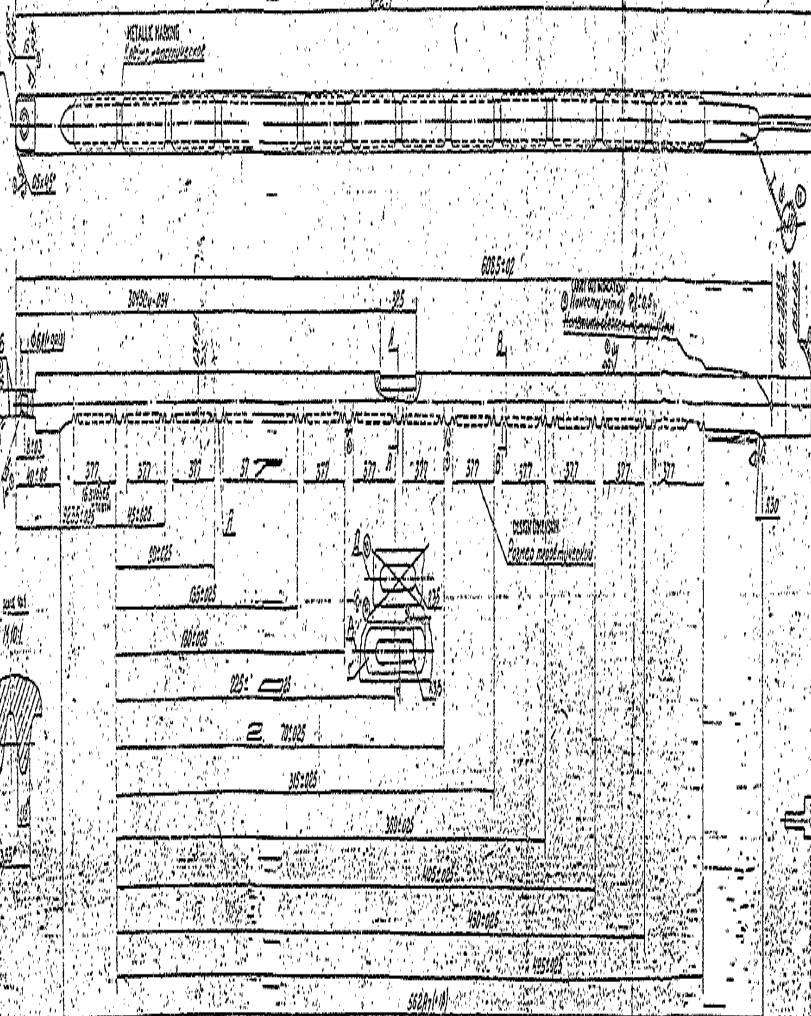


327-75-6

МЕТ. ПР.	115	МЕТ. ПР.	115
МЕТ. ПР.	120	МЕТ. ПР.	135
БЕЖ. КОЛ. РАП.	140	БЕЖ. КОЛ. РАП.	155
БЕЖ. КОЛ. РАП.	155	БЕЖ. КОЛ. РАП.	170
ПРЕС. АКС.	17	ПРЕС. АКС.	27
ТОН. ТКАН. ОБЛАТ.	1	ТОН. ТКАН. ОБЛАТ.	1
ПРЕС. АКС.	1	ПРЕС. АКС.	1
АЛЮМ. РЕФ. ЛИН.	1	АЛЮМ. РЕФ. ЛИН.	1
АЛЮМ. РЕФ. ЛИН.	1	АЛЮМ. РЕФ. ЛИН.	1
АЛЮМ. РЕФ. ЛИН.	1	АЛЮМ. РЕФ. ЛИН.	1



