

EXPLANATORY NOTE :

MATERIAL QUOTED : 24-5 GOST 8560-78
45 GOST 1050-74

BRIGHT STEEL HEXAGONAL BAR ACROSS FLATS 24 mm.
CLASS OF ACCURACY 5 TO GOST 8560-78.

45 = GRADE OF STEEL

(a) CHEMICAL COMPOSITION : (AS PER GOST 1050-74)

GRADE OF STEEL	CONTENT OF ELEMENTS %							
	C	Si	Mn	Cr	S	P	Cu	Ni
45	0.42-0.50	0.17-0.37	0.50-0.80	0.25	0.040	0.035	0.25	0.25

(b) MECHANICAL PROPERTIES :

GRADE OF STEEL	YIELD POINT Kgf/mm ² (min)	ULTIMATE TENSILE STRENGTH Kgf/mm ² (min)	ELONGATION % (min)	REDUCTION IN AREA % (min)	IMPACT STRENGTH Kgf.m/cm ² (min)
45	36	61	16	40	5

- INSPECTION GROUP III AS PER TECHNICAL REQUIREMENTS TT-11 HB 241 TO 207 (d = 3.9 TO 4.2).
DIMENSIONS
- UNSPECIFIED LIMIT DEVIATIONS OF MACHINING ARE AS FOLLOWS :
FOR HOLE - AS PER A7.
FOR SHAFTS - AS PER B7.
FOR OTHERS - AS PER CM7.
- MACHINE SURFACES B AND C WITH COMBINATION TOOL.
- TOLERANCE FOR END PLAY OF SURFACE B WITH RESPECT TO THE ANGLE DIAMETER AXIS OF THREAD SHOULD BE 0.05 mm.
- TOLERANCE FOR RADIAL RUN-OUT OF CHAMFER A WITH RESPECT TO SURFACE S AXIS SHOULD BE 0.02mm.
- TOLERANCE FOR END PLAY OF SURFACE 'A' WITH RESPECT TO THE ANGLE DIAMETER AXIS OF THREAD 'X' SHOULD BE 0.1mm.
- WHEN BUTT-ENDS B AND 'A' ARE FACED, THE SINGLE POINT TOOL MAY CUT ALONG THE CYLINDRICAL SURFACE TO A DEPTH OF NOT EXCEEDING 0.3mm.
- THREAD 'U' MAY BE MADE BY ROLLING WITH THE DIAMETER OF THE UNTHREADED PORTION FROM BUTT-END 'B' BEING WITHIN THE LIMITS OF THE MEAN DIAMETER OF THREAD OVER THE LENGTH NOT EXCEEDING 2.5mm.

- * DIMENSION ARE GIVEN FOR REFERENCE.
- COATING : ZINC-PLATED, 6 MICRONS THICK OILED.
- USED FOR TROPICAL VERSION IS COATING CADMIUM-PLATED 9 MICRONS THICK, OILED WITH REMOVAL OF HYDROGEN EMBRITTLEMENT.
- INTERNAL SURFACES MAY HAVE NO COATING.

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

EST. WT. 0.06 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	Frederick	MATERIAL	24-5 GOST-8560-78	USED ON	CB 322-13-3
CHD	9/2		45 GOST 1050-74		CB 310-31
TCD	N. S. S.	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)			
APPO		A V A D I			
DATE	8-1-90	TITLE			
SCALE	2:1	STARTING VALVE BODY			
DIMENSIONS IN mm		TOLERANCE ON DIMS UNLESS OTHERWISE STATED S 202-69		D S CAT NUMBER	
ISSUE		DATE		DRAWING NUMBER	
		NATURE OF AMENDMENTS		322-33-2	

