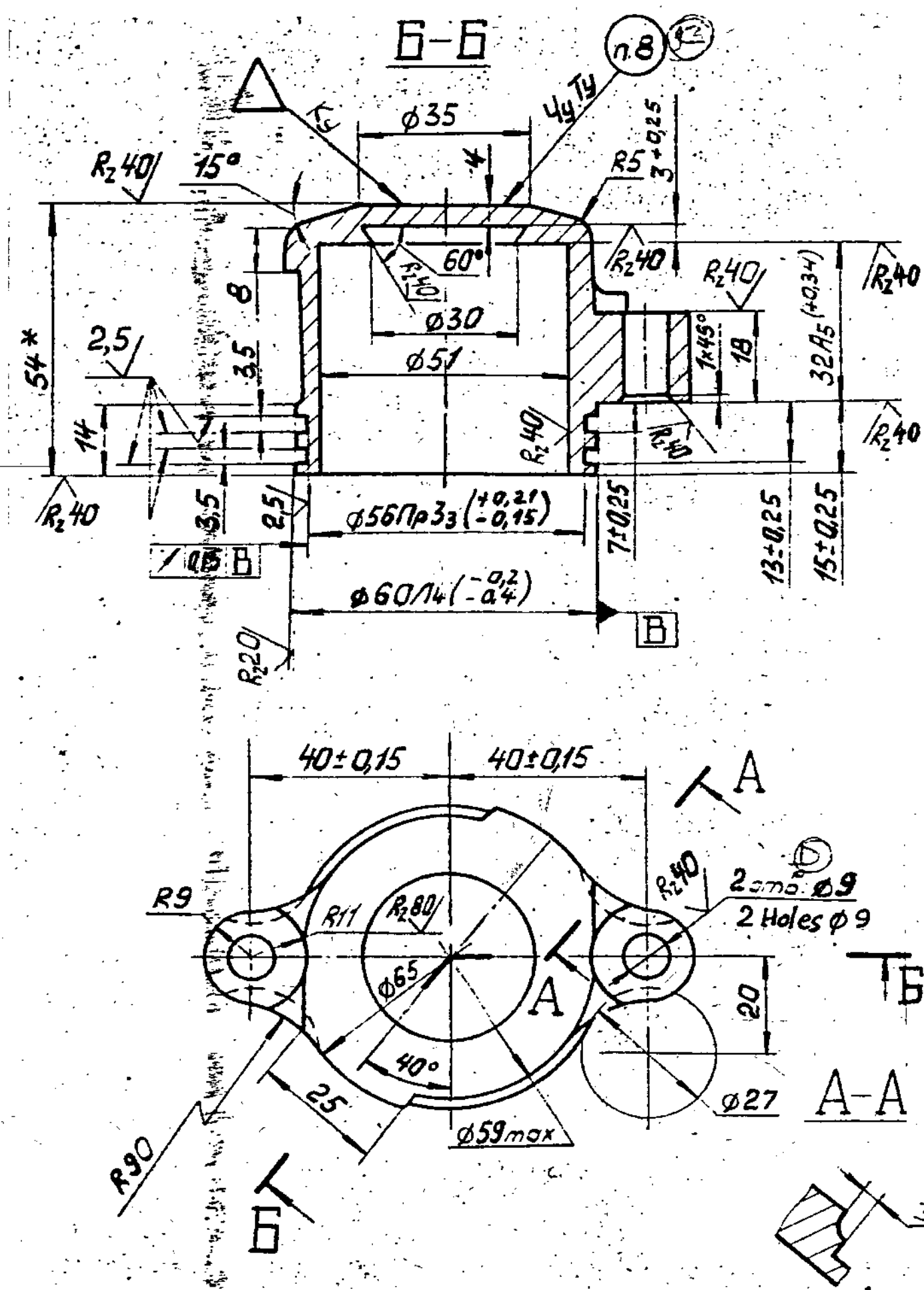


TITLE  
**SEALING RING**



DRAWING NUMBER  
20.13.69-2

✓(✓)



