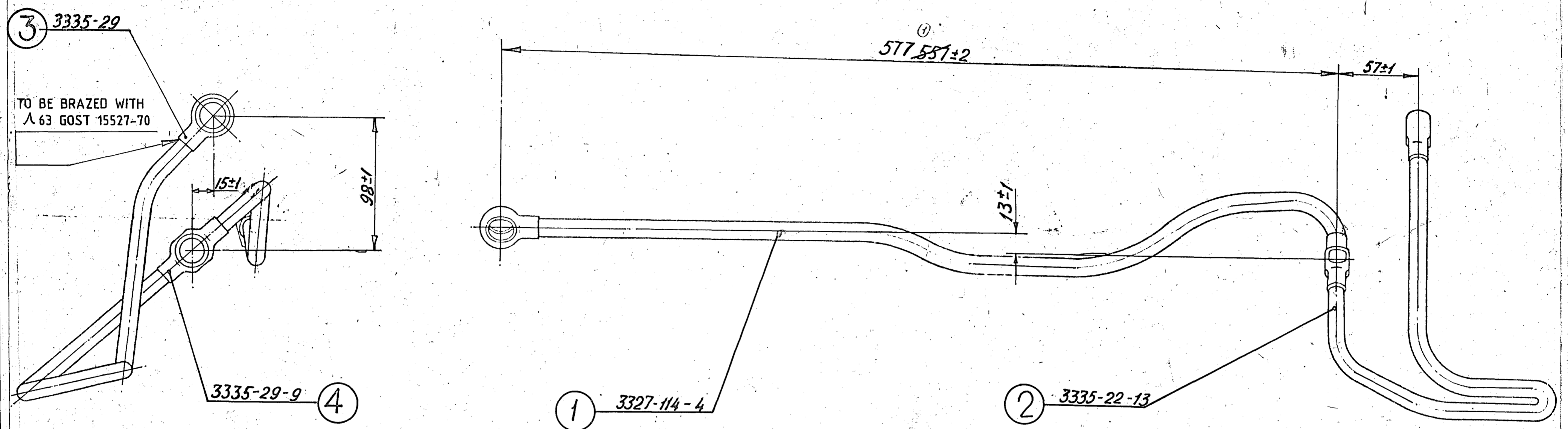




DRAWING NUMBER  
CB 3335 07 19



1. FINAL ADJUSTMENT AND ACCEPTANCE SHOULD BE CARRIED OUT ON ARTICLE.
2. PIPE ENDS SHOULD BE SAFE GUARDED AGAINST CONTAMINATION.
3. PIPE INTERNAL PASSAGE SHOULD BE CLEAN.
4. PIPE SHOULD BE CHECKED FOR CLEANLINESS WITH PETROL (BY RINSING THE PIPE) WITH SUBSEQUENT FILTERING PETROL THROUGH FILTER PAPER. THERE SHOULD BE NO SEDIMENTS, VISIBLE TO THE NAKED EYE ON THE FILTER PAPER. 2% OF UNITS ARE TO BE CHECKED.
5. THE PIPE IS TO BE PRESSURE TESTED IN WATER BY AIR AT A PRESSURE OF 3 TO 5 Kg/cm<sup>2</sup>. PRESSURE TESTING SHOULD BE CARRIED OUT BEFORE COATING.
6. EXTERNAL COATING GLYPTAL VARNISH / φ-95 GOST 0010-70 AS PER INSTRUCTIONS (УН-09-73. THERE MAY BE NO COATING ON THE PACKING SURFACES OF SWIVEL ELBOWS. TO BE SUBSEQUENTLY COATED WITH BLACK ENAMEL No. 660.