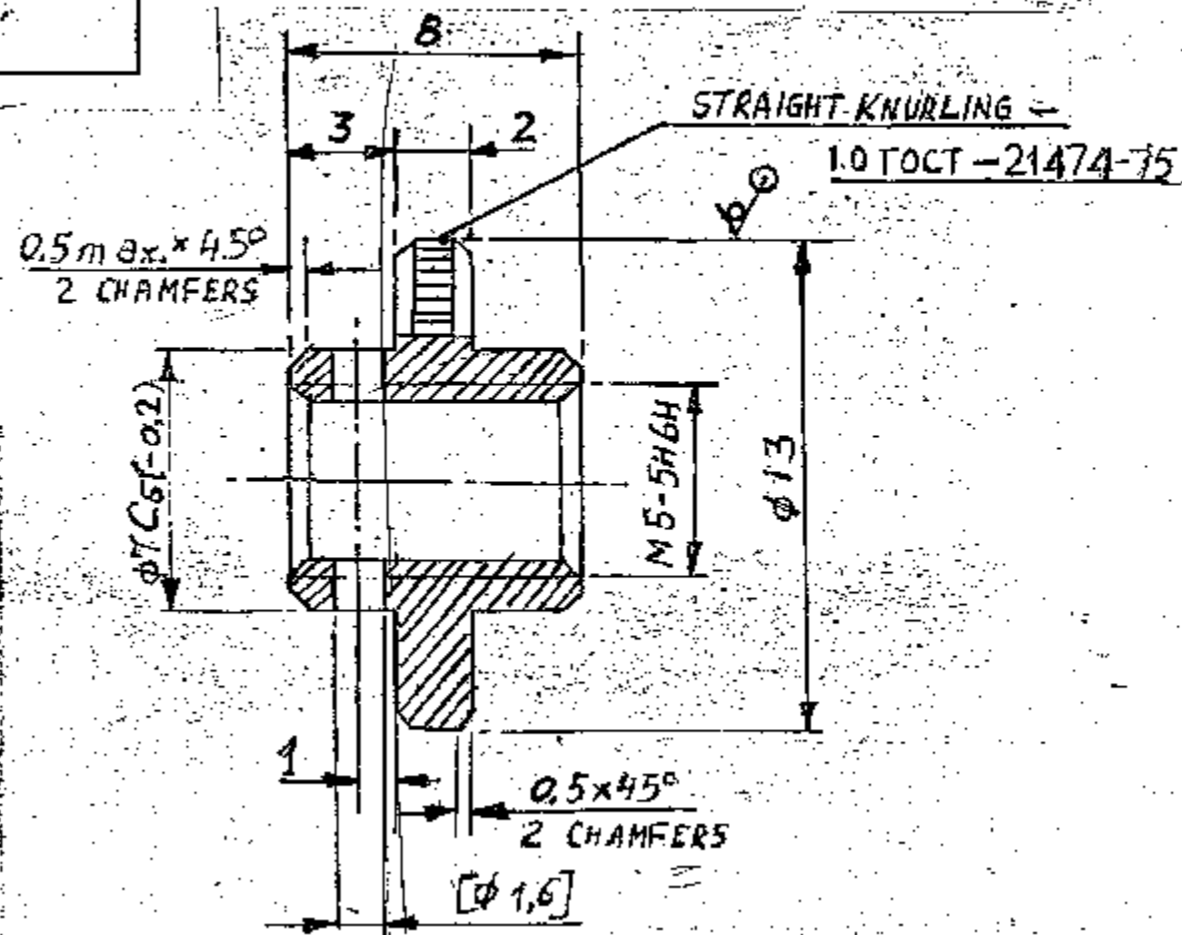






DRAWING NUMBER

322-35



1. ALTERNATE MATERIAL IS STEEL 40, 50, GOST 1050-74.
2. UNSPECIFIED LIMIT DEVIATIONS OF MACHINING DIMENSIONS ARE AS FOLLOWS FOR HOLES - AS PER A₇, SHAFTS - AS PER B₇, OTHERS - AS PER C₇.
3. CARRY-OUT MACHINING AS PER DIMENSION GIVEN IN SQUARE BRACKETS IN THE ASSEMBLY.
4. COATING: CHEMICALLY OXIDIZED OILED.

EXPLANATORY NOTE:-

Pz 40/ (✓)

MATERIAL QUOTED:- 13-5 GOST-7417-75
45 GOST 1050-74

ALTERNATE MATERIAL QUOTED:- 40, 50, GOST 1050-74

SIZED, COLD ROLLED OR COLD DRAWN STEEL WITH 13 mm EXTERNAL DIA, CLASS OF ACCURACY - 5 AS PER GOST 7417-75, MANUFACTURED FROM STEEL GRADES 40, 45 & 50 GOST 1050-74.

