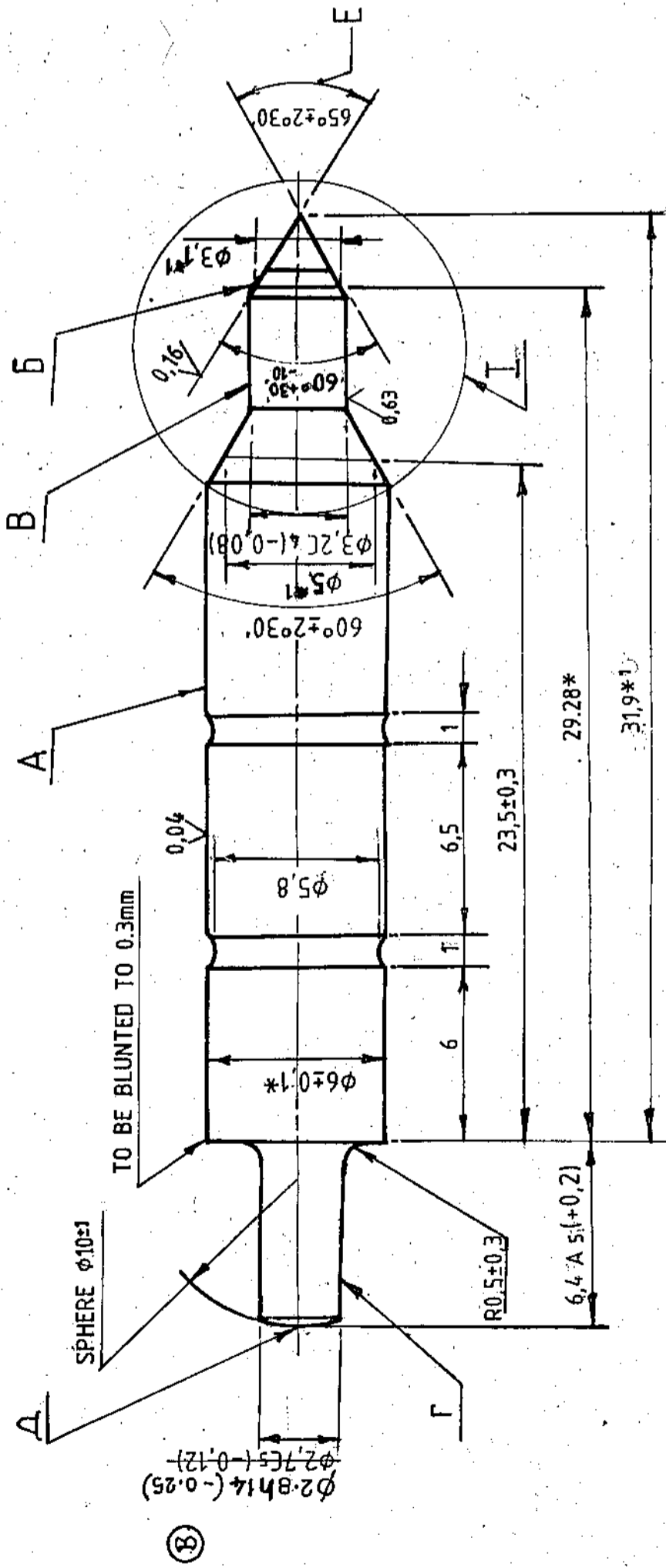
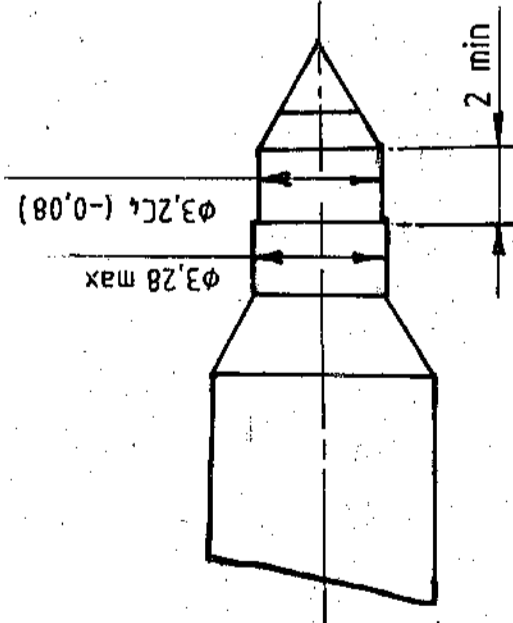


DRAWING NUMBER
317-07-3

1.25
✓(✓)



I ALTERNATIVE



1. INSPECTION GROUP III, TT-11
2. ~~HR C 52-61~~ HARDNESS MAY BE CHECKED WITH HARDNESS TEST FILE WITH RANDOM INSPECTION AS PER ROCKWELL.
3. UNSPECIFIED LIMIT DEVIATIONS OF DIMENSIONS: FOR HOLES AS PER A7, FOR SHAFTS AS PER B7.
4. OVALITY OF SURFACE 'A' SHOULD NOT EXCEED 0.0005mm.
5. LOBING OF SURFACE 'A' SHOULD NOT EXCEED 0.0005mm.
6. CONICITY AND NON-STRAIGHTNESS OF GENERATRICES OF SURFACE 'A' SHOULD NOT EXCEED 0.0005mm.
7. RUN-OUT OF SURFACE 'B' RELATIVE TO SURFACE 'A' SHOULD NOT EXCEED 0.002mm. IN THE CASE SHUT-OFF PORTION.
8. RUN-OUT OF SURFACE 'B' RELATIVE TO SURFACE 'A' SHOULD NOT EXCEED 0.004mm.
9. RUN-OUT OF SURFACE 'T' RELATIVE TO SURFACE 'A' SHOULD NOT EXCEED 0.06mm.
10. A SYMMETRY OF SURFACE 'A' RELATIVE TO AXIS OF SURFACE 'T' SHOULD NOT EXCEED 0.1 mm.
11. ANGLE 'E' MAY BE OBTAINED $60^\circ \pm 2^\circ 30'$
12. * TO BE MACHINED TO SUIT MATING COMPONENT.
13. * DIMENSIONS FOR REFERENCE.

EXPLANATORY NOTE:
REFERENCE MATERIAL QUOTED:

HIGH SPEED TOOL STEEL GRADE P18 GOST 19265-73.

CHEMICAL COMPOSITION

CONTENT OF ELEMENTS %									
C	Cr	W	V	Mn	Si	Mo	Ni	S	P
				MAXIMUM					
0.7	3.8	17.0	1.0	0.4	0.5	1.0	0.4	0.03	0.03
0.8	4.4	18.5	1.4						

15. REFERENCE NOTE 1 ON INSPECTION GROUP III, TT-11

SUBJECT TO 100% CHECKING OF HARDNESS WITHOUT BEING TESTED FOR MECHANICAL PROPERTIES. BESIDES CHECKING OF MECHANICAL PROPERTIES AND HARDNESS DEPENDING UPON THE INSPECTION GROUP, PERIODIC CHECKS OF MICROSTRUCTURE ARE CARRIED OUT. DIRECTION OF GRAIN FLOW IN STAMPINGS SHOULD SATISFY THE REQUIREMENTS OF THE STANDARD.

IN THE FRACTURE OF FINISHED ITEMS OR IN MICROSTRUCTURE THERE SHOULD BE NO SHRINKAGE CAVITIES, POROSITY, BUBBLES, EXFOLIATIONS, CRACKS, NON-METALLIC INCLUSIONS AND FLAKES VISIBLE TO THE UNAIDED EYE.

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

EST WT TO BE STAMPED OR MARKED WHERE INDICATED THUS # (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	B. Goshv	MATERIAL	STEEL P 18 GOST 19265-73	USED ON	C6 3317-01-4A
CHD	V. G. I.				
TCD	B. Goshv				
APPD	B. Goshv				
DATE	24-2-86	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES AVADI)			
SCALE	5 : 1	TITLE			
DIMENSIONS IN MM					
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS: 2102-69					
B	21-4-93	AUTHY. NOTN. NO. BK B5-772			
A	23.11.87	AUTHY. BK. 82-394			
ISSUE	DATE	NATURE OF AMENDMENTS			
				D S CAT NUMBER	DRAWING NUMBER
					317-07-3

SPRAYER NEEDLE

DRAWING NUMBER

317-09-3

Rz 20/ (✓) (✓)

1. INSPECTION GROUP III, TT-11
2. ~~HRC 7-59~~ HRC₉ ≥ 60
3. DELETED
4. MISALIGNMENT OF SURFACE 'A' RELATIVE TO SURFACE 'B' SHOULD NOT EXCEED 0,1 mm
5. CURVATURE OF SURFACE 'B' SHOULD NOT EXCEED 0,02 mm
6. * DIMENSION FOR REFERENCE

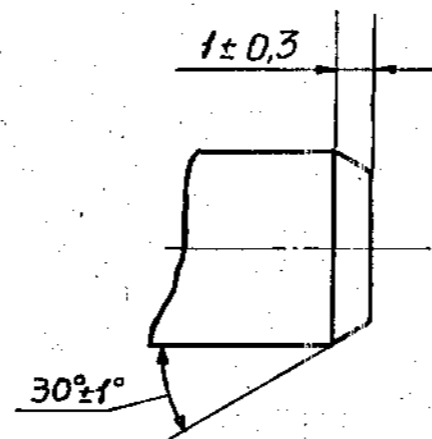
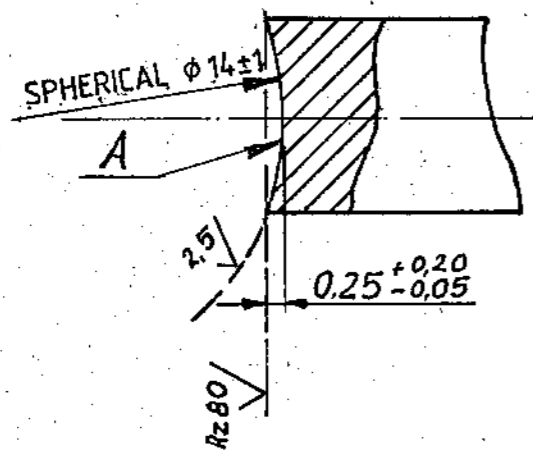
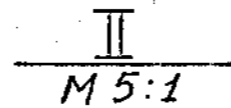
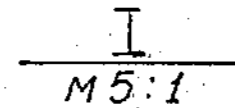
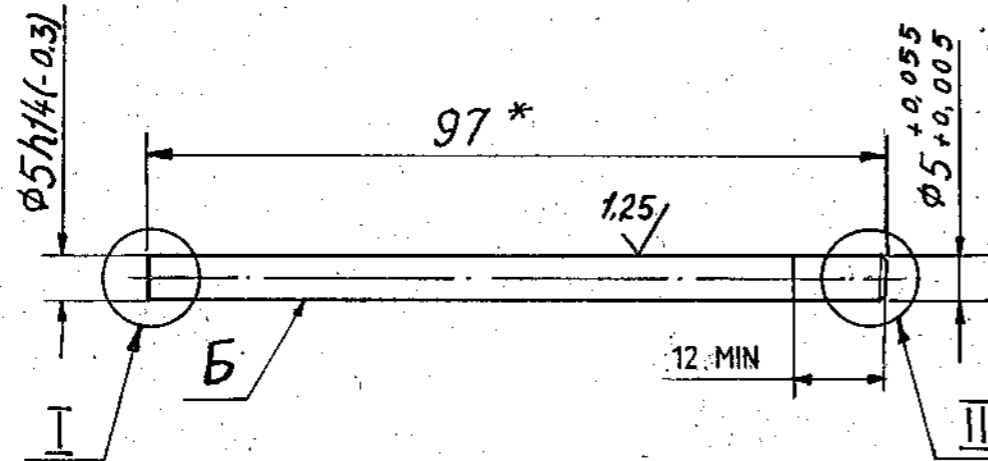
EXPLANATORY NOTE