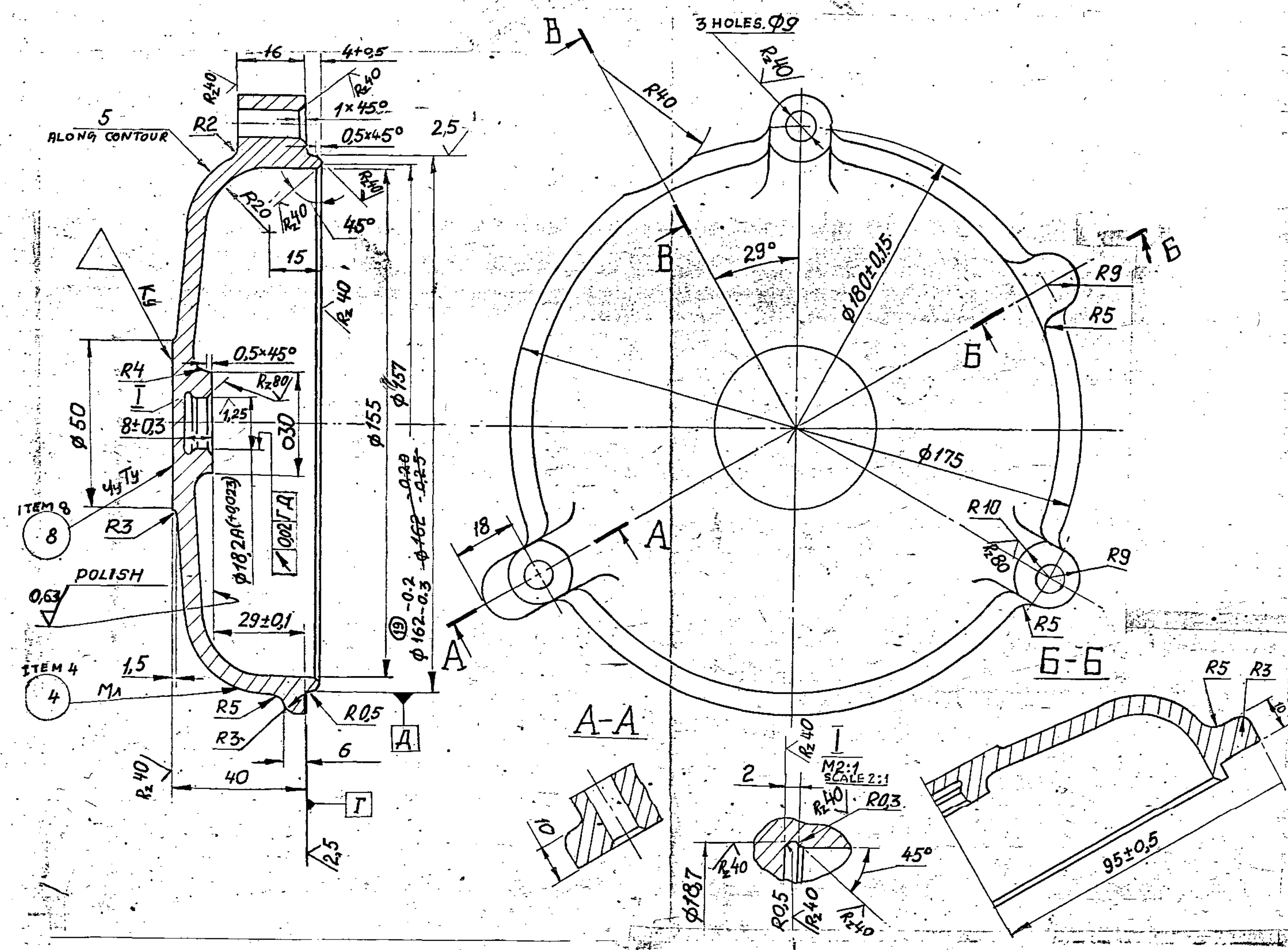
1. HB ≥ 80.
2. REQUIREMENTS PLACED UPON CASTING ARE AS PER TECHNICAL REQUIREMENTS TT AJ) 310-5/65 AND STANDARD 82050-15.
3. CARRY-OUT UNSPECIFIED CASTING RADI R = 3.0 mm.
4. BEFORE BAKELITE COATING, PERFORM PRESSURE TEST OF CASTING WITH WATER OR GASOLINE AT 15 Mpa (15kgf/cm<sup>2</sup>) FOR 2 MINUTES AT 70 TO 80° C. LEAKAGE OR SWEATING IS NOT ALLOWED.
5. UNMACHINED SURFACES ARE COATED WITH BAKELITE VARNISH ЛБ С-1, GOST 901-78, V. 6/1-C, LEAKAGE AND MOISTURE ARE NOT ALLOWED.
6. UNSPECIFIED LIMIT DEVIATIONS OF MACHINED DIMENSIONS ARE AS FOLLOWS:  
FOR HOLES - AS PER A-7,  
SHAFTS - AS PER D-7,  
OTHERS - AS PER CH-7.
7. \* DIMENSION IS GIVEN FOR REFERENCE.
8. APPLY THE FACTORY TRADE MARK AND ASSEMBLY DESIGNATION ON ASSEMBLIES SENT AS SPARES OR THOSE DELIVERED TO THE COOPERATING FACTORIES.

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

EST. WT. 0.177 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.	

DRN	---	MATERIAL	АЛ9 GOST 2685-75	USED ON :-	СБ 20.13.01.8
CHD	gung	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)			
TCO	gung	A V A D I			
APPD	gung	TITLE : COVER			
DATE	2-8-02	D S CAT NUMBER			
SCALE	1:1	DRAWING NUMBER			
DIMENSIONS IN mm		20.13.69-2			
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102 - 69		ALL THREADS TO CONFORM TO			
ISSUE	DATE	NATURE OF AMENDMENTS			

SIZE A2



EXPLANATORY NOTE:-

MATERIAL QUOTED:- AL9 GOST 2685-75.