CHEMICAL COMPOSITION:- % (AS PER GOST 1050-74)

GRADE OF STEEL	C	Si	Mn	Cr	P	S	Cu	Ni
40	0.37-0.45	0.17-0.37	0.50-0.80	0.25	0.035	0.040	0.25	0.25
45	0.42-0.50	0.17-0.37	0.50-0.80	0.25	0.035	0.040	0.25	0.25
50	0.47-0.55	0.17-0.37	0.50-0.80	0.25	0.035	0.040	0.25	0.25

MECHANICAL PROPERTIES:- (AS PER GOST 1050-74).

GRADE OF STEEL	TENSILE STRENGTH Kgf/mm ²	YIELD POINT Kgf/mm ²	% ELONGATION	% REDUCTION IN AREA	IMPACT STRENGTH Kgf.m/cm ²
40	58	34	19	45	6
45	61	36	16	40	5
50	64	38	14	40	4

Material: STEEL 709M40 (EN-19) TO BS-970 Pt-1-1983

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

EST. WT. 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 INSEE FOLLOWS CHAMFERS ARE PERMISSIBLE

DRN	8/25/09	MATERIAL:- 13-5 GOST 7417-75	USED ON
ITD	8/25/09	45 GOST 1050-74	55 322-13-A
APPD	8/25/09	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)	
DATE	8-25-09	AVAD	
SCALE:-	5:1	TITLE	
DIMENSIONS IN mm		STARTING VALVE	
TOLERANCE ON DIMS UNLESS OTHERWISE STATED IS: 2102-69		D S CAT NUMBER	
ALL THREADS TO CONFORM TO		DRAWING NUMBER	
A 18.5.09 Authy: Thrd Att. Comm. Minutes Point 5 Dated 27-02-2009.		322-35	
ISSUE DATE		NATURE OF AMENDMENTS.	

SIZE A3



TECHNICAL REQUIREMENTS IN RUSSIAN

1. Длина развернутой пружины 290 мм.
2. Число рабочих витков 8.
3. Число витков полное 10,5-0,5
4. Толщина конца опорного витка 0,2 мм, не менее.
5. Опорные поверхности Б должны составлять 5/8 длины окружности витка, не менее.
6. Допускается увеличение наружного диаметра опорных витков до 10,5 мм, не более.
7. Неравномерность шага пружины в свободном состоянии 0,5 мм, не более.
8. Зазор между концом опорного витка и соседним рабочим витком 0,2 мм, не более.
9. Покрытие Ц15 хр по ИЛ-483-82 с удалением водородной хрупкости.
- 10.* Размеры и параметры для справок.

EXPLANATORY NOTE:-

MATERIAL QUOTED:- WIRE II A-1, GOST 9389-75 CARBON STEEL, COLD DRAWN WIRE USED FOR FABRICATING SPRINGS, COILED IN COLD STATE AND NOT SUBJECTED TO HARDENING.