7. REFERENCE MATERIAL QUOTED:
BALL BEARING STEEL HOT ROLLED GRADE U4 X15 GOST 801-78
CHEMICAL COMPOSITION:

CONTENT OF ELEMENTS %								
C	Si	Mn	Cr	S	P	Ni	Cu	Ni + Cu
				M A X I M U M				
0.95	0.17	0.20	1.30	0.02	0.027	0.30	0.25	0.50
1.05	0.37	0.40	1.65					

8. REFERENCE NOTE 1 ON INSPECTION GROUP III, TT - 11
TO BE SUBJECTED TO 100 % CHECKING OF HARDNESS WITHOUT BEING TESTED FOR MECHANICAL PROPERTIES,

(B) EQUIVALENT MATERIAL
STEEL 535A99 (EN31) TO BS:970/103
CR 2 TO IS 4398-72



DRAWING INDIANISED BASED ON ISSUE 4.

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 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	<i>Freehand</i>	MATERIAL:	USED ON
CHD	<i>V.G.L.</i>	STEEL U4 X15 GOST 801-78	CB 317 023 CB
TCD	<i>Freehand</i>	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)	
APPD	<i>Freehand</i>	AVADI	
DATE	<i>24-2-86</i>	TITLE	
SCALE	1:1	ROD	
DIMENSIONS IN mm		D S CAT NUMBER	DRAWING NUMBER
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS: 2102-69			317-09-3
ALL THREADS TO CONFORM TO			
ISSUE	DATE	NATURE OF AMENDMENTS	
B	10-7-10	4 # ALT. COMM. Mtg. MINUTES POINT No 8 DT-26-10-09	
A	23.11.87	AUTHY BK 82-394	

(A6)

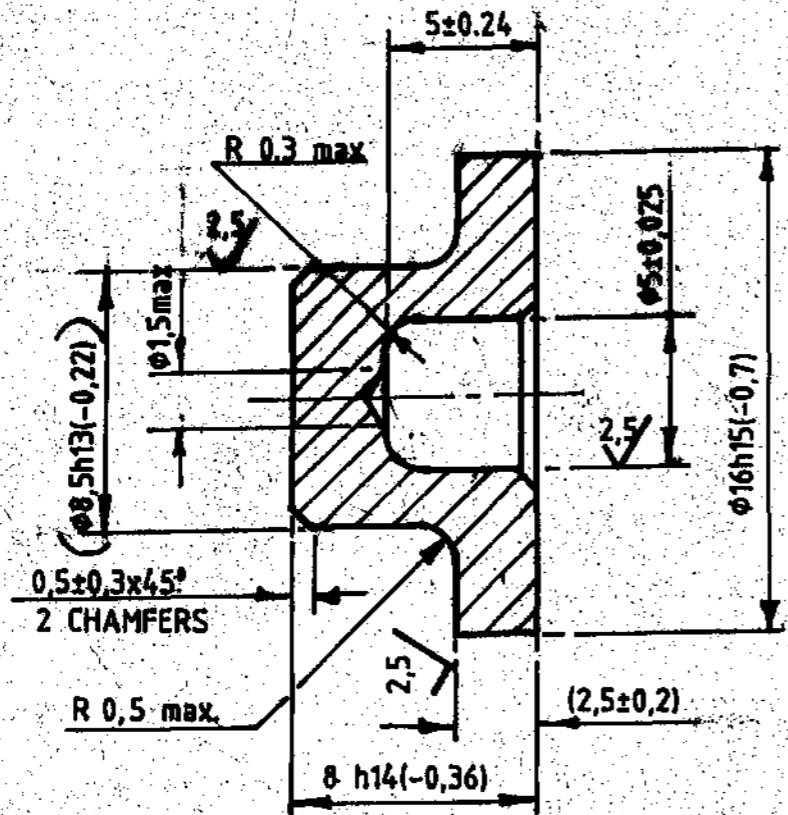
SIZE A3

DRAWING NUMBER

317-10-2

R200/✓(✓)

DRAWING/INDIANISED BASED ON ISSUE 3.



(B) EQUIVALENT MATERIAL STEEL
835 M 15 (EN39B) TO BS:970

EXPLANATORY NOTE

5. REFERENCE MATERIAL QUOTED

STRUCTURAL ALLOY CONTROLLED HIGH QUALITY STEEL
GRADE 18X2H4BA GOST 4543-71

6. REFERENCE NOTE 4 ON ALTERNATIVE MATERIAL: HOT-ROLLED
ROUND BAR GRADE 18X2H4MA TO TY 14-1-381-72

a. CHEMICAL COMPOSITION:

GRADE OF STEEL	CONTENT OF ELEMENTS %							P MAXIMUM	S
	C	Si	Mn	Cr	Ni	Mo	W		
18X2H4BA	0.14 0.20	0.17 0.37	0.25 0.55	1.35 1.65	4.00 4.40	—	0.80 1.20	0.025	0.025
18X2H4MA	0.14 0.20	0.17 0.37	0.25 0.55	1.35 1.65	4.00 4.40	0.30 0.40	—	0.025	0.025

- i. RESIDUAL CONTENT OF COPPER SHOULD NOT EXCEED MORE THAN 0.30%.
- ii. THE PHOSPHOROUS CONTENT FOR HIGH QUALITY STEEL PRODUCED IN BASIC OPEN-HEARTH AND ACID-REFINED FURNACES, IS ALLOWED UP TO 0.030%

b. MECHANICAL PROPERTIES:-

GRADE OF STEEL	TENSILE STRENGTH Kgf/mm ²	YIELD POINT kgf/mm ²	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH Kgf.m/cm ²	HARDNESS BHN (MAX)
18X2H4BA	105	80	12	50	12	269
18X2H4MA	115	85	10	50	12	269

1. INSPECTION GROUP IV T T-11.

2. HRC: 33.....37 (HRC: 35.....39)

3. DIMENSIONS GIVEN IN BRACKETS SHOULD BE ENSURED AFTER ASSEMBLY

4. ALTERNATE MATERIAL: STEEL 18X2H4MA TY 14-1-381-72

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

EST WT
0.006 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

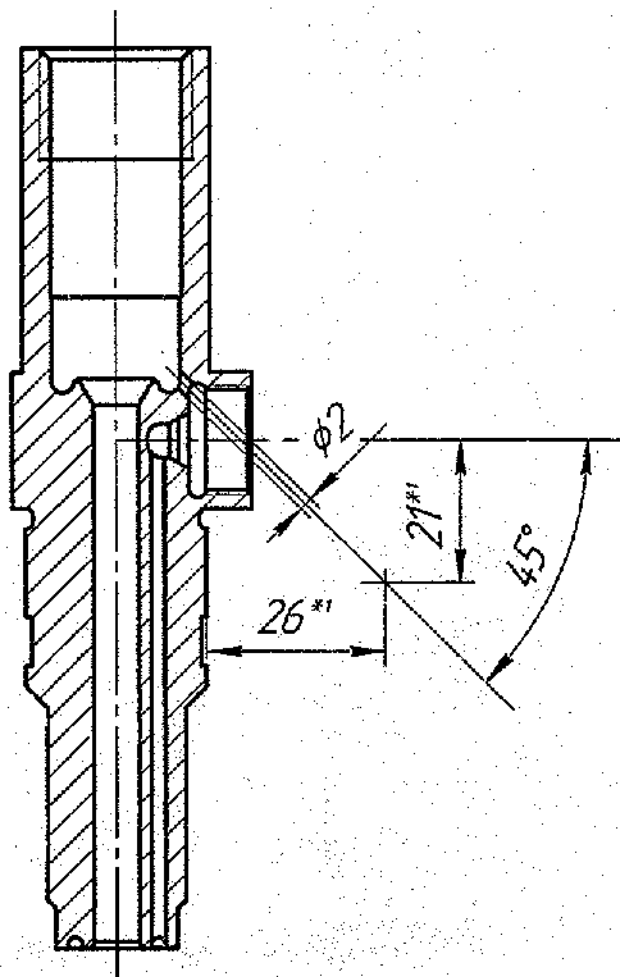
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DD	23.11.07	AU HY BK 82-394.	DATE		
TD			DATE		
APPO			DATE		
SCALE	4:1				
DIMENSIONS	IN mm				
TOLERANCE	ON DIMNS UNLESS OTHERWISE STATED IS: 2102-69				
ALL THREADS	TO CONFORM TO				
MATERIAL	STEEL 18X2H4BA GOST 4543-71				
USED ON	CS 317-02-3 CS				
CONTROLLER			RATE OF INSPECTION (HEAVY VEHICLES) AVADI		
TITLE			SPRING DISC		
D S CAT NUMBER			DRAWING NUMBER		
			317-10-2		

A6

SIZE A3



317-13-30-02



1.*1 Размеры обеспечиваются инструментом.