AL9 = GRADE OF MATERIAL

CHEMICAL COMPOSITION:- %

ALUMINIUM = BASE

Mg = 0.2-0.4

Si = 6.0-8.0

ADMIXTURES:- % (MAX)

IRON = 1.00, Ti = 0.01

Mn = 0.50, Pb = 0.05

Cu = 0.20, Be = 0.10

Zn = 0.30, Zr = 0.15

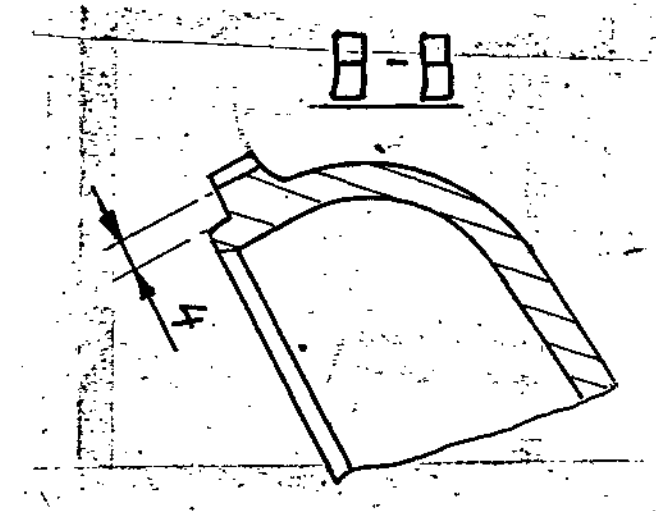
TOTAL OF CALCULATED ADMIXTURES:- 1.50

MECHANICAL PROPERTIES:- (CHILL MOULD CASTING)

PARTIAL RESISTANCE kgf/mm<sup>2</sup> = 16 (MIN)

SPECIFIC ELONGATION % = 2 (MIN)

1. HB ≥ 80
2. REQUIREMENTS PLACED UPON CASTING ARE AS PER TECHNICAL REQUIREMENTS TT AJ 310-5/65 AND STANDARD 82050-15.
3. ALTERNATE MATERIAL IS ALLOY AA4, GOST 2685-75.
4. MARK THE GRADE OF MATERIAL AS PER GOST 2171-79, TYPE П0-8 GOST 2930-62.
5. BEFORE BAKELITE COATING CARRYOUT PRESSURE TEST OF CASTING WITH WATER OR DIESEL FUEL AT 15 MPa (15 kgf/cm<sup>2</sup>) FOR 2 MINUTES. WATER TEMPERATURE SHOULD BE 70 TO 80°C. LEAKAGE OR SWEATING ARE NOT ALLOWED.
6. UNMACHINED SURFACES ARE COATED WITH BAKELITE VARNISH Л6 C-1, GOST 901-78 V.6/1-C1.
7. UNSPECIFIED LIMIT DEVIATIONS OF MACHINED DIMENSIONS ARE AS FOLLOWS:- FOR HOLES - AS PER A<sub>7</sub>, SHAFTS - AS PER B<sub>7</sub>, OTHERS - AS PER CM<sub>7</sub>.
8. APPLY FACTORY TRADE MARK AND ASSEMBLY DESIGNATION ON ASSEMBLIES SENT AS SPARES OR THOSE DELIVERED TO OPERATING FACTORIES.



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

EST. MASS 0.590 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	CHD	TCB	APPD	DATE	SCALE	DIMENSIONS IN mm.	TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS 2102-65	ALL THREADS TO CONFORM TO
CHD	CHD	CHD	CHD	10-8-91	1:1			
MATERIAL AL9 GOST 2685-75								USED ON C520-13-01-B
CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A D I								TITLE FILTER COVER
D S CAT NUMBER								DR. WING NUMBER 20-13-11-6
ISSUE	DATE	NATURE OF AMENDMENTS						
19	10-8-89	NOTEN No. 1631-80						

**EXPLANATORY NOTE :-**

7. MATERIAL QUOTED :- 45 GOST 1050-74.

ALTERNATE MATERIAL QUOTED :- 40, 50 TO GOST 1050-74 & 40X, 38XA TO GOST 4543-71.

45 = GRADE OF STEEL.

40 = GRADE OF STEEL.

50 = GRADE OF STEEL.

40X = CHROMIUM STEEL TO GRADE 40X. 38XA = CHROMIUM STEEL OF HIGH QUALITY (A) TO GRADE 38XA

a) CHEMICAL COMPOSITION :- AS PER GOST 1050-74.

GRADE OF STEEL	C O N T E N T O F E L E M E N T S %									
	C	Si	Mn	Cr	S	P	Cu	Ni		
40	0.37-0.45	0.17-0.37	0.50-0.80	M A X I M U M					0.25	0.25
				0.25	0.040	0.035	0.25	0.25		
45	0.42-0.50	0.17-0.37	0.50-0.80	0.25	0.040	0.035	0.25	0.25		
50	0.47-0.55	0.17-0.37	0.50-0.80	0.25	0.040	0.035	0.25	0.25		

b) CHEMICAL COMPOSITION :- AS PER GOST 4543-71.

