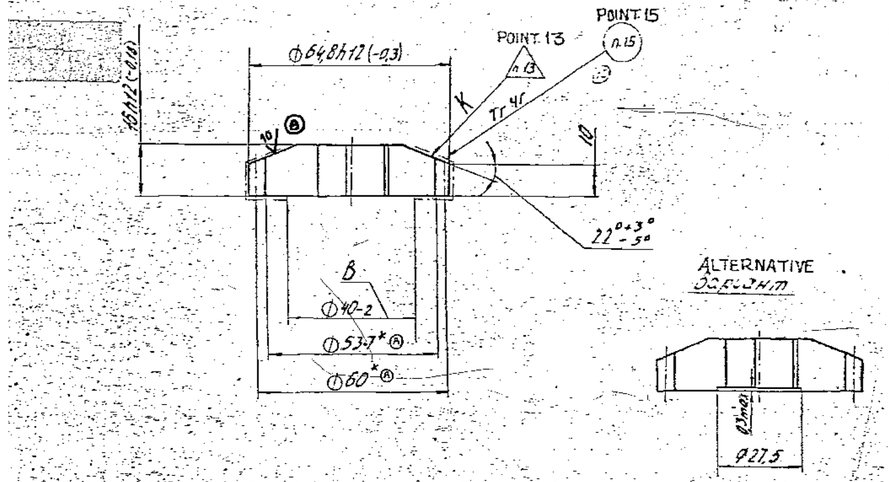
412-25-2

ЕСКД



1. ALTERNATE MATERIAL: STEEL, GRADE 18Х2Н4МА AS PER ТУ14-1-381-72.
2. INSPECTION GROUP III; ТТ-11.
3. TO BE CARBURIZED: FOR TEETH h 0·6 TO 0·9 $HRC_э \geq 55$.
4. $HRC_э$ 37–45 FOR THE NON-CARBURIZED SURFACES IS TO BE CHECKED AT RANDOM, BUT NOT LESS THAN 3 PIECES FROM A BATCH.
5. GEAR FACES MAY BE ADDITIONALLY CARBURIZED ON 2 SIDES UP TO Ⓑ TO DEPTH h NOT EXCEEDING 0·2 mm.
6. IT IS ALLOWED TO CASE-HARDEN ALL OVER. IN THIS CASE THE TOLERANCE FOR DIMENSION Б BEFORE CARBURIZATION SHOULD BE DETERMINED BY TECHNOLOGICAL PROCESS.
7. COATING: CHEMICAL OXIDIZING, OIL FINISHING FOR SPARE PARTS.
8. UNSPECIFIED LIMIT DEVIATIONS OF DIMENSIONS: OF HOLES AS PER H14; OF SHAFTS – AS PER h14, OF THE REST OF DIMENSIONS – $\pm \frac{IT14}{2}$.
9. RUN-OUT OF TOOTHED RIM RELATIVE TO THE AXIS OF SURFACE А SHOULD BE 0·1 mm, MAXIMUM. TO BE CHECKED IN CASE RUNNING-IN WITH STANDARD GEAR IS NOT CARRIED OUT.
10. PITCH VARIATION OF SURFACE А IS TO BE CHECKED BY SPECIAL GAUGE CONSTRUCTED TO SUIT THE MAXIMUM DIMENSIONS OF MATED COMPONENT.
11. QUALITY OF ENGAGEMENT IS TO BE CHECKED BY IMPRINT OF PAINT AT RUN-IN WITH A STANDARD GEAR AS PER INSTRUCTIONS У8-42.
12. COMPONENTS ARE TO BE CHECKED ON MAGNETIC-FIELD FLAW DETECTOR ACCEPTANCE ACCORDING TO THE TECHNICAL REQUIREMENTS У8-17.
13. NOT TO BE MARKED BY PUNCHING.

Ⓑ ~~R 20~~ 5

14. DIMENSIONS OF HOLE ARE TO BE CHECKED BEFORE HEAT TREATMENT.
15. IN CASE THE COMPONENT IS INTENDED AS SPARES MANUFACTURE CODE AND THE PART NUMBER OF COMPONENT ARE TO BE MARKED.
16. Ⓐ DIMENSIONS FOR REFERENCE.

