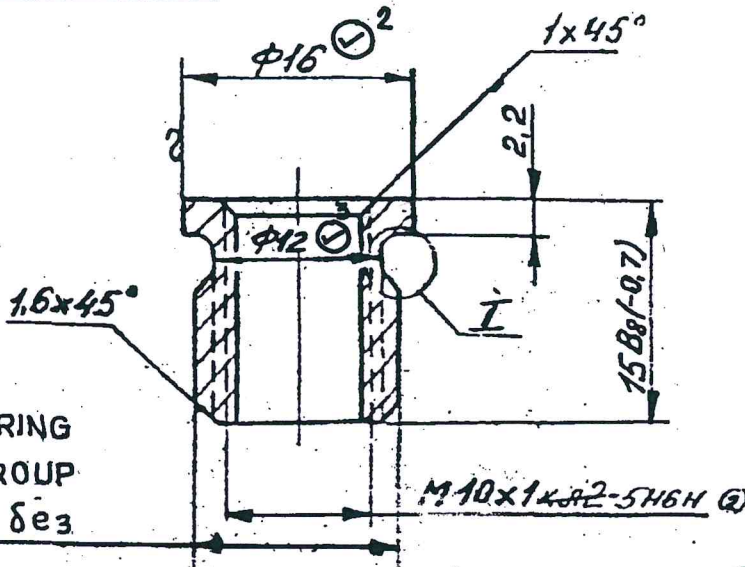


Cb 406-08-3 (B)
Cb 306-09-8

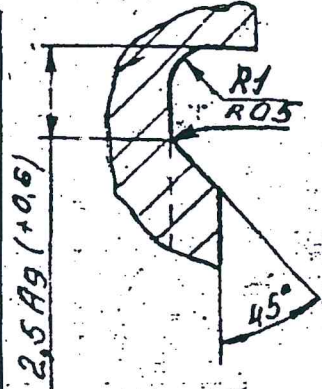


NOT CONSIDERING
ACCURACY GROUP
1 M14 X1.5 T1 2 δe3

I
M5-1 Scale 5:1

REPAIR SIZE DIMENSIONS ARE ADDED WHERE INDICATED THUS (C) BASED ON Lt. NO. 82847/0H/QAD/ED DT. 13-1-95

S.No	R1	R2	REMARKS
1	M16x1.5T1.2δ23 φ 15.026 +0.062 (MEAN)	M18x1.5T1.2δ23 φ 17.026 +0.062 (MEAN)	1. MARK REPAIR SIZE CATEGORY R1, R2. 2. ALL OTHER SIZES SURFACE FINISH, MATERIAL AND TECHNICAL REQUIREMENTS ARE SAME.
2	φ 18	φ 20	
3	φ 13.8	φ 15.8	



- TECHNICAL REQUIREMENTS FOR THREAD SHOULD IN ACCORD WITH STANDARD 82021-00.
- DIMENSIONS WITH UNSPECIFIED TOLERANCES SHOULD BE MAINTAINED AS PER ACCURACY CLASS 7 OST 1010.
- SHARP EDGES SHOULD BE BLUNTED.
- COATING : Zn 3, CHROMATIZING IN ACCORDANCE WITH U1 483-82. (A5)

(A) ALTERNATE MATERIAL: STEEL 080 M40 (EN 8) TO BS: 970

PL-1-1983 OR 45 CB TO IS: 1570

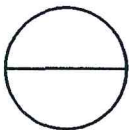
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION

EST. MASS 0.009 kg		TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)	
C	28.12.21	SHEET 2 CREATED.	
B	19.12.19	USED ON NUMBER ADDED.	
A	7/19/09	3rd ALTN. COMM. MIN POINT B DT. 27-2-09	
ISSUE	DATE	NATURE OF AMENDMENTS	MATERIAL - 16.50ST7417-75 RD BAR 45.50ST 1051-73
DRW	lls	SCALE: 2:1	USED ON - Cb 306-08-8 ** Cb 306-09-10
CHD	lls	DIMENSIONS IN mm	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A U I
TCD	lls	TOLERANCE ON DIMS UNLESS OTHERWISE STATED	TITLE: BUSH
APPD	lls	ALL THREADS TO CONFORM TO	D'S CAT NUMBER
DATE	28-1-88		DRAWING NUMBER: 306-157 Sht 1 of 2

COMMON TO V46-6 & V92S2

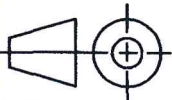
SHEET 2 CREATED ISSUE "C", BASED ON CQA(HV) NOTING No. 111909/CQA(HV)/DB/ENGT-90/ALT.COMM dt. 05 Aug 2020 & POINT No.3 OF 14TH ACM