1. Проверить качество изготовления в соответствии с требованиями чертежа.
 2. Проверить качество изготовления в соответствии с требованиями чертежа.
 3. Проверить качество изготовления в соответствии с требованиями чертежа.
 4. Проверить качество изготовления в соответствии с требованиями чертежа.
 5. Проверить качество изготовления в соответствии с требованиями чертежа.
 6. Проверить качество изготовления в соответствии с требованиями чертежа.
 7. Проверить качество изготовления в соответствии с требованиями чертежа.
 8. Проверить качество изготовления в соответствии с требованиями чертежа.
 9. Проверить качество изготовления в соответствии с требованиями чертежа.
 10. Проверить качество изготовления в соответствии с требованиями чертежа.
 11. Проверить качество изготовления в соответствии с требованиями чертежа.
 12. Проверить качество изготовления в соответствии с требованиями чертежа.
 13. Проверить качество изготовления в соответствии с требованиями чертежа.
 14. Проверить качество изготовления в соответствии с требованиями чертежа.
 15. Проверить качество изготовления в соответствии с требованиями чертежа.
 16. Проверить качество изготовления в соответствии с требованиями чертежа.
 17. Проверить качество изготовления в соответствии с требованиями чертежа.
 18. Проверить качество изготовления в соответствии с требованиями чертежа.
 19. Проверить качество изготовления в соответствии с требованиями чертежа.
 20. Проверить качество изготовления в соответствии с требованиями чертежа.

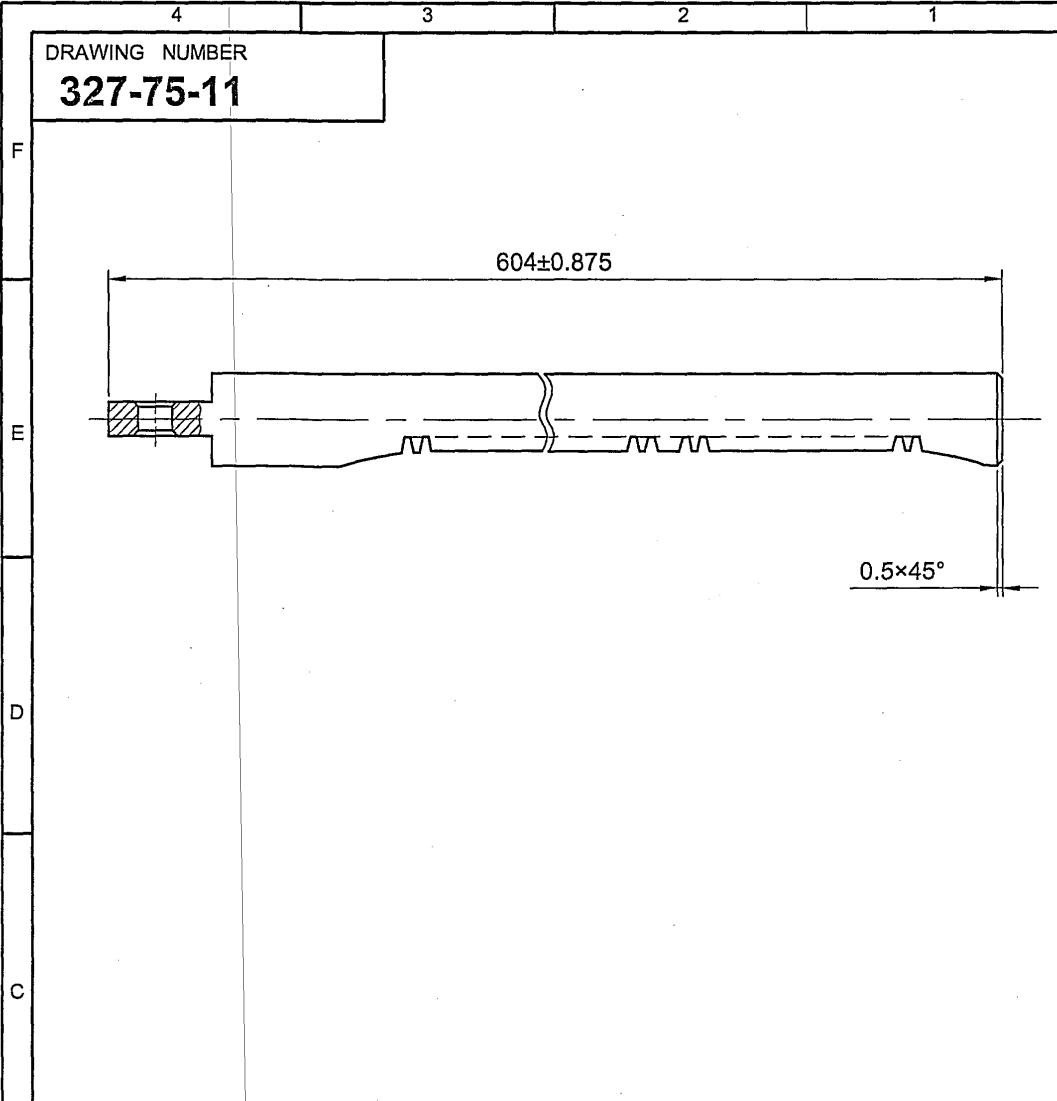
1. Borell hardness is 80-90 HRC.
2. Face 3 should be protection hardened in a furnace not exceeding 1100°C.
3. Dimensions with unspecified tolerances should be maintained as per ISO fit class 7/8 H8.
4. Bore - straightness of face should not exceed 0.05 mm in a length of 10 mm.
5. Bore - straightness of taper of tooth working surface, measured along reference line, with axis should not exceed 0.05 mm in 10 mm length.
6. Bore - straightness of hole in A with the plane passing through end faces of teeth working surface along reference line should not exceed 0.05 mm in length of 10 mm.
7. Straightness of surface 1 relative to surface 3 should not exceed 0.05 mm in width of end face.
8. Slot and diameter of slot axis A from the horizontal surface perpendicular to surface 1 should not exceed 0.05 mm in 10 mm length.
9. From the side of face B 90° hole is allowed in a length of 15 mm maximum.
10. Grooves from internal is allowed while making of surface 1.
11. Scrap pieces should be blanked.
12. Blanking in A, dimensions as per 13-14-15.
13. Dimensions should be checked before exit cutting.
14. Dimensions for construction of the cage.
15. Dimensions for reference.
16. Dimensions for reference.
17. Dimensions for reference.
18. Dimensions for reference.
19. Dimensions for reference.
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46. Dimensions for reference.
47. Dimensions for reference.
48. Dimensions for reference.
49. Dimensions for reference.
50. Dimensions for reference.

