USED ON	ITEM	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	No. OFF	REMARKS
172 "45 060 C5C6		172 70 033C5-4 &I/L		LEVER WITH SWITCH ASSY.		
	1	172 70 173 C5 &I/L		SWITCH ASSY.	1	
	2	172 70 174 C5 &I/L		CONTACT ASSY.	1	
	3	172 70 311		COVER	1	
	4	172 70 312		BUSH	1	
	5	172 70 314		GASKET	1	
(17)	6	172 45 312		COUPLING, LEVER	1	MAY BE REPLAC-ED WITH ITEM 18
	7	172 70 495		ROD	1	
	8	175 70 365		SPRING	1	
	9	175 70 366		OIL SEAL	1	
	10	175 70 367		GASKET	4 MAX	SELECTION
	11	175 70 367-01		GASKET	3 MAX	SELECTION
	12	175 70 367-02		GASKET	2 MAX	SELECTION
	13	175 70 368		GASKET	1	-
	14	54 26 342		WASHER	7	
(12)	15	GOST 1491-72 80		SCREW B M4.6g X 10.46.016	2	
(15)(12)	16	GOST 17473-72 80		SCREW B M4.6g X 12.46.016	8	
(15)(12)	~~17~~	~~GOST 17475-72 80~~		~~SCREW B M4.6g X 10.46.0.16~~	~~4~~	
(17)	18	172.45 312A		LEVER, COUPLING	1	MAY BE REPLACED WITH ITEM 6.

ISSUE	DATE	NATURE OF AMENDMENTS
14	6.10.88	I/L SHEET 2 AMENDED
13	05.8.88	I/L SHEET 2 AMENDED
12	05.8.88	AMDT. LIST 6, PART II, BOOK 9
11	05.8.88	DRAWING AMENDED
10	05.8.88	DRAWING AMENDED

ISSUE	DATE	NATURE OF AMENDMENTS
17A	28.12.90	I/L SHEET 2 AMENDED
17	10.8.91	172 M. 30 "A"- 89 (A.L 12/1)
16	17.1.90	DRG AMENDED
15	17.1.90	172 M. 370 A-88 (A.L 10/3)

DRN.	
CHD.	
TCO.	
APPD.	
DATE	24.1.2000

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI

TITLE: LEVER WITH SWITCH ASSY.

SHT. No. 1 OF 2 | D S CAT NUMBER | ITEM LIST FOR 172 70 033C5-4

I/L RECREATED BASED ON RUSSIAN ORIGINAL ISSUE-9

USED ON	ITEM	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	No. OFF	REMARKS
172 45 060C6C6	(13) 19	GOST 3722-60-81		BALL ~~Ø4mm H~~ 4-60	1	
	20	GOST 19034-82		SLEEVE III-TB-40-230-3·5 WHITE ℓ=10 mm	2	
	(14) ~~21~~	~~GOST 1477-75~~		~~SCREW M4-6g x10-46-016~~	~~1~~	
	(14) 21	GOST 1477-84		SCREW BM4.6g x10.14H.016	1	
	22	TY16-505-437-73		WIRE MГШB-0.35 L=200MAX	1	
	(17A) (15) 23	GOST 6402-70		WASHER 4·65Г 0.016	4	ALTERNATE TO ITEM 24
	(17A) 24	IS 6735-72		SPRING WASHER-4 ZINC COATED	4	ALTERNATE TO ITEM 23

ISSUE	DATE	NATURE OF AMENDMENTS
14	6.10.88	AMDT. LIST 7
13	05.8.88	AMDT LIST 6, PART II, BOOK 9
12	05.8.88	1/4 SHEET 1 AMENDED
11	05.8.88	DRAWING AMENDED
10	05.8.86	DRAWING AMENDED

ISSUE	DATE	NATURE OF AMENDMENTS
17A	26.12.98	NOFA CQA(HV)/TO/003/SPECN
17	10.8.91	SHT 1 AMENDED
16	17.1.90	DRG. AMENDED
15	17.1.90	172 M.370A-88 (A.L10/3)

DRN.	
CHD.	Chaudhuri
TCD.	
APPD.	
DATE	24.1.2000

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI

TITLE : LEVER WITH SWITCH ASSY

SHT. No. 2 OF 2 | D S CAT NUMBER | ITEM LIST FOR 172 70 033C6-4

T/L RECREATED BASED ON RUSSIAN ORIGINAL ISSUE - 9

USED ON	ITEM	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	No. OFF	REMARKS
172.70-033 C5-4		172 70 173 C5 &		SWITCH ASSY.		
		ITEM LIST				
	1	172 70 315		BRACKET	1	
	2	172 70 370		SPRING	1	
	3	175 74 003		STRIP	1	
	4	0H0.360.007 TY		MICRO SWITCH MT1-1	1	
(6)	~~5~~	~~GOST 17473-72~~		~~SCREW M2-6g×12-46-016~~	~~2~~	
(7) (6)	5.	GOST 17473-80		SCREW AM2-6g×12-46-016 013	2	