WIRE DIA = 1 mm.
WIRE SHOULD BE FABRICATED FROM CARBON STEEL GRADE KT2 and SK7

CHEMICAL COMPOSITION

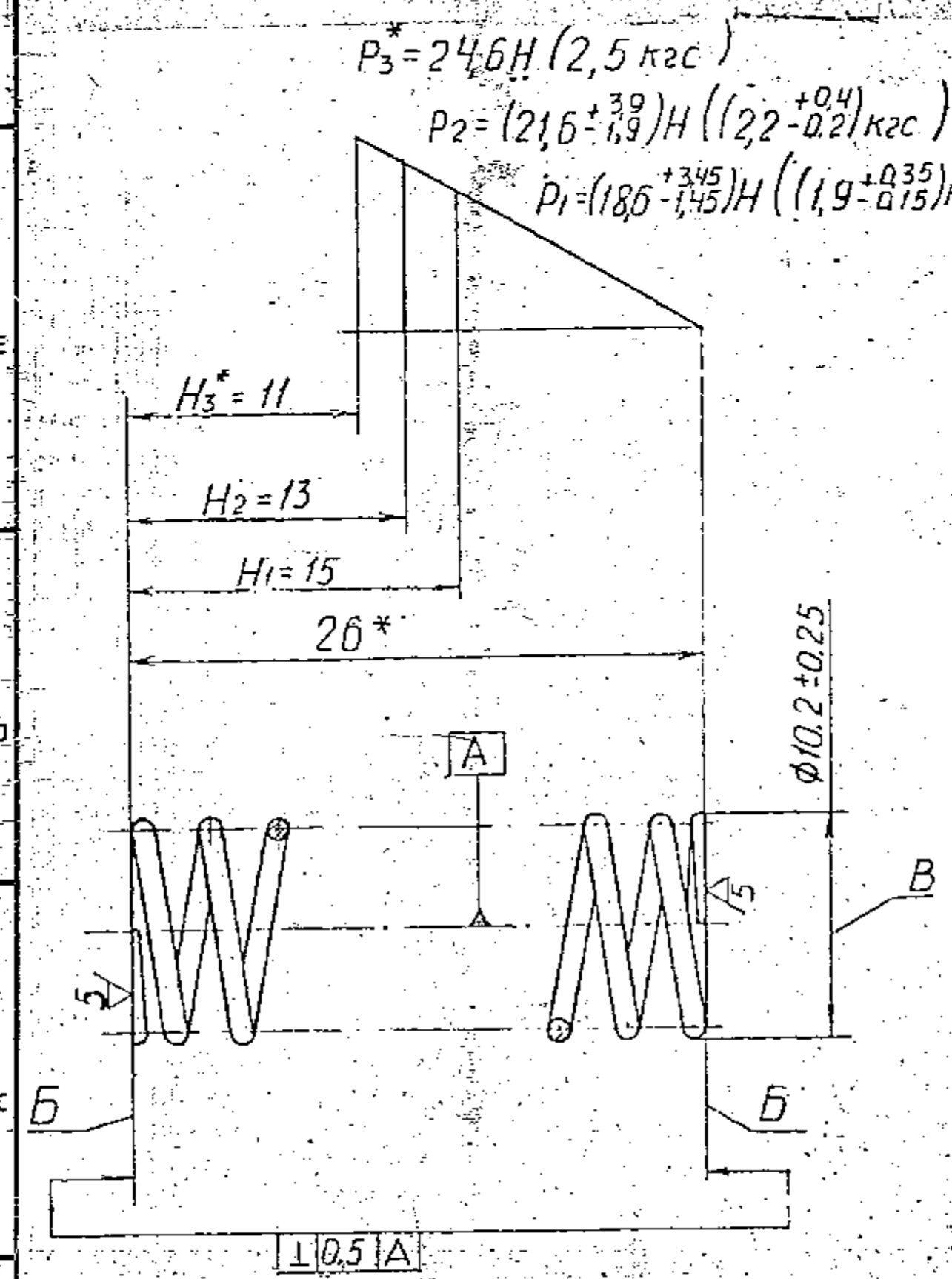
GRADE	C	Mn	Si	S	P	Cr	Ni	Cu
KT2	0.86-	0.20-	0.17-	MAXIMUM				
	0.91	0.40	0.37	0.020	0.020	0.050	0.050	0.10
SK7	0.68-	0.50-	0.17-					
	0.76	0.80	0.37	0.030	0.020	0.050	0.050	0.04

MECHANICAL PROPERTIES:-

TENSILE STRENGTH kgf/mm² = 205-250
 NO. OF BENDS (min) = 10
 NO. OF TWISTS (min) = 17

TECHNICAL REQUIREMENTS - TRANSLATED

1. Length of developed spring 290 mm.
2. No. of working coils 8.
3. Total no. of coils 10.5 - 0.5
4. Thickness of supporting coil end 0.2 mm min.
5. Resting surfaces b should not be less than 5/8 the length of circumference coil, minimum.
6. The outer diameter of supporting coils may be increased up to 10.5 mm max.
7. Variation in pitch should not exceed 0.5 mm max.
8. Gap between supporting coil end and adjacent working coils should not exceed 0.2 mm.
9. Coating. Zn. 15, chromating as per ИЛ-483-82 with elimination of hydrogen embrittlement.
10. * Dimensions and parameters for reference.