МЕТ. ПР.	115
МЕТ. ПР.	120
БЕЖ. КОЛ. РАП.	140
БЕЖ. КОЛ. РАП.	155
ПРЕС. АКС.	17
ТОН. ТКАН. ОБЛАТ.	1
ПРЕС. АКС.	1
АЛЮМ. РЕФ. ЛИН.	1
АЛЮМ. РЕФ. ЛИН.	1
АЛЮМ. РЕФ. ЛИН.	1

МЕТ. ПР.	115	МЕТ. ПР.	115
МЕТ. ПР.	120	МЕТ. ПР.	135
БЕЖ. КОЛ. РАП.	140	БЕЖ. КОЛ. РАП.	155
БЕЖ. КОЛ. РАП.	155	БЕЖ. КОЛ. РАП.	170
ПРЕС. АКС.	17	ПРЕС. АКС.	27
ТОН. ТКАН. ОБЛАТ.	1	ТОН. ТКАН. ОБЛАТ.	1
ПРЕС. АКС.	1	ПРЕС. АКС.	1
АЛЮМ. РЕФ. ЛИН.	1	АЛЮМ. РЕФ. ЛИН.	1
АЛЮМ. РЕФ. ЛИН.	1	АЛЮМ. РЕФ. ЛИН.	1
АЛЮМ. РЕФ. ЛИН.	1	АЛЮМ. РЕФ. ЛИН.	1