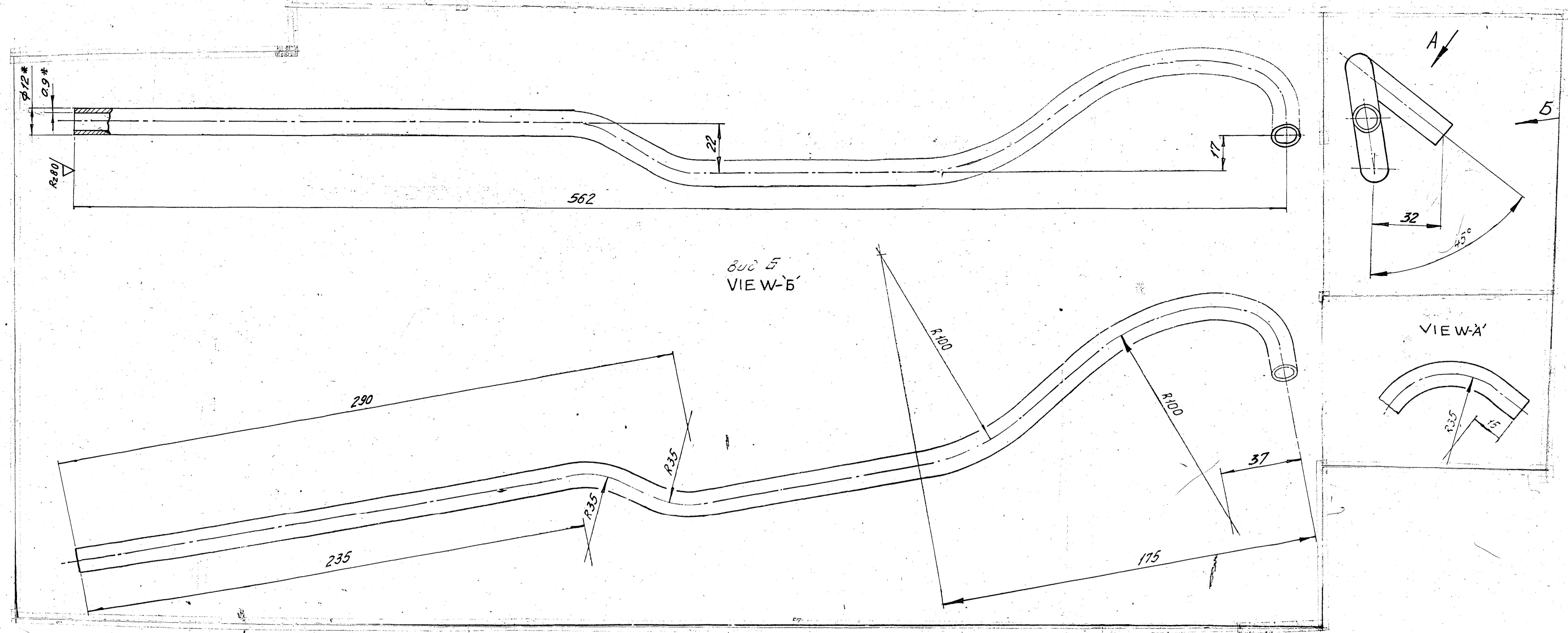
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

EST. MASS 0.436 Kg	TO BE STAMPED OR MARKED WHERE INDICATED THUS # LETTERS)
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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>Done</i>	MATERIAL:-	USED ON:-
CHD	<i>Done</i>		CB 3335 00 24 30
TCD	<i>Not done</i>		
APPD	<i>Not done</i>		
DATE	<i>07/10</i>	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
	SCALE - 1 : 2		
	DIMENSIONS IN mm.		
	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE:-	
			PIPE TO FUEL PUMP
	ALL THREADS CONFORM TO	D S CAT NUMBER	DRAWING NUMBER
ISSUE	DATE		CB 3335 07 19
	NATURE OF AMENDMENTS		

A-9  
SIZE A2



1. DIMENSIONS WITH UNSPECIFIED TOLERANCES SHOULD BE MAINTAINED:-  
 UP TO 100mm WITH ACCURACY ±1mm,  
 UP TO 200mm WITH ACCURACY ±1.5mm,  
 BEYOND 200mm WITH ACCURACY ±2mm.
2. OVALITY OF THE TUBE AT THE PLACE OF BENDING SHOULD NOT EXCEED 1.5 mm.
3. LENGTH OF DEVELOPED TUBE  $L \leq 627$  mm.
4. DIMENSIONS FOR REFERENCE.