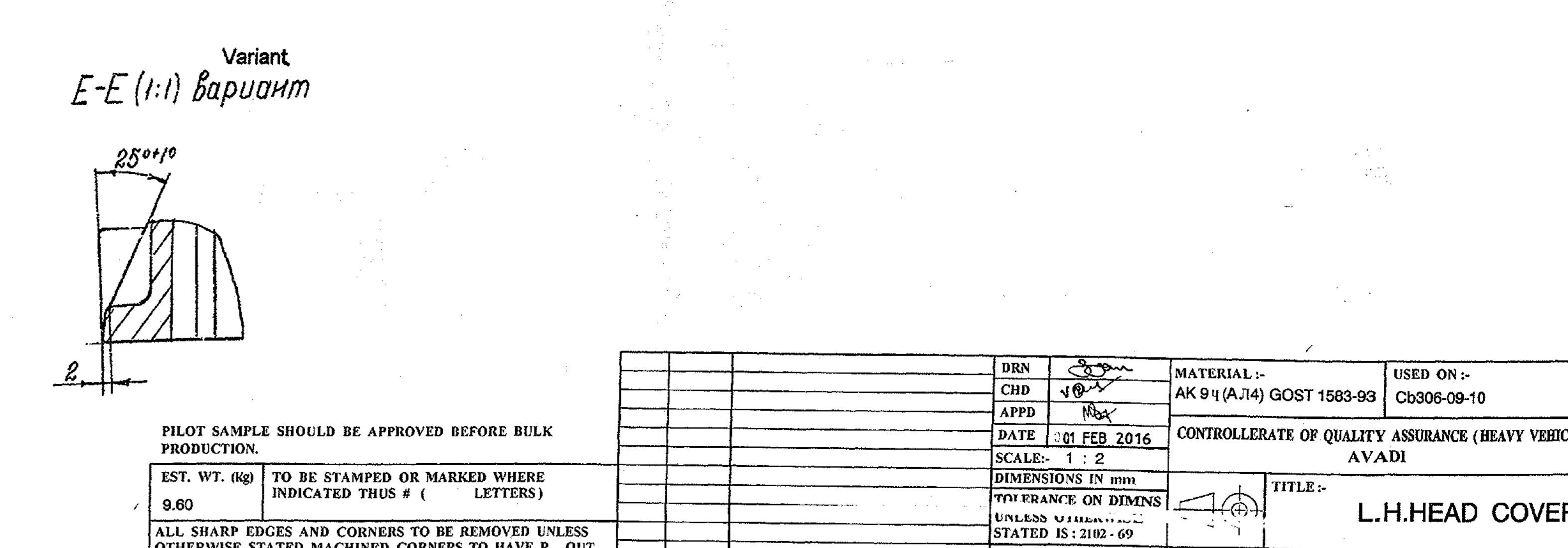
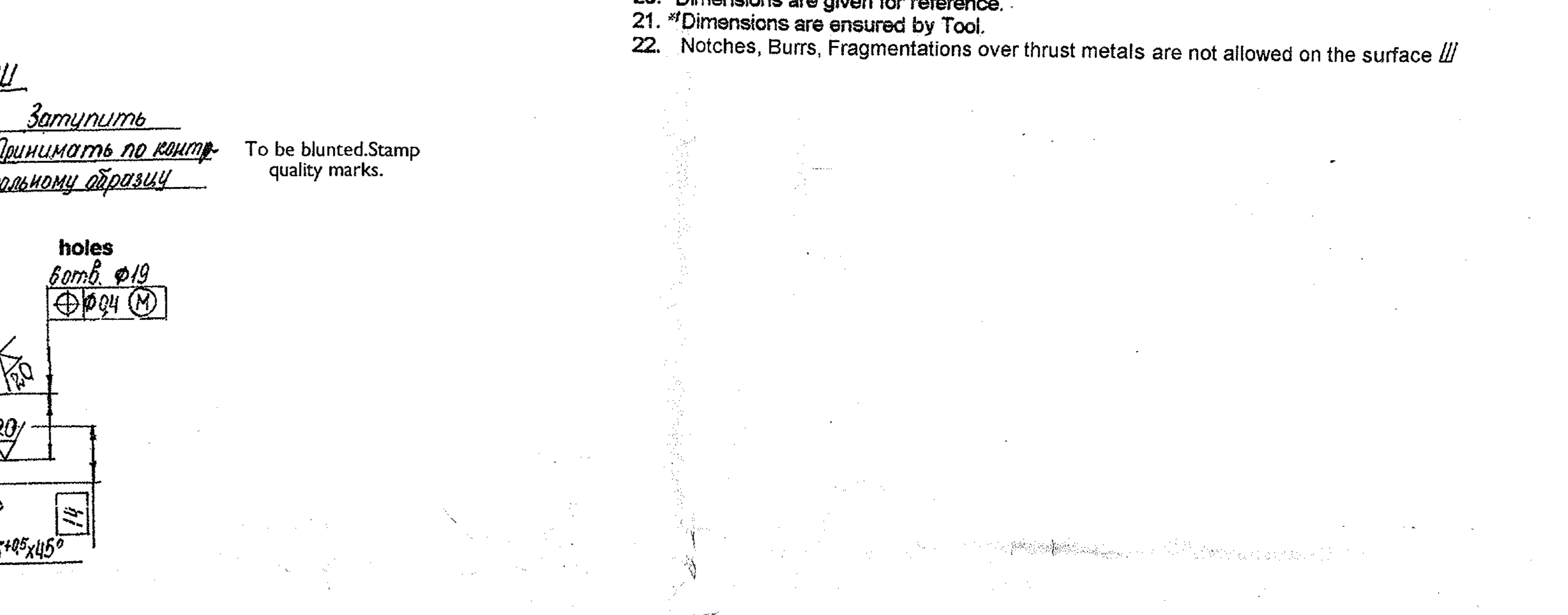
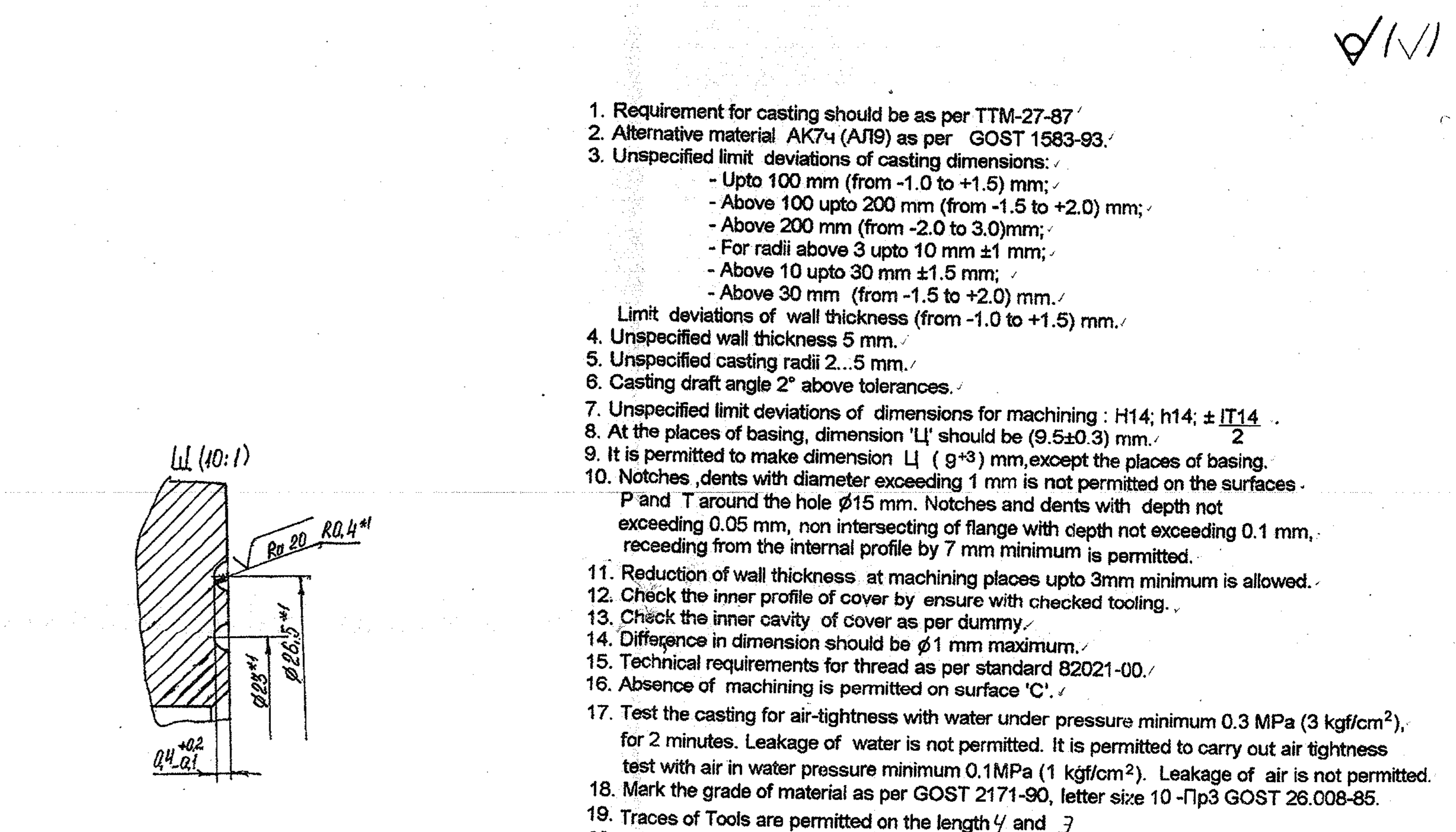
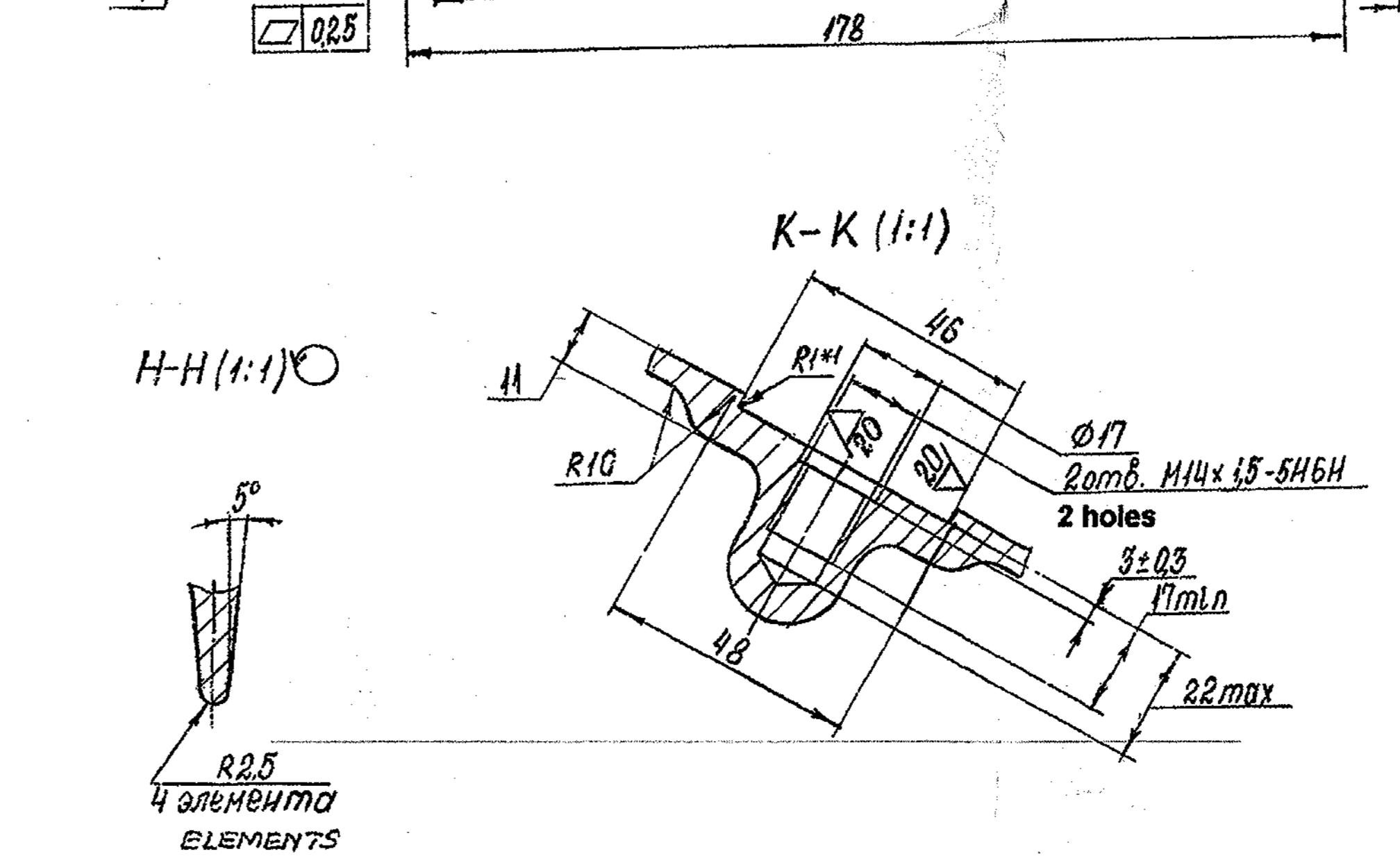
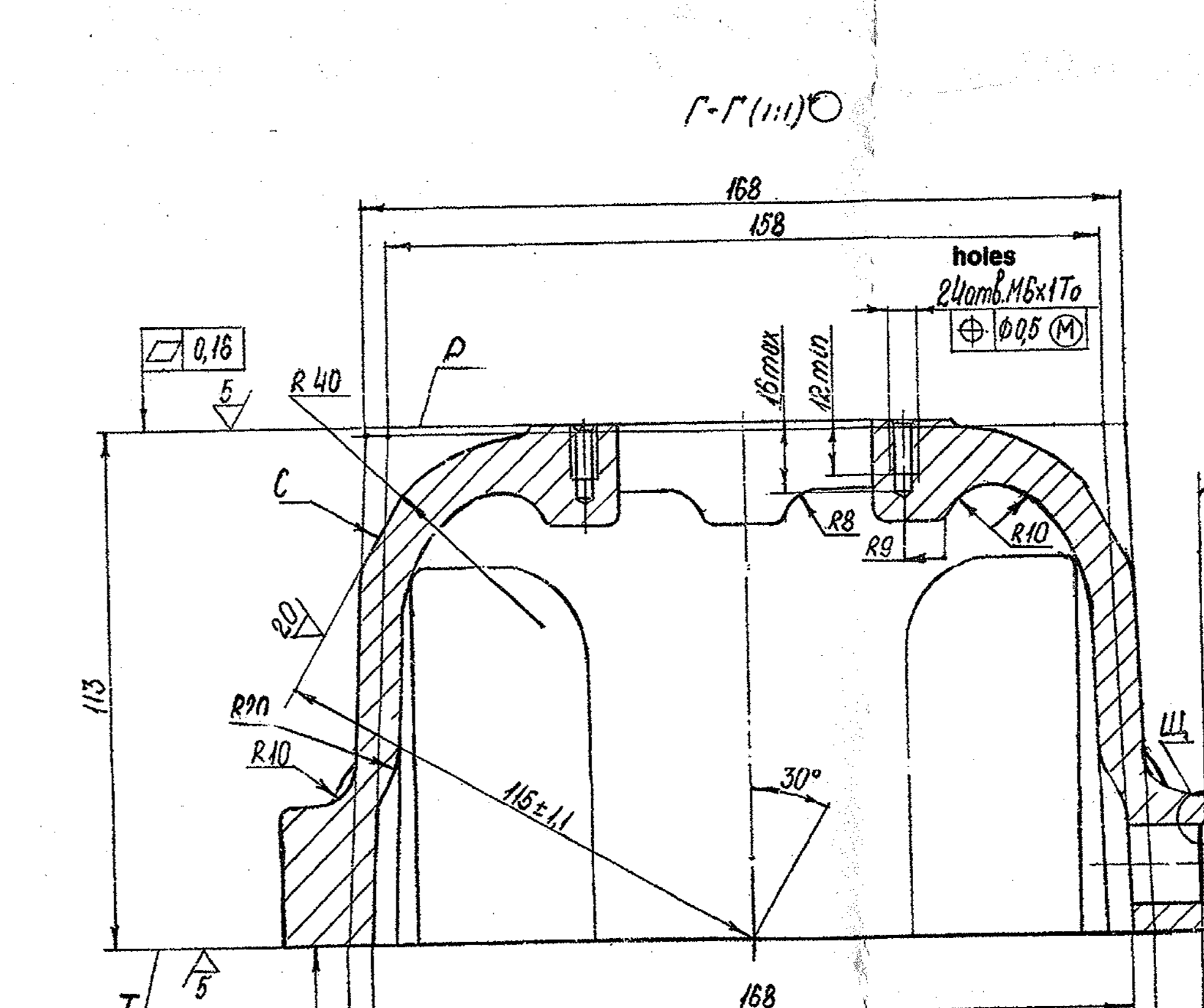
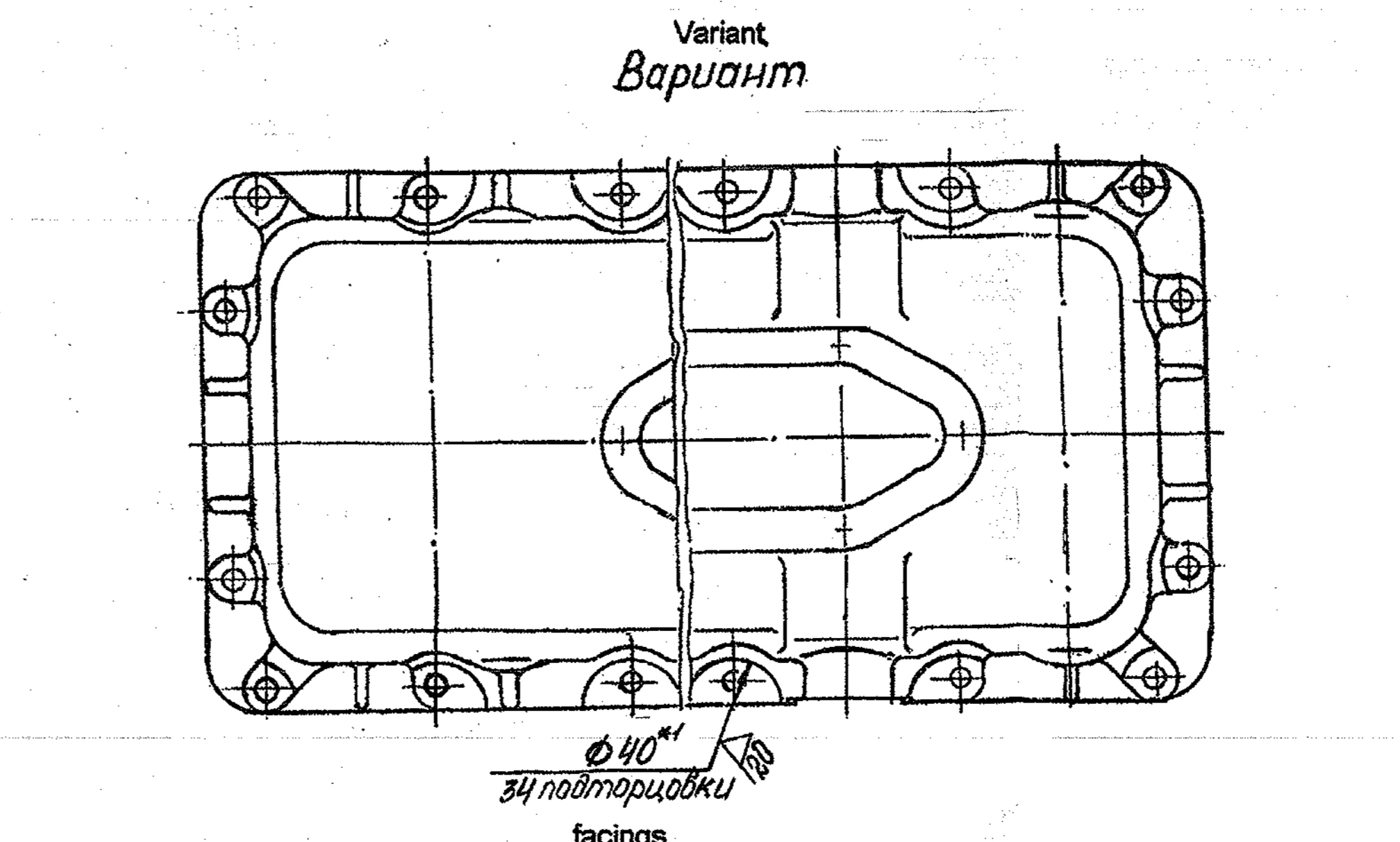
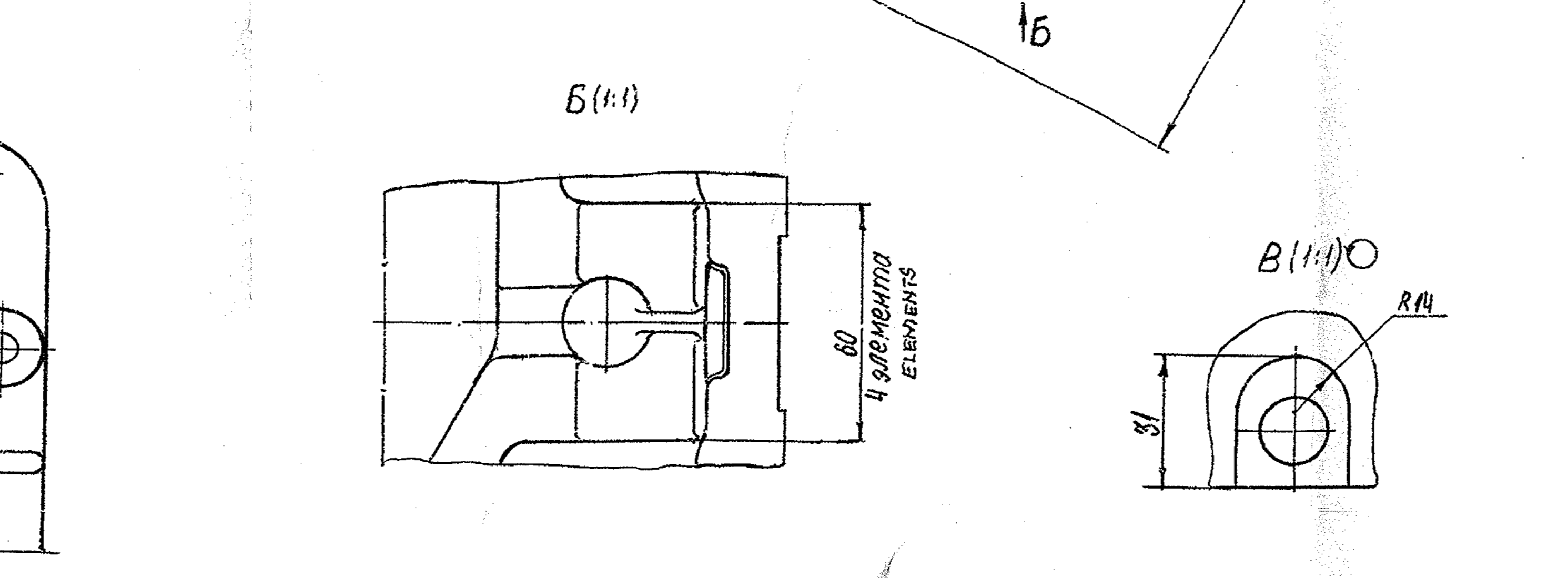
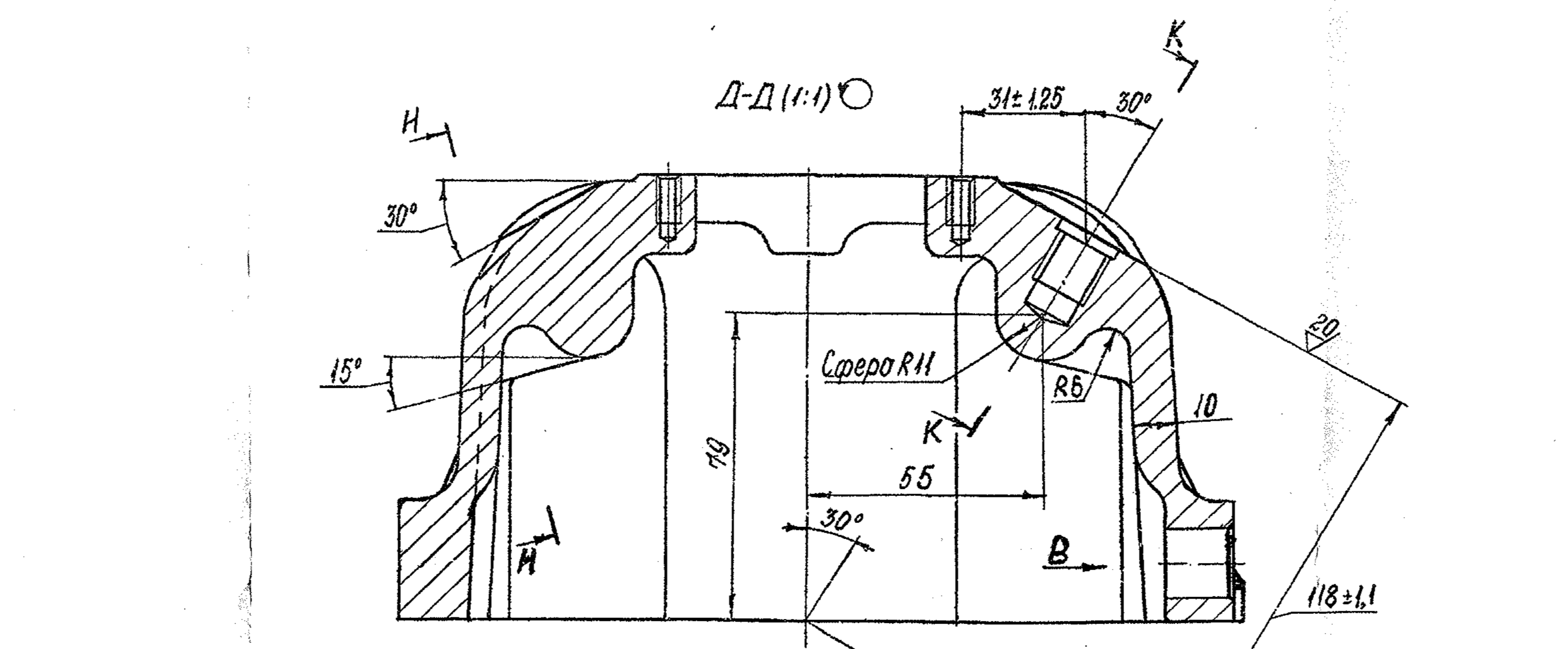