$$P_3 = 24.6H (2.5 \text{ кгс})$$

$$P_2 = (21.6^{+0.39}_{-1.9})H ((2.2^{+0.4}_{-0.2}) \text{ кгс})$$

$$P_1 = (18.6^{+0.345}_{-1.45})H ((1.9^{+0.35}_{-0.15}) \text{ кгс})$$

Ⓐ EQUIVALENT MATERIAL
Gr. DH/DM IS:4454-2001

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

EST. WT. 0.02 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	CHD	TCD	APPD	DATE	SCALE	DIMENSIONS IN mm.	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69	MATERIAL :- WIRE II A-1,0 USED ON :- GOST 9389-75. CB.322-13-34	CONTROLLER OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A B I
				16-8-10	4:1				
ISSUE	DATE	NATURE OF AMENDMENTS			ALL THREADS TO CONFORM TO		D S CAT NUMBER	DRAWING NUMBER 322-36-1	

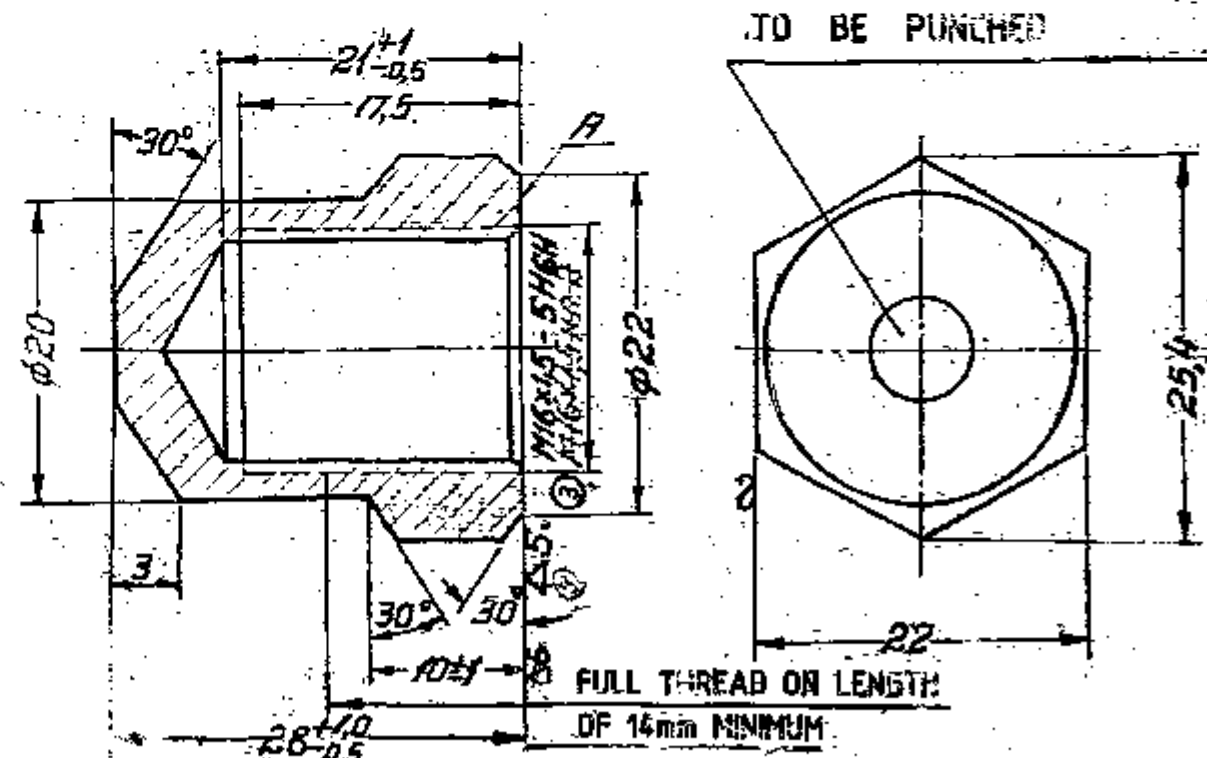
KVD. 63374

DRAWING INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE NIL (Bk 84-483)