**EXPLANATORY NOTE:**

5. REFERENCE MATERIAL QUOTED.  
 STEEL TUBE TOP QUALITY 'B', EXTRENAL DIAMETER 12mm, WALL THICKNESS 0.9 (± 0.07)mm.  
 TO GOST 11249-80 AND MANUFACTURED IN ACCORDANCE WITH QUALITY CARBON  
 STRUCTURAL STEEL GRADE 10 TO GOST 1050-74.

a) CHEMICAL COMPOSITION.

GRADE OF STEEL	CONTENT OF ELEMENTS %					
	C	Si	Mn	Cr	S	P
10	0.07 - 0.14	0.17 - 0.37	0.35 - 0.65	0.15	0.040	0.035
	MAXIMUM					

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

b) MECHANICAL PROPERTIES AS PER GOST 11249-80.

i) ULTIMATE TENSILE STRENGTH ----- 30 Kgf/mm<sup>2</sup> (Min)

TUBES MUST WITHSTAND THE FOLLOWING TESTS.

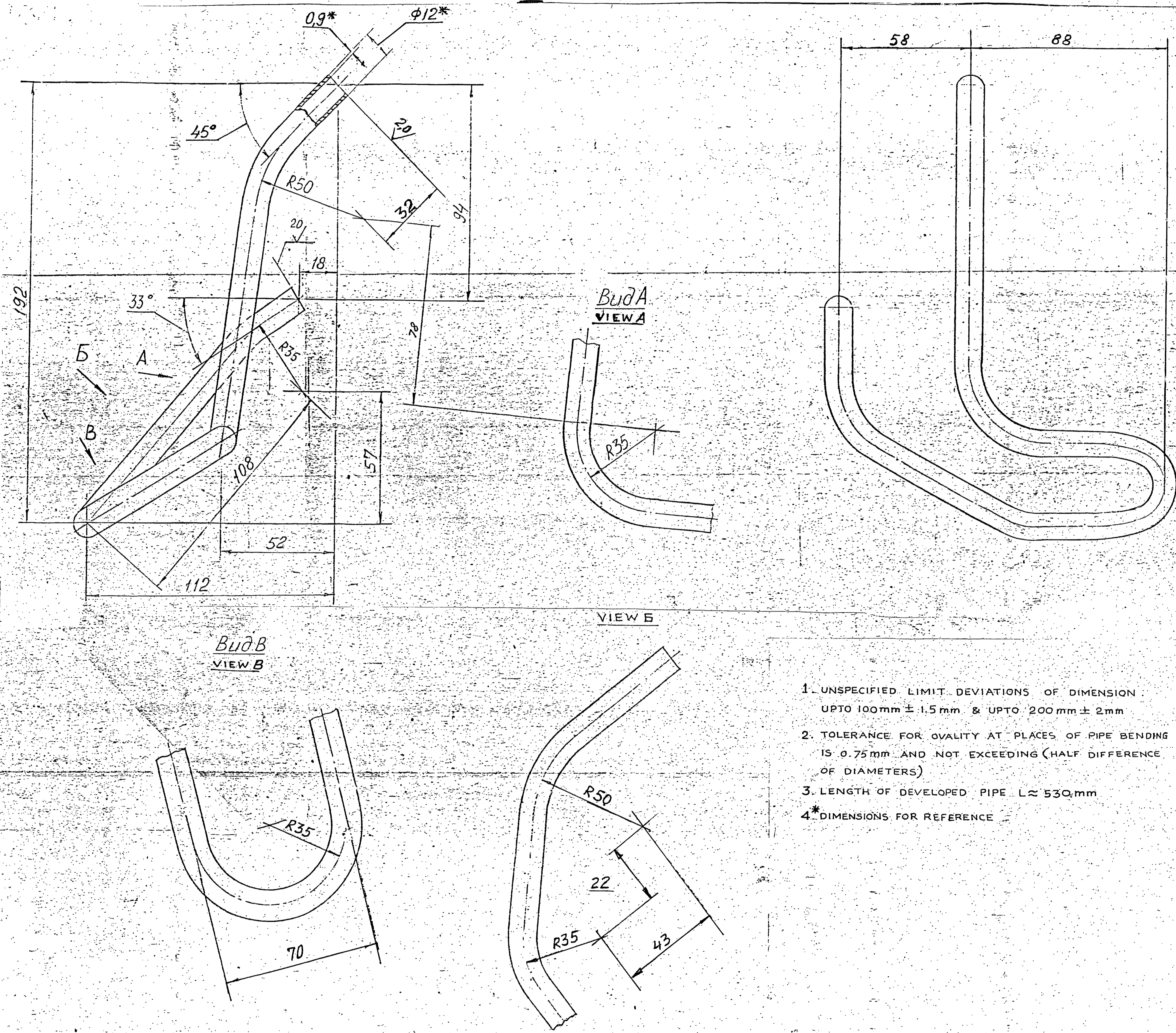
ii) HYDRAULIC PRESSURE (Min) ----- 350 Kgf/cm<sup>2</sup>