GRADE OF STEEL	C O N T E N T O F E L E M E N T S %							
	C	Si	Mn	Cr	P	S	Cu	Ni
40X	0.36-0.44	0.17-0.37	0.50-0.80	0.80-1.10	M A X I M U M			
					0.035	0.035	0.30	0.30
38XA	0.35-0.42	0.17-0.37	0.50-0.80	0.80-1.10	0.025	0.025	0.30	0.30

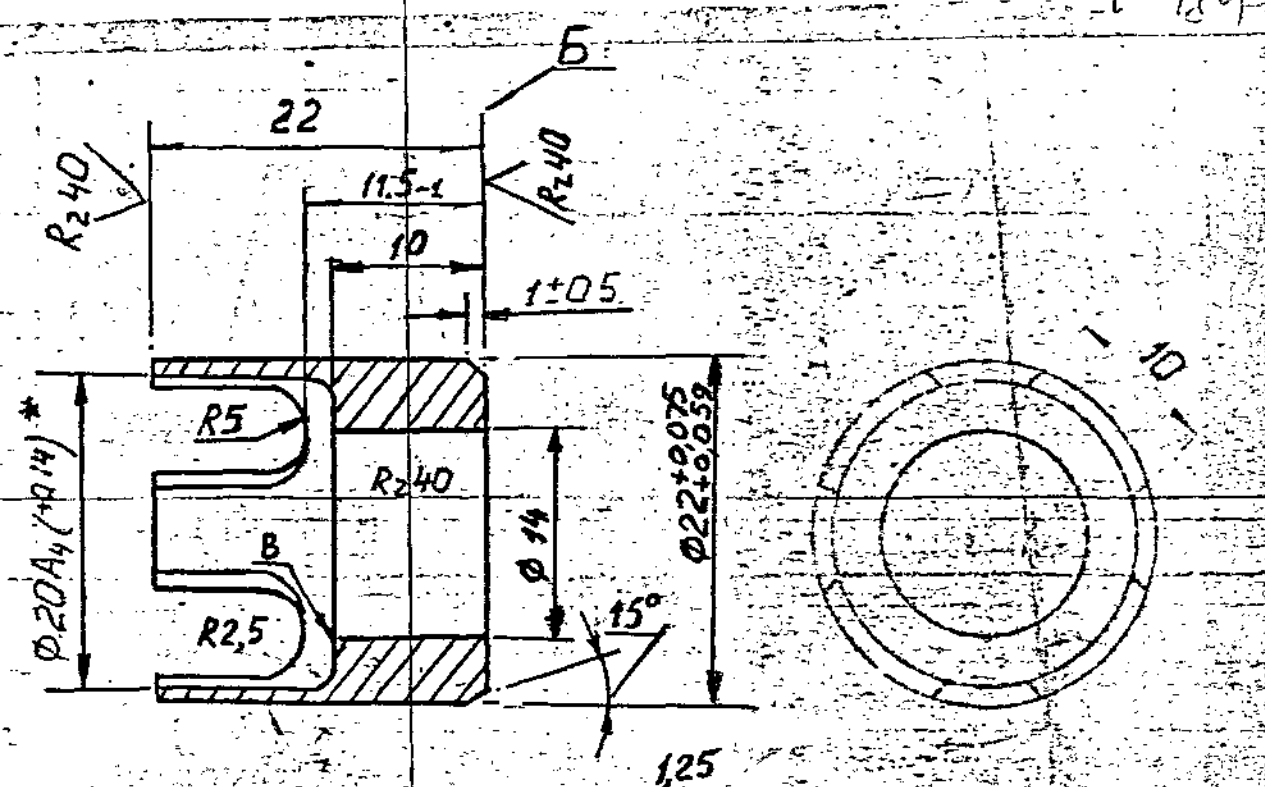
c) MECHANICAL PROPERTIES :- AS PER GOST 1050-74.

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

- 1 ALTERNATE MATERIAL IS STEEL 40, 50, GOST 1050-74 AND 40X, 38XA, GOST 4543-71.
- 2 UNSPECIFIED LIMIT DEVIATIONS OF MACHINED DIMENSIONS ARE AS FOLLOWS :-  
FOR HOLES - AS PER A7  
SHAFTS - AS PER B7,  
OTHERS - AS PER CM7.
- 3 MAINTAIN DIMENSION A OVER A LENGTH OF 10mm FROM SURFACE B.
- 4 \*DIMENSION IS GIVEN BEFORE MILLING THE GROOVES.
- 5 LEAVE EDGE B SHARP.
- 6 COATING :- CHEMICALLY OXIDIZED, OILED.

d) MECHANICAL PROPERTIES :- AS PER GOST 4543-71

GRADE OF STEEL	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>
40X	100	80	10	45	6
38XA	95	80	12	50	9



KVD No : 63318

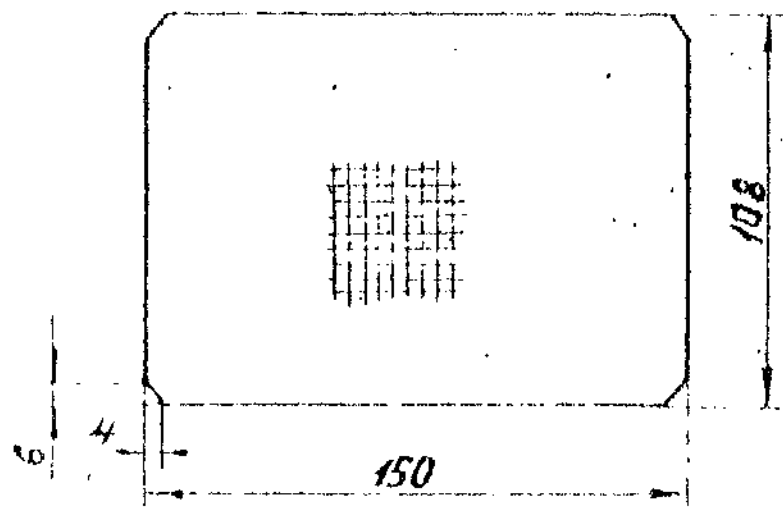
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. WT. 0.020 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.