Остальное - см. 317-13-30

317-13-30-02

Корпус
форсунки

Лист	Масса	Масштаб
		1:1
Лист	Листов	1

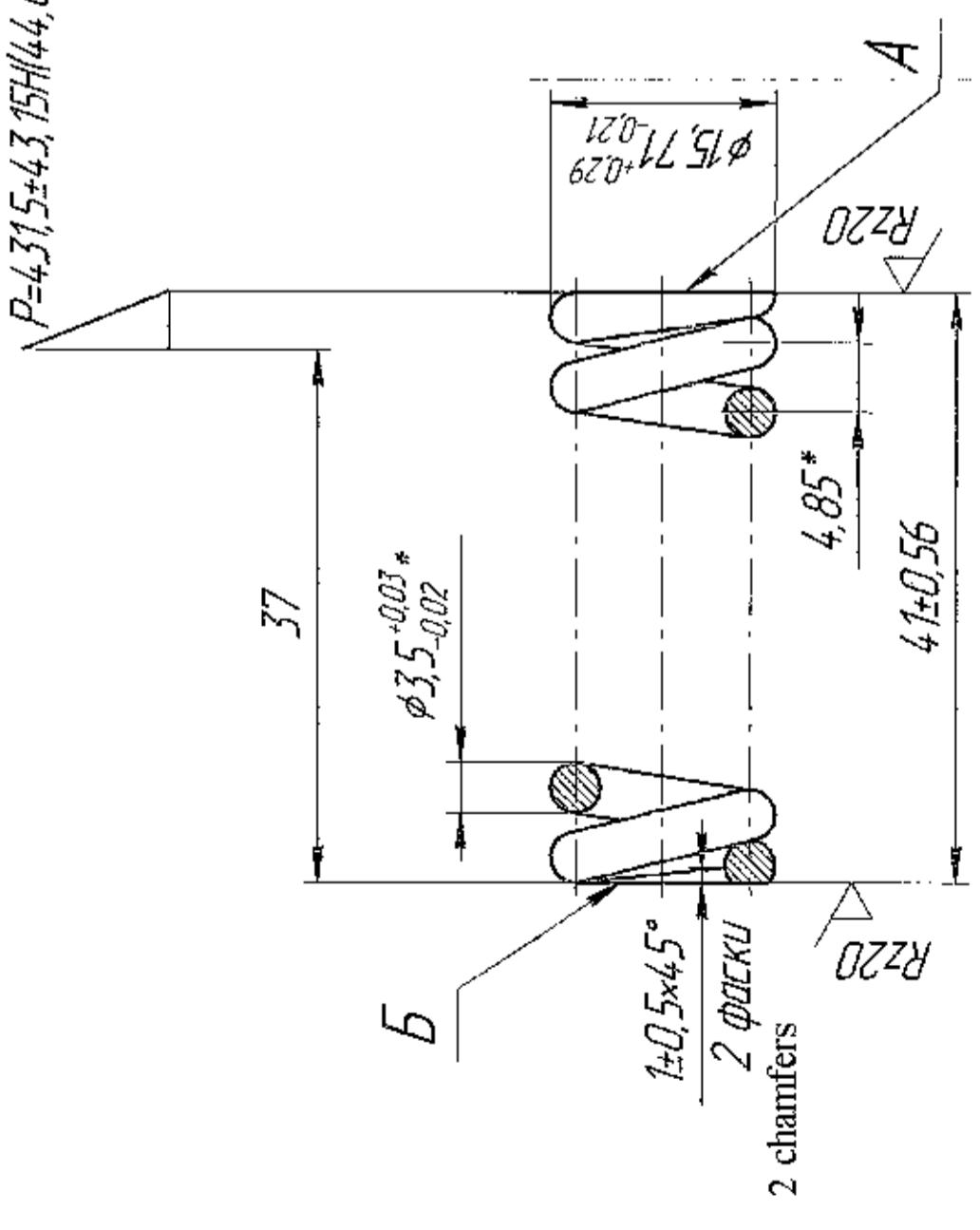
Изм.	Лист	№ докум.	Подп.	Дата
Разраб.				
Проб.				
Т.контр.				
Исполн.				
Утв.				

Копировал

Формат А4

- 15. Маркировать обозначение и количество пружин на бирке для партии деталей.
- 16. Клеить окончательную приемку на бирке для партии деталей.
- 17. *Размеры для справок.
- 18. Допускается подшлифовка торцов пружины после обработки дробью и заねволивания.
- 19. Неплоскостность опорных поверхностей опорных витков не более 0,1мм.
- 20. Контроль силой характеристики производить по инструкции ИЛ-482-82.

R=431,5±4,3, 15H44, 0±4,4кг



- 1. Direction of spring winding - right.
- 2. No. of turns n = 7.
- 3. n1 = 9.5±0.25
- 4. HRC₃ 45...51
- 5. Repeated hardening is not permitted.
- 6. Uncarburized layer is not permitted.
- 7. Working thread pitch unevenness should be maximum 0.4mm
- 8. Non-squareness of the generatrix of spring relative to the face surface A and B should not exceed to 0.4 mm.
- 9. Clearance between compressed turns of spring should not exceed to 0.2 mm.
- 10. Base surface of supporting turns should be minimum of 0.75 of length of circle.
- 11. Thickness of the supporting turn should not be less than 0.5 mm.
- 12. Shot blast before compressing as per instruction ИМ-508-83.
- 13. compress and duration of holding minimum 11 hours 30 minutes.
- 14. Coating: Chemical oxidation and oil finished.
- 15. Mark code and quantity of springs on tag for batch of parts.
- 16. Stamp final acceptance on tag for batch of parts.
- 17. *Dimensions for reference.
- 18. Grinding of end face of spring after machining of shot and compression is permitted.
- 19. Non-flatness of supporting surfaces of supporting turns is not more than 0.1 mm.
- 20. Carry out of inspection of force characteristic as per instruction ИЛ-482-82.

- 1. Направление намотки пружины правое.
- 2. n=7.
- 3. n₁=9,5±0,25.
- 4. HRC₃ 45...51.
- 5. Повторная закалка не допускается.
- 6. Обезуглерожженный слой не допускается.
- 7. Неравномерность шага рабочих витков не более 0,4мм.
- 8. Неперпендикулярность образующей пружины к торцевым поверхностям А и Б не более 0,4мм.
- 9. Зазор между поджатыми витками не более 0,2мм.
- 10. Опорная поверхность опорных витков не менее 0,75 длины окружности.
- 11. Толщина конца опорного витка не менее 0,5мм.
- 12. Обработать дробью до заねволивания по инструкции ИМ-508-83.
- 13. Заねволить, продолжительность выдержки 11 часов 30 мин., не менее.
- 14. Покрытие Хим. Окс. прим.

F-154
17/59

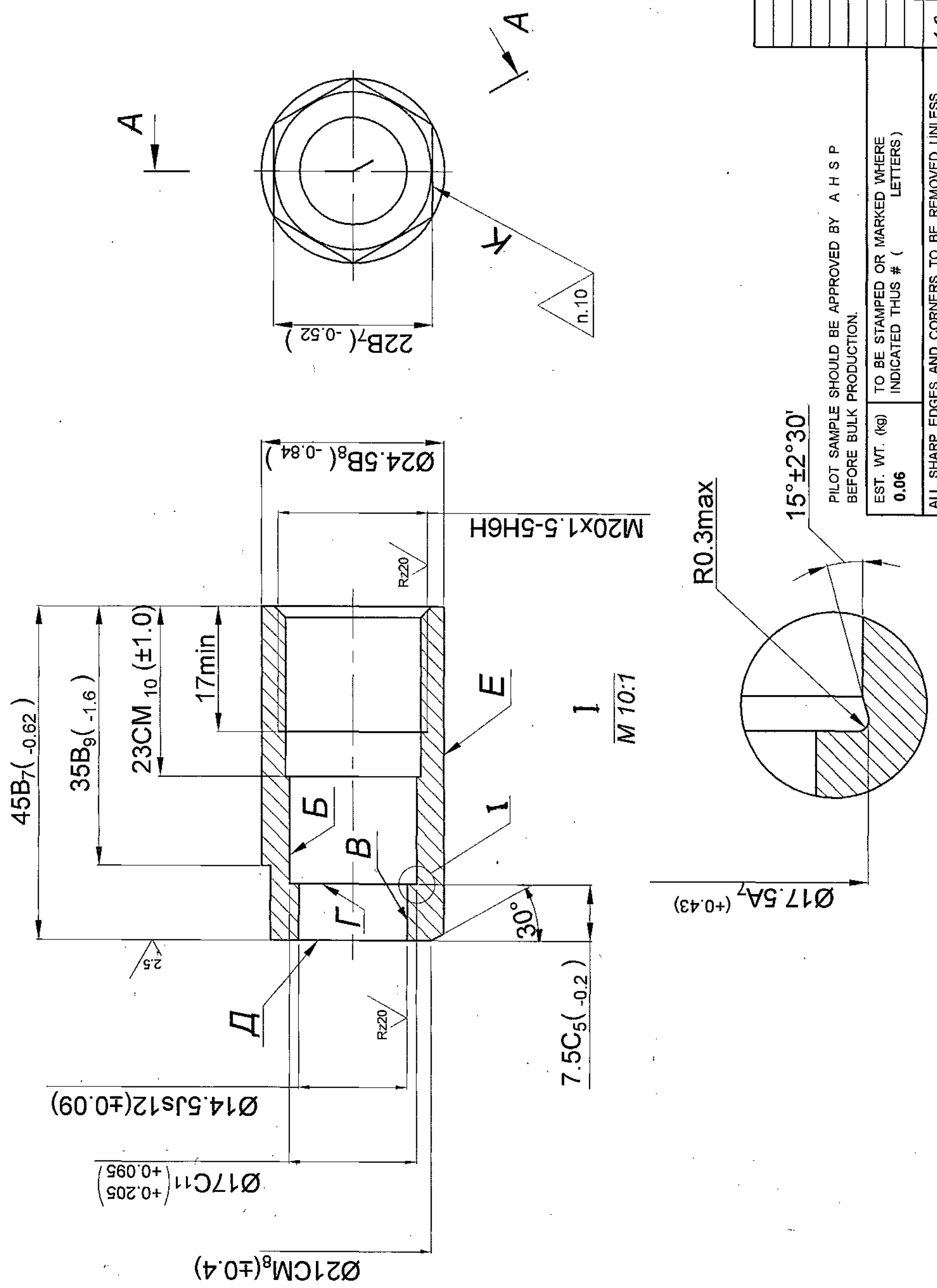
Sheet	Doc. No.	Sign.	Date	Scale
9	96-161			317-15-15
Изм. Лист	№ докум.	Подп.	Дата	Масса
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Trans & Ckd. by:				Листов
MIS SWYAZ				1
Authenticating by:				Вес
Approved by:				1
Engine Factory, Avadi				Листов
Spring of the sprayer				Вес
Пружина				2-1
Wire				Листов
Проволока 51ХФА-				Листов
-А-П-1-ХН-3,5 ГОСТ 14963-78				1

DRAWING NUMBER
317-23-18

SHEET No. OF

A-A

Rz40 ✓ (✓)



1. Inspection group - IV.
2. HRC₃ 26...32.
3. Misalignment of surface B relative to thread axis should not exceed 0.05mm (permissible tolerance).
4. Misalignment of surface "B" relative to thread axis should not exceed 0.03mm (permissible tolerance).
5. Non-squareness of surface "Γ" relative to thread axis should not exceed 0.04mm on the surface Ø 16 mm (permissible tolerance).
6. Non-squareness of surface "D" relative to thread axis should not exceed 0.06mm on the surface Ø 21 mm (permissible tolerance).
7. Radial runout of surface "E" relative to thread axis should not exceed 0.3mm.
8. An acceptance of thread of plug M20x1.5-7H is allowed.
9. Coating: Chemically oxidized and oiled.
10. Stamp on the surface "E" is allowed.
11. Quality of calibrated steel surface should comply with the requirement of Gost 1051-73 group "B".