iii) EXPANSION OF EXTERNAL DIA ----- 20 %

iv) BENDING OVER MANDREL RADI EQUAL TO - 3 TIMES O/D

v) FLATTENING TEST OVER RADIUS ----- 4 TIMES NOMINAL WALL THICKNESS.

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.		DRN	DATE	MATERIAL:-	USED ON:-
EST. MASS 0.154 Kg	TO BE STAMPED OR MARKED WHERE INDICATED THUS # LETTERS)	CHD	29/12	PIPE B 12 X 0.9-10 GOST 11249-80	CG 3335 07 19
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.		TCO	29/12	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	TITLE:- PIPE
		APPD	29/12	D S CAT NUMBER	DRAWING NUMBER 3327 114 4
		DATE	29/12		
		SCALE	1:1		
		DIMENSIONS IN mm.			
		ALL THREADS CONFORM TO			
ISSUE	DATE	NATURE OF AMENDMENTS			



1. UNSPECIFIED LIMIT DEVIATIONS OF DIMENSION  
UPTO 100mm ± 1.5 mm & UPTO 200 mm ± 2mm
2. TOLERANCE FOR QUALITY AT PLACES OF PIPE BENDING  
IS 0.75 mm AND NOT EXCEEDING (HALF DIFFERENCE  
OF DIAMETERS)
3. LENGTH OF DEVELOPED PIPE L ≈ 530 mm
- 4\* DIMENSIONS FOR REFERENCE