DRAWING INDIA/ANISED BASED ON RUSSIAN ORIGINAL ISSUE - 3

F-5
53
283



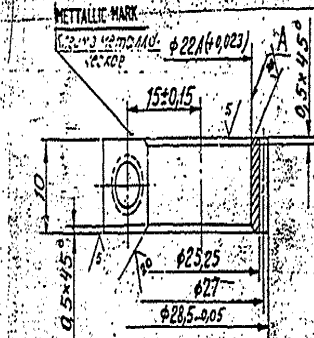
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

		EST. WT. (Kg) 0.78	TO BE STAMPED OR MARKED WHERE INDICATED THIS # (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 :- BLANK 327-75-6	USED ON:- CB 327-00-73
ISSUE	DATE	NATURE OF AMENDMENTS	
DRN <i>Ashwin</i>		SCALE :- 1 : 1	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI
CHD <i>P. S. Srinivas</i>		DIMENSIONS IN mm	
APPD <i>[Signature]</i>		TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS : 2102 - 69	TITLE :- TOOTHED CONTROL RACK
DATE 21/3/07		ALL THREADS TO CONFORM TO	D S CAT NUMBER
SIZE A4			DRAWING NUMBER 327-75-11

USED ON:- SB 3327-06-73, V92S2 ENGINE(FIP)

ITEM	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	No. OFF	REMARKS
	SK - 1382 & ITEM LIST		ASSEMBLY OF TOOTHED CONTROL RACK & CONTROL SLEEVE		
1	327-75-11 (BLANK:- 327-75-6)		ADJUSTABLE RACK / ROD	1	
2	SB 3327-06 & ITEM LIST		CONTROL SLEEVE ASSY (or) SLEEVE ROTARY	12	
ISSUE	DATE	NATURE OF AMENDMENTS	ISSUE	DATE	NATURE OF AMENDMENTS
QRN		ENGINE FACTORY AVADI	TITLE ASSEMBLY OF TOOTHED CONTROL RACK & CONTROL SLEEVE		
CHD					
TCD					
APPD		SHT 1 OFF 1	D S CAT NUMBER	ITEM LIST FOR	
DATE	14-08-2013			SK - 1382	

Drawing prepared based on Discussion in Indigenisation meeting dated 07-08-2013.
 GM,s approval letter No. EFA/P/P&P/118 , Dated : 9th Aug'2013.



MODULE	0.75
No. OF TEETH	36
PRESSURE ANGLE	20°
ADDENDUM ALONG TOOTH GAUGE	0.763
TOOTH THICKNESS IN TOOTH GAUGE	1.18±0.05
PITCH GAUGE DIMENSION (ALONG TOOTH)	0.13±0.01

EXPLANATORY NOTE:

MATERIAL QUOTED:

ROUND BAR GOST 7417-75
45 GOST 1051-73

ROUND STEEL BRIGHT BAR TO GOST 7417-75.

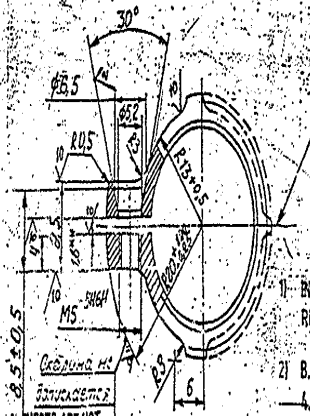
CHEMICAL COMPOSITION: 1/6
(AS PER GOST 1050-74 GRADE 45)

C = 0.42 - 0.50 ; Si = 0.17 - 0.37 ; Mn = 0.50 - 0.80
P = 0.035 Max. Cr = 0.25 Max.
S = 0.040 Max. Ni = 0.25 %
Cu = 0.25 %

MECHANICAL PROPERTIES:

ULTIMATE TENSILE STRENGTH kgf/mm^2 (min) = 61
YIELD POINT kgf/mm^2 (min) = 36
1/2 ELONGATION (min) = 16
1/2 REDUCTION IN AREA (min) = 40
IMPACT STRENGTH kgf/cm^2 (min) = 5.