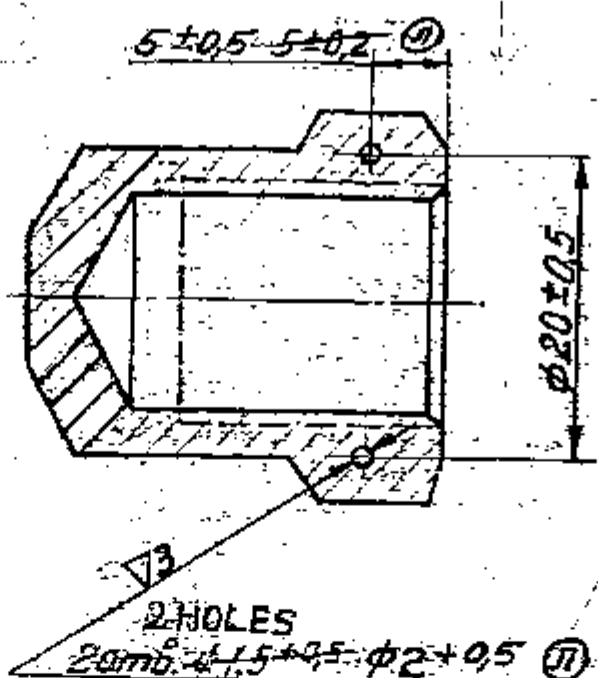
DRAWING NUMBER
~~322-37~~ 322-37-1

▽ 3 UNLESS OTHERWISE SPECIFIED



- 1.
 2. RUN-OUT OF SURFACE A RELATIVE TO PITCH DIAMETER OF THREAD SHOULD NOT EXCEED 0.1mm.
 3. DIMENSIONS WITH UNSPECIFIED TOLERANCES SHOULD BE MAINTAINED AS PER ACCURACY CLASS 7 OST 1010.
 4. TECHNICAL REQUIREMENTS FOR THREAD IN ACCORDANCE WITH STANDARD 82021-00.
 5. SHARP EDGES SHOULD BE BLUNTED.
 7. COATING: ON OUTER SURFACES CV N1 18, ON INNER SURFACES CV 12. NICKEL IS PERMISSIBLE ON THE THREAD. AFTER COPPER PLATING M 12, THE OUTER SURFACE MAY BE COATED WITH CV 18, MILKY.
- ALTERNATE MATERIAL: STEEL GRADES 40 AND 50, GOST 1050-74.

COMPONENT 322-37-1



SCALE 1:1



FOR THE REST OF THE DATA REFER TO 322-37.

** HEXAGON BAR 22.5 GOST 8560-78
 45 GOST 1051-73

ALT. MATL:-
 STEEL GRADE EN 8 BRIGHT BAR
 TO SPECN. BS.970-55.

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

EST. WT.
 0,04 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.

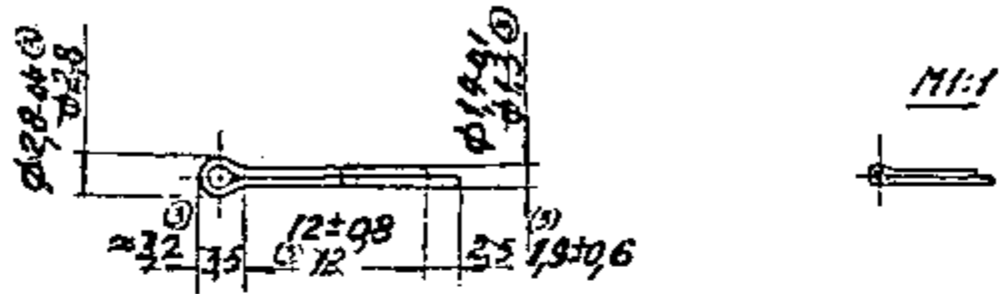
DRN	CHD	TCD	APPD	DATE	SCALE	DIMENSIONS	TOLERANCE	MATERIAL	USED ON
				17-2-88	2:1	IN mm.	UNLESS OTHERWISE STATED IS 2102-69	** SEE ABOVE SEE ALT. MATL. (A)	CS 447-00-1 CB 322-13-4 For 322-37-1
					CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)				
					AVADI				
								TITLE	
								STARTING VALVE CAP	
								D S CAT NUMBER	
								DRAWING NUMBER	
								322-37-1	
								322-37-1	

B	30.6.01	AUTHY. LT. NO. 90211/AHSP/ED dt 27.3.01	ALL THREADS TO CONFORM TO
A	20.10.95	AUTHY. LT. NO. 90241/AHSP/ENG. DT. 26.8.95	
ISSUE	DATE	NATURE OF AMENDMENTS	