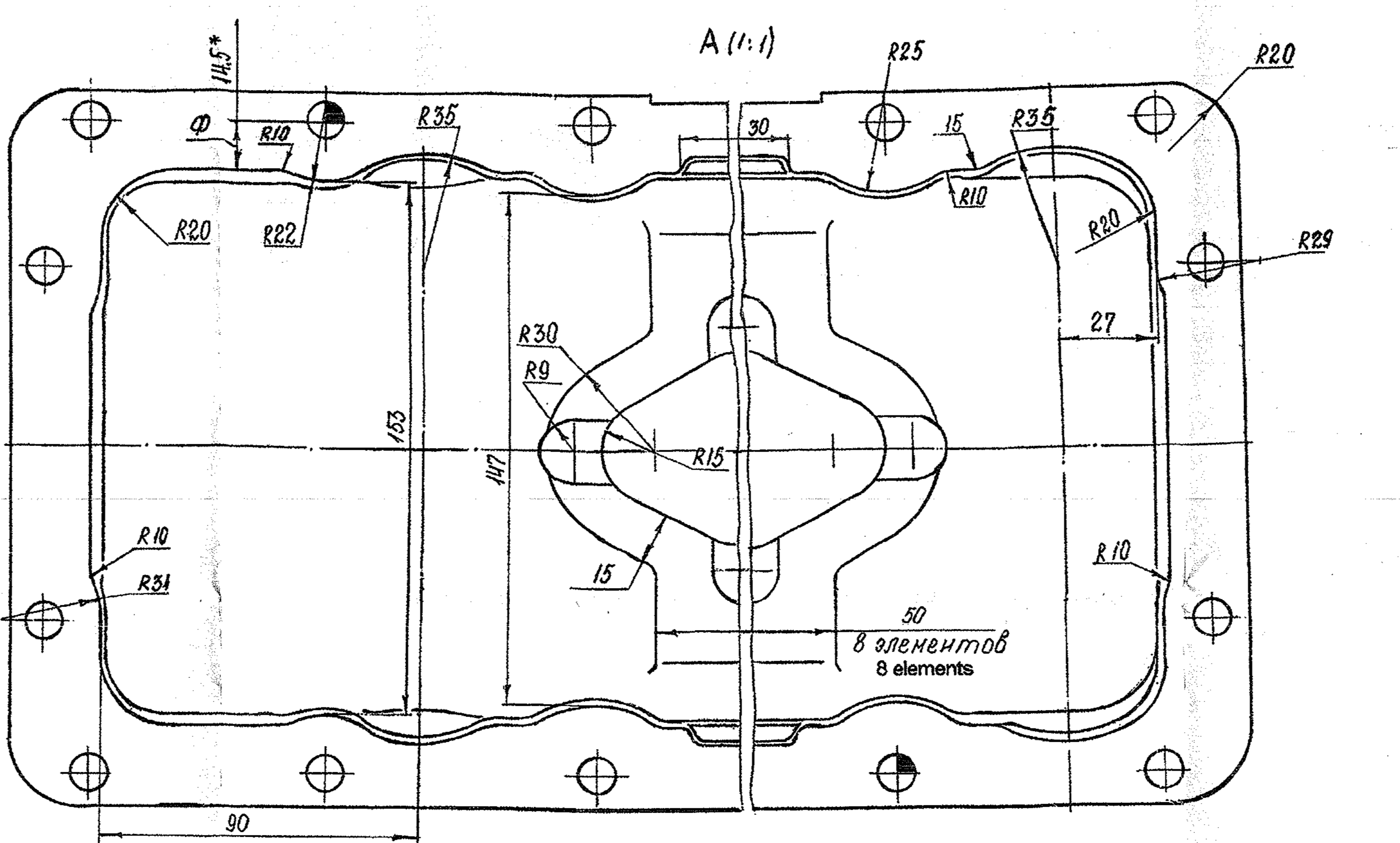
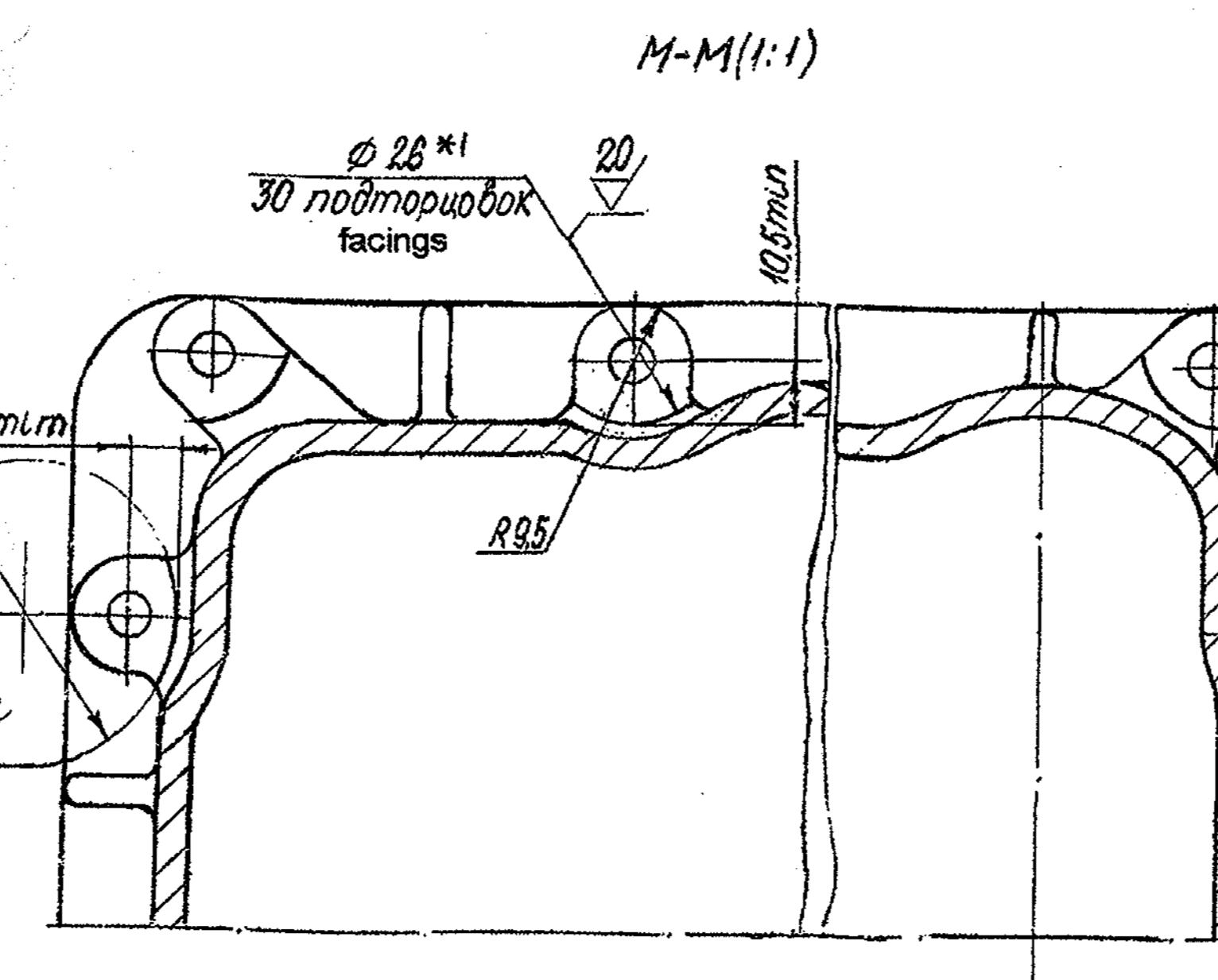
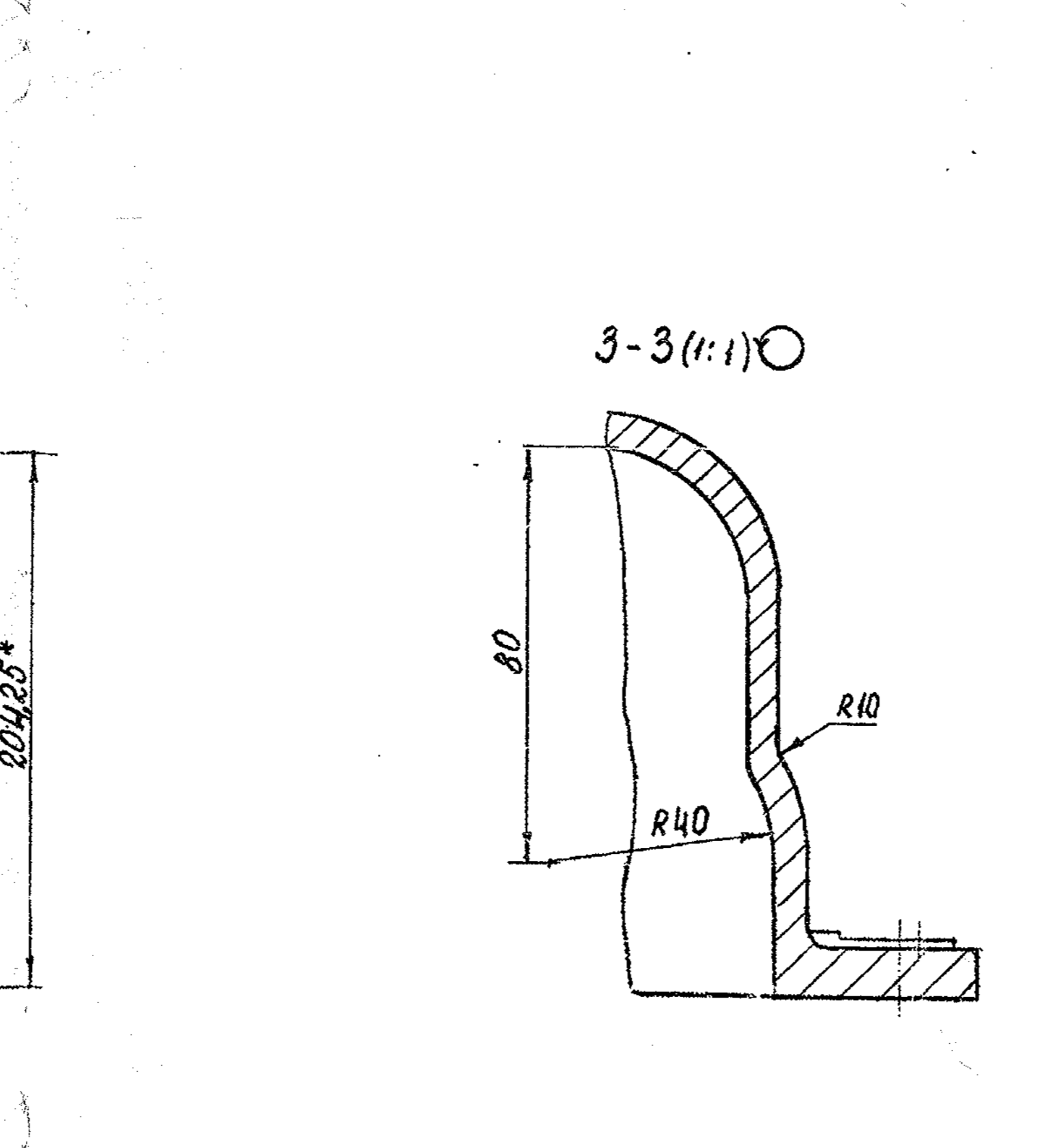
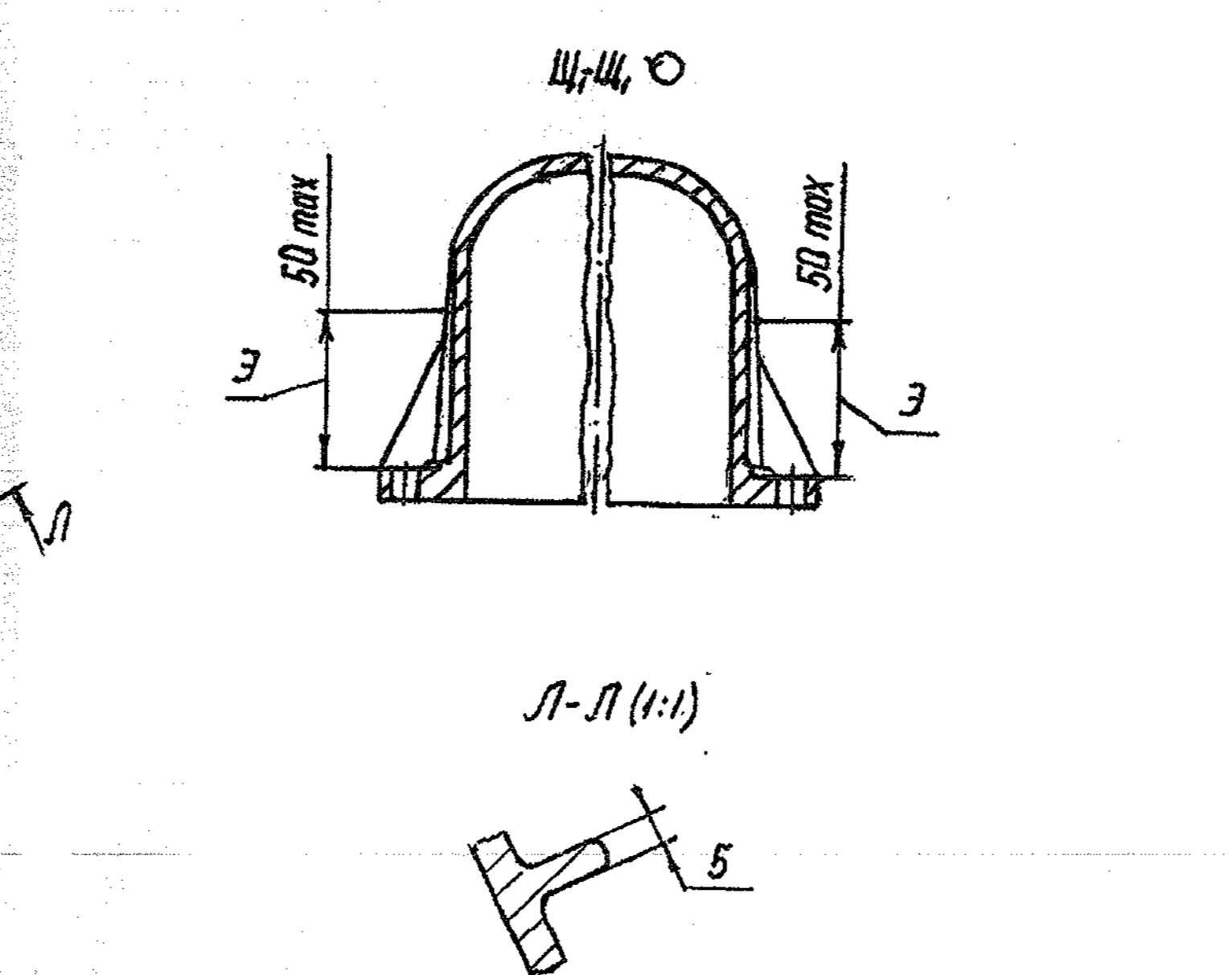
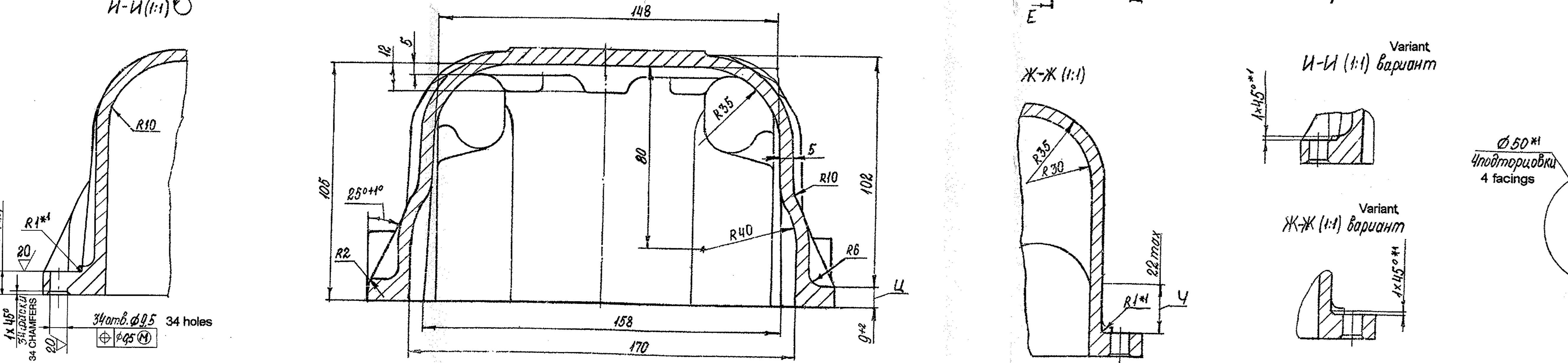
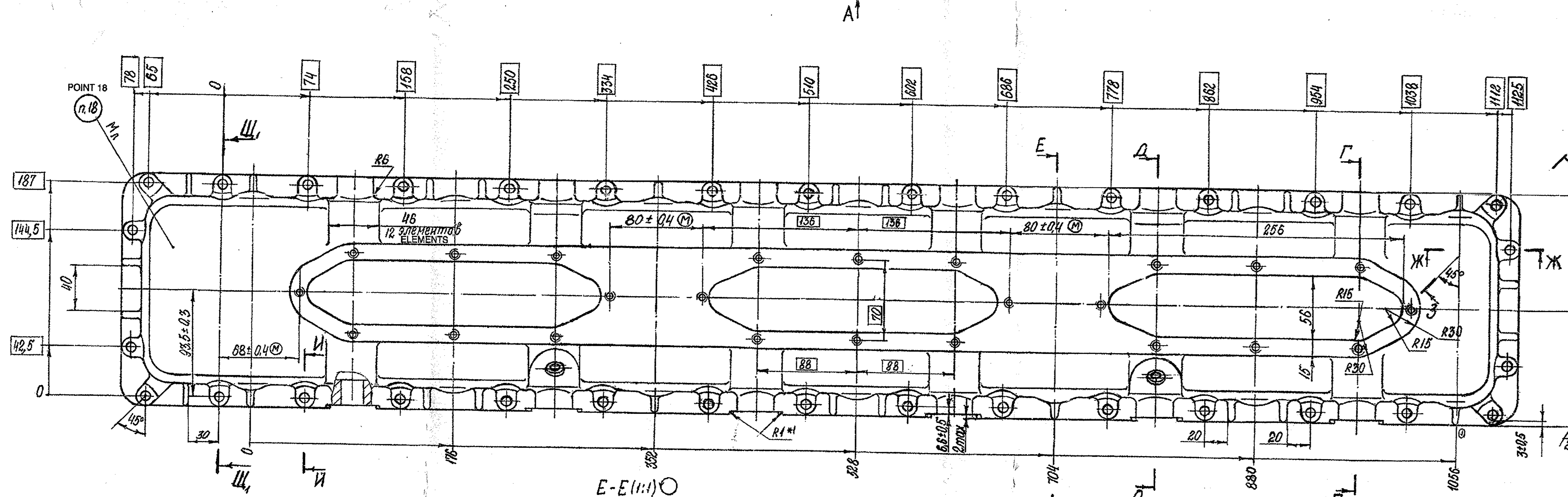
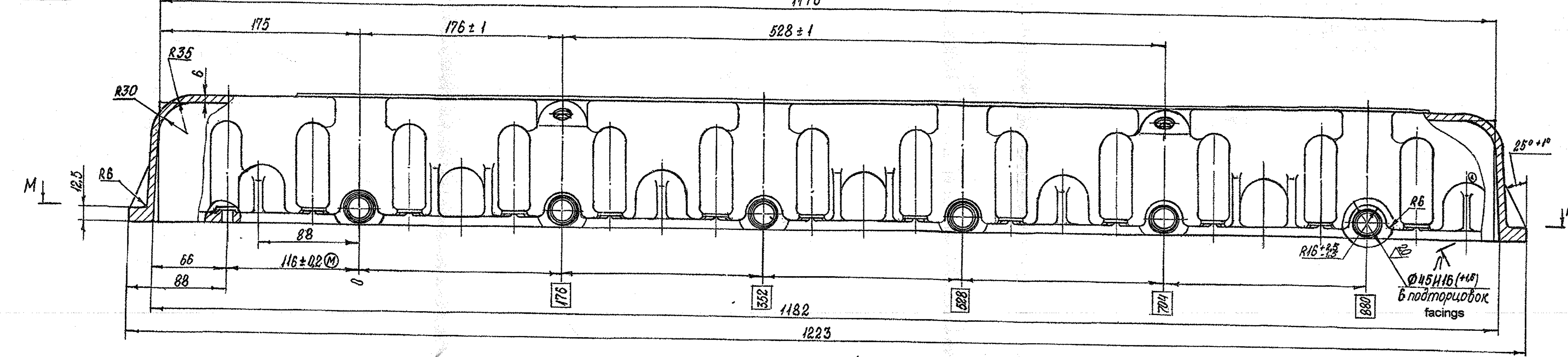
COMMON TO V46-6 & V92S2 Engines