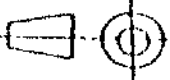
DRN	CHD	TCD	APPO	DATE	SCALE	DIMENSIONS IN mm	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69	ISSUE	DATE	NATURE OF AMENDMENTS
				19-8-88	2:1					
MATERIAL :- 45 GOST 1050-74.						USED ON :- C8 20-13-02-II		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A O I		
TITLE						VALVE SEAT		DRAWING NUMBER		
						20-13-60-1				

DRAWING NUMBER  
20-13-66-1



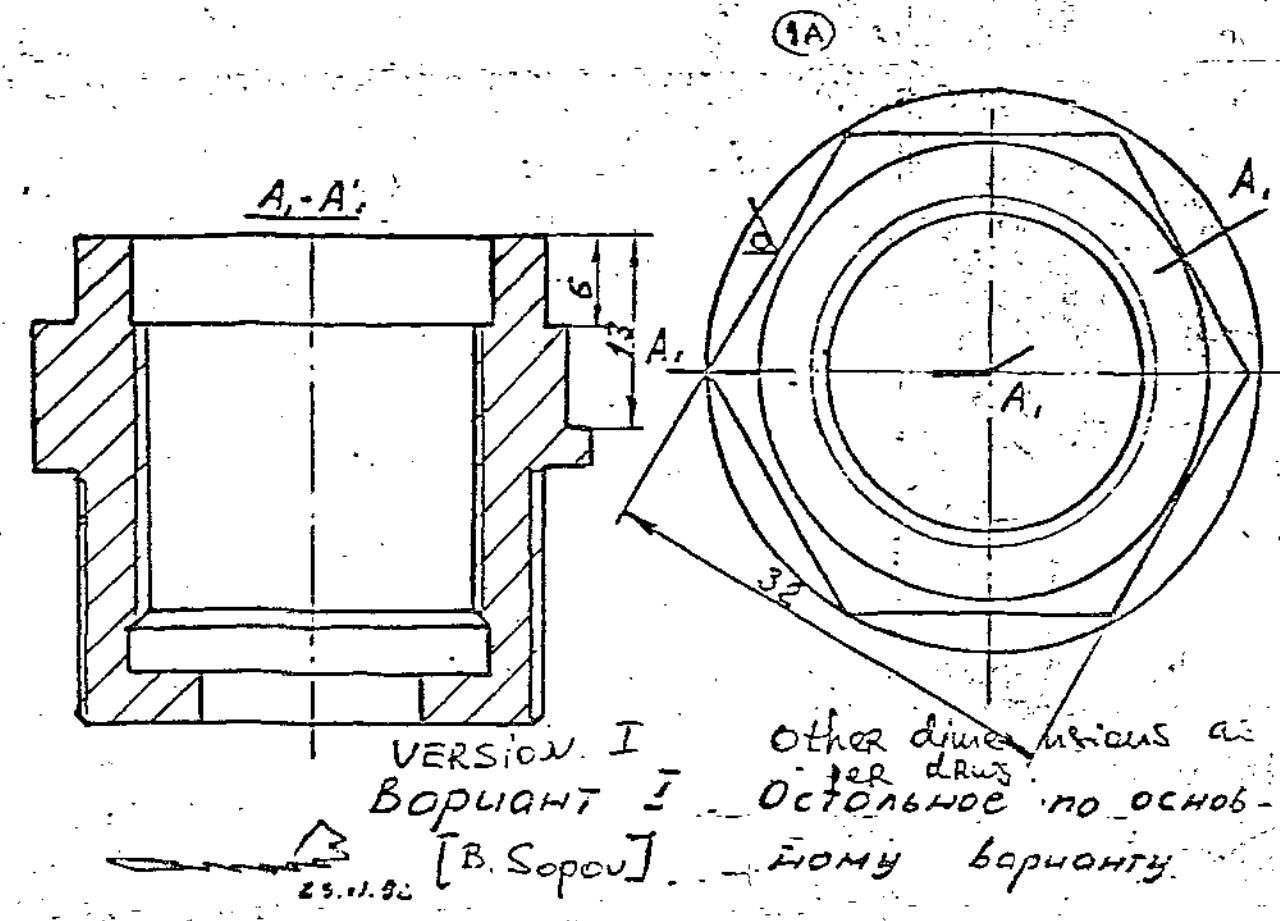
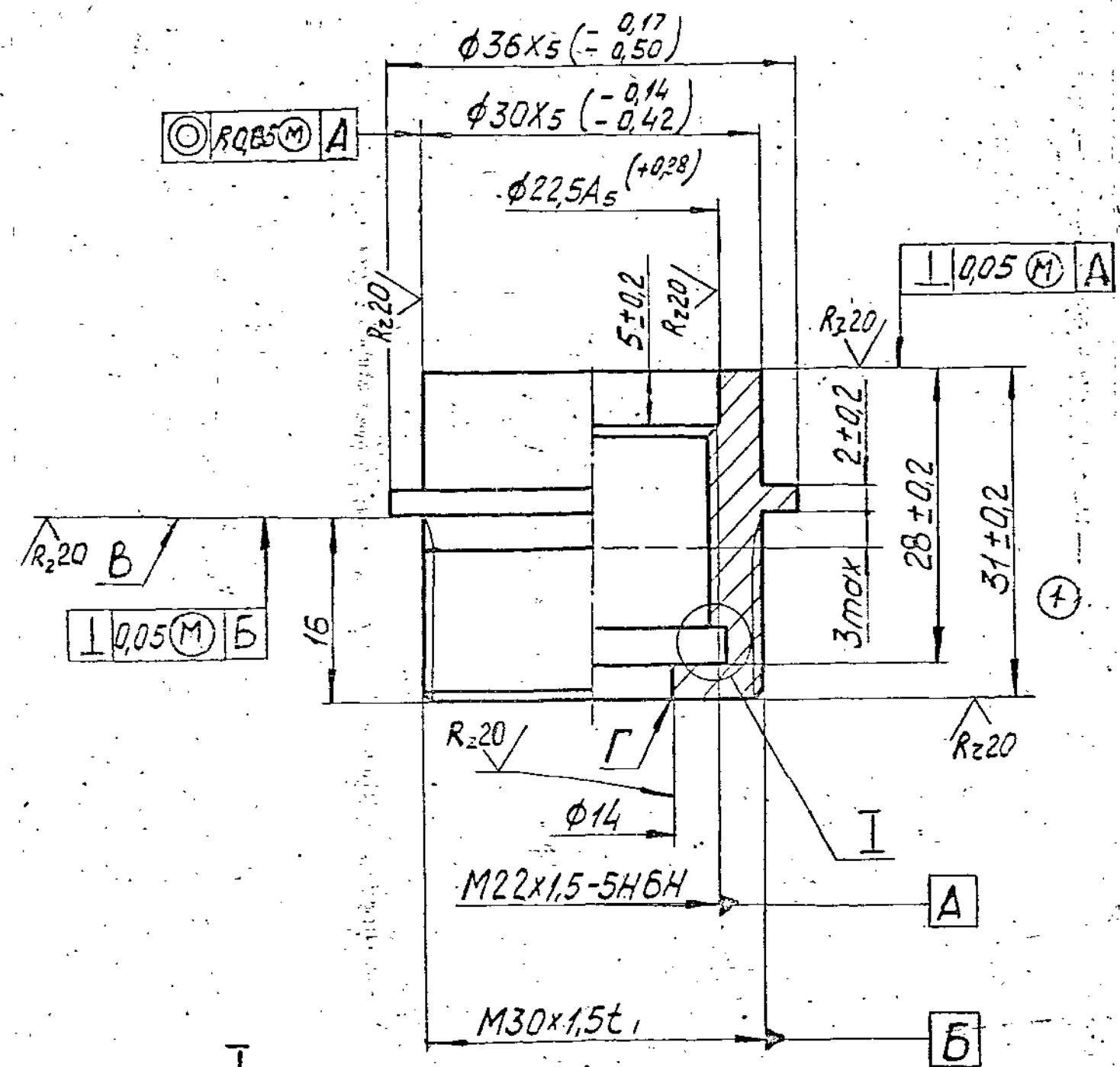
26