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

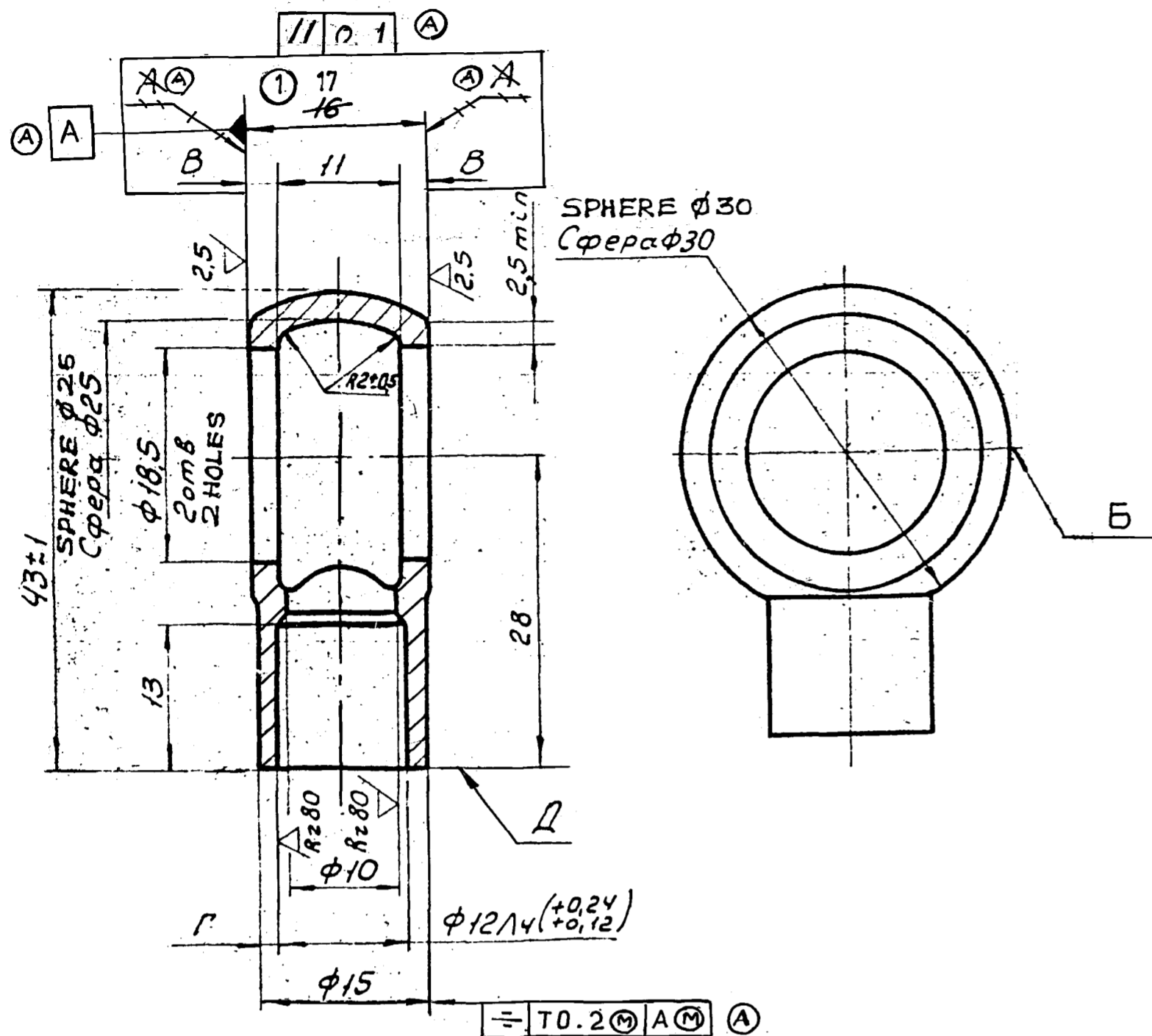
EST. MASS TO BE STAMPED OR MARKED WHERE  
0.13 kg INDICATED THUS: II (LETTERS)

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	8	MATERIAL	PIPE B12X0.9-10	USED ON	CB 3335-07-13
CHD			GOST 11249-80		
TCO		CONTROLLERATE OF QUALITY ASSURANCE (NAVY VEHICLES)			
APPD		A V A D I			
DATE	30-9-93	TITLE			
SCALE	1:1	FUEL PIPELINE			
DIMENSIONS IN mm.		D S CAT NUMBER			
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69.		DRAWING NUMBER			
ALL THREADS TO CONFORM TO		3335-22-13			
ISSUE	DATE	NATURE OF AMENDMENTS			

DRAWING NUMBER  
3335 29

Rz 40 (✓)