4	3	2	1					
DRAWING NUMBER 306-157		SHEET No. 2 OF 2						
EXPLANATORY NOTE:								
Material Quoted: Round Bar $\frac{16.5 \text{ GOST 7417-75}}{45 \text{ GOST 1051-73}}$								
Killed Steel :								
Grade of Steel : 45 as per GOST 1051-73								
Dia of Round Bar - 16.5 mm								
Chemical & Mechanical properties as per GOST 1050-74 according to GOST 1051-73.								
CHEMICAL COMPOSITION: AS PER GOST 1050-74								
CONTENT OF ELEMENTS %								
GRADE OF STEEL	C	Si	Mn	Cr	S	P	Cu	Ni
	MAXIMUM							
45	0.42 - 0.50	0.17 - 0.37	0.50 - 0.80	0.25	0.040	0.035	0.25	0.25
MECHANICAL PROPERTIES: AS PER GOST 1050-74								
GRADE OF STEEL	Yield Point Kg/mm ²	Ultimate Tensile Strength Kg/mm ²	% of Elongation	Reduction of Area %	Impact Strength Kg.m/cm ²			
	Minimum							
45	36	61	16	40	5			
<p>Note : Any other parameters given in specification to be adhered in ToTo.</p> <p>PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION</p>								



			EST. WT. Refer Sht 1 of 2	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.	
			MATERIAL :- Refer Sht 1 of 2	USED ON :- Refer Sht 1 of 2
ISSUE	DATE	NATURE OF AMENDMENTS	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
DRN		SCALE :- —	BUSH	
CHD		DIMENSIONS IN mm		
APPD		TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS : 2102 - 69		TITLE :-
DATE		ALL THREADS TO CONFORM TO	D S CAT NUMBER	DRAWING NUMBER 306-157 SHT 2 of 2
SIZE	A4			

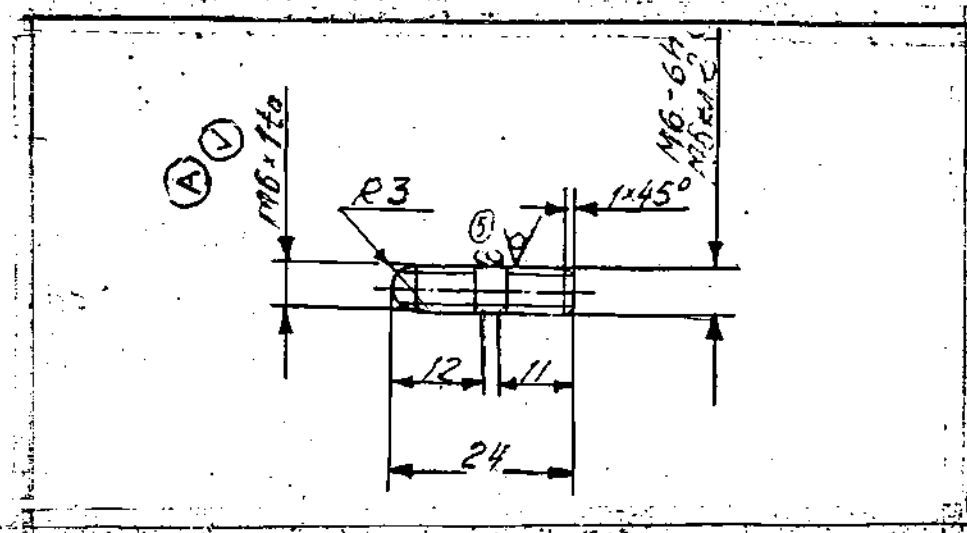


- Requirement for casting should be as per TTM-27-87
- Alternative material AK74 (A78) as per GOST 1583-93
- Unspecified limit deviations of casting dimensions:
 - Upto 100 mm (from -1.0 to +1.5) mm;
 - Above 100 upto 200 mm (from -1.5 to +2.0) mm;
 - Above 200 mm (from -2.0 to 3.0) mm;
 - For radii above 3 upto 10 mm ±1 mm;
 - Above 10 upto 30 mm ±1.5 mm;
 - Above 30 mm (from -1.5 to +2.0) mm.
- Limit deviations of wall thickness (from -1.0 to +1.5) mm.
- Unspecified wall thickness 5 mm.
- Unspecified casting radii 2...5 mm.
- Casting draft angle 2° above tolerances.
- Unspecified limit deviations of dimensions for machining: H14; h14; ± IT14.
- At the places of basing, dimension 'L' should be (9.5±0.3) mm.
- It is permitted to make dimension 'L' (±0.3) mm, except the places of basing.
- Notches, dents with diameter exceeding 1 mm is not permitted on the surfaces P and T around the hole ø15 mm. Notches and dents with depth not exceeding 0.05 mm, non intersecting of flange with depth not exceeding 0.1 mm, receding from the internal profile by 7 mm minimum is permitted.
- Reduction of wall thickness at machining places upto 3mm minimum is allowed.
- Check the inner profile of cover by ensure with checked tooling.
- Check the inner cavity of cover as per dummy.
- DiffERENCE in dimension should be ø1 mm maximum.
- Technical requirements for thread as per standard B2021-00.
- Absence of machining is permitted on surface 'C'.
- Test the casting for air-tightness with water under pressure minimum 0.3 MPa (3 kgf/cm²), for 2 minutes. Leakage of water is not permitted. It is permitted to carry out air tightness test with air in water pressure minimum 0.1MPa (1 kgf/cm²). Leakage of air is not permitted.
- Mark the grade of material as per GOST 2171-90, letter size 10 - Тр3 GOST 26.008-85.
- Traces of Tools are permitted on the length 'J' and 'J'.
- *Dimensions are given for reference.
- *Dimensions are ensured by Tool.
- Notches, Burrs, Fragmentations over thrust metals are not allowed on the surface 'L'

DRG. INDICATED BASED ON RUSSIAN ORIGINAL (S.S.L.E. - N.L. DRG. INTRODUCED AND REPLACES 306-94-11 With Instr. No. 94-99.

DRN	CHD	APPD	DATE	SCALE	DIMENSIONS IN mm	PROPORTION ON DIMENS	STATED IS: 2002-09	ALL THREADS TO CONFORM TO IS:4218 PART-4	ISSUE DATE	NATURE OF AMENDMENTS	MATERIAL	AK 94(A,34) GOST 1583-93	USED ON	CB306-09-10	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	TITLE	L.H.HEAD COVER	D S CAT NUMBER	DRAWING NUMBER	306-94-20
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DRAWING NUMBER
350 03



D EQUIVALENT MATERIAL STEEL
45C8 TO IS:1570

- DELETED.
- TECHNICAL REQUIREMENTS FOR THREADS AS PER STANDARD 82021-00.
- DIMENSIONS WITH UNSPECIFIED TOLERANCES AND THE REST OF THE TECHNICAL REQUIREMENTS AS PER STANDARD 82052-00.
- COATING: CADMIUM 3, CHROMATIZING AS PER UL-104 WITH SUBSEQUENT ELIMINATION OF HYDROGEN EMBRITTLEMENT.
- THE THREAD MAY BE MADE BY ROLLING WITH DIAMETER OF UN-THREADED PORTION WITH IN THE PITCH DIAMETER OF THREAD.
- MECHANICAL DAMAGES OF THE CADMIUM COATING SUCH AS SCRATCHES, NICKS AND DENTS ARE ALLOWED ON ASSEMBLY UNITS, PROVIDED THE STEEL IS NOT EXPOSED.

- ALTERNATE MATERIAL: STEEL GRADES 40 & 50 GOST 1050-74.
- HARDNESS:- 27-32 HRC.

* ALT MATERIAL:-
STEEL 709 M40 (EN-19) TO
BS:- 970 PT.-1- 1983

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 # (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

EXPLANATORY NOTE:

8. REFERENCE MATERIAL QUOTED:

COLD DRAWN SIZED ROUND BAR, 6.0 (-0.025)mm DIA TO GOST 7417-75 FROM HIGH GRADE SIZED STEEL NORMAL SURFACE QUALITY TO GOST 1051-73 AND MANUFACTURED IN ACCORDANCE WITH QUALITY CARBON STRUCTURAL STEEL GRADE 45 TO GOST 1050-74.

REFERENCE NOTE '7' ON ALTERNATE MATERIAL: QUALITY CARBON STRUCTURAL STEEL GRADE 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 ²	YIELD POINT Kgf/mm ²	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH Kgf/cm ²	HARDNESS B H N MAX	REMARKS
45	61	36	16	40	5	207	Ref,Matl
40	58	34	19	45	6	197	Alt,Matl
50	64	38	14	40	4	217	Alt,Matl

A 9. REPAIR SIZE DIMENSIONS ARE ADDED WHERE INDICATED THUS **⊕** BASED ON OVERHAUL SPECIFICATIONS PART III REPAIR DRAWINGS.

Sl.No.	R	REMARKS
1	M6 x 1.25 to	ALL OTHER CONDITIONS AS PER STD. DRG.
2	PCD = 7.188 ± 0.152	

Cb 306-08-8, Cb 306-09-10,
Cb 401-03-6, Cb 3301-15-30,
Cb 306-08-13, Cb 306-09-13,
Cb 3308-04-24

DRN	CHD	TCD	APPD	DATE	SCALE 1:1	MATERIAL ROUND BAR GOST 7417-75 * 45 GOST 1051-73	USED ON Cb 3301-15-44 ** Cb 3338-402-4 Cb 3329-01-11
CONTROLLERATE OF INSPECTION(HEAVY VEHICLES) AVADI					TITLE: STUD M6 x 24		
D S CAT NUMBER					DRAWING NUMBER 350 03		

ISSUE	DATE	NATURE OF AMENDMENTS
D	12-8-10	4 th Alt. Comm. Meeting Minutes Point No.11 Dt: 26-10-09
C	25.8.08	USED ON NUMBERS ADDED AUTHY:- MIN. OF ALT. COM. MEET.
B	11.01.08	POINT No.-2.12 Dt.- 07-02-07
A	6.9.95	REPAIR SIZE DIMENSION ADDED

COMMON TO V-92S2 ENGINE

A-11

SIZE A3



USED ON

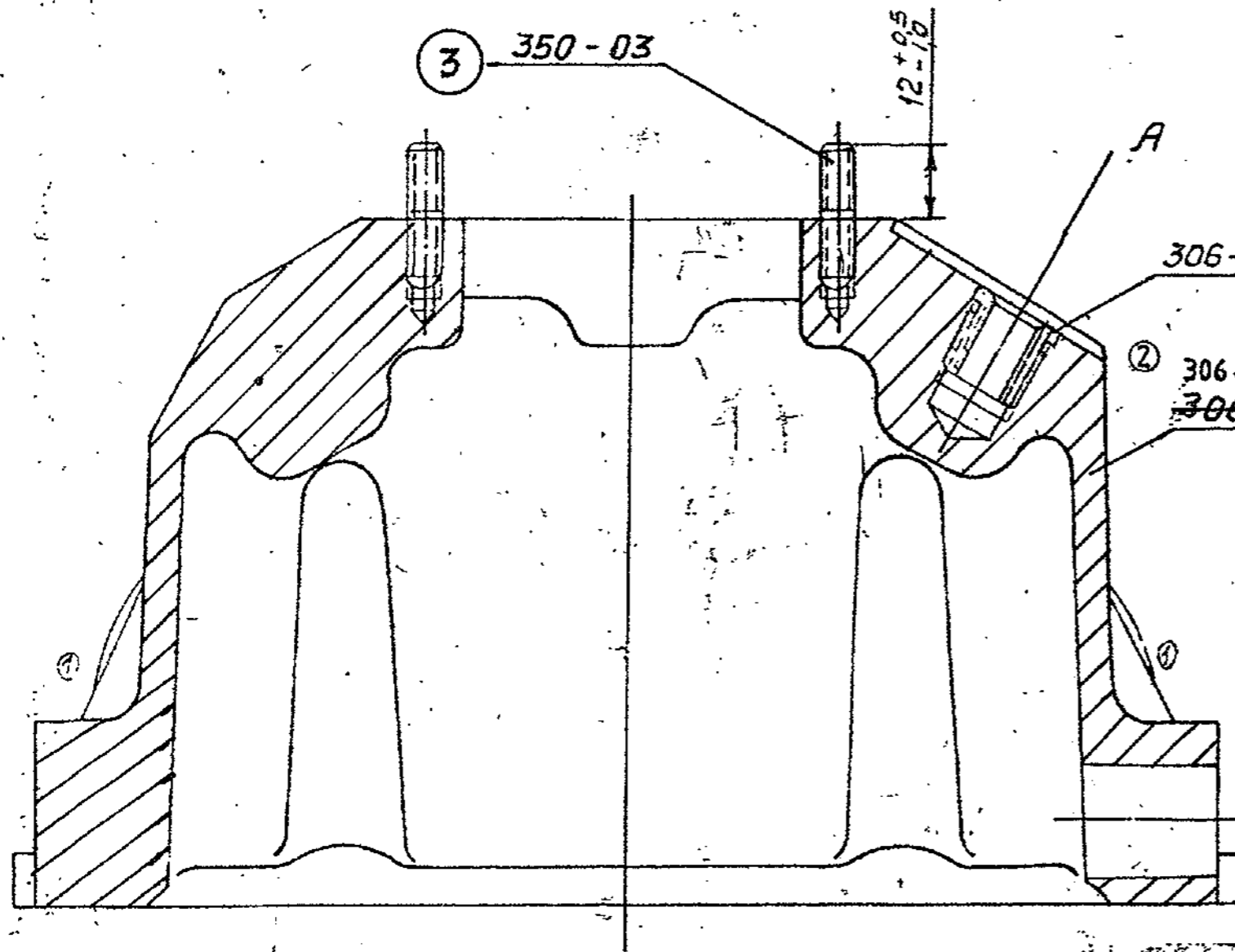
-CB 406-13-32-
 CB 406-13-77-

①

ITEM	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	No. OFF	REMARKS		
	CB 306-09-10		LH CYLINDER HEAD COVER ASSY				
	& ITEM LIST						
1	306-94-20 306-94-11		CYLINDER HEAD COVER, L.H.	1			
2	306-157		BUSH	2			
3	350-03		STUD M6x24	24			
1	9.9.15	Vide Notn No.196-09 (F-164)					
ISSUE	DATE	NATURE OF AMENDMENTS		ISSUE	DATE	NATURE OF AMENDMENTS	
DRN	<i>Alf. Pichler</i>		CONTROLLER OF QUALITY ASSURANCE (HEAVY VEHICLES) AVAD				
CHD	<i>G. Pichler</i>						
TCD	<i>Alf. Pichler</i>		TITLE: LH CYLINDER HEAD COVER, ASSY				
APPD	<i>[Signature]</i>						
DATE	11-4-88		D S CAT NUMBER		ITEM LIST FOR CB 306-09-10		
			SHT. No. 1 OF 1				

A4
 61

01-60-90E90



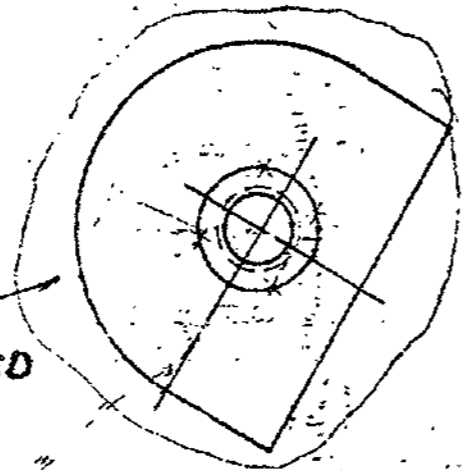
③ Остальная графика и технические требования по чертежу сб. 306-09-Б.