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

	EST. WT. 0.015 Kg.	TO BE STAMPED OR MARKED WHERE INDICATED THIS $\neq$ 1 LETTER(S)
	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.	
NATURE OF AMENDMENTS SCALE: 1:2 DIMENSIONS IN mm	MATERIAL:- No. 05 Gost 6613-73	USED ON СБ 20-13-05-1
TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102-69	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.	
THREADS FORM TO		TITLE <b>SCREEN</b>
	D S CAT NUMBER	DRAWING NUMBER 20-13-66-1

DRAWING NUMBER  
20-13-71-2.

Rz 40 ✓ (✓)



1. Неуказанные предельные отклонения размеров: отверстий - по А7, валов - по В7, остальных - по СМ8.
2. Резьбу Б выполнить по нормали 82020-13.
3. При подрезке торца В допускается врезание резца по цилиндрической поверхности на глубину не более 0,3мм.
4. Кромку Г оставить острой.
5. Покрытие КД9-Хр.
6. Допускается отсутствие покрытия на внутренних поверхностях.

1. NON-INDICATED LIMIT DEVIATIONS OF DIMENSIONS ARE OF: HOLES BY A7, SHAFTS BY B7, THE REST BY CM8.
2. MAKE 'B' THREAD ACCORDING TO NORMAL 82020-13.
3. CUTTER CUTTING-IN IS ALLOWED ON CYLINDER SURFACE ON THE DEPTH OF 0.3mm MAX, WHEN CUTTING 'B' END FACE.
4. LEAVE 'Г' EDGE KNIFE.
5. COATING КД9-Хр.
6. COATING ABSENCE IS ALLOWED ON INNER SURFACES.