**EXPLANATORY NOTE**

11. REFERENCE MATERIAL QUOTED :

QUALITY CARBON STRUCTURAL STEEL GRADE 35 AND REFERENCE NOTE 1 ON  
ALTERNATE MATERIAL QUALITY CARBON STRUCTURAL STEEL GRADE  
30, 40 AND 45 TO GOST 1050-74.

a) CHEMICAL COMPOSITION:

GRADE OF STEEL	CONTENT OF ELEMENTS %						REMARKS
	C	Si	Mn	Cr	S	P	
35	0.32 - 0.40	0.17 - 0.37	0.50 - 0.80	0.25	0.040	0.035	Ref. Matl.
30	0.27 - 0.35	0.17 - 0.37	0.50 - 0.80	0.25	0.040	0.035	Alt. Matl.
40	0.37 - 0.45	0.17 - 0.37	0.50 - 0.80	0.25	0.040	0.035	Alt. Matl.
45	0.42 - 0.50	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 UNDER NORMALISED CONDITION.

GRADE OF STEEL	ULTIMATE TENSILE STRENGTH Kgf/mm <sup>2</sup>	YIELD POINT Kgf/mm <sup>2</sup>	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH KJm/cm <sup>2</sup>	REMARKS
35	54	32	20	45	7	Ref. Matl.
30	50	30	21	50	8	Alt. Matl.
40	58	34	19	45	6	Alt. Matl.
45	61	36	16	40	5	Alt. Matl.

12. REFERENCE NOTE 1 ON ALTERNATE MATERIAL: STEEL CASTING GRADE 20 И 35 И TO GOST 977-75.

a) CHEMICAL COMPOSITION

GRADE OF STEEL	CONTENT OF ELEMENTS %							
	C	Mn	Si	P	S	Cr	Ni	Cu
20 И	0.17 - 0.25	0.35 - 0.90	0.20 - 0.52	0.06	0.05	0.30	0.30	0.30
35 И	0.32 - 0.40	0.40 - 0.90	0.20 - 0.52	0.06	0.05	0.30	0.30	0.30

b) MECHANICAL PROPERTIES UNDER NORMALISED CONDITION.

GRADE OF STEEL	ULTIMATE TENSILE STRENGTH Kgf/mm <sup>2</sup>	YIELD POINT Kgf/mm <sup>2</sup>	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH KJm/cm <sup>2</sup>
20 И	42	22	22	35	5.0
35 И	50	28	15	25	3.5

1. ALTERNATE MATERIAL : STEEL, GRADES 20 И AND 35 И GOST 977-75 AND STEEL 30, 40 AND 45 GOST 1050-74.

2. UNSPECIFIED LIMIT DEVIATIONS OF DIMENSIONS AS PER ACCURACY CLASS 7 OST 1010.

① 3. THICKNESS OF WALL "B" SHOULD NOT BE LESS THAN 2.5mm.

4. VARIATION IN THICKNESS OF WALL "Г" SHOULD NOT EXCEED 0.2 mm.

② 5. NON-PARALLELISM OF SURFACES "A" SHOULD NOT EXCEED 0.1 mm.

③ 6. MISALIGNMENT AND SKEWNESS OF SHANK AXIS RELATIVE TO SURFACE "A" SHOULD NOT EXCEED 0.3 mm ON A LENGTH OF THE SHANK.