17
 193



DRAWING NUMBER
354-09



1. COTTER PINS SHOULD BE MANUFACTURED FROM LOW-CARBON STEEL WITH CONTENT OF CARBON NOT EXCEEDING 0.28% AS PER GOST 1050-74.
2. BURRS, CRACKS, RUST AND SHARP CUTS IN THE PLACE OF TRANSMISSION OF LOAD TO THE SHANK ARE NOT ALLOWED ON THE SURFACE OF COTTER PINS.
3. COTTER PINS WITH NOMINAL DIAMETER UP TO 5mm SHOULD WITHSTAND WITHOUT SIGNS OF FRACTURE AND CRACKS NOT LESS THAN 3 BENDINGS.
4. COATING : CADMIUM CHROMATIZING AS PER VLA-124 WITH ELIMINATION OF HYDROGEN BRITTLENESS.
5. TO BE ANNEALED.

CG 322-13-3
CG 333-403-2
CG 310-31
CG 333-401-10
CG 322-133
CG 310-031

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

A-11-87

EXPLANATORY NOTE:

Material Quoted : Low carbon steel carbon content 0.20% (max) as per gost 1050-74.

Chemical composition

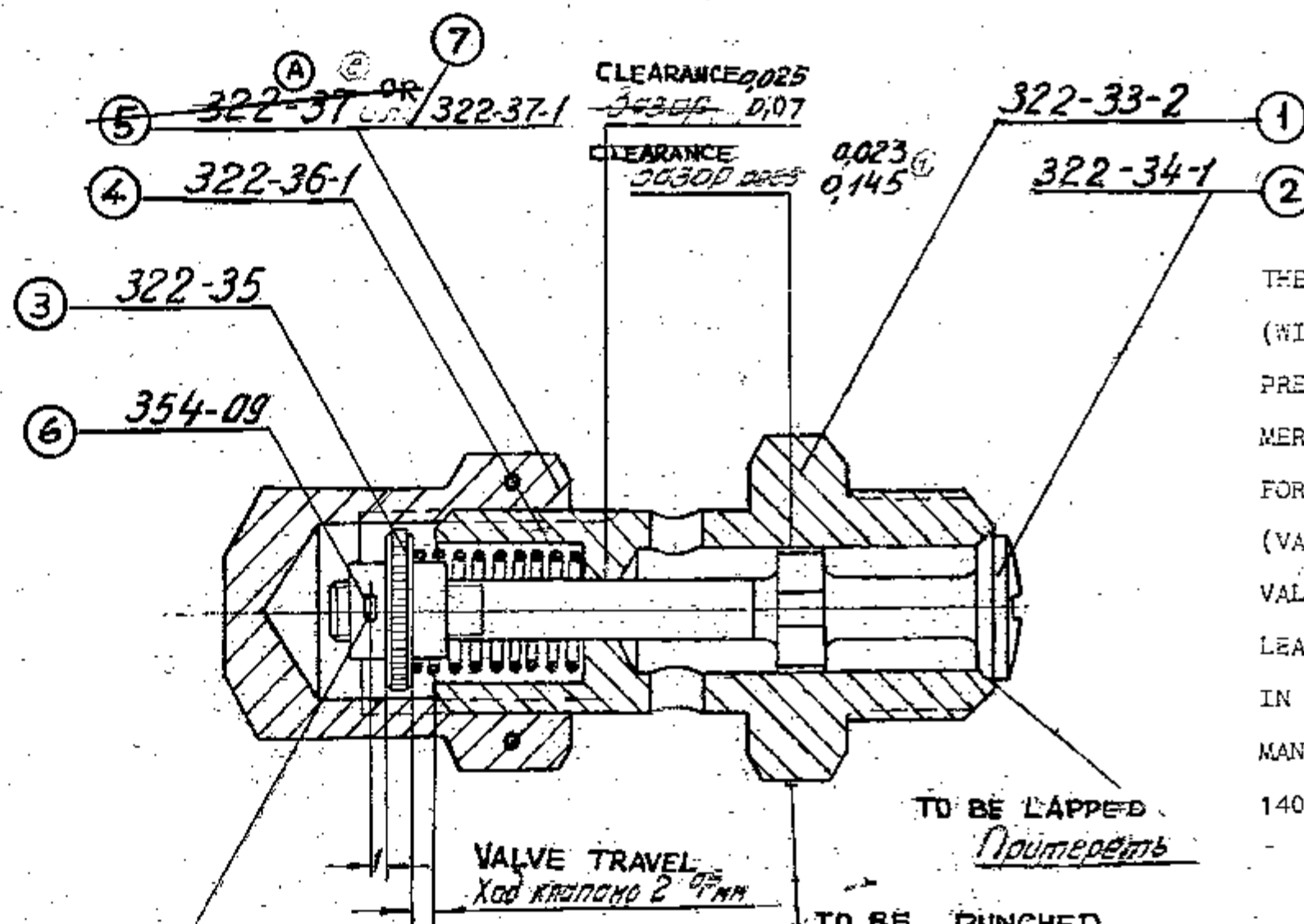
Carbon	: 0.12 - 0.19	Sulphur	: 0.040
Silicon	: 0.17 - 0.37	Phosphorus	: 0.035
Manganese	: 0.35 - 0.65	Nickel	: 0.25
Chromium	: 0.25 Max.	Copper	: 0.25