MODULE		m	3
NUMBER OF TEETH		z	20
NORMAL BASIC RACK	PROFILE ANGLE	α	20°
	ADDENDUM COEFFICIENT	h_a^*	0·8
	COEFFICIENT OF RADIUS OF CURVATURE OF CASEMENT CURVE	ρ_f	~~0·526~~ Ⓐ 0·40
	COEFFICIENT OF BOTTOM CLEARANCE	c^*	~~0·346~~ Ⓐ 0·250
BASIC RACK MODIFICATION COEFFICIENT		x	0
DEGREE OF ACCURACY		–	–
BASIC TANGENT LENGTH		W	$22{\cdot}98^{-0.09}_{-0.21}$
TOLERANCE ON COMPOSITE ERROR DOUBLE FLANK	TOTAL	F_i''	0·120
	TOOTH-TO-TOOTH	f_i''	0·050
PAINT IMPRINT FROM CONTACT WITH TEETH OF STANDARD GEAR	ALONG LENGTH	–	–
	ALONG HEIGHT	–	–
BASIC DIAMETER		d_B	56·38
RADIUS OF ACTIVE FLANK CURVATURE IN LOW POINT		ρ_p	~~1·48~~ Ⓐ 4·56
BASE PITCH		p_α	8·85

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

ISSUE	DATE	NATURE OF AMENDMENTS
B	15-7-96	AUTHY. NOTN. No. BK-84-243
A	16.10.87	AUTHY BK 82-536

DRN		SCALE:– 1:1	
CHD		DIMENSIONS IN mm	
TCD		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED	
APPD		ALL THREADS CONFORM TO	
DATE	07.12.87		