1B EQUIVALENT MATERIAL
STEEL 080M40 (EN8) TO BS: 970 OR
45 CB TO IS: 1570

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

EST. WT. (KG) 0.06
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.

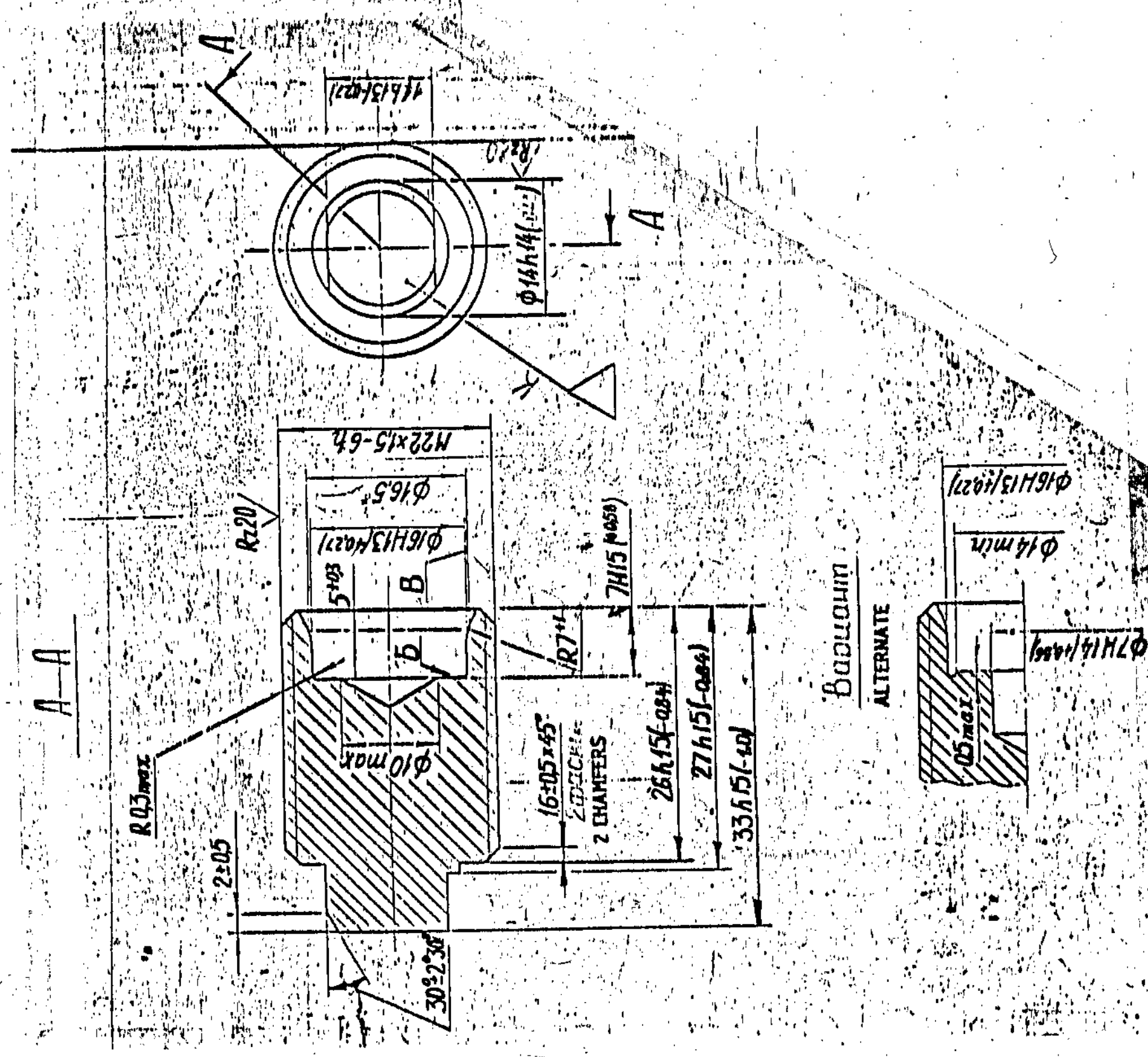
DRN	MATERIAL: STEEL 45	USED ON:
CHD	GOST 1050-88	CB 317-00 - 33-01
APPD	CONTROL RATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
DATE	01/3/07	TITLE: SPRAY TIP NUT (7A)
SCALE	2:1	D S CAT NUMBER
DIMENSIONS IN mm	DRAWING NUMBER 317-23-18	
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS: 2102-69	D S CAT NUMBER	
4 th ALT. COMM. Mfg. MINUTES	D S CAT NUMBER	
POINT No 7 DT. 26-10-09	D S CAT NUMBER	
DO. CORRECTION	D S CAT NUMBER	
ISSUE DATE	D S CAT NUMBER	
7A 09.07.08	D S CAT NUMBER	
NATURE OF AMENDMENTS	D S CAT NUMBER	

F-4
45
253

SIZE A4 x 3

DRAWING NUMBER
317-24-1

RZ10 ✓ (N)



- 1) NON-PERPENDICULARITY OF FACE B RELATIVE TO THREAD AXIS SHOULD NOT EXCEED 0.05 mm AT $\phi 14$ mm (DEPENDENT TOLERANCE)
- 2) MISMATCH OF SURFACE B RELATIVE TO THREAD AXIS SHOULD NOT EXCEED 0.1mm (TOLERANCE DEPENDENT)
- 3) COATING- CHEMICAL OXIDATION AND OILING.
- 4) * DIMENSIONS FOR REFERENCE

EXPLANATORY NOTE :-

MATERIAL QUOTED : STEEL 45 GOST 1050-74.
45 = GRADE OF MATERIAL

CHEMICAL COMPOSITION %

CARBON = 0.42-0.50 ; SILICON = 0.17-0.37 ;
MANGANESE = 0.50-0.80.
CHROMIUM = 0.25 (MAX) ; PHOSPHORUS = 0.035 (MAX)
SULPHUR = 0.040 (MAX) ; COPPER = 0.25 (MAX)
NICKEL = 0.25 (MAX).

MECHANICAL PROPERTIES :

TENSILE STRENGTH Kgf/mm^2 (MIN) = 61
YIELD POINT Kgf/mm^2 (MIN) = 36
ELONGATION % (MIN) = 16
REDUCTION IN AREA % (MIN) = 40
IMPACT STRENGTH Kgf/cm^2 = 5.

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

EST. WT. TO BE STAMPED OR MARKED WHERE INDICATED THUS \neq LETTERS)
0.041 kg

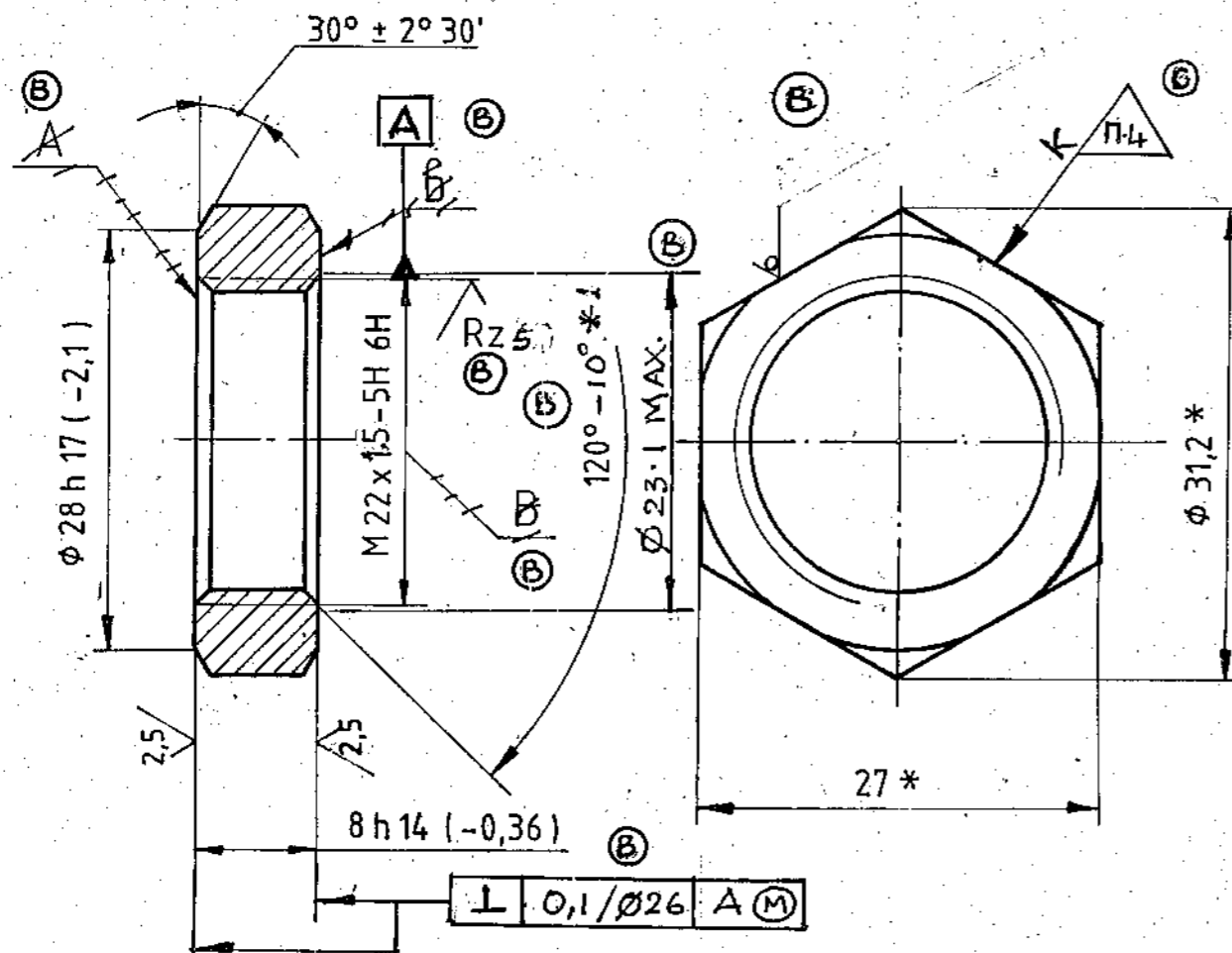
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT-SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRN	909-4	MATERIAL :- STEEL 45	USED ON :-	38
CHD	20-20-80	GOST 1050-74	CB-317-00-50	
TEC	20-20-80	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)		
APPD	20-20-80	A V A D I		
DATE	17-2-88	TITLE		
SCALE	2:1	SPRING NUT		
DIMENSIONS IN mm.				
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS 2102-69				
ALL THREADS TO CONFORM TO				
ISSUE	DATE	NATURE OF AMENDMENTS	D S CAT NUMBER	DRAWING NUMBER
				317-24-1

DRAWING NUMBER

317-25

(B) 10
Rz 40
(✓)



EXPLANATORY NOTE

5. REFERENCE MATERIAL QUOTED :

HEXAGONAL STEEL BAR 27 mm A/F CLASS OF ACCURACY 4 (-0.14) TO GOST 8560-57. HIGH GRADE STEEL 45 GROUP B ON SURFACE QUALITY TO GOST 1051-73 AND MANUFACTURED IN ACCORDANCE WITH STEEL GRADE 45 GOST 1050-74.

a. CHEMICAL COMPOSITION : AS PER GRADE 45 GOST 1050-74.