Mechanical Properties

Ultimate tensile strength	kgf/mm ²	: 38	} (Min)
Yield point	kgf/mm ²	: 23	
Elongation	%	: 27	
Reduction in area	%	: 55	

EST. WT. 1000 PIECE. 0.230 Kg		TO BE STAMPED OR MARKED WHERE INDICATED THUS $\frac{A}{B}$ (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	
		* * USED ON SEE ABOVE	
ISSUE	DATE	NATURE OF AMENDMENTS	
DRN	22/	SCALE:- 2:1 DIMENSIONS IN mm	
CHD		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADL	
TCD			
APPO		TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102-69 ALL THREADS CONFORM TO	TITLE COTTER PIN
DATE	15-2-85	D.S. CAT NUMBER	DRAWING NUMBER 354-09
SIZE	A4		

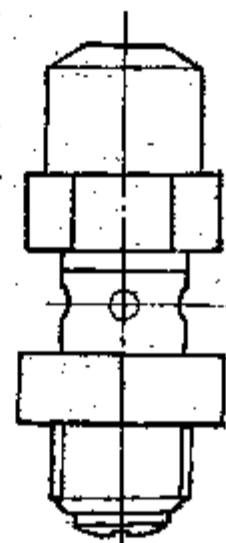




THE VALVE SHOULD BE PRESSURE-TESTED ON A SPECIAL STAND WITH AIR (WITH INTERMEDIATE VOLUME NOT EXCEEDING 2500cm³ BEFORE MERCURY PRESSURE GAUGE) AT A PRESSURE OF 5±1 kgf/cm². MERCURY COLUMN MAY RISE BY 5mm MAX. IN ONE LEG OF A MANOMETER TUBE FOR 10 SECONDS (VARIATION IN HEIGHT OF COLUMNS SHOULD NOT EXCEED 10mm). VALVE COMPONENTS SHOULD BE DRY DURING PRESSURE TESTING. LEAK PROGRESS OF VALVE MAY BE CHECKED BY WATER PRESSURE GAUGE. IN THIS CASE WATER COLUMN MAY RISE BY 70mm MAX. IN ONE LEG OF MANOMETER TUBE VARIATION IN HEIGHT OF COLUMNS SHOULD NOT EXCEED 140mm)

HOLE FOR COTTER PIN IS TO BE DRILLED IN UNIT
 Отверстие под шпильку
 Ø1.5 сверлить в виде

Ø1.6



M11
 SCALE 1:1

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

EST. WT. 0.117 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 CUT-SIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

DRW	CHD	TCD	APPD	DATE	SCALE	DIMENSIONS	TOLERANCE	STATED	CONFORM	MATERIAL	USED ON	CONTROLLER	TITLE	D S CAT NUMBER	DRAWING NUMBER
				17-2-86	1:2:1	IN MM	ON DIMNS	2:02-59	TO		C6-20-22-00-7 C6-310-00-7 C6-3300-00-26 C6-322-00-4	AVADI	STARTING VALVE ASSY		C6-322-13-3 C6-322-13-4
ISSUE	DATE	NATURE OF AMENDMENTS													
A	30.6.01	AUTHY LL.No. 90211/ANSP/ED 27.3.01													