NON COINCIDENCE OF TOOTH AXIS WITH COMMON AXIS OF SURFACE A AND UNDER CUT NOT MORE THAN 0.5 mm ON φ28.5 CUT 17 TEETH



- INSPECTION GROUP - IV 1S PER TECHNICAL REQUIREMENTS 11.
- B.A.N 163.229 DIA OF INDENTATION 4.0 - 4.7 mm.
- DIMENSIONS WITH UNSPECIFIED TOLERANCES EXCEPT φ6.5 SHOULD BE MAINTAINED AS PER ACCURACY CLASS 7 DST 1010.
- NON PARALLELISM OF TOOTH GENERATRIX ALONG PITCH CIRCLE WITH THE AXIS OF SURFACE A SHOULD NOT EXCEED 0.03 mm ON TOOTH LENGTH.
- RUN-OUT OF TEETH PITCH CIRCLE RELATIVE TO THE AXIS OF SURFACE A SHOULD NOT EXCEED 0.05 mm.
- CONCENTRICITY OF THREAD M5-SHCH WITH CONE SHOULD BE CHECKED (RANDOM INSPECTION 20% FROM BATCH) WITH GAUGE BY BLUEING. PAINT IMPRINT SHOULD BE IN THE FORM OF A RING.
- THE RIM SHOULD BE SLIT AFTER CUTTING OF THE TEETH.
- SHARP EDGES SHOULD BE BLUNTED.
- ISOLATED BROTCING MARKS ARE ALLOWED ON SURFACE A.
- IT IS ALLOWED TO CHECK NON-PARALLELISM OF TOOTH GENERATRIX MAY BE CHECKED BY RUNNING IN 15 TEETH OF THE COMPONENT WITH STANDARD GEAR (BACKLASH BEING TAKE UP) IN THIS CASE, COMPOSITE ERROR DOUBLE FLANK SHOULD NOT EXCEED 0.067 mm (6H GRADE OF ACCURACY AS PER GOST 9178-59).
- COATING: CHEMICAL OXIDIZING, OIL FINISHING.
- IT ALLOWED TO CARRYOUT CHECKING BEFORE SLITTING THE COMPONENT.
- * DIMENSION IS TO BE ENSURED WITH TOOL.

ГОДИЩНОЕ ИЛИ
ПОСЛЕДИТЕЛЬНОЕ
ИЗГОТОВЛЕНИЕ
ИЗДЕЛИЙ НЕ
ПРЕДУСМОТРЕНО
ПРОЦЕДУРА ПРИ УСТАНОВКЕ
НА ОБОИЩАХ φ22 мм
ПРИ МОНТАЖЕ НА ШТАБЛ
1022 мм

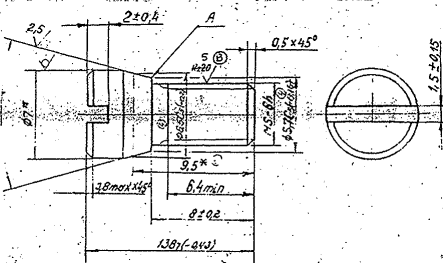
Ⓐ ALTERNATE MATERIAL: STEEL 080 M40 (EN 8) TO BS: 970
Pl-1-1983 OR 45 C6 TO IS: 1570

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

EST. WT. 0.018 kg. TO BE STAMPED OR MARKED WHERE INDICATED THIS # (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	15-2-88	MATERIAL - ROUND BAR	USED ON -
CHK	15-2-88	GOST 7417-75	CB 3327-06
T:CD	15-2-88	45 GOST 1051-73	
APPD		CONTROLLEDATE OF QUALITY ASSURANCE (HEAVY VEHICLE)	
DATE	15-2-88	AVADI	
SCALE	2:1		
DIMENSIONS IN mm.			
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS 200-89		TITLE	TOOTHED RING
ISSUE	15-7-89	D S CAT NUMBER	
DATE	15-7-89	DRAWING NUMBER	327-55-1
NATURE OF AMENDMENTS	3 RD ALTERATION COMM. MINUTES POINT 8, DATE 27-2-09		

DRAWING NUMBER
327 56 1



7. TO ENSURE HIGH QUALITY OF COATING IT IS ALLOWED TO RECTIFY SURFACE DEFECTS OF ROLLED STOCK WITH DECREASE OF ITS SIZE AS PER ACCURACY CLASS 5.
8. EDGE 'A' MAY BE BUNTED WITH CHAMFER 0.3 X 45.
9. DIMENSIONS FOR REFERENCE.