OTHER SKETCHES AND TECHNICAL REQUIREMENTS ARE AS PER DRAWING CB 306-09-B

① 1. SET THE BUSH ITEM 2 ON SEALING COMPOUND ANAEROBIC ANATERM-SMATY 2257-339-00208947-2000 AS PER ИА-652-86

VIEW A Bud A b

Роккершумб
TO BE PUNCH LOCKED



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

		EST, MASS	TO BE STAMPED OR MARKED WHERE INDICATED THIS # LETTERS)
2	9.9.15	Vide Notn No. 196-09	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE
1	7.2.09	NOTN. No. 05-07.F 158	
ISSUE	DATE	NATURE OF AMENDMENTS	MATERIAL:- _____ USED ON:- * CB 406-13-32
DRN	SCALE: 1:1		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A D I
CHD	DIMENSIONS IN mm		
TCD	TOLERANCE ON DIMS UNLESS OTHERWISE STATED		TITLE: CYLINDER HEAD COVER, L.H ASSY.
APPD			D S CAT NUMBER
DATE: 11-4-88	ALL THREADS TO CONFORM TO		DRAWING NUMBER: CB 306-09-10

ЦНБ Навел Подв. и д.м.т. 2.0059
 ЦНБ Навел Подв. и д.м.т. 2.0059
 ЦНБ Навел Подв. и д.м.т. 2.0059

USED ON

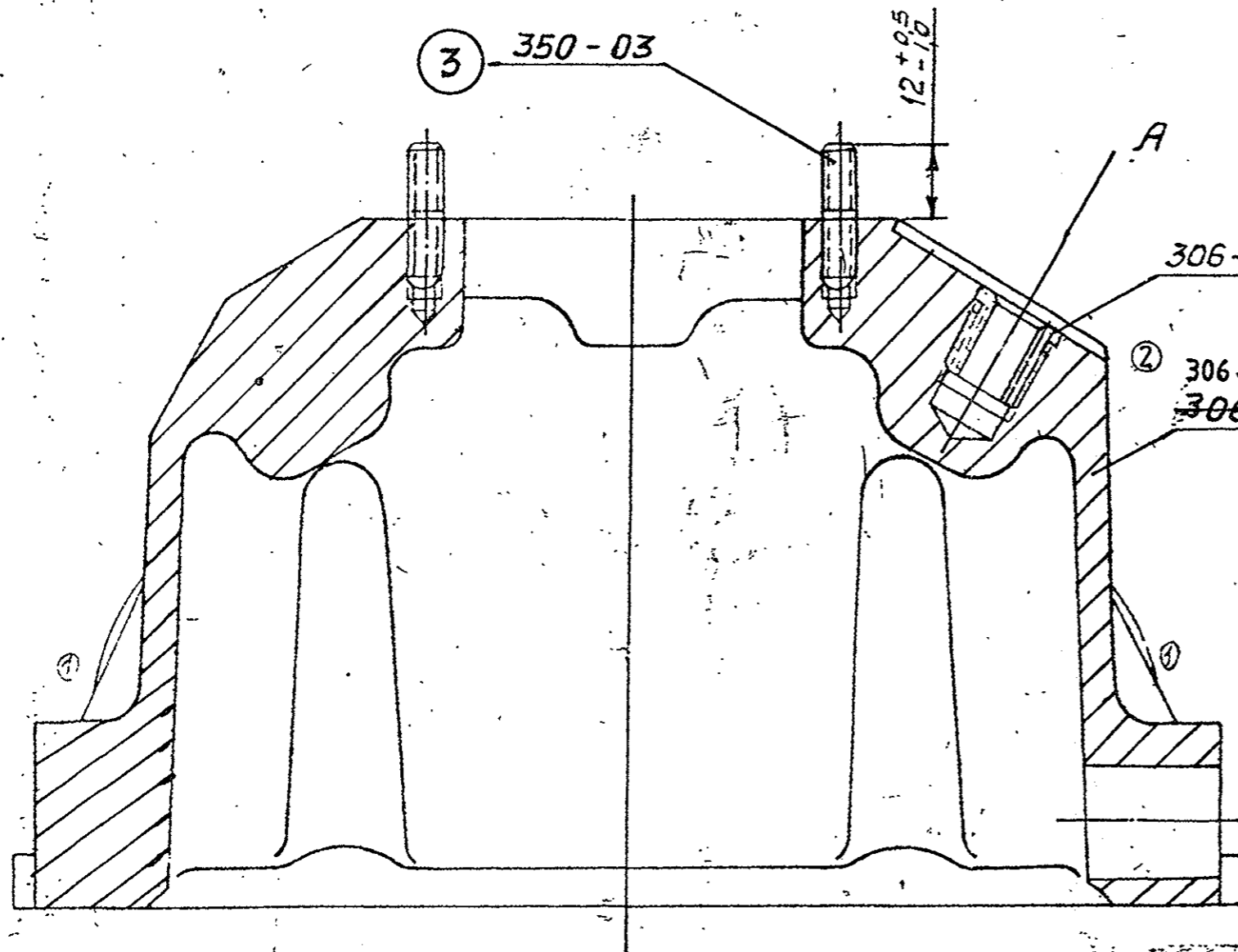
~~CB 406-13-32~~
 CB 406-13-77

①

ITEM	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	No. OFF	REMARKS		
	CB 306-09-10 & ITEM LIST		LH CYLINDER HEAD COVER ASSY				
1	306-94-20 306-94-11		CYLINDER HEAD COVER, L.H.	1			
2	306-157		BUSH	2			
3	350-03		STUD M6x24	24			
1	9.9.15	Vide Notn No.196-09 (F-164)					
ISSUE	DATE	NATURE OF AMENDMENTS		ISSUE	DATE	NATURE OF AMENDMENTS	
DRN	<i>A. S. G. F. S.</i>		CONTROLLER OF QUALITY ASSURANCE (HEAVY VEHICLES) AVAD				
CHD	<i>A. S. G. F. S.</i>						
TCD	<i>A. S. G. F. S.</i>		TITLE: LH CYLINDER HEAD COVER, ASSY				
APPD	<i>[Signature]</i>		D S CAT NUMBER		ITEM LIST FOR		
DATE	11-4-88		SHT. No. 1 OF 1		CB 306-09-10		

A4
 61

01-60-90E93



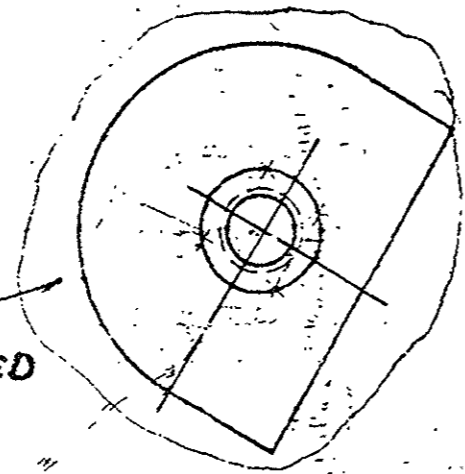
Остальная графика и технические условия по чертежу с/б 306-09-Б