CONTENT OF ELEMENTS %					
C	Si	Mn	Cr	S	P
			M A X I M U M		
0,42 - 0,50	0,17 - 0,37	0,50 - 0,80	0,25	0,040	0,035

RESIDUAL CONTENT OF COPPER AND NICKEL SHOULD NOT EXCEED 0,25 % EACH

b. MECHANICAL PROPERTIES : AS PER GOST 1050-74

TENSILE STRENGTH Kgf/mm ²	YIELD STRENGTH Kgf/mm ²	ELONGATION %	REDUCTION IN AREA %	IMPACT STRENGTH Kgm/cm ²	HARDNESS B H N (Max)
61	36	16	40	5	229

6. REFERENCE NOTE 2 ON PROTECTIVE FINISH :

OXIDISED COPPER FINISH TO IS : 1378-79 AND OIL FINISH

(B) 2. NON SQUARENESS OF SURFACES A AND B RELATIVE TO THE AXIS OF SURFACE B SHOULD NOT EXCEED 0,1 mm AT/DIA 26 mm

(C) 1. COATING :- CHEMICAL OXIDIZING, OIL FINISHING

(C) 2. IT IS ALLOWED TO USE ROLLED STOCK OF CLASS 4 GROUP B GOST 1051-73, TO ENSURE HIGH QUALITY OF COATING, SURFACE DEFECTS OF ROLLED STOCK MAY BE RECTIFIED WITH DECREASE OF DIMENSION AS PER ACCURACY CLASS 5

(C) 3. * DIMENSIONS FOR REFERENCE

(C) 4. TO BE MARKED BY ELECTRIC SPARK METHOD.

(B) 5. * DIMENSION IS TO BE ENSURED BY TOOL.

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

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

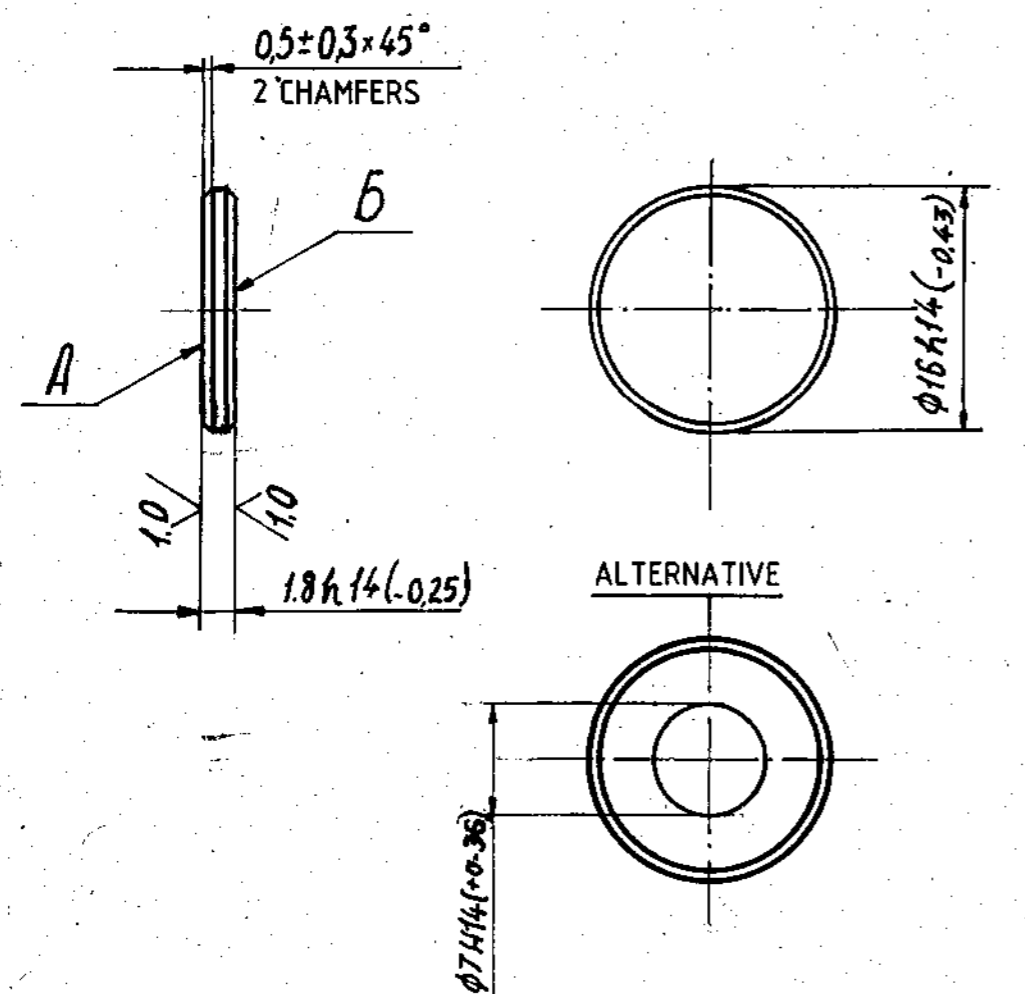
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R. OUTSIDE R. INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE

		DRN	<i>Freehold</i>	MATERIAL : HEXAGON BAR	USED ON
		CHD	<i>V. h. p. i.</i>	27-4 GOST 8560-78	38 (A)
		TCD	<i>Freehold</i>	45-6 GOST 1051-73	CB-317-00-30
		APPD	<i>Freehold</i>	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)	
		DATE	24-2-86	AVADI	
		SCALE	2 : 1	TITLE	
		DIMENSIONS IN MM		LOCK NUT	
		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS: 2102-69		D S CAT NUMBER	
		ALL THREADS TO CONFORM TO IS: 4218 Part IV.		DRAWING NUMBER	
				317-25	
		ISSUE	DATE	NATURE OF AMENDMENTS	
		C	7-7-93	Authy No. BK 89-272	
		B	26-4-93	AUTHY. NOTN. No. BK 86-585	
		A	08-3-88	AUTHY. NOTN. NO. BK 83-345	

317-36

Rz 40 (✓)

DRAWING INDIANISED BASED ON ISSUE 2.



EXPLANATORY NOTE

6. REFERENCE MATERIAL QUOTED :
 SPRING ALLOY STEEL, HOT ROLLED, GRADE 65 F GOST 14959-69
 a. CHEMICAL COMPOSITION AS PER GRADE 65F GOST 14959-79.

CONTENT OF ELEMENTS %					
C	Si	Mn	Cr	S	P
			M A X I M U M		
0,62 - 0,70	0,17 - 0,37	0,90 - 1,20	0,25	0,035	0,035

RESIDUAL CONTENT OF COPPER AND NICKEL SHOULD NOT EXCEED 0,20% AND 0,25% EACH RESPECTIVELY

- b. MECHANICAL PROPERTIES

TENSILE STRENGTH Kgf/mm ²	YIELD POINT Kgf/mm ²	ELONGATION %	REDUCTION IN AREA %	HARDNESS B H N (Max)
100	80	8	30	285

7. REFERENCE NOTE 3 ON ALTERNATE MATERIAL : BALL BEARING STEEL, HOT ROLLED GRADE ~~U X 15 GOST 801-60~~
~~CHEMICAL COMPOSITION : AS PER GRADE U X 15 GOST 801-78~~

CONTENT OF ELEMENTS %									
C	Si	Mn	Cr	S	P	Ni	Cu	Ni + Cu	
				M A X I M U M					
0,95	0,17	0,20	1,30	0,02	0,027	0,030	0,25	0,30	
1,05	0,37	0,40	1,65						

8. REFERENCE NOTE 1 ON INSPECTION GROUP IV TT-11 : SUBJECTED ONLY TO RANDOM CHECKING OF HARDNESS DURING ACCEPTANCE. THE MATERIAL SHOULD MEET THE APPROPRIATE GOST OR TECHNICAL REQUIREMENTS.
 9. REFERENCE NOTE 5 ON PROTECTIVE FINISH :
 OXIDIZED-COPPER FINISH TO IS : 1378 - 79 AND OIL FINISH

1. INSPECTION GROUP IV, TT-11
 HRC 49-57
 HRC 48-56
 2. ALTERNATE MATERIAL : STEEL : -ROUND BLANK ~~17-F-4 GOST 14955-77~~ ~~U X 15-O-XB GOST 801-78~~
 3. NON-PARALLELISM OF SURFACES A AND B SHOULD NOT EXCEED 0,02 mm AT DIA 12 mm
 4. PERMITTED COATING : CHEMICAL OXIDIZING OIL FINISHING