MASTER COPY

ISSUE	DATE	NATURE OF AMENDMENTS
7	21.5.92	172M.542'A'-89 (AL.No.13/2)
6	14.8.88	AMDT. LIST 6, PART II, BOOK-10

ISSUE	DATE	NATURE OF AMENDMENTS

RE CREATED BASED ON RUSSIAN ORIGINAL ISSUE-5

1/1

DRN.	[signature]
CHD.	Chanchal
TCD.	[signature]
APPD.	[signature]
DATE	21-1-2000

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI

TITLE : SWITCH ASSY

SHT. No. 1 OF 1	D S CAT NUMBER	ITEM LIST FOR 172 70 173 C5

USED ON	ITEM	DRAWING NUMBER	D S CAT NUMBER	DESCRIPTION	No. OFF	REMARKS
172 70 033C5-4		172 70 174C5		CONTACT ASSY		
		& ITEM LIST				
	1	172 70 316		PLATE	1	
	2	155 21 072-2		CONTACT	1	
	3	GOST 5927-70		NUT M4 X 6H 8.40.016	2	
	4	GOST 11371-68		WASHER 4.01.016	1	
(54)	5	GOST 6402-70		WASHER 465 Γ 016	1	ALTERNATE TO ITEM 7
	6	TY16-505-437-73		WIRE MΓ ШВ-0.35 L=62 mm	1	
(54)	7	IS : 6735-72		SPRING WASHER 4 ZINC COATED	1	ALTERNATE TO ITEM 5
			MASTER COPY			

ISSUE	DATE	NATURE OF AMENDMENTS
5A	28.12.98	N OF A CQA(HV)/70/003/SPECN
5	14.8.88	DRG. AMENDED

ISSUE	DATE	NATURE OF AMENDMENTS

DRN.	
CHD.	Chauchal
TCD.	
APPD.	
DATE	24.1.2000

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI

TITLE : CONTACT ASSY

SHT. No. 1 OF 1

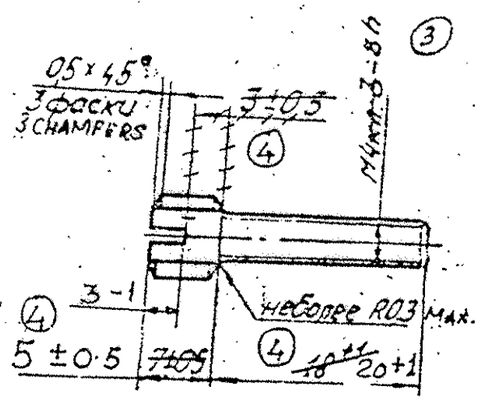
D S CAT NUMBER

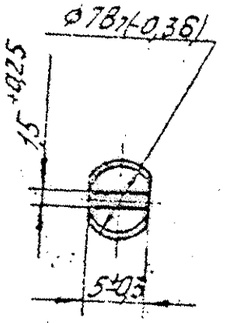
ITEM LIST FOR 172 70 174 C5

I/L RECREATED BASED ON RUSSIAN ORIGINAL ISSUE-4

155 21 072 -2

▽3





1. RUN-OUT OF THE SHANK HEAD RELATIVE TO THE THREADED SURFACE IS NOT TO EXCEED 0.3mm.
2. DEVIATION OF SURFACES AT DIMENSION ④ 5±0.3 FROM THE TRUE POSITION IS NOT TO EXCEED 0.2 mm MAX. TO ANY SIDE.
3. THREAD IS TO BE CHECKED ON A LENGTH NOT LESS THAN 15mm.
4. IT IS ALLOWED TO MANUFACTURE THE COMPONENT FROM BRASS GOST 15527-70 OF ANY GRADE.
5. SHIFT OF THE SLOT RELATIVE TO THE AXIS OF HEAD IS NOT TO EXCEED 1mm.

FOR REFERENCE ONLY

ALTERNATE MATERIAL :- BS:2870 CZ-120

AUTHORITY :- C&A (HV) LETTER NO. 091/IFD/IND-V/MTPF/OE. DATED: 17/03/2005.