1. ОБЪЕКТ КАРТА
2. Цилиндровый болт с резьбой 2,0, 25 мм. НР 2-8
3. Изменение длины конуса 30° по окружности на 0,2±0,5 мм.
4. Допускается изготовление основания паза.
5. Окраска хим. окс. прм.
6. Допускается использовать покрытие 4 класса группы В ГОСТ 1051-73.
7. Для обеспечения прочности болта не допускается уменьшение его диаметра до 5 класса точности.
8. Комку А допускается подтуплять формой 20 x 45° у основания для удобства.

- 1. INSPECTION GROUP IV AS PER TECHNICAL REQUIREMENTS II.
- 2. TO BE CYANIDED TO A DEPTH OF 0.10---0.25 MM. HARDENING HRC 24-29.
- 3. VARIATION IN LENGTH OF TAPER 30° SHOULD NOT EXCEED 0.5 MM ALONG THE CIRCUMFERENCE.
- 4. BASE OF SLOT MAY BE MADE WITH R ≥ 35 MM.
- 5. COATING: CHEMICAL OXIDIZING, OIL FINISHING.
- 6. ROLLED STOCK OF CLASS 4 GROUP B. GOST 1051-73 MAY BE USED.

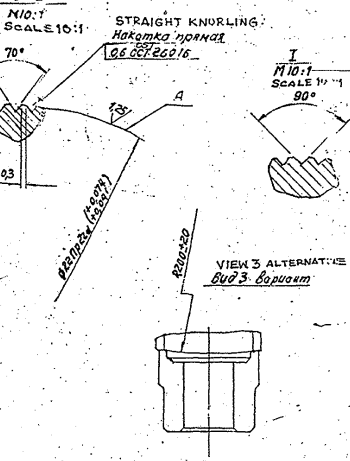
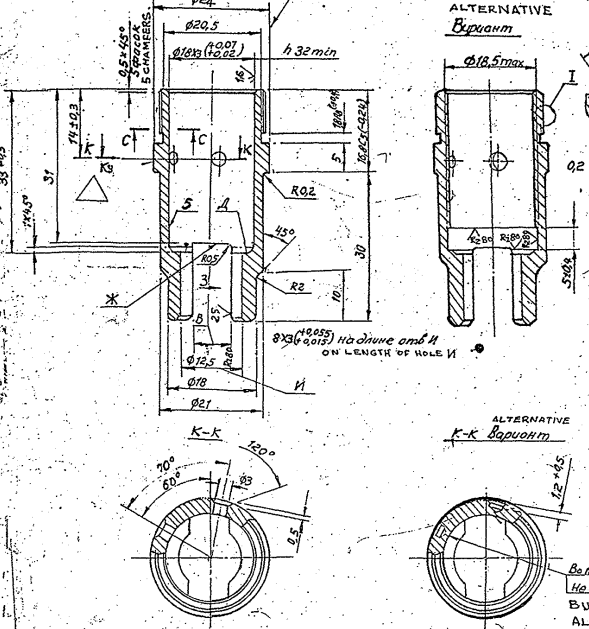
① EQUIVALENT MATERIAL
040 A 04 (EN 2A) BS:970

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

EST. MASS 0.002 Kg
TO BE STAMPED OR MARKED WHERE INDICATED THIS # 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- ROUND BAR	USED UN-
CD	2		7.4 GOST 7417-75	CG 3327 06
APPD	2		10-E GOST 1051-73	CG 3327 06 3
DATE	19-5-86			
SCALE	1:1			
4th ALT. COMM. MEETING MINUTE POINT No 2 DATE 26-10-09			CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
SCALE	1:1		TITLE- RING WOOD SCREW	
ISSUE	DATE	NATURE OF AMENDMENTS	D S CAT NUMBER DRAWING NUMBER	
			327 56 1	