VERSION I  
Вариант I  
[B. Sopov] 25.11.92  
Other dimensions as per drawing. Остальное по основному варианту.

**EXPLANATORY NOTE:-**

**MATERIAL QUOTED : 20 GOST 1050-74**

20 = GRADE OF MATERIAL.

**CHEMICAL COMPOSITION %**

CARBON = 0.17 - 0.24

SILICON = 0.17 - 0.37

MANGANESE = 0.35 - 0.65

CHROMIUM = 0.25 (MAX); PHOSPHORUS = 0.035 (MAX);

SULPHUR = 0.040 (MAX); COPPER = 0.25 (MAX); NICKEL = 0.25 (MAX).

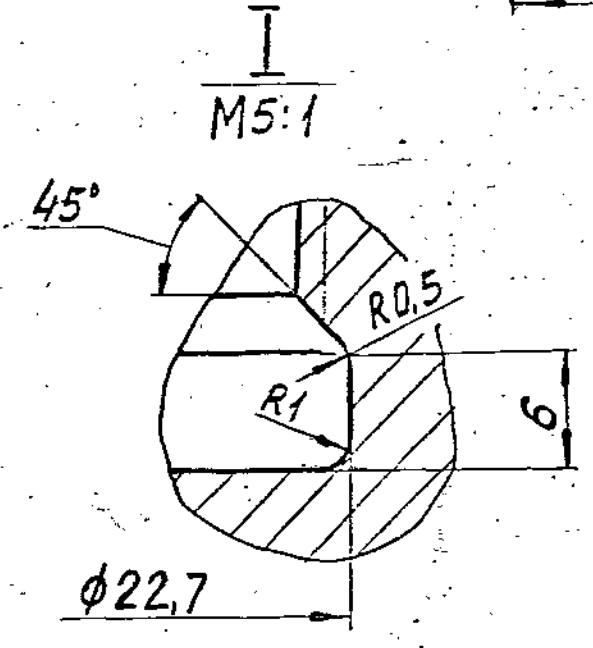
**MACHANICAL PROPERTIES :**

ULTIMATE TENSILE STRENGTH  $Kgf/mm^2 = 42$  (MIN)

YIELD POINT  $Kgf/mm^2 = 25$  (MIN)

ELONGATION % = 25 (MIN)

REDUCTION IN AREA % = 55 (MIN)



REDRAWN ON 17.1.91.

EXPLANATORY NOTE ADDED ON 20-3-92. DRG CREATED BASED ON RUSSIAN ORIGINAL ISSUE-1.

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

EST. WT. 0.050 Kg. TO BE STAMPED OR MARKED WHERE INDICATED THUS (LETTERS)

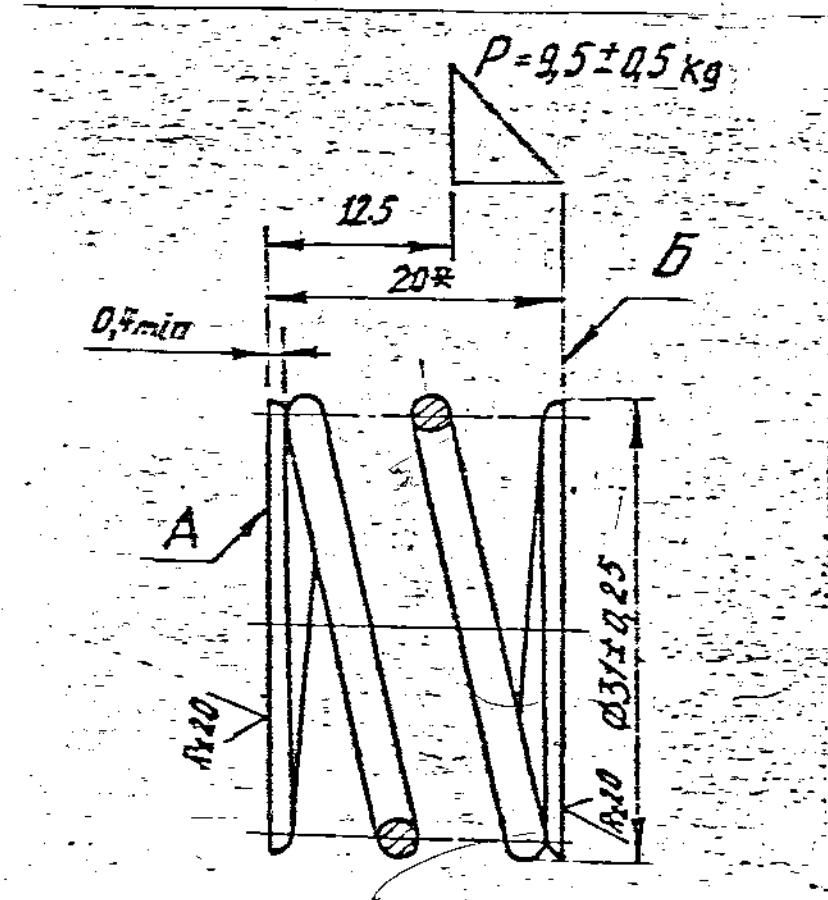
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRN	—	MATERIAL :-	USED ON :-
CHD	VGK	20 GOST 1050 - 74.	20-13-02-11.
TCD	Sd/-	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	A V A D I
APPO	GEORGE YARGHESI		
DATE	7-9-86.	TITLE <b>BUSHING.</b>	
SCALE :-	2 : 1		
DIMENSIONS IN mm.		D S CAT NUMBER	DRAWING NUMBER 20-13-71-2.
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69			
1A	17.1.91	ALL THREADS TO CONFORM TO	
ISSUE	DATE	SCT SUGGESTION: NATURE OF AMENDMENTS	