DRG. INDIANISED: BASED ON RUSSIAN ORIGINAL ISSUE-3

(19/92)

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

EST. MASS.	TO BE STAMPED OR MARKED WHERE INDICATED THUS #
0.0034	(LETTERS)

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

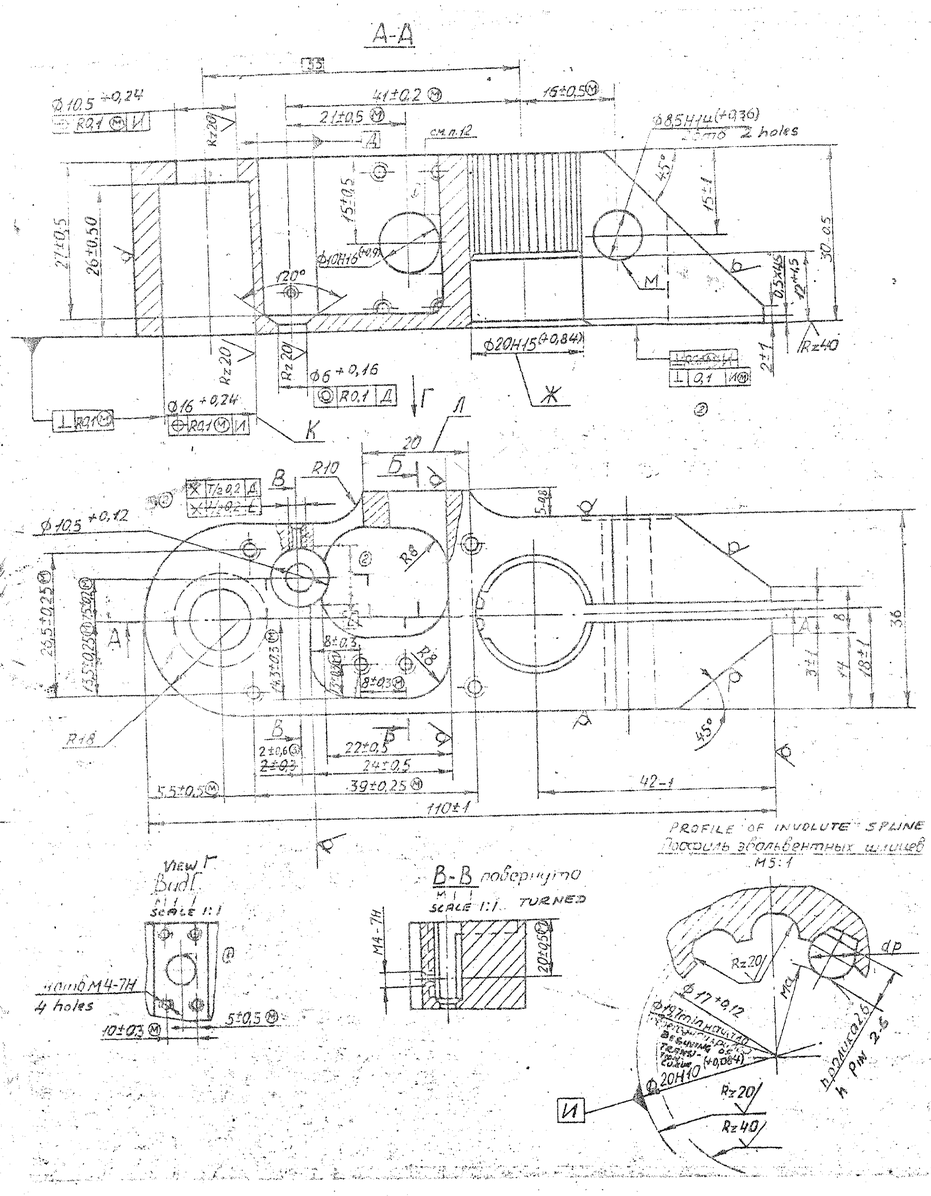
ISSUE	DATE	NATURE OF AMENDMENTS
4	2-4-92	NOTN.No.N82-83 AL.14/1

DRN	
CHD	Bhattacharya
TCD	
APPD	
DATE	30.10.86
SCALE - 2:1	
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	
ALL THREADS CONFORM TO	

MATERIAL:- BRASS ΠC 59 1/ GOST 15527-70	USED ON: 172 70 174 C8
CONTROLLERATE OF INSPECTION(HEAVY VEHICLES) AVADI	
	TITLE: CONTACT
I S CAT NUMBER	DRAWING NUMBER 155 21 072 -2