(D) EQUIVALENT MATERIAL
 75 C6 TO IS:2507/EN 42 J BS:970

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

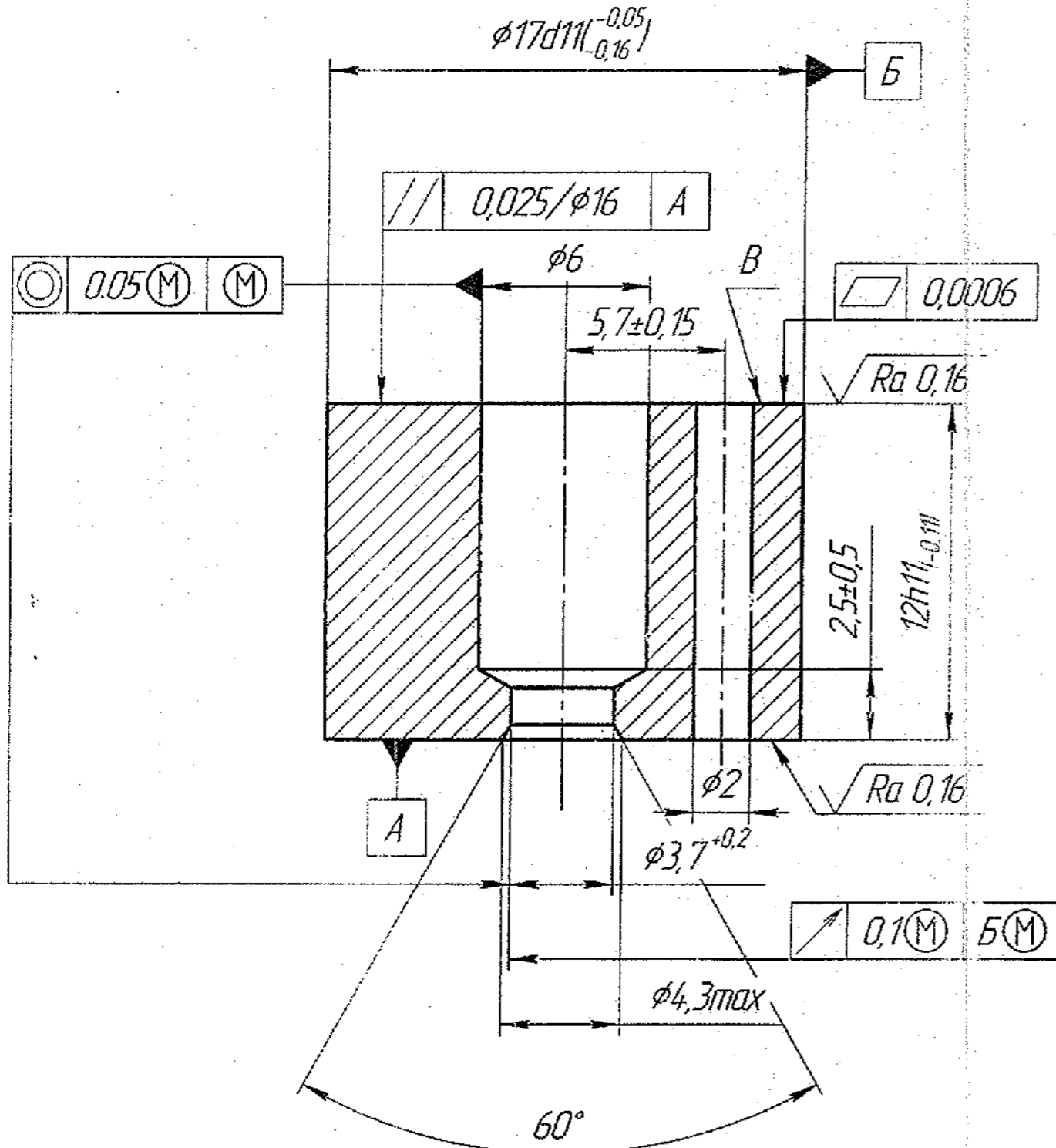
EST WT 0,003 Kg TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)

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	<i>[Signature]</i>	MATERIAL	STEEL 65 F GOST 14959-69	USED ON	38 (B) CB-317-00-30
CHD	<i>[Signature]</i>	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI			
TCD	<i>[Signature]</i>				
APPD	<i>[Signature]</i>				
DATE	24-2-86				
SCALE	2 : 1	TITLE			
DIMENSIONS IN. MM		SPRING WASHER			
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS: 2102-69		ALL THREADS TO CONFORM TO		D S CAT NUMBER	DRAWING NUMBER
D 16-08-10 4 th Alt. Comm. Meeting Minutes Point No.12 Dt:26-10-09		A 7.7.93 AUTHY. NOTN. NO. BK 88-304		317-36	
C 08-3-88 AUTHY. NOTN. NO. BK 83-345		A 23.11.87 AUTHY BK 82-394			
ISSUE	DATE	NATURE OF AMENDMENTS			

317-54-4

√ Ra 10,0 (√)



1. Группа контроля III по ТТ-11
2. 58..62 HRC.
3. Неуказанные предельные отклонения размеров: H14.
4. Плоскостность торцов А и В допускается проверять лекальной линейкой. Просвет не допускается.
5. На поверхности В допускается винтовой след выхода резца глубиной 0,1 мм, не более.
6. Покрытие Хим. Окс. прм ИЛ-681-87, кроме поверхностей А и Б.
7. Притупить острые кромки 0,3мм, не более.

Изм. №	№ подл.	Дата
Изм. №	№ докл.	Дата
Изм. №	№ докл.	Дата
Изм. №	№ докл.	Дата

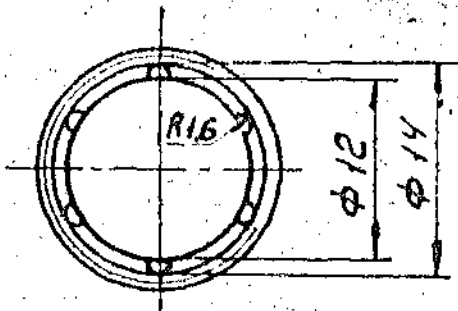
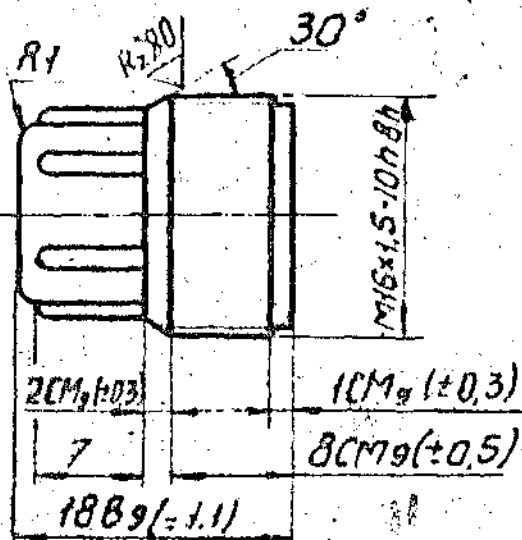
				317-54-4			
Изм.	Лист	№ док.им.	Подп.	Дата	Лит.	Масса	Масштаб
Разраб.					0	0,019	5:1
Проб.					Лист	Листов	1
Т.контр.							
И.контр.							
Утв.							
					19-Г-4 ГОСТ 14955-77 КРУЗШХ15-0-ХВ ГОСТ 801-78		

Копировал

Формат А3

340-21-1Г

ЕСКД



1. UNSPECIFIED LIMIT DEVIATIONS OF SHAFTS DIMENSIONS ARE AS PER B7; OTHERS AS PER CM7.
2. SUBSTITUTE FOR MATERIAL IS PHENOLIC PLASTIC OF GRADES 01-040-02, 01-030-02 GOST 5689-79.
3. THE FOLLOWING MAY BE MARKED ON THE FACES: TRADE MARK, ARTICLE NO, SEAT NUMBER.
4. OTHER TECHNICAL REQUIREMENTS ARE AS PER TY6-05-1538-77.
5. PART IN TROPICAL VERSION SHOULD BE MADE FROM PHENOLIC PLASTIC B x 7-090-34 OR B x 3-090-14 GOST 5689-79, AND BE MARKED WITH LETTER "T" OR WITH YELLOW OR WHITE SPOT.

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

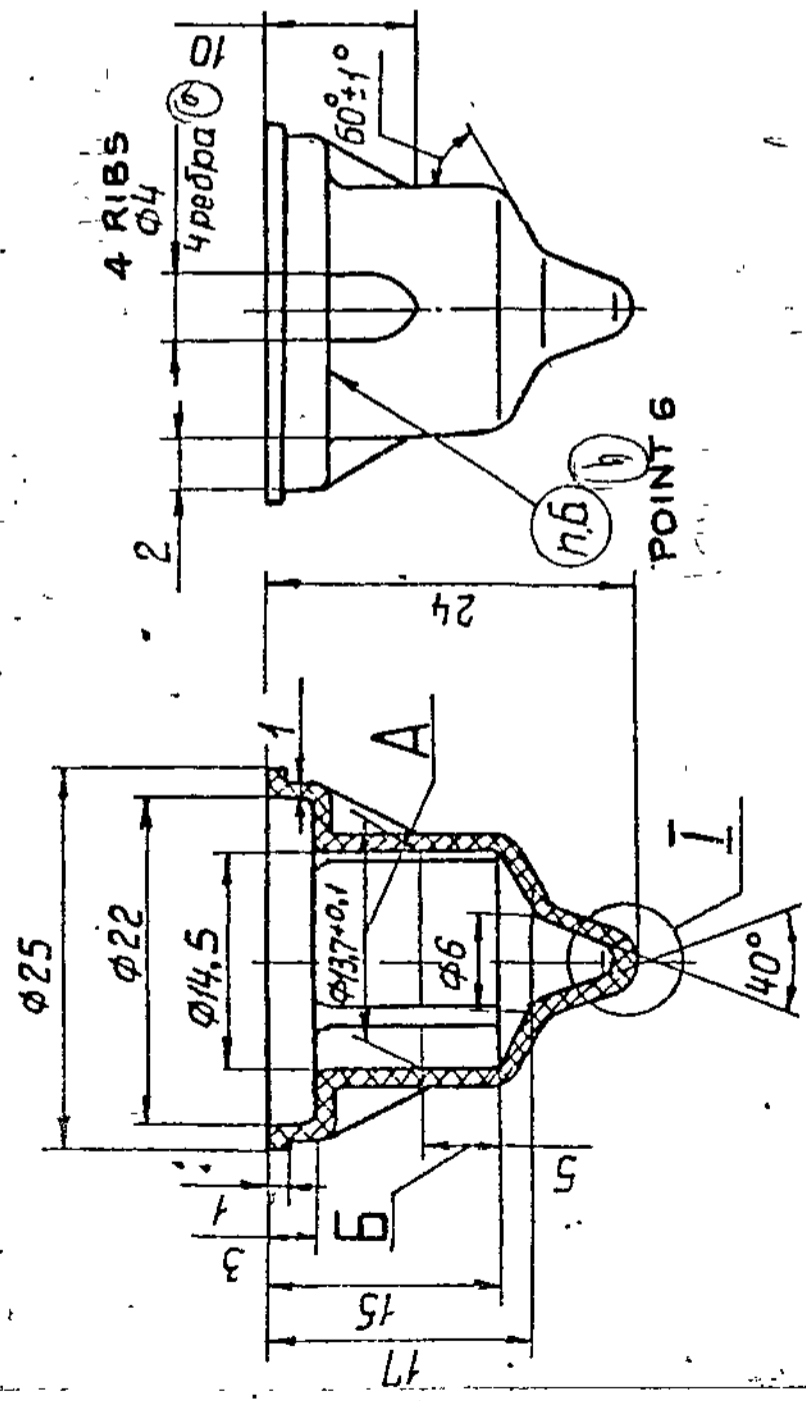
ISSUE DATE		NATURE OF AMENDMENTS	EST. NO.	TO BE STAMPED ON DRAWING BEFORE APPROVED THIS IS
DUN gms		SCALE: 2 : 1	0.003 Kg	1111051
CIT. gms		DIMENSIONS IN mm	ALL DIMENSIONS AND TOLERANCES TO BE OBSERVED UNLESS OTHERWISE SPECIFIED OTHERWISE TO HAVE IT OUTSIDE IT SHOULD BE SPECIFIED CLEARLY AND FULLY	
TCU gms		TOLERANCE ON DRYS UNLESS OTHERWISE STATED	MATERIAL: PHENOLIC PLASTIC	USED ON: СБ 317-00-38
APP. gms		ALL THREADS TO	03-010-02 GOST 5689-79	QUALITY ASSURANCE (HEAVY V. RULES)
DATE			PLUG	
			D.S. CAT NUMBER	DRAWING NUMBER
				340.21.1Г