OTHER SKETCHES AND TECHNICAL REQUIREMENTS ARE AS PER DRAWING СБ 306-09 Б

1. SET THE BUSH ITEM 2 ON SEALING COMPOUND ANAEROBIC ANATERM-SMATY 2257-339-00208947-2000 AS PER ИЛ-652-86

VIEW A Sub A b

Роккернуть TO BE PUNCH LOCKED

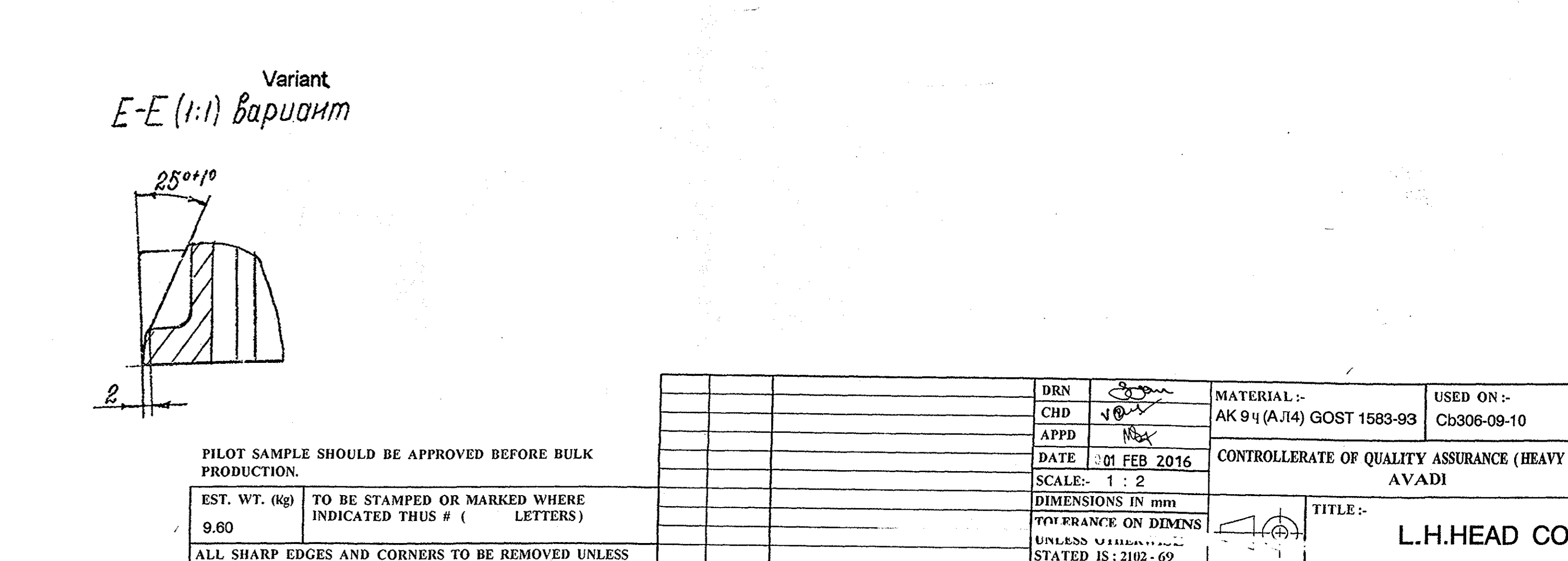
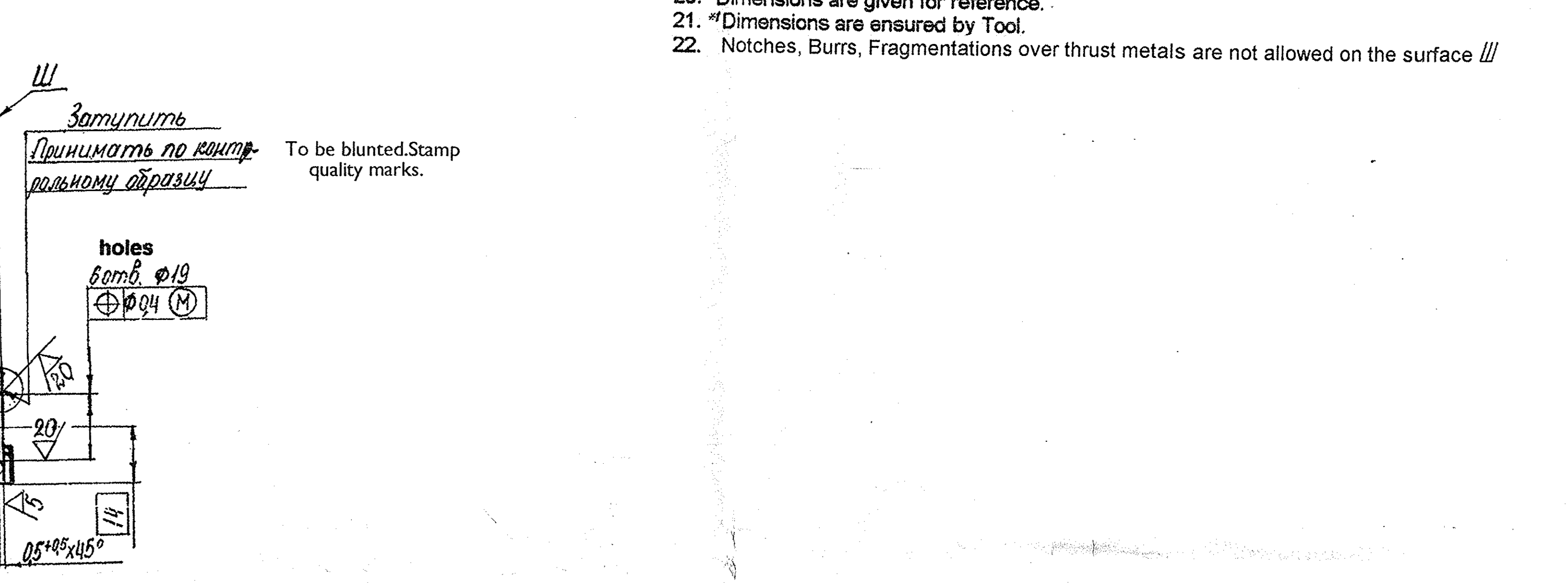
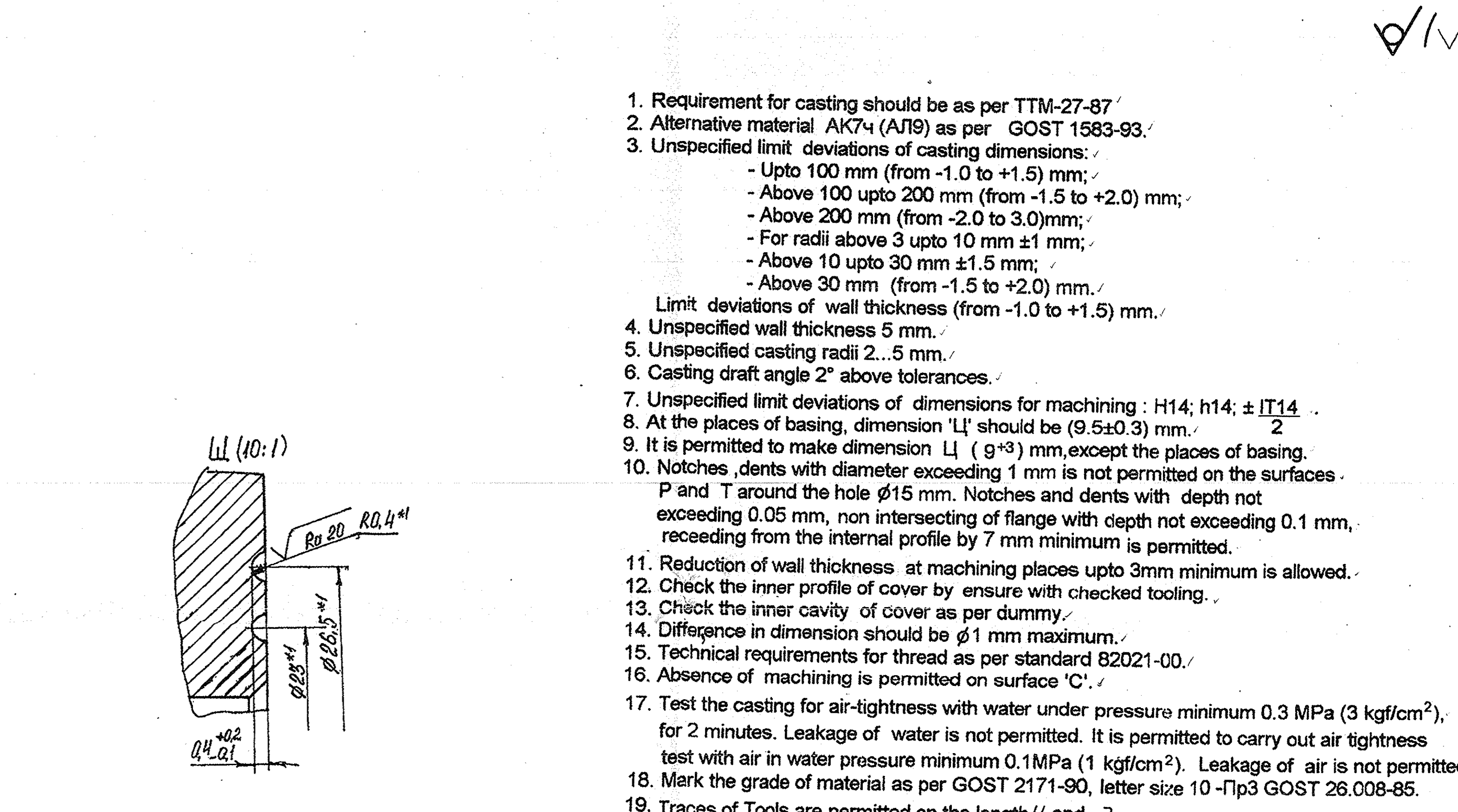
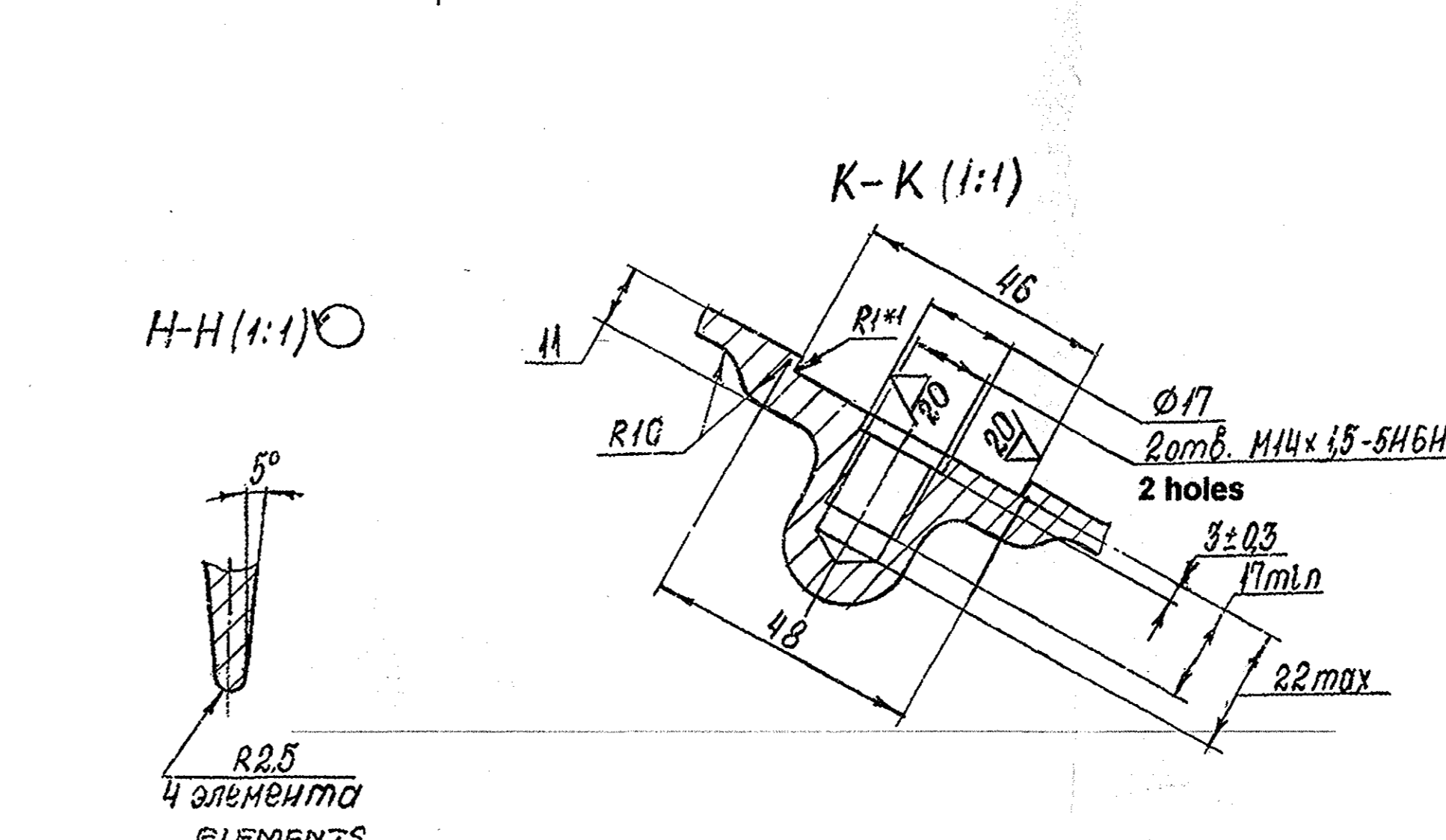
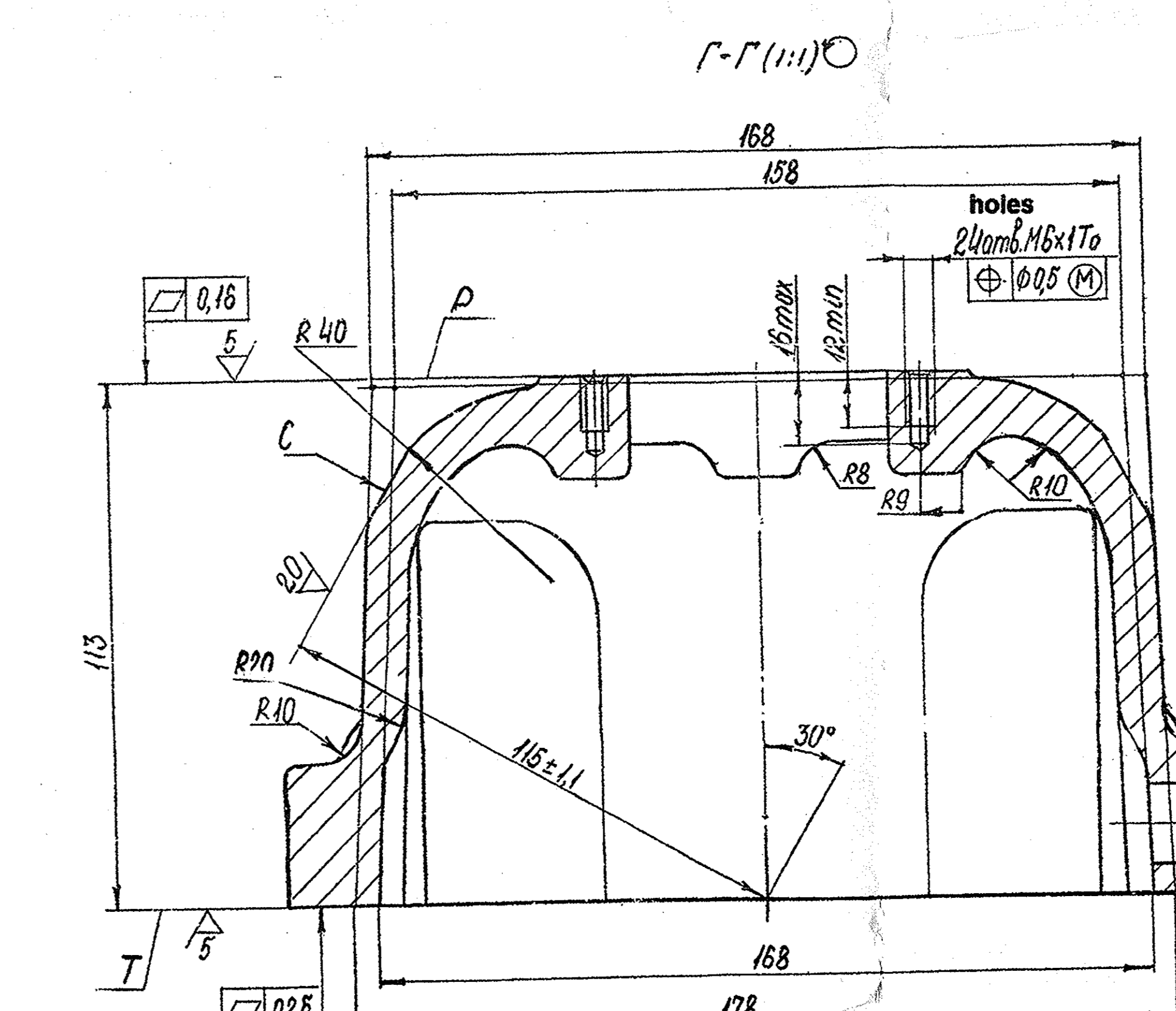