SIZE-A3

DRAWING NUMBER
172 45 312-A



1. 255 ... 302 BHN (DIA OF INDENTATION 3.8 ... 3.5). TO BE CHECKED IN BLANK.
2. ALTERNATE MATERIAL - STEEL 40 Х Л GOST 977 - 75.
3. REQUIREMENTS FOR CASTING SHOULD BE IN COMPLIANCE WITH SPECIFICATIONS 172.Ту10.
4. DIMENSIONS OF SPLINES AND DIMENSION ✳ SHOULD BE CHECKED BEFORE SLITTING.
5. SPLINES ARE LOCATED IN SUCH A WAY SO THAT PLANE OF SYMMETRY OF TOOTH SPACE COINCIDED WITH THE PLANE PASSING THROUGH THE AXIS OF HOLES ✳ AND К. DEVIATION SHOULD NOT EXCEED 1°.
6. ON THREE PAIRS OF SPLINES DECREASING OF DIMENSION ALONG THE ROLLERS UPTO 0.05 MM BEYOND TOLERANCE IS ALLOWED.
7. UNSPECIFIED DIMENSIONS OF RADII -
8. THREADED HOLES SHOULD BE COUNTERSINK AT ANGLE 90° TO 120° UPTO THE EXTERNAL DIAMETER OF THREAD.
9. COUNTERSINK 18 H15 (+0.7) IS ALLOWED ON HOLE M ON THE SIDE OF AXER ALONG DIMENSION Л .
10. COATING : CHEMICAL OXIDIZING PHOSPHATING OIL FINISHING.
11. OTHER REQUIREMENTS SHOULD BE IN COMPLIANCE WITH SPECIFICATIONS 520. Ту1.
12. HOLES ⌀ 10H16(+0.9) MAY BE MADE ALONG THE CONVENTIONAL CONTOUR WHICH IS SHOWN BY DOT AND DASH LINES.

Rz80 (V)

CONVENTIONAL DESIGNATION OF HOLE AS PER GOST 6033-51		3В20×1,5×12А5q
MODULE	m	1,5
NUMBER OF TEETH	z	12
ANGLE OF BASIC RACK	2α	30°
DIAMETER OF PIN	dp	2,886 +0,004 +0,013
DISTANCE OVER PINS	M	37,324 +0,173 +0,073
TOOTH-SPACE WIDTH ALONG REF. CIRCLE CHORD	S	2,552
REFERENCE DIAMETER	d	18

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

EST. MASS	TO BE STAMPED OR MARKED WHERE INDICATED THUS #
0,65 Kg.	LETTERS)

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

ISSUE	DATE	NATURE OF AMENDMENTS
3	28.9.92	172/1.498 (AL-1371)

DRN	
CHD	
TCD	Vijay Chandrawat
APPD	V. Ramarao
DATE	7-10-91.
SCALE	2 : 1
DIMENSIONS IN mm.	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69	
ALL THREADS TO CONFORM TO	

MATERIAL :- STEEL 45 Х-Л OST 3 - 4365 - 79.

USED ON :- 172 70 033C6 - 6.

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) A V A D I

TITLE: LEVER COUPLING.

D S CAT NUMBER

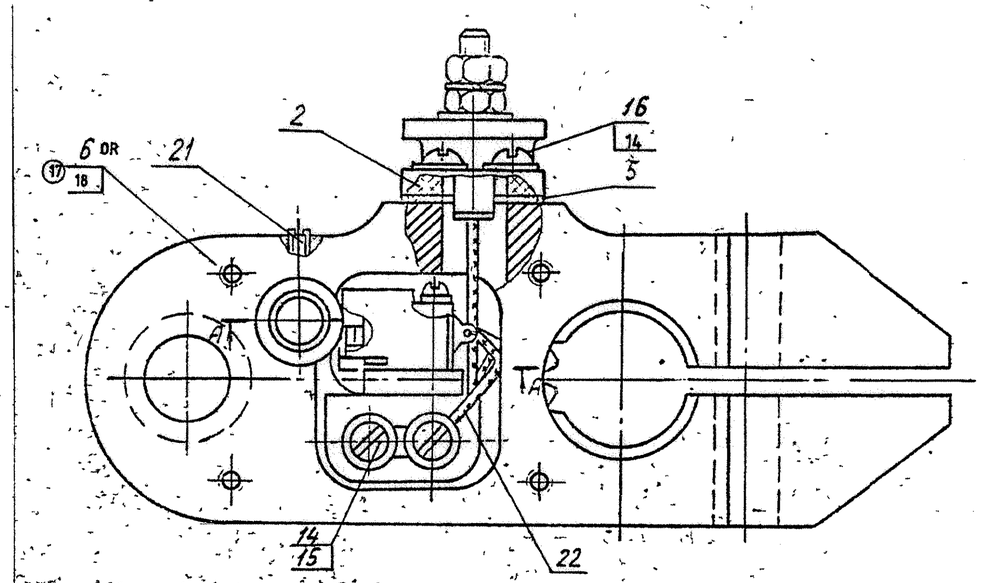
DRAWING NUMBER 172 45 312-A.