EST MASS 0.25

TO BE STAMPED OR MARKED WHERE (INDICATED THUS # LETTERS) Ⓐ Б

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 18Х2Н4ВА ТУ14-1-381-72

USED ON:– СБ3312-94-1 СБ 3312-95-1

CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI

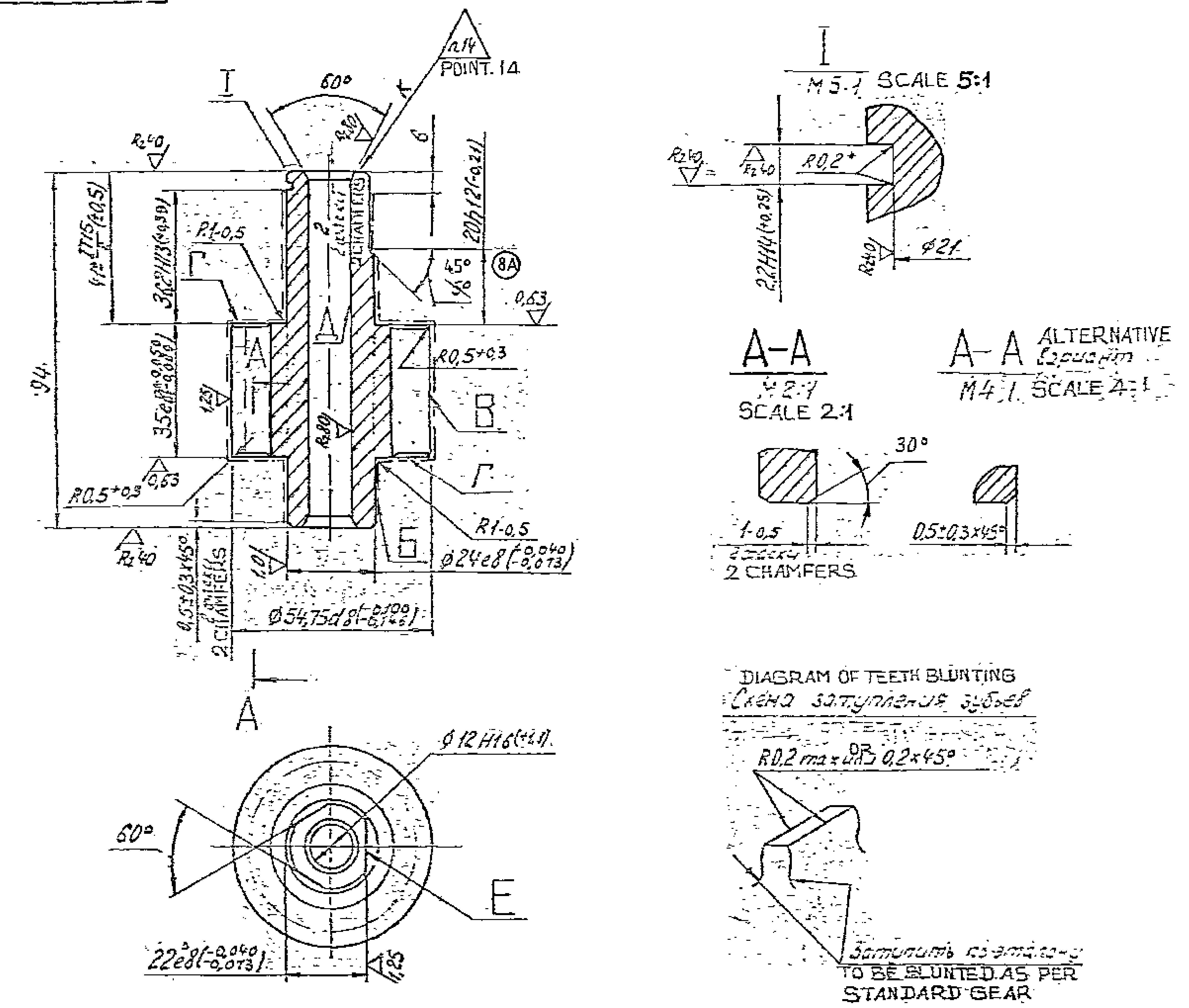
TITLE:– OIL PUMP DRIVE GEAR

D S CAT NUMBER

DRAWING NUMBER 412-25-2

ECKA

DRG. INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE-7



1. INSPECTION GROUP III, TT-11

2. DEPTH OF CARBURIZATION: FOR TEETH SURFACES h 0.6 .1 mm, FOR SURFACE B h 0 25 TO 40 MM, FOR THE REST OF THE SURFACES h 0.40 ..... 60 mm HRC3 51 ... 57. (8)

3. ON THE NON CARBURIZED SURFACES HRC3 26-42. TO BE CHECKED AT RANDOM, BUT NOT LESS THAN ON 3 COMPONENTS FROM EACH HEAT-TREATED BATCH.

4. MAY BE CARBURIZED ALL OVER

5. UNSPECIFIED LIMIT DEVIATIONS OF DIMENSIONS; OF SHAFTS AS PER h14, OF THE REST OF DIMENSIONS ± IT14/2

6. RUN-OUT OF TOOTHED RIM RELATIVE TO THE AXIS OF SURFACE Б SHOULD NOT EXCEED 0.1mm. TO BE CHECKED IN CASE RUN-IN WITH STANDARD GEAR IS NOT CARRIED OUT.

7. RUN-OUT OF SURFACE B RELATIVE TO THE AXIS OF SURFACE Б IS NOT TO EXCEED 0.02 mm

8. END PLAY OF SURFACE Г RELATIVE TO THE AXIS OF SURFACE Б IS NOT TO EXCEED 0.020 MM AT DIA 53 MM.

9. QUALITY OF ENGAGEMENT IS TO BE CHECKED BY PAINT IMPRINT BY RUN-IN WITH A STANDARD GEAR AS PER INSTRUCTIONS UB-42.

10. PITCH VARIATION OF SURFACES E IS TO BE CHECKED BY SPECIAL GAUGE CONSTRUCTED TO SUIT THE MINIMUM DIMENSIONS OF MATED COMPONENT.

11. THE COMPONENT IS TO BE CHECKED ON MAGNETIC-FIELD FLAW DETECTOR AS PER TT UB-17.

12. SHOULDER UP TO 0.25 mm IS ALLOWED ON SURFACE Д.

13. COATING: CHEMICAL OXIDIZING; OIL FINISHING (IN CASE COMPONENT IS INTENDED AS SPARE).

14. NOT TO BE PUNCHED.

15.* DIMENSION IS TO BE ENSURED BY TOOL.