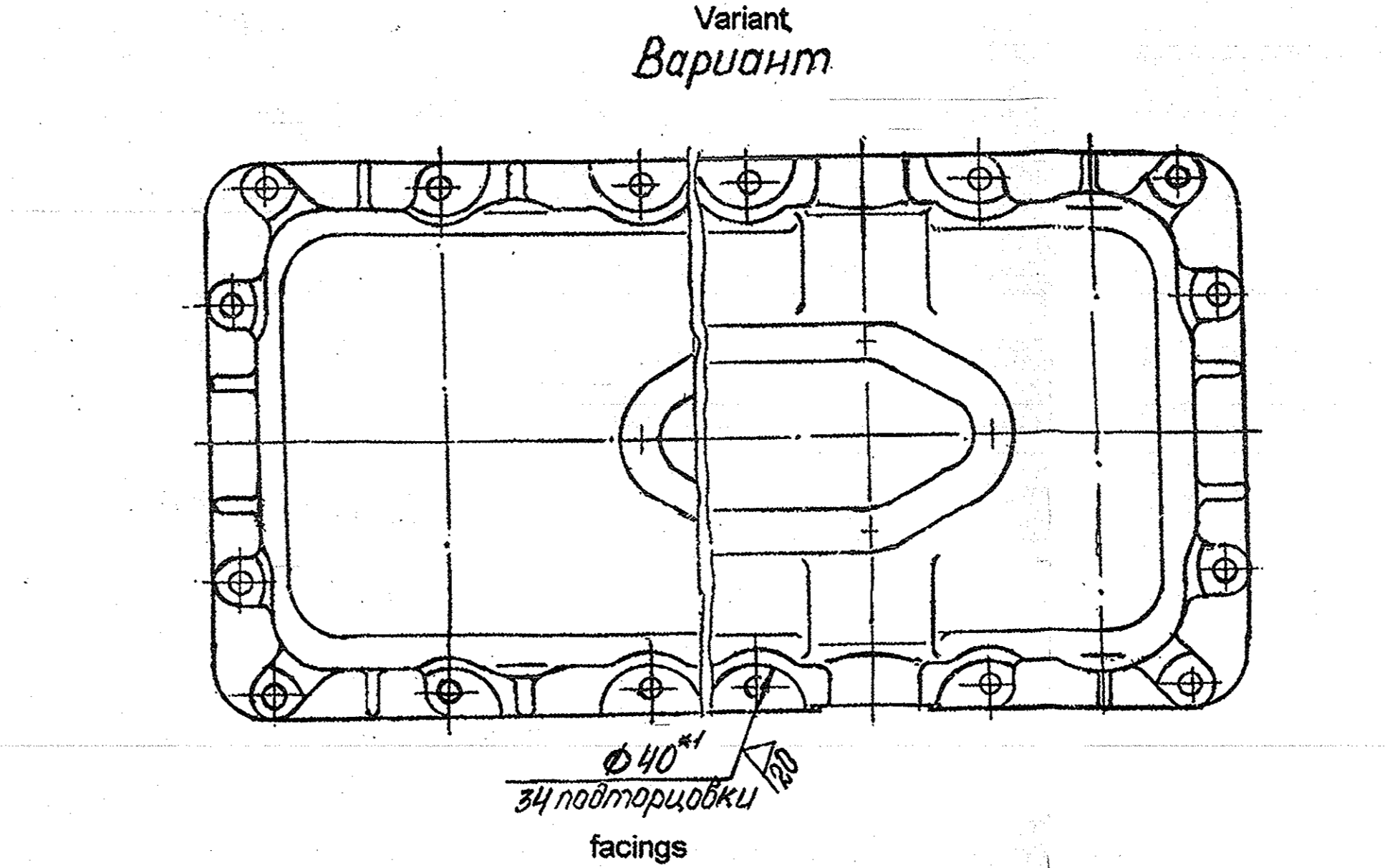
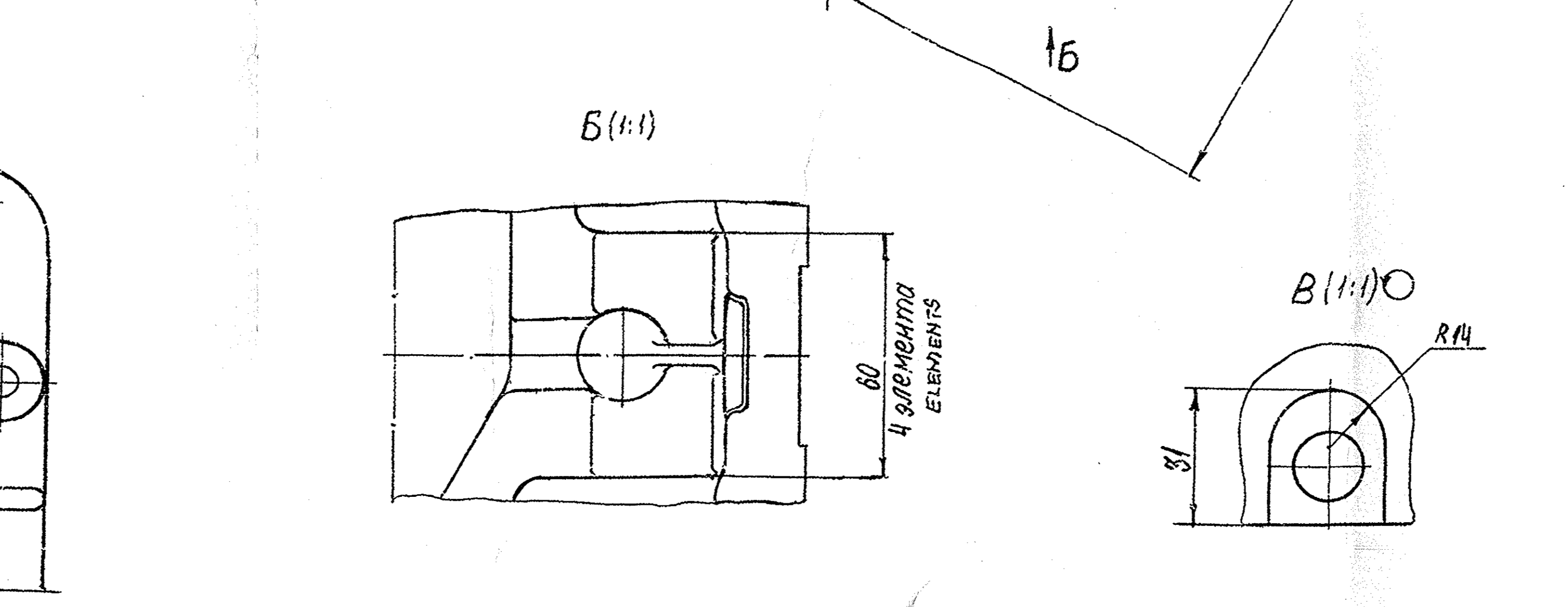
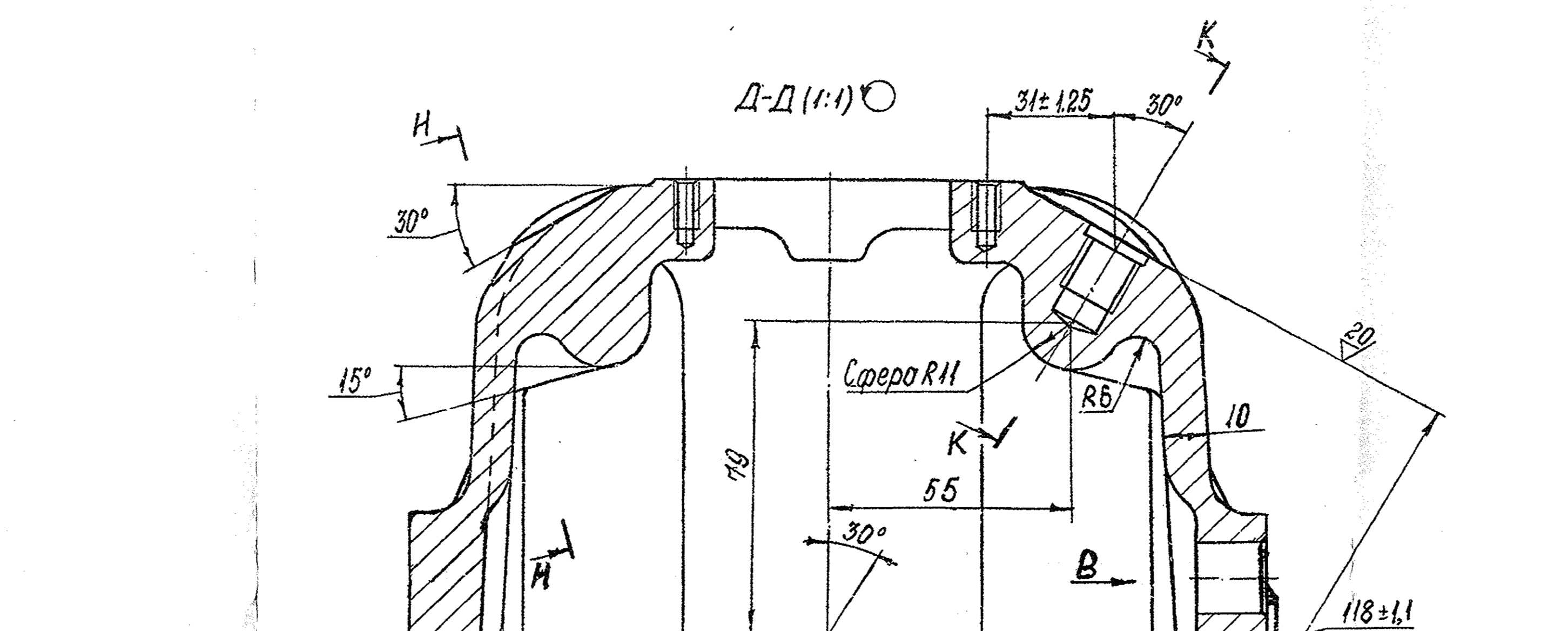
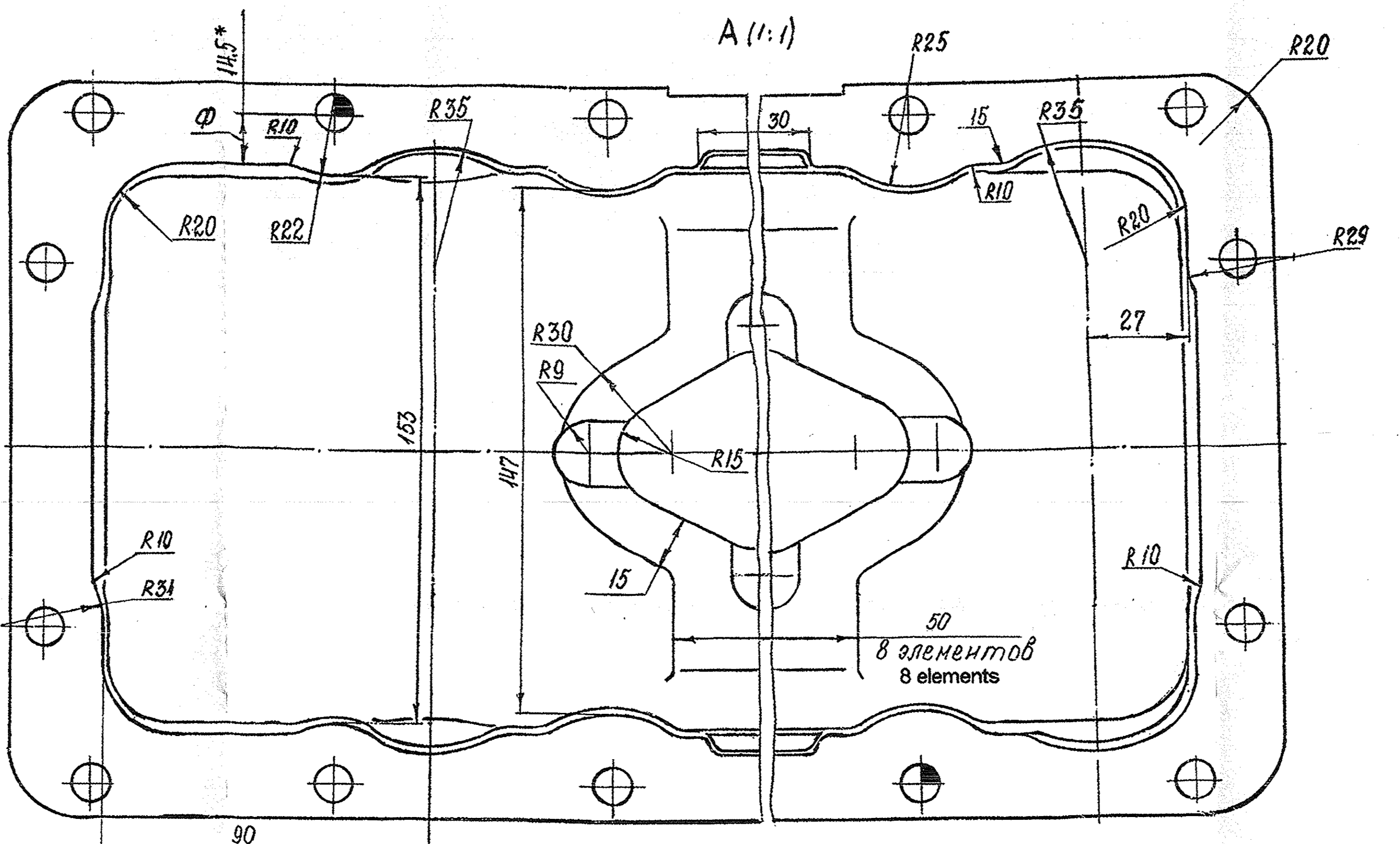
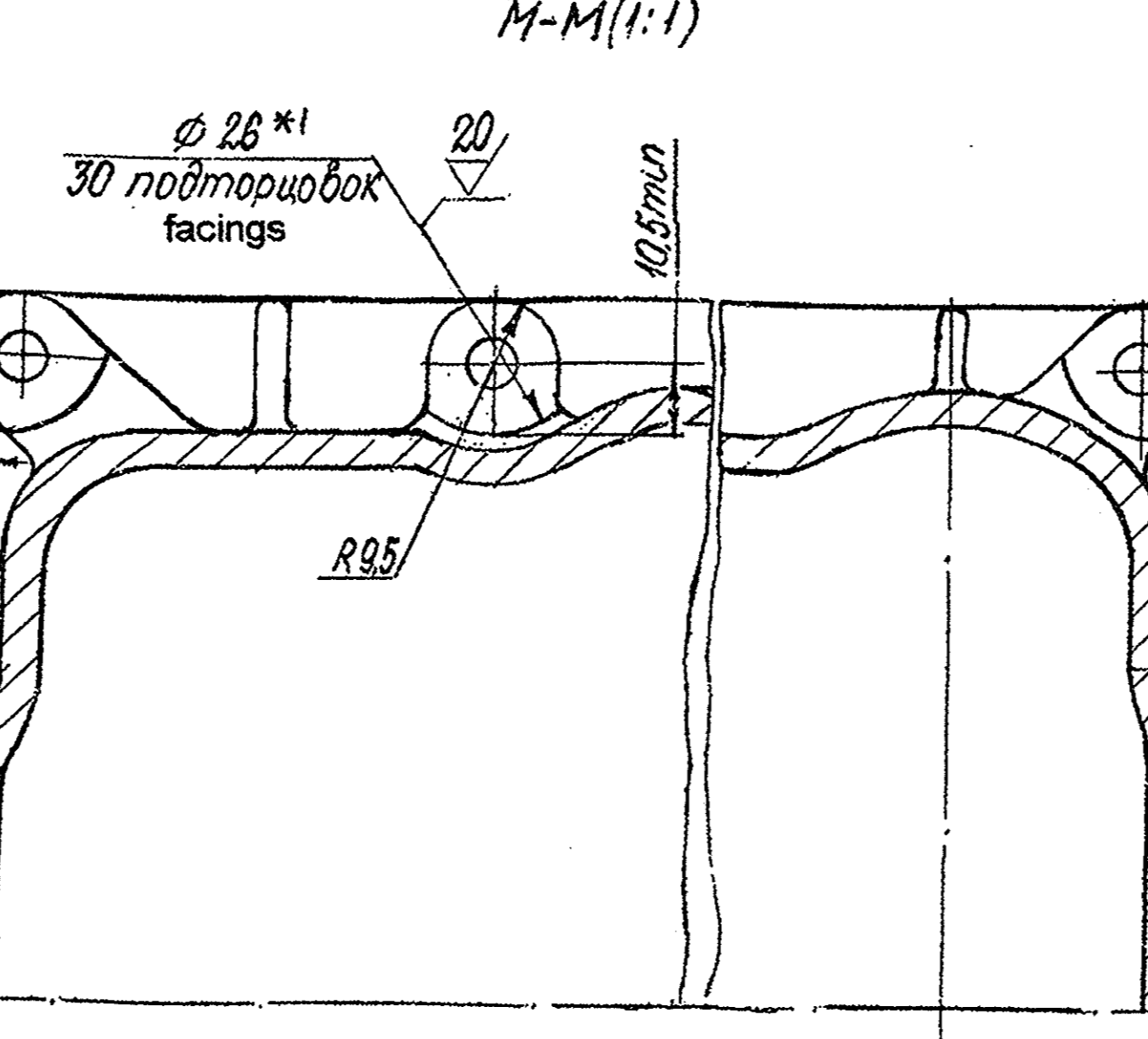
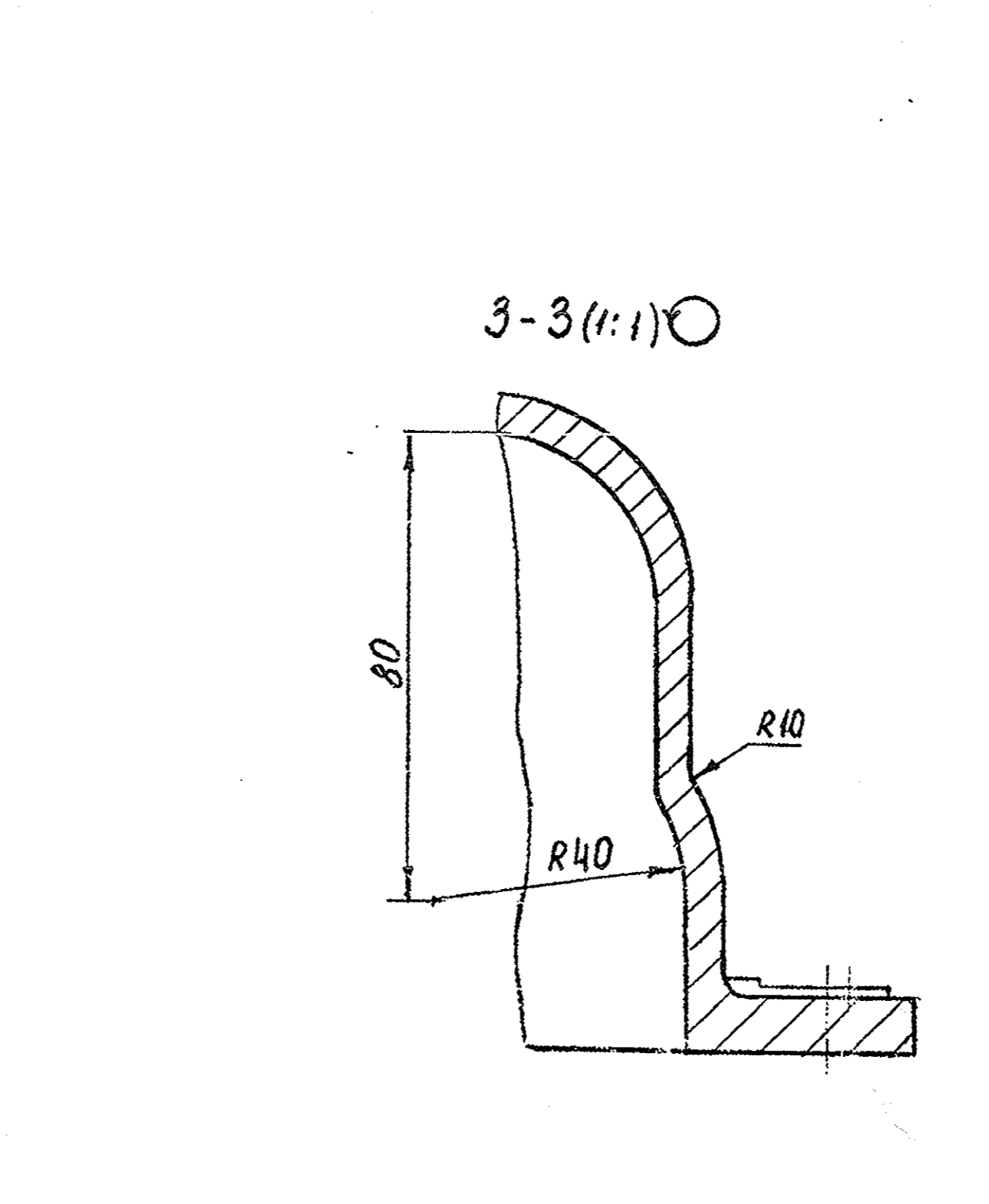
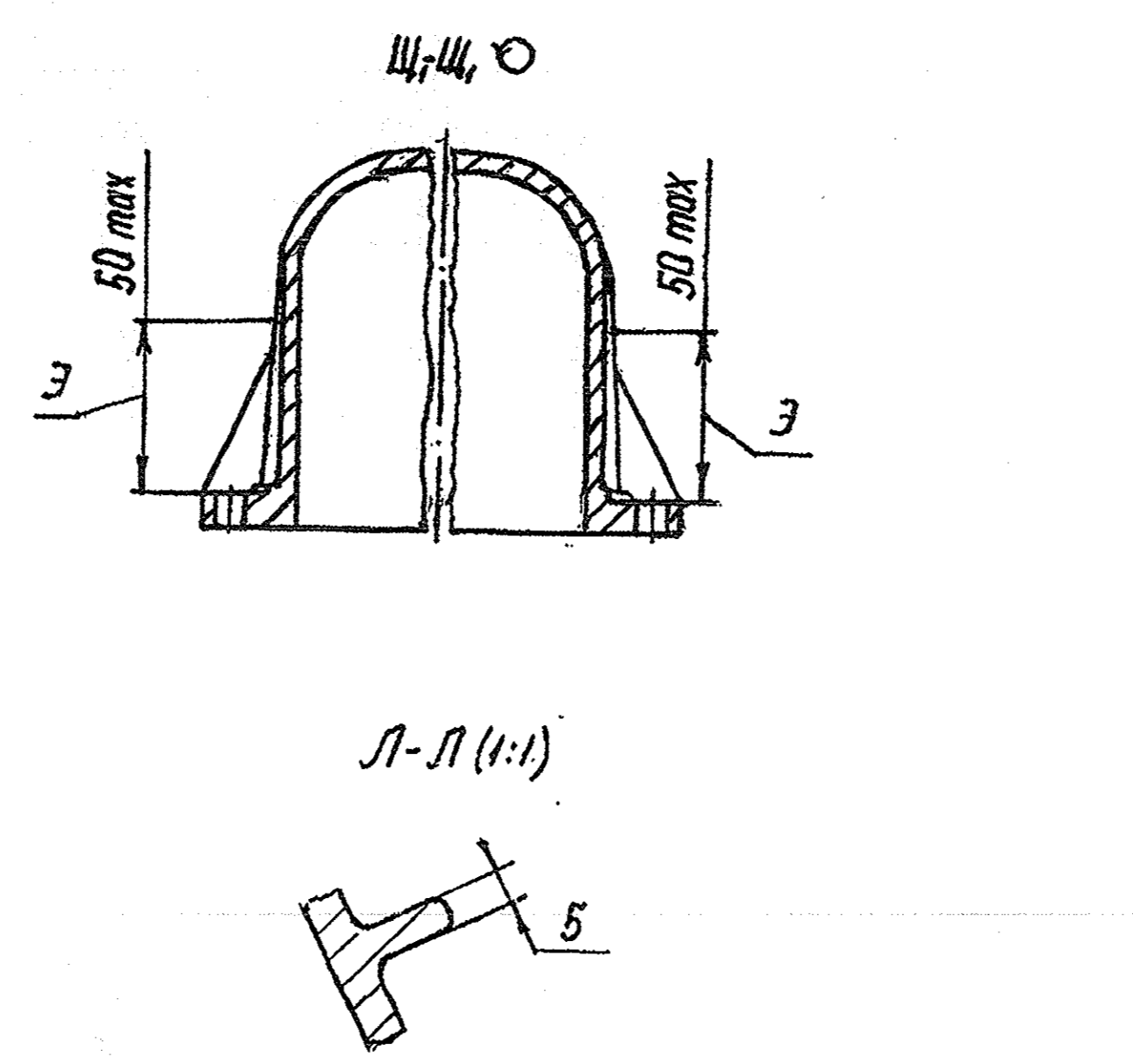
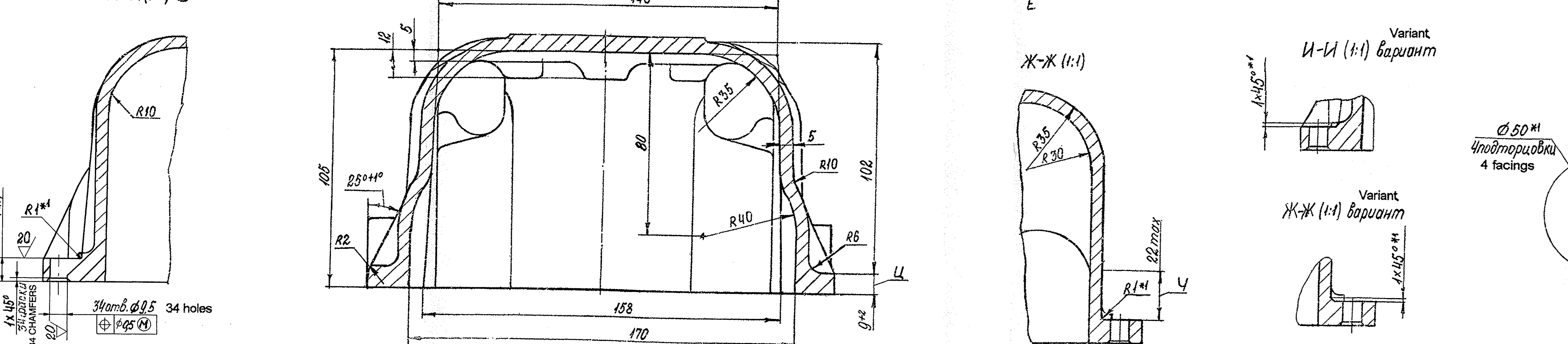
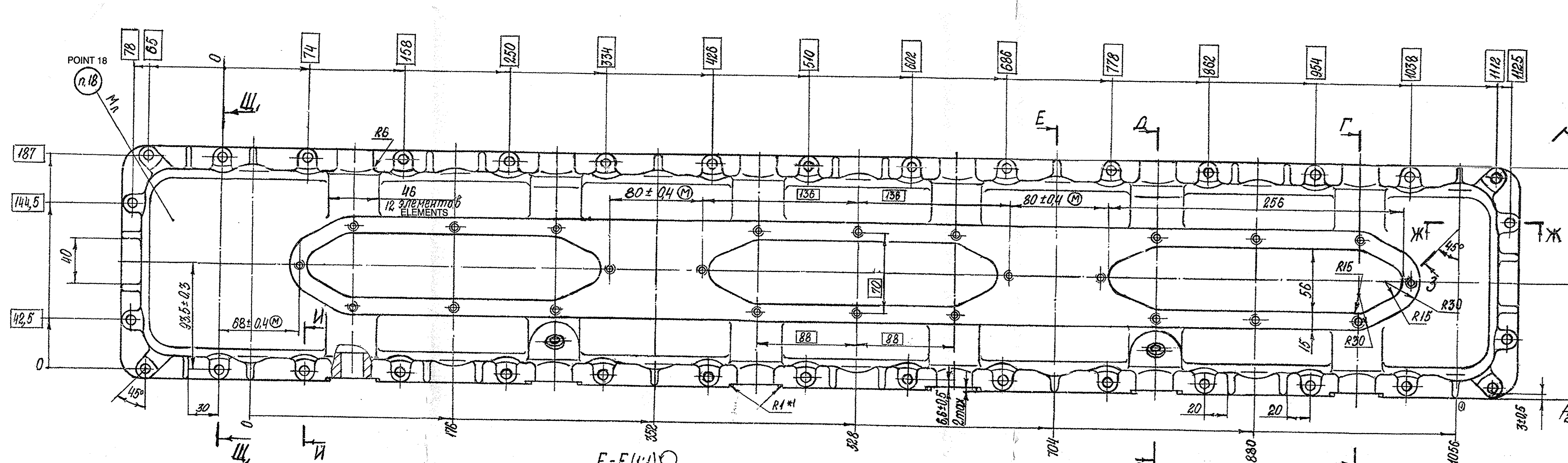
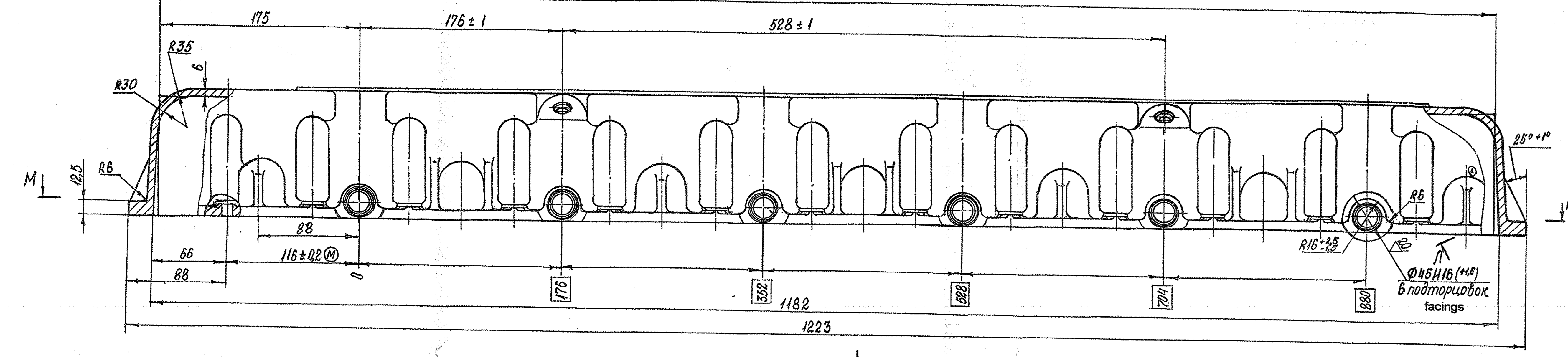