7. ROUGH CYLINDRICAL SURFACE "Б" UP TO 4 mm. WIDE IS ALLOWED ON TWO SIDES.

8. DELETED.

9. COATING: Cd 9, CHROMATIZING AS PER INSTRUCTIONS  
441 -104 WITH ELIMINATION OF HYDROGEN EMBRITTLEMENT.

10. THERE MAY BE NO COATING ON THE INTERNAL SURFACES AND AT THE PLACES OF DEFECTS OF CASTING.

④ ALTERNATE MATERIAL : STEEL 080 M40 (EN8) TO BS: 970 Pt-1-1983 OR 35 C4 TO IS: 1570

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

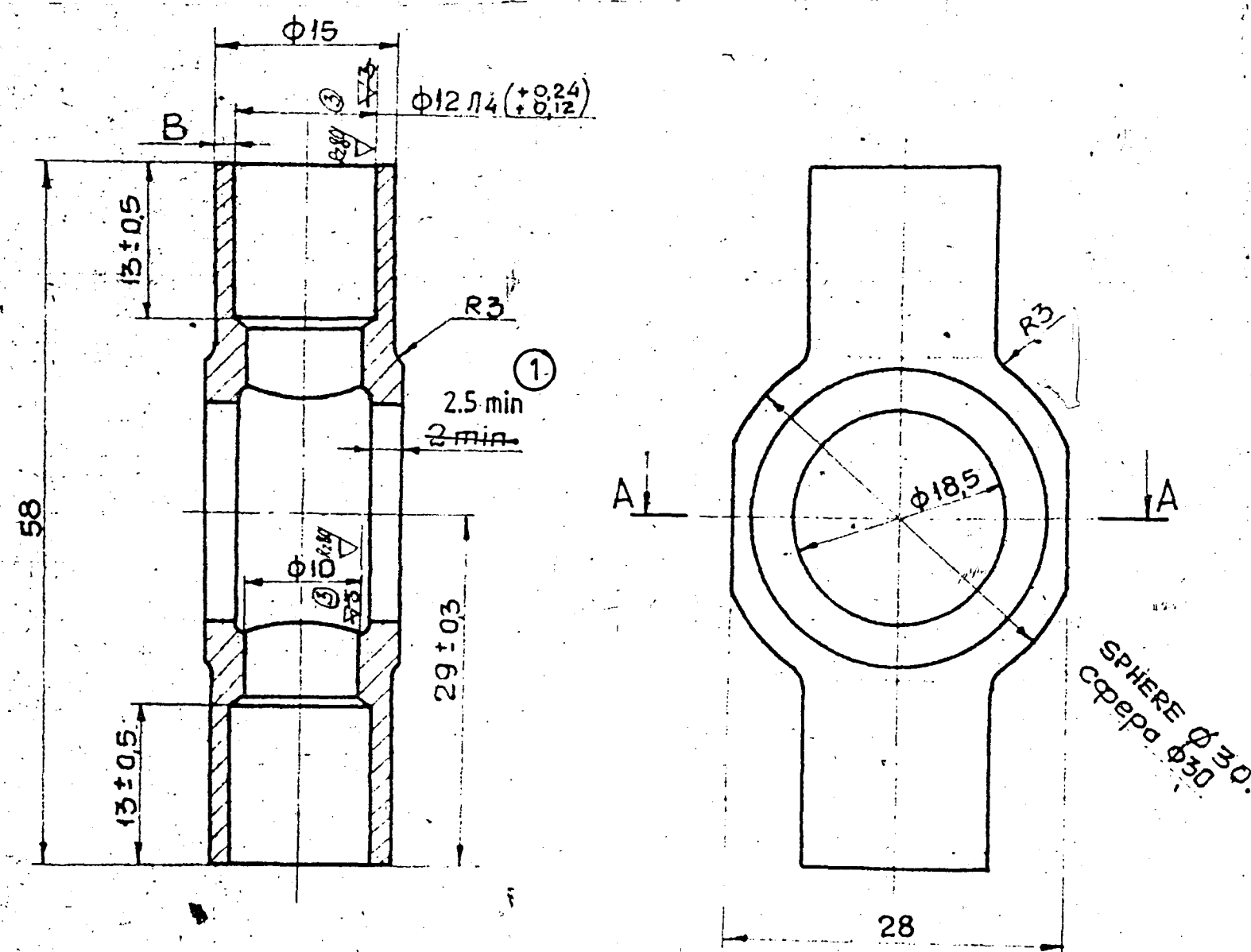
EST. MASS 0.035 Kg TO BE STAMPED OR MARKED WHERE INDICATED THUS # LETTERS)