Rz20 (√)

MODULE		m	5
NUMBER OF TEETH		z	9
NORMAL BASIC RACK	PROFILE ANGLE	α	25°
	ADDENDUM COEFFICIENT	h_a^*	1
	COEFFICIENT OF RADIUS OF CURVATURE OF CASEMENT CURVE	ρ_f^*	0.351
	COEFFICIENT OF BOTTOM CLEARANCE	c^*	0.203
BASIC RACK MODIFICATION COEFFICIENT		X	0
DEGREE OF ACCURACY		—	—
BASE TANGENT LENGTH		W	$22.55^{-0.09}_{-0.20}$
TOLERANCE ON COMPOSITE ERROR DOUBLE FLANK	TOTAL	F_i''	0.130
	TOOTH-TO-TOOTH	f_i''	0.050
PAINT IMPRINT FROM CONTACT WITH TEETH OF STANDARD GEAR	ALONG LENGTH	—	—
	ALONG HEIGHT	—	—
BASIC DIAMETER		d	45
RADIUS OF ACTIVE FLANK CURVATURE IN LOW POINT		ρ_p	0.55
BASE PITCH		p_a	14.23

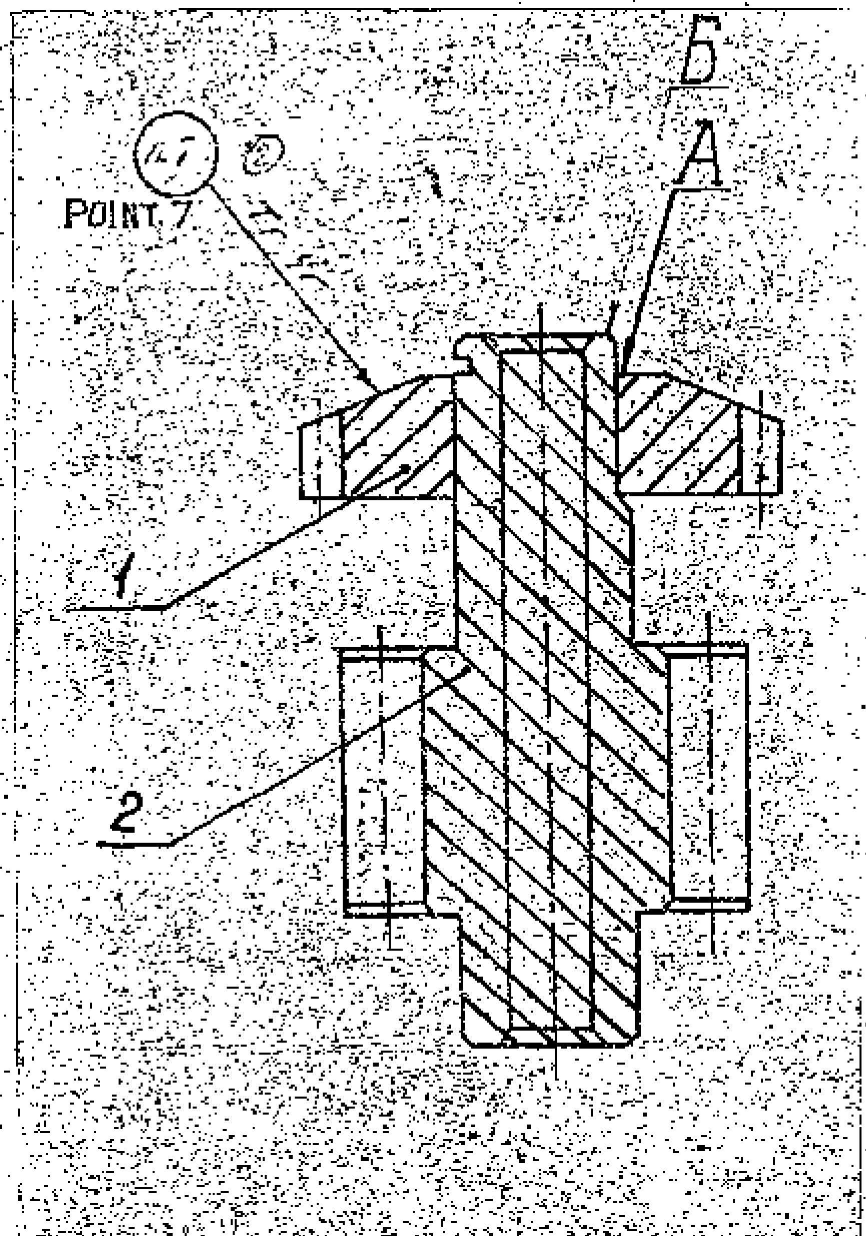
* * STEEL 12XH3A
TY 14-1-381-72

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

ISSUE	DATE	NATURE OF AMENDMENTS	EST. MASS 0.468 Kg	TO BE STAMPED OR MARKED WHERE INDICATED THUS ⊕ LETTERS
8A	26.11.09	D-D CORRECTION	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED. MACHINED CORNERS TO HAVE R OUTSIDE R ... EQUIVALENT CHAMFERS ARE PERMISSIBLE	
8	4.10.89	AUTHY BK 85-347.	MATERIAL ** SEE ABOVE	USED ON CБ 3312-95-1
DRN		SCALE 1 : 1	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
CHD		DIMENSIONS IN mm		
TED		TOLERANCE ON DIMENS UNLESS OTHERWISE STATED	TITLE OIL PUMP DRIVE GEAR	
APPD				
DATE 5/7/88		ALL THREADS TO CONFORM TO	D S CAT NUMBER	DRAWING NUMBER 3312-99

(A-6)

DRAWING NUMBER
CБ 3312-95-1CБ



1. TRIHEDRAL CONNECTION OF COMPONENTS SHOULD BE DONE BY INDIVIDUAL SELECTION. WHEN THE COMPONENTS FAIL TO BE MATED DUE TO BUCKLING OF THE HOLE SURFACES DURING HEAT-TREATMENT THE FOLLOWING MAY BE MADE TO ENSURE CLEARANCE BETWEEN THE FACES:
   - GRINDING OF FACES OF COMPONENT 2 (BEYOND TOLERANCE),