ЧИВ. КОМП. ПОД. И ДИТА
 21.07.9
 ЧИВ. КОМП. ПОД. И ДИТА
 21.07.9

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

2 * СБ 406-13-77 (A4)

EST, MASS		TO BE STAMPED OR MARKED WHERE INDICATED THIS # LETTERS)	
2	9.9.15	Vide Notn No. 196-09	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE
1	7.2.09	NOTN. No. 05-07.F 158	
ISSUE	DATE	NATURE OF AMENDMENTS	MATERIAL:- _____ USED ON:- * СБ 406-13-32
DRN	SCALE: 1:1		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A D I
CHD	DIMENSIONS IN mm		
TCD	TOLERANCE ON DIMMS UNLESS OTHERWISE STATED		TITLE: CYLINDER HEAD COVER, L.H ASSY.
APPD			D S CAT NUMBER
DATE: 11-4-88	ALL THREADS TO CONFORM TO		DRAWING NUMBER: СБ 306-09-10

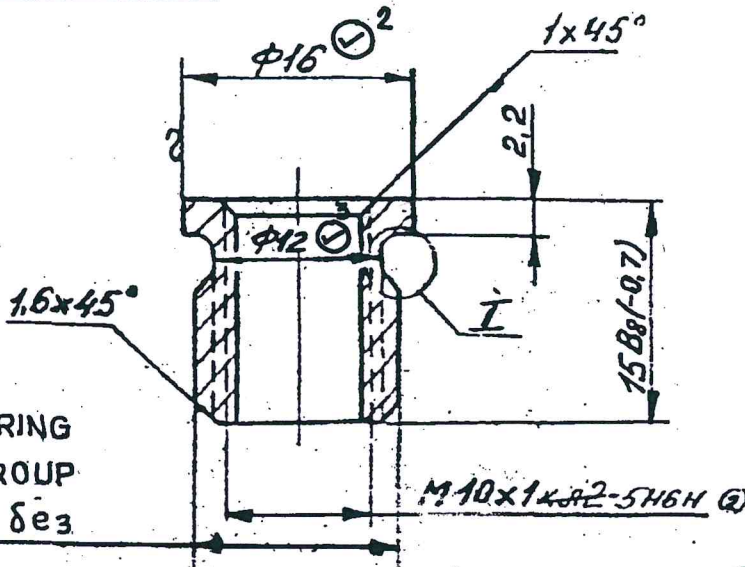


- Requirement for casting should be as per TTM-27-87
- Alternative material AK74 (A19) as per GOST 1583-93.
- Unspecified limit deviations of casting dimensions:
 - Upto 100 mm (from -1.0 to +1.5) mm;
 - Above 100 upto 200 mm (from -1.5 to +2.0) mm;
 - Above 200 mm (from -2.0 to 3.0) mm;
 - For radii above 3 upto 10 mm ±1 mm;
 - Above 10 upto 30 mm ±1.5 mm;
 - Above 30 mm (from -1.5 to +2.0) mm.
- Limit deviations of wall thickness (from -1.0 to +1.5) mm.
- Unspecified wall thickness 5 mm.
- Unspecified casting radii 2...5 mm.
- Casting draft angle 2° above tolerances.
- Unspecified limit deviations of dimensions for machining: H14; h14; ±IT14.
- At the places of basing, dimension 'L' should be (9.5±0.3) mm.
- It is permitted to make dimension 'L' (±0.3) mm, except the places of basing.
- Notches, dents with diameter exceeding 1 mm is not permitted on the surfaces P and T around the hole φ15 mm. Notches and dents with depth not exceeding 0.05 mm, non intersecting of flange with depth not exceeding 0.1 mm, receding from the internal profile by 7 mm minimum is permitted.
- Reduction of wall thickness at machining places upto 3mm minimum is allowed.
- Check the inner profile of cover by ensure with checked tooling.
- Difference in dimension should be φ1 mm maximum.
- Differential requirements for thread as per standard B2021-00.
- Absence of machining is permitted on surface 'C'.
- Test the casting for air-tightness with water under pressure minimum 0.3 MPa (3 kgf/cm²), for 2 minutes. Leakage of water is not permitted. It is permitted to carry out air tightness test with air in water pressure minimum 0.1MPa (1 kgf/cm²). Leakage of air is not permitted.
- Mark the grade of material as per GOST 2171-90, letter size 10-11p3 GOST 26.008-85.
- Traces of Tools are permitted on the length 'y' and 'z'.
- *Dimensions are given for reference.
- **Dimensions are ensured by Tool.
- Notches, Burrs, Fragmentations over thrust metals are not allowed on the surface 'L'

DRG. INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE - NLE
DRG. INTRODUCED AND REPLACES 306-94-11 With Mark No. 94-97

DRN	AK 94 (A14)	MATERIAL	GOST 1583-93	USED ON	Cd306-08-10
CHD		DATE	12 FEB 2016	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	AVADI
APPD		SCALE	1:2	TITLE	
L.H.HEAD COVER					
D S CAT NUMBER					
DRAWING NUMBER					
306-94-20					

Cb 406-08-3 (B)
Cb 306-09-8

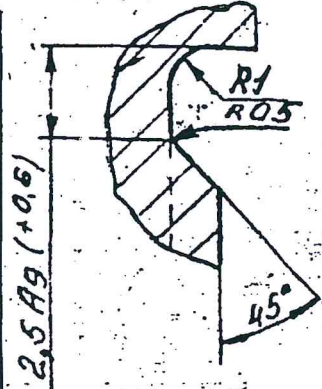


NOT CONSIDERING
ACCURACY GROUP
1 M14 X1.5 T1.2 δe3

I
M5-1 Scale 5:1

REPAIR SIZE DIMENSIONS ARE ADDED WHERE INDICATED THUS (C) BASED ON Lt. NO. 82847/0H/QAD/ED DT. 13-1-95

S.No	R1	R2	REMARKS
1	M16x1.5T1.2δ23 φ 15.026 +0.062 (MEAN)	M18x1.5T1.2δ23 φ 17.026 +0.062 (MEAN)	1. MARK REPAIR SIZE CATEGORY R1, R2. 2. ALL OTHER SIZES SURFACE FINISH, MATERIAL AND TECHNICAL REQUIREMENTS ARE SAME.
2	φ 18	φ 20	
3	φ 13.8	φ 15.8	



- TECHNICAL REQUIREMENTS FOR THREAD SHOULD IN ACCORD WITH STANDARD 82021-00.
- DIMENSIONS WITH UNSPECIFIED TOLERANCES SHOULD BE MAINTAINED AS PER ACCURACY CLASS 7 OST 1010.
- SHARP EDGES SHOULD BE BLUNTED.
- COATING : Zn 3, CHROMATIZING IN ACCORDANCE WITH U1 483-82. (A5)

(A) ALTERNATE MATERIAL: STEEL 080 M40 (EN 8) TO BS: 970

PL-1-1983 OR 45 CB TO IS: 1570

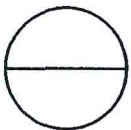
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION

EST. MASS 0.009 kg		TO BE STAMPED OR MARKED WHERE INDICATED THUS # LETTERS	
C	28.12.21	SHEET 2 CREATED.	
B	19.12.19	USED ON NUMBER ADDED.	
A	7/19/09	3rd ALTN. COMM. MIN POINT B DT. 27-2-09	
ISSUE	DATE	NATURE OF AMENDMENTS	MATERIAL - 16.50ST7417-75 RD BAR 45.50ST 1051-73
DRW	lls	SCALE: 2:1	USED ON - Cb 306-08-8 ** Cb 306-09-10
CHD	lls	DIMENSIONS IN mm	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A U I
TCD	lls	TOLERANCE ON DIMS UNLESS OTHERWISE STATED	TITLE: BUSH
APPD	lls	ALL THREADS TO CONFORM TO	D'S CAT NUMBER
DATE	28-1-88		DRAWING NUMBER 306-157 Sht 1 of 2

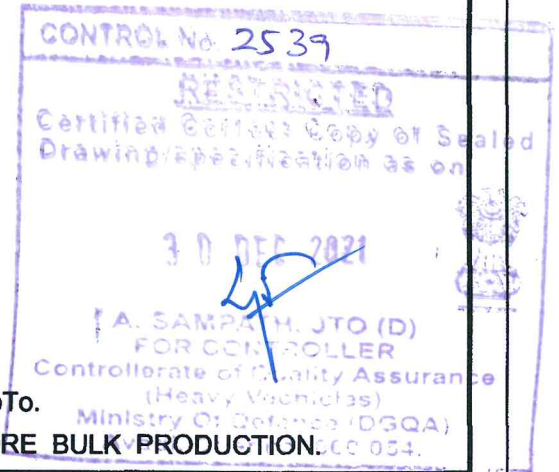
COMMON TO V46-6 & V92S2

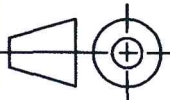
SHEET 2 CREATED ISSUE "C", BASED ON CQA(HV) NOTING No. 111909/CQA(HV)/DB/ENGT-90/ALT.COMM dt. 05 Aug 2020 & POINT No.3 OF 14TH ACM

COMMON TO V46-6 & V92S2 Engines

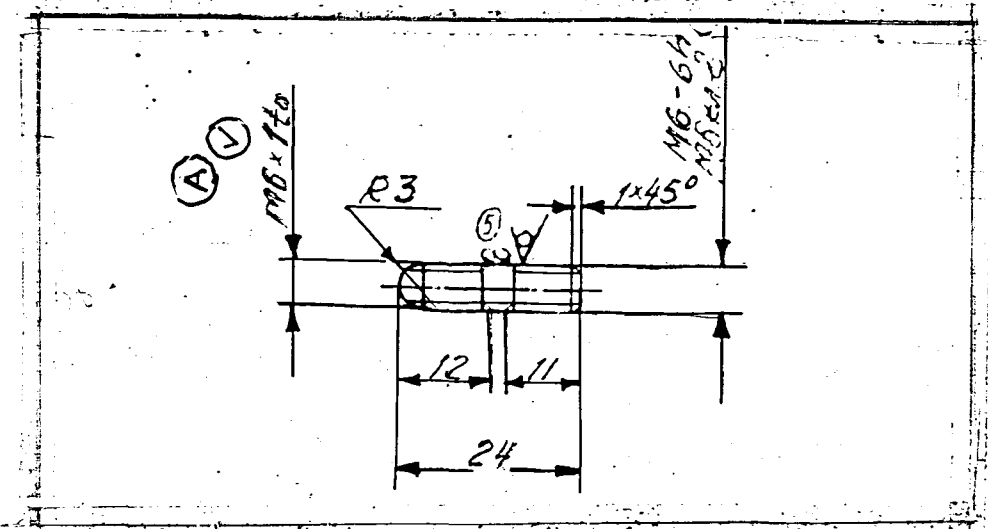


4	3	2	1					
DRAWING NUMBER 306-157		SHEET No. 2 OF 2						
EXPLANATORY NOTE:								
Material Quoted: Round Bar $\frac{16.5 \text{ GOST 7417-75}}{45 \text{ GOST 1051-73}}$								
Killed Steel :								
Grade of Steel : 45 as per GOST 1051-73								
Dia of Round Bar - 16.5 mm								
Chemical & Mechanical properties as per GOST 1050-74 according to GOST 1051-73.								
CHEMICAL COMPOSITION: AS PER GOST 1050-74								
CONTENT OF ELEMENTS %								
GRADE OF STEEL	C	Si	Mn	Cr	S	P	Cu	Ni
MAXIMUM								
45	0.42 - 0.50	0.17 - 0.37	0.50 - 0.80	0.25	0.040	0.035	0.25	0.25
MECHANICAL PROPERTIES: AS PER GOST 1050-74								
GRADE OF STEEL	Yield Point Kg/mm ²	Ultimate Tensile Strength Kg/mm ²	% of Elongation	Reduction of Area %	Impact Strength Kg.m/cm ²			
Minimum								
45	36	61	16	40	5			
<p>Note : Any other parameters given in specification to be adhered in ToTo.</p> <p>PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION</p>								



			EST. WT. Refer Sht 1 of 2	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.	
			MATERIAL :- Refer Sht 1 of 2	USED ON :- Refer Sht 1 of 2
ISSUE	DATE	NATURE OF AMENDMENTS	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
DRN		SCALE :- —	BUSH	
CHD		DIMENSIONS IN mm		
APPD		TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS : 2102 - 69		TITLE :-
DATE		ALL THREADS TO CONFORM TO	D S CAT NUMBER	DRAWING NUMBER 306-157 SHT 2 of 2
SIZE	A4			

DRAWING NUMBER
350 03



ⓓ EQUIVALENT MATERIAL STEEL
45C8 TO IS:1570

1. DELETED.
2. TECHNICAL REQUIREMENTS FOR THREADS AS PER STANDARD 82021-00.
3. DIMENSIONS WITH UNSPECIFIED TOLERANCES AND THE REST OF THE TECHNICAL REQUIREMENTS AS PER STANDARD 82052-00.
4. COATING: CADMIUM 3, CHROMATIZING AS PER ULS-104 WITH SUBSEQUENT ELIMINATION OF HYDROGEN EMBRITTLEMENT.
5. THE THREAD MAY BE MADE BY ROLLING WITH DIAMETER OF UN-THREADED PORTION WITH IN THE PITCH DIAMETER OF THREAD.
6. MECHANICAL DAMAGES OF THE CADMIUM COATING SUCH AS SCRATCHES, NICKS AND DENTS ARE ALLOWED ON ASSEMBLY UNITS, PROVIDED THE STEEL IS NOT EXPOSED.
7. ALTERNATE MATERIAL: STEEL GRADES 40 & 50 GOST 1050-74.
8. HARDNESS:- 27-32 HRC.

* ALT MATERIAL:-
STEEL 709 M40 (EN-19) TO
BS:- 970 PT.-1- 1983

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 # (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

EXPLANATORY NOTE:

8. REFERENCE MATERIAL QUOTED:
COLD DRAWN SIZED ROUND BAR, 6.0 (-0.025)mm DIA TO GOST 7417-75 FROM HIGH GRADE SIZED STEEL NORMAL SURFACE QUALITY TO GOST 1051-73 AND MANUFACTURED IN ACCORDANCE WITH QUALITY CARBON STRUCTURAL STEEL GRADE 45 TO GOST 1050-74.
REFERENCE NOTE '7' ON ALTERNATE MATERIAL: QUALITY CARBON STRUCTURAL STEEL GRADE 40 AND 50 TO GOST 1050-74.
a) CHEMICAL COMPOSITION: AS PER GOST 1050-74.

GRADE OF STEEL	CONTENT OF ELEMENTS%						REMARKS
	C	Si	Mg	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 ²	YIELD POINT Kgf/mm ²	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH Kgf/cm ²	HARDNESS B H N M A X	REMARKS
45	61	36	16	40	5	207	Ref,Matl
40	58	34	19	45	6	197	Alt,Matl
50	64	38	14	40	4	217	Alt,Matl

- ⓐ 9. REPAIR SIZE DIMENSIONS ARE ADDED WHERE INDICATED THUS ⓐ BASED ON OVERHAUL SPECIFICATIONS PART III REPAIR DRAWINGS.

Sl.No.	R	REMARKS
1	M6 x 1.25 to	ALL OTHER CONDITIONS AS PER STD. DRG.
2	PCD = 7.188 ± 0.082	

*
Cb 306-08-8, Cb 306-09-10,
Cb 401-03-6, Cb 3301-15-30,
Cb 306-08-13, Cb 306-09-13,
Cb 3308-04-24

DRN	CHD	TCD	APPD	DATE	SCALE	MATERIAL: ROUND BAR	USED ON
				30-5-86	1:1	GOST 7417-75 * 45 GOST 1051-73	Cb 3301-15-44 Cb 3338-402-4 Cb 3329-01-11
DIMENSIONS IN mm					TOLERANCE ON DIMNS UNLESS OTHERWISE STATED		
ALL THREADS TO CONFORM TO					CONTROLLERATE OF INSPECTION(HEAVY VEHICLES) AVADI		
D S CAT NUMBER					TITLE: STUD M6 x 24		
DRAWING NUMBER					350 03		

ISSUE	DATE	NATURE OF AMENDMENTS
D	12-8-10	4 th Alt. Comm. Meeting Minutes
C	25.8.08	Point No.11 Dt: 26-10-09 USED ON NUMBERS ADDED
B	11.01.08	AUTHY:- MIN. OF ALT. COM. MEET. POINT No.-2.12 Dt.- 07-02-07
A	6.9.95	REPAIR SIZE DIMENSION ADDED

COMMON TO V-92S2 ENGINE

ⓐ-11
SIZE A3