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	APPD	DATE	SCALE - 2:1	DIMENSIONS IN mm.	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	ALL THREADS CONFORM TO	D S CAT NUMBER	DRAWING NUMBER
										3335 29
MATERIAL: STEEL 35 GOST 1050-74					USED ON: CB 3335 07 19					
CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI					TITLE: SWIVEL ELBOW					
3rd ALTERATION COMM. MINUTES POINT 6, DATE 27-2-09					NOTN. NO: 30-06 (F-158)					
1. 08.12.08					AUTHY NOTN. No. BK 86-240					
A 7.2.97					NATURE OF AMENDMENTS					

DRAWING NUMBER  
3335 29 9

Rz 40/ (✓)



**EXPLANATORY NOTE:**

6. REFERENCE MATERIAL QUOTED:

QUALITY CARBON STRUCTURAL STEEL GRADE 35 TO GOST 1050-74.

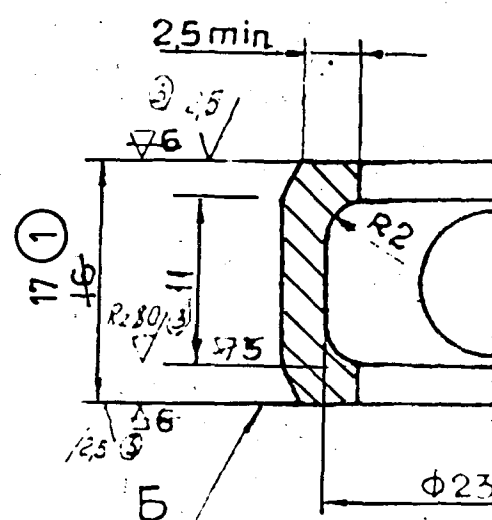
a) CHEMICAL COMPOSITION :

GRADE OF STEEL	CONTENT OF ELEMENTS %					REMARKS	
	C	Si	Mn	Cr	S		P
35	0.32 - 0.40	0.17 - 0.37	0.50 - 0.80	0.25	0.040	0.035	Ref. MatL

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

b) MECHANICAL PROPERTIES UNDER NORMALISED CONDITION.

GRADE OF STEEL	ULTIMATE TENSILE STRENGTH Kgf/mm <sup>2</sup>	YIELD POINT Kgf/mm <sup>2</sup>	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH Kgf/cm <sup>2</sup>	REMARKS
35	54	32	20	45	7	Ref. MatL



- DELETED.
- UNSPECIFIED LIMIT DEVIATIONS OF DIMENSIONS : FOR FEMALE COMPONENTS- AS PER A 7 FOR MALE COMPONENTS - AS PER B 7
- VARIATIONS IN THICKNESS OF WALL "B" SHOULD NOT EXCEED 0.2 mm.
- SHIFT AND SKEWNESS OF CYLINDRICAL SHANK AXIS RELATIVE TO THE AXIS OF SURFACES B SHOULD NOT EXCEED 0.3 mm ON A LENGTH OF CYLINDRICAL PORTION.

5. NON PARALLELISM OF SURFACES B SHOULD NOT EXCEED 0.1 mm.

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

EST. MASS 0.072 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	APPD	DATE	SCALE	DIMENSIONS IN mm	TOLERANCE ON DIMS UNLESS OTHERWISE STATED.	ALL THREADS CONFORM TO
					2:1			
MATERIAL: STEEL 35 GOST 1050-74					USED ON: CG 3335 07 19			
CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI					TITLE: SWIVEL ELBOW			
D S CAT NUMBER					DRAWING NUMBER 3335 29 9			
1...	08.12.08	NOTN. NO: 30-06 (F-158)			NATURE OF AMENDMENTS			
ISSUE	DATE							