SIZE A2

DRAWING NUMBER  
20-11-17-3

(V)



1. ALTERNATE MATERIAL IS WIRE II - 2.8, GOST 9389-75.
2.  $G = 8.10^3 \text{ kgf/mm}^2$ .
3.  $C = 525 \text{ kgf/mm}^2$ .
4. DIRECTION OF SPRING WINDING IS RIGHT HAND.
5.  $n = 1.8 \pm 0.25$ .
6.  $n_1 = 4 \pm 0.25$ .
7. LENGTH OF UNWOUND SPRING  $\approx 34.0 \text{ mm}$ .
8. \* DIMENSIONS ARE GIVEN FOR REFERENCE.
9. LENGTH OF ARC OF MACHINED BUTT END SURFACE IS AT LEAST 75% OF CIRCLE.
10. TOLERANCE FOR SQUARENESS OF SURFACE A AND B WITH RESPECT TO GENERATRIX IS 0.4 mm OVER LENGTH OF SPRING.
11. CLEARANCE BETWEEN PLANES A AND B OF TIGHTENED BEARING COILS AND SURFACE PLATE IS NOT MORE THAN 0.1 mm.
12. CHECK FOR ELASTICITY IS PERFORMED ON AT LEAST 30% OF SPRINGS.
13. AFTER COMPRESSING THE SPRING TILL COMPLETE CONTACT OF COILS IS OBTAINED, NO RESIDUAL DEFORMATION SHOULD BE OBSERVED.
14. CHECK THE PART WITH MAGNETIC FLAW DETECTOR AS PER INSTRUCTIONS JB 28-72.
15. COATING BAKELITE VARNISH KB / 12X5C-1 GOST 901-78, TV 4/1-C, ABSENCE OF BAKELITE AT FOUR PLACES WITH TOTAL AREA OF UPTO 5.0 cm<sup>2</sup> IS PERMITTED ONLY ALONG THE SPRING BUTT END AND AT CONTACT POINTS OF NON WORKING COILS.
16. PRIOR TO APPLYING BAKELITE VARNISHING IT IS ALLOWED TO PERFORM CADMIUM PLATING FOLLOWED BY PHOSPHATING.
17. MARK THE PART NO AND STAMP FINAL ACCEPTANCE ON TAG (PART 540-550) FOR BATCH OF PARTS AND SEAL.

**EXPLANATORY NOTE:**

MATERIAL QUOTED: WIRE III-2.8 GOST 9389-75. ALTERNATE MATERIAL WIRE II-2.8 GOST 9389-75  
CARBON STEEL COLD DRAWN WIRE II, III CATEGORIES  
2.8 mm = DIAMETER.  
GRADES KT2 AND SK7.

**CHEMICAL COMPOSITION**

GRADE OF STEEL	CONTENT OF ELEMENTS %							
	C	Si	Mn	S	P	Cr	Cu	Ni
	MAXIMUM							
KT-2	0.86 - 0.91	0.17 - 0.37	0.20 - 0.40	0.020	0.020	0.05	0.05	0.10
SK-7	0.68 - 0.76	0.17 - 0.37	0.50 - 0.80	0.030	0.020	0.05	0.05	0.04

**MECHANICAL PROPERTIES**

	CATEGORY-II	CATEGORY-III
TENSILE STRENGTH Kgf/mm <sup>2</sup>	165 - 190	130 - 165
No: OF BENDS (min)	9	10
No: OF TWISTS (min)	14	14

(A) EQUIVALENT MATERIAL  
Gr. DH/DM IS:4454-2001

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

EST. WT. 0.014 Kg.	TO BE STAMPED OR MARKED WHERE INDICATED THIS $\oplus$ LETTERS)
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED. MACHINED CORNERS TO HAVE R OUTSIDE R. INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.	

DRN	<i>[Signature]</i>	MATERIAL :- WIRE III-2.8	USED ON :-
DHD	<i>[Signature]</i>	GOST 9389-75	CS 20-11-01-9
TED	<i>[Signature]</i>		CS 20-13-01-8
APPO	<i>[Signature]</i>	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	
DATE	6-2-90	A V A D I	
SCALE	2:1		
DIMENSIONS IN mm		TITLE	
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS 2002-69		SPRING	
A 16-8-10 4 <sup>th</sup> Alt. Comm. Meeting Minutes Point No.13 Dt:26-10-09		D S CAT NUMBER	
ISSUE	DATE	NATURE OF AMENDMENTS	DRAWING NUMBER
			20-11-17-3