   - GRINDING OF JOURNAL DIAMETER ON TRIHEDRAL LENGTH ALONG $\phi 24 e8 \left(^{-0.040}_{-0.073}\right)$
   - THE CLEARANCE BETWEEN FACES SHOULD NOT EXCEED 0.08 MM.
2. RUNOUT OF TOOTHED RIM OF GEAR 1 RELATIVE TO THE AXIS OF GEAR 2 SHOULD NOT EXCEED 0.12 MM.
3. DURING INSTALLATION OF THE UNIT INTO PUMP COINCIDENCE OF MATCHING MARKS SHOULD BE CHECKED.
4. DURING MATING OF COMPONENTS 1 AND 2 INTERFERENCE IS NOT ALLOWED.
5. CIRCUMFERENTIAL PLAY OF COMPONENT 1, RELATIVE TO COMPONENT 2 ON TRIHEDRAL MEASURED AT DIA 60 MM SHOULD NOT EXCEED 0.6 MM. COMPONENT 1 SHOULD NOT OVER LAP THE GROOVE OF COMPONENT 2 DURING PLAY CHECKING.
6. MARK AND MATCHING NUMBER SHOULD BE PUT ON SURFACES A AND Б. TO BE MARKED OTHERWISE THAN BY PUNCHING.
7. MANUFACTURERS CODE AND UNIT NUMBER ARE TO BE MARKED IN CASE, THE COMPONENT IS INTENDED AS SPARES.

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

EST. WT. 0.72	TO BE STAMPED OR MARKED WHERE INDICATED THUS # I 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.	

ISSUE	DATE	NATURE OF AMENDMENTS

DRN	Naveen
CHD	
TCD	Naveen
APPD	
DATE	22-3-95
SCALE:- 1:1	
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.	
ALL THREADS TO CONFORM TO	

MATERIAL:-

USED ON: CБ 3312-00-15

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) - AVADI.

TITLE: PAIRED GEARS ASSY DRAWING

D S CAT NUMBER

DRAWING NUMBER
CБ 3312-95-1CБ

USED ON GE 3312-00-15

				OFF	REMARKS
	CB 3312-95-1 CB		PAIRED GEARS ASSY DRG		
1	412-25-2		OIL PUMP DRIVE GEAR	1	
2	3312-99		OIL PUMP DRIVE GEAR	1	

ISSUE	DATE	NATURE OF AMENDMENTS	ISSUE	DATE	NATURE OF AMENDMENTS

DRN.		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI	
CHD.			
TCD.		TITLE: PAIRED GEARS ASSY DRAWING	
APPD.			
DATE	16-3-95	SHT. No. 1 OF 1	D S CAT NUMBER
			ITEM LIST FOR CB 3312-95-1 CB