DRG. INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE-

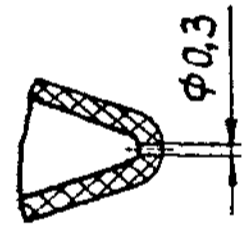
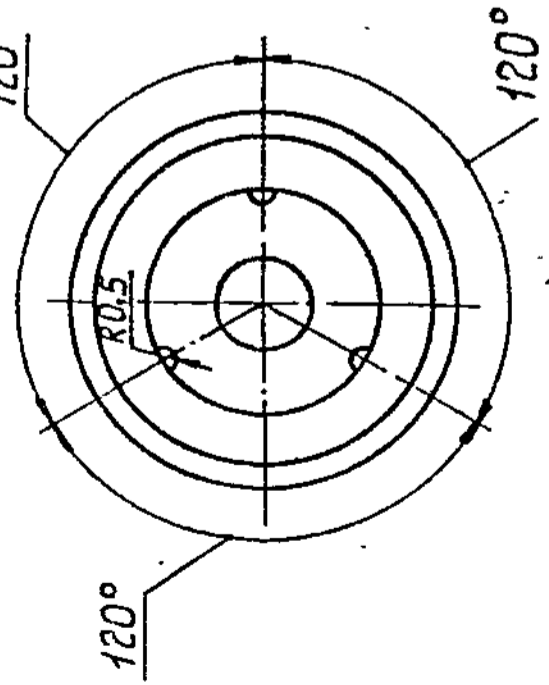
74573

(A15)

DRAWING NUMBER
700-40-5109



I ALTERNATIVE
I 6000000



1. IT IS ALLOWED TO REPLACE THE MATERIAL BY POLYETHYLENE ПЭВНПБ TY 23-108-68-79
2. UNSPECIFIED LIMIT DEVIATION OF DIMENSIONS: HOLES AS PER H14, SHAFTS h14 AND OTHERS ± IT14/2P
3. RADII ROUNDING OFF SHOULD NOT EXCEED 1.5MM
4. INCOMPLETE MOULDING, CRACKS AND CAVITIES ARE NOT ALLOWED.
5. DIMENSIONS A SHOULD BE MAINTAINED TO LENGTH B
6. MARKING PLACE OF MOULD SEAT LETTERING AS PER IS GOST 2930-62 PROJECTION SHOULD NOT EXCEED 0.5 MM.

POLYETHYLENE 15808-020
GRADE 1 GOST 16337-77

DRN	CHD	TCD	APPD	DATE	SCALE	DIMENSIONS IN MM TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS: 2102-69.	ALL THREADS TO CONFORM TO	ISSUE	DATE	NATURE OF AMENDMENTS	
				24-4-97	2:1			26-4-97	17	BK No 87-869	
MATERIAL:-		USED ON		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)		AVADI.		TITLE		DRAWING NUMBER	
SEE ABOVE		CS 317-00 - 38						CAP		700-40-5109	
POLYETHYLENE 15808-020		GRADE 1 GOST 16337-77						D S CAT NUMBER			

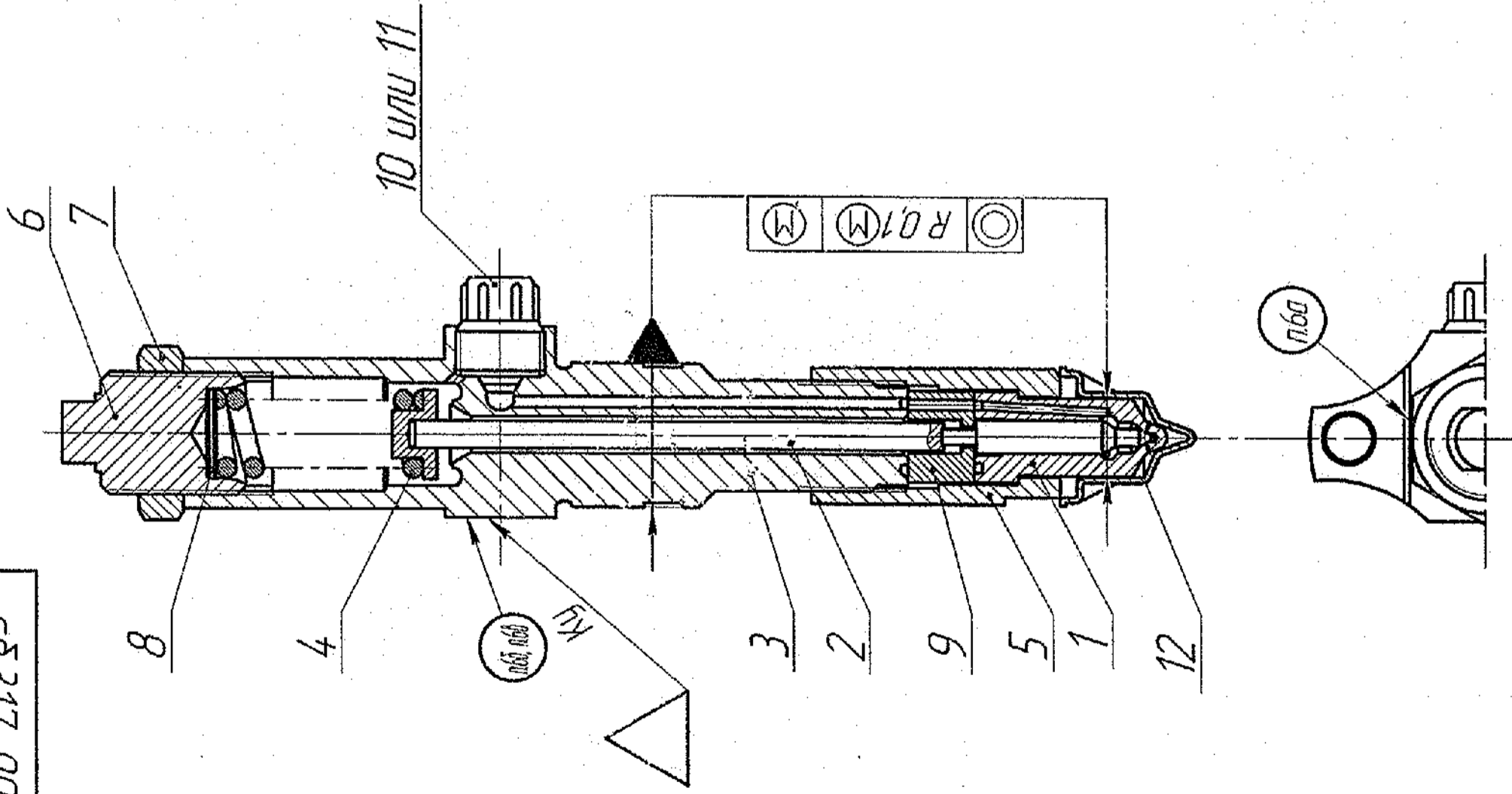
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION

EST. WT. TO BE STAMPED OR MARKED WHERE INDICATED THIS ##-1 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.

8 7 6

СБ.317-00-43СБ



1. Adjust the assembly unit at the pressure of beginning of injection (21+0.8) MPa [(210+8) kgf/cm²].
2. Assembly unit should be airtight on locking cone of sprayer. Moistening of nozzle of housing of sprayer is permitted.
3. Assembly unit should be airtight on the places of sealing of cavity of high pressure. The leakage and moistening of places of seals by fuel is not permitted.
4. The needle of sprayer should be movable.
5. The quality of fuel atomization should meet the following requirements: atomized fuel, coming out from the nozzle should be fog-like, without noticeable of separate drops, continuous streams and easily distinguishable local condensation by eye. The visibility of flame rod is permitted.
6. Mark with font size 10 GOST 26.008-85
 - a) SB.317-00-43, height of font is 3 mm;
 - б) version number 02, height of font is 8 mm;
 - в) group of sprayer, height of font is 8 mm.
7. Parts of pos. 10, 11 12 - protective, are installed during the transportation and storage.
8. Carry out leakage tests of cavity of high pressure on batteryless stand.

SPRAYER
ASSEMBLY DRAWING

СА.317-00-43СБ		Лист	Масса	Масштаб
Форсунка				1:1
Сборочный чертёж		Лист	Листов 1	
Изм./Лист	№ докум.	Подп.	Дата	
Разработ.				
Проб.				
Т.контр.				
Исполнит.				
Утв.				

Копирован

Формат А3

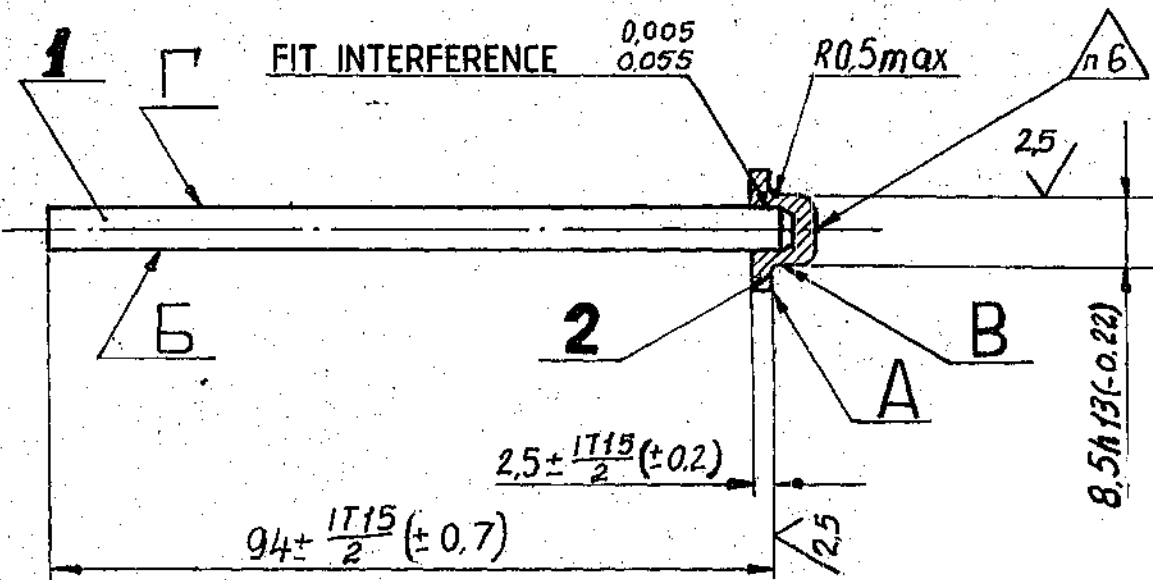
№№ № подл.	Лист в докум.	Взам. у/б. №	И/б. № у/б. №	Лист в докум.
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Формат	Зона	Поз.	Обозначение	Наименование	Кол.	Примечание
				Documents		
				Документация		
				Assembly Drawing		
A3			сб.317-00-43СБ	Сборочный чертеж		
A4			317-00ПМ Programme & Procedure	Программа и методика		
A4			0С-93-2ПМ Programme & Procedure	Программа и методика		
A4			0С-42 Programme & Procedure	Программа и методика		
				Assembly Units		
				Сборочные единицы		
A4	1		сб.3317-01-4A Sprayer	Распылитель	1	
A4	2		сб.317-02-3 Rod	Штанга	1	
				Parts		
				Детали		
				Body of Sprayer		
A4	3		317-13-30-02	Корпус форсунки	1	
A3	4		317-15-15 Spring of Sprayer	Пружина форсунки	1	
*	5		317-23-18 Nut for Sprayer	Гайка распылителя	1	*1A4x3
A3	6		317-24-1 Spring Nut	Гайка пружины	1	
A3	7		317-25 Lock Nut	Контргайка	1	
A3	8		317-36 Spring Washer	Шайба пружины	1	
A3	9		317-54-4 Spacer	Проставка	1	

Подп. и дата
 Инв. № докум.
 Взам. инв. №
 Подп. и дата
 Инв. № подл.