HS-L280 ECKA



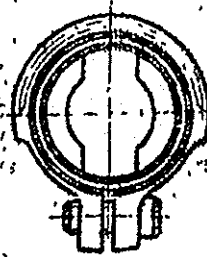
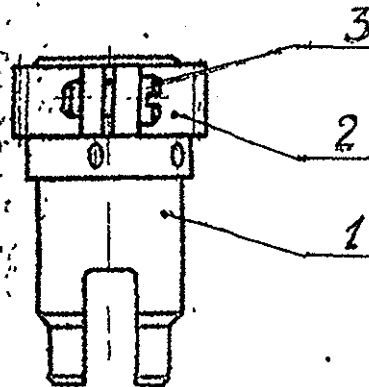
- 3327 54
- 1. DIMENSIONS WITH UNSPECIFIED TOLERANCES SHOULD BE MAINTAINED AS PER ACCURACY CLASS 7 GOST 1010.
- 2. RUN OUT OF SURFACE A RELATIVE TO THE AXIS OF SURFACE SHOULD NOT EXCEED 0.03mm.
- 3. NON SYMMETRY OF AXIS OF SLOT B RELATIVE TO THE AXIS OF SURFACE SHOULD NOT EXCEED 0.02mm (MVC)
- 4. RADIUS FROM CUTTER 30mm MAY BE LEFT AFTER MACHING OF SLOT B.
- 5. ON SURFACE ISOLATED MARKS IN COMPLIANCE WITH STANDARD ARE ALLOWED.
- 6. COATING: CHEMICAL OXIDIZING, OIL FINISHING.
- 7. THERE MAY BE NO COATING ON THE SURFACE OF SLOT B, ALONG ITS PROFILE AND ON SURFACE.
- 8. ROUGHNESS IS ALLOWED ON SURFACE.
- 9. HOLE MAY BE INCREASED UPTO DIMENSION 10.08mm.
- 10. ON FACE OF THE SLOT B CUTTING IN UPTO 0.5mm IS ALLOWED AFTER WITHDRAWAL OF GRINDING WHEEL.
- 11. ALTERNATE MATERIAL: STEEL GRADES, 25, 30 AND 41 GOST 1050-74.
- ① MATERIAL ROUND BAR 24-3 GOST 7417-75 10-E GOST 1051-73 (A-B)

① 8. DURING MACHINING ENSURE SURFACE FINISH OF T₁ AND DIMENSION φ 24 H7/k9 (0.021 mm)
② 12. DIMENSION FOR REFERENCE.
ALTERNATE MATERIAL STEEL 070M20 (EN3A) TO BS: 970 - PL-1-1983 (OR) 20 C6 TO 15: 1970

EST. MASS	0.035 Kg	TO BE STAMPED OR MARKED WHERE INDICATED THIS # LETTERS)
ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED. MACHINED CORNERS TO HAVE R OUTSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.		
SCALE	2:1	USED UN- CG 3327 06
CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI		
TITLE- SLEEVE ROTARY		
DRAWING NUMBER 327 54		

DRAWING NUMBER

CB 3327 06



(A-8)

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

		EST WT 0.063 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	
		MATERIAL —	USED ON CB 20-27-00-4 CB 327 00 45
ISSUE DATE	NATURE OF AMENDMENTS	CONTROLLERATE OF INSPECTION(HEAVY VEHICLES) AVADI	
DRN	SCALE : 1 : 1	TITLE: CONTROL SLEEVE ASSY	
CHD <i>Daiba</i>	DIMENSION IN mm		
TCD <i>Subbar</i>	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	D S CAT NUMBER	DRAWING NUMBER
APPD <i>Subbar</i>	ALL THREADS TO CONFORM TO —		CB 3327 06
DATE <i>08-5-86</i>			
SIZE A4			