сб.317-00-43			
Изм./Лист	№ докум.	Подп.	Дата
Разраб.			
Проб.			
Н.контр.			
Утв.			
SPRAYER ФОРСУНКА		Лист	Листов
		1	2

DRAWING NUMBER
CB 317-02-3CB



1. COMPONENT 2 IS TO BE PRESS FITTED UP TO THE STOP AGAINST THE FACE OF COMPONENT 1.
2. END PLAY OF SURFACE 'A' RELATIVE TO THE AXIS OF SURFACE 'B' SHOULD NOT EXCEED 0.06mm AT DIA. 15mm.
3. RUN-OUT OF SURFACE B RELATIVE TO THE AXIS OF SURFACE 'B' SHOULD NOT EXCEED 0.1mm.
4. COATING:- CHEMICAL OXIDIZING, OIL FINISHING.
5. TO BE MAGNETISED TO OBTAIN EFFORT PERMITTING TO HOLD THE COMPONENT WITH THE SAME MASS.
6. TO BE MARKED BY ELECTRIC ETCHING. IT IS ALLOWED TO MARK BY ETCHING OR ELECTRO-CHEMICAL METHOD. MAY BE MARKED IN PLACE OF 'F'

EXPLANATORY NOTE:-

7. REFERENCE NOTE 4 ON PROTECTIVE FINISH: OXIDIZED-COPPER FINISH TO IS:1378-79 AND OIL FINISH.

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

EST WT 0,021Kg. 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	<i>Steel</i>	MATERIAL	USED ON
CHD	<i>V.h.f.</i>		38 (A) CB 317-00-30
TCD	<i>F.B. Pl.</i>		
APPD	<i>Bon</i>	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)	
DATE	<i>24-2-86</i>	AVADI	
SCALE:	1:1		
DIMENSIONS IN	mm	TITLE	ASSY. ROD
TOLERANCE ON DIMNS	UNLESS OTHERWISE STATED IS: 2102-69		
ALL THREADS TO	CONFORM TO	D S CAT NUMBER	DRAWING NUMBER
ISSUE	A		CB 317-02-3CB
DATE	08-3-88		
NATURE OF AMENDMENTS	AUTHY. NOTN. NO. BK 83-345		

Format Формат	Zone Зона	Item Поз.	Code Обозначение	Name Наименование	Qty. Кол.	Remark Примечание
				Documents Документация		
				Assembly drawing Сборочный чертеж		*1A4x3
A4			сб.3317-01-4А СБ	Program and method Программа и методика		
			317-01 ПМ	Assembly units Детали		
		1	3317-06-3А	Корпус распылителя	1	*1A3x4
			NOZZLE BODY			
		2	317-07-3	Игла распылителя	1	*1A4x3
			NOZZLE NEEDLE			

Ино. № подл. 45086
 Подп. и дата
 Возм. инв. № Инв. № дубл.
 Подп. и дата

F-153 73/74

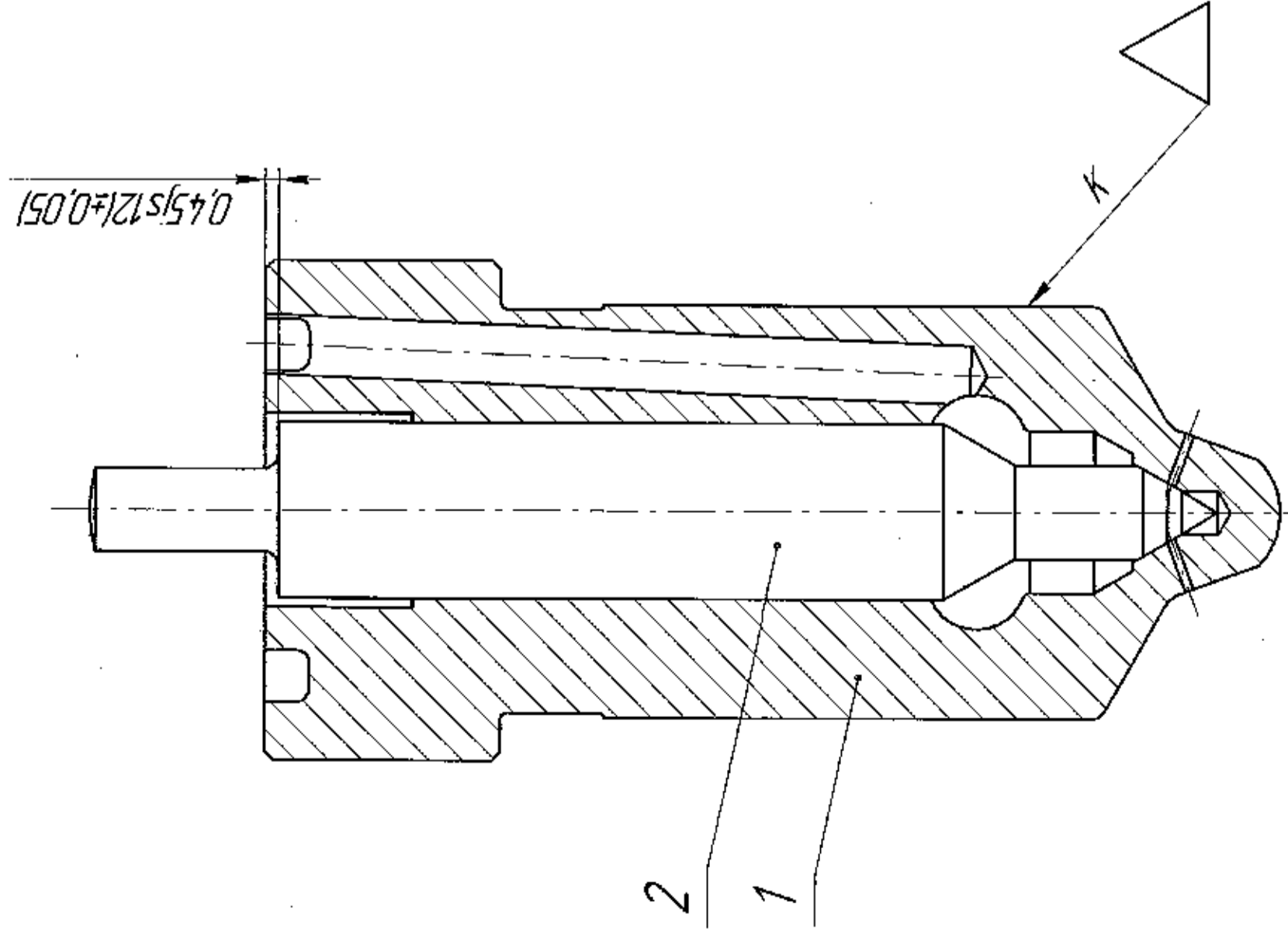
сб.3317-01-4А

Doc. No. 92-327
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 № докум. 92-327
 Sign. Подп.
 Date Дата

NOZZLE
 Распылитель

Letter Sheet Sheets
 Лист Листов Листов
 6 1

Trans & Ckd by
 M/S SWYAZ
 Authenticated by :
 Approved by :
 Engine Factory. Avadi



5. Допускается сборку распылителя производить совместной притиркой корпуса распылителя и иглы по уплотнительному конусу. Уплотнительный пояс на конусе иглы, прилегающей к корпусу распылителя, должен располагаться у основания конуса и по ширине быть не более 0,6 мм.

6. Шероховатость сопрягающихся цилиндрических поверхностей на отдельных участках не более $R_{0.05}$ общей площадью не более 50%, конических поверхностей $R_{0.5}$.

1. Diametrical clearance between the nozzle body and needle 0.002...0.006 is ensured by selective assembly.

2. The movement of nozzle needle should be smooth without jamming.

3. Nozzle should be leak proof leakage of fuel through the clearance between the locking cone of the needle and nozzle body during pressure not exceeding the pressure of lifting the needle, is not allowed.

4. The quality of atomization should correspond to the following requirements.

- The fuel atomization should be like fog forming without visible individual drops on the glass without continuous jet and easily identifiable local condensation.
- Before the beginning of spraying inspection and further after its completion, leakage of fuel through the nozzle hole is not allowed.
- At the completion of spraying, moisturing at the tip of the nozzle is allowed.
- The spray should be precise and must be followed by a sound.

5. Assembly of the nozzle is allowed to be carried out simultaneously with lapping of the nozzle body and needles at the sealing cone. The sealing strip on the needle cone, lapped to the nozzle body should be positioned at the base of cone and width should not more than 0.6mm.

6. Surface finish of adjoining cylindrical surfaces on separate sections should not be more than $R_{0.05}$ of total area not exceeding 50% of the conical surfaces.

1. Диаметральный зазор между корпусом распылителя и иглой 0,002...0,006 мм, обеспечивается селективной сборкой.

2. Перемещение иглы распылителя должно быть плавным, без прихватываний.

3. Распылитель должен быть герметичным, пропуск топлива через зазоры между запирающим конусом иглы и корпусом распылителя при давлении, не превышающих давления подъема иглы, не допускается.

4. Качество распыливания должно соответствовать следующим требованиям:

- распыленное топливо должно быть туманообразным, без заметных на глаз отдельных капель, сплошных струек и легко различимых местных сгущений;
- перед началом контрольного впрыска, а также после его окончания подтекание топлива через сопловые отверстия не допускается;
- по окончании впрыска допускается увлажнение носика распылителя;
- впрыск должен быть четким и сопровождаться характерным звуком.

С-153 74/74

Doc. No.	2001-298	Sign.	Date
Sheet	92-327	Подп.	Дата
Изм/Лист	№ докум	Подп.	Дата
Trans. & Ckd. by: M.S. SWYAZ			
Authenticated by:			
Approved by:			
Engine Factory, Avdi			

СД.3317-01-4А СБ		Letter	Sheet	Sheets
NOZZLE		Лист	Масса	Масштаб
Распылитель		Б	0,037	51
Сборочный чертеж		Лист	Листов	Т
Assembly drawing		Sheet	Sheets	