MASTER COPY

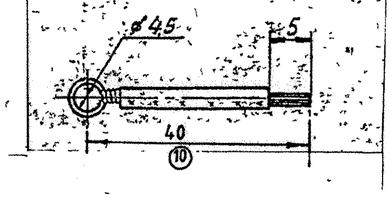
INTRODUCED VIDE MODN. NO. 172M. 30-9-89. VIDE AMDT. LIST NO. 12.
DRG INCHANISED BASED ON RUSSIAN ORIGINAL ISSUE 2.

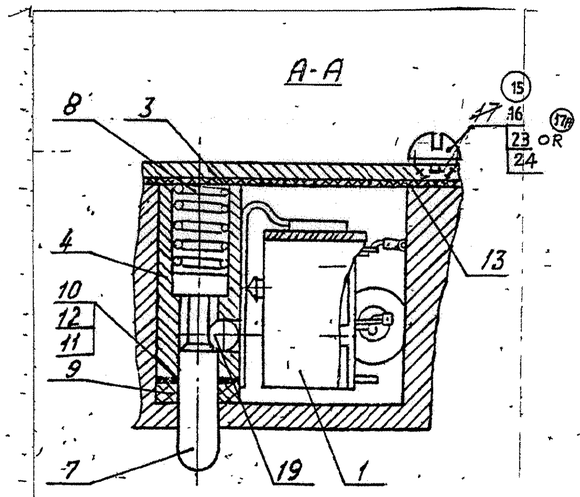
F-2G
94

DRAWING NUMBER
172 70 033 Cb-4.



SKETCH OF TERMINATION OF ENDS OF WIRE 22,





1. BEFORE ASSEMBLING THE CHANGEOVERE SWITCH, GLAND 9 SHOULD BE DRIED AND IMPREGNATED IN LUBRICANT ЦИАТИМ – 201 GOST-6267-74 AND ALL FRICTION SURFACES SHOULD BE LUBRICATED WITH A FINE LAYER OF THE SAME GREASE,
2. BEFORE INSTALLATION OF COVER 3 BUSH SHOULD BE PROJECTED OVER THE SURFACE OF LEVER BY 0.5 TO 0.9 mm, THE SAID DIMENSION SHOULD BE ADJUSTED USING SHIMS 11, 12, AND 10.
3. PUSH ROD OF THE CHANGEOVER SWITCH SHOULD BE MOVED WITHOUT JAMMING,
4. OPERATION OF THE CHANGEOVER SWITCH SHOULD BE CHECKED BY OHM METER (CIRCUIT TESTER) CONNECTED TO THE OUT PUT CANTACT AND BODY OF LEVER.
   WHEN ROD IS PRESSED, CIRCUIT BETWEEN CONTACT AND BODY SHOULD BE CLOSED AND WHEN ROD IS RELEASED, THE CIRCUIT IS OPENED. CHECKING MAY BE DONE WITH PILOT LAMP CM 28-2,8.
15. 5. SCREWS 15, 16, ~~17~~ AND SCREW 21 SHOULD BE SECURED BY ANY NITRATE ENAMEL USED FOR ITEMS.
6. WIRE SHOULD BE SOLDERED WITH TIN-LEAD SOLDER П.О С 61, GOST 21930-76 OR GOST 21931-76 BY USING ACID FREE FLUX. PLACE OF SOLDERING SHOULD BE COATED WITH RED VARNISH HЦ-62, OST 6-10-391-74 AND INSULATED USING SLEEVES 20.
7. ALL SCREWS SHOULD BE TIGHTLY SCREWED DOWN,
8. WIRES SHOULD BE SOLDERED TO 1, AND 2, TERMINALS OF MICROCHANGEOVER SWITCH.
16. ~~9. GASKET 5 SHOULD BE SET ON WHITE ZINC PAINT PREPARED IN ACCORDANCE WITH THE INSTRUCTIONS N8 0FT,~~
16. 9. GASKET 5, SHOULD BE SET ON WHITE ZINC PASTE МА-011-1 GOST 482-77.
10. PROTRUSION OF CONTACT 2, GASKET 5, AND WASHER 14, SHOULD NOT EXEED 0.8 mm. BEYOND THE MATING SURFACE OF LEVER 17 6 OR 18, IF THE PROJECTION IS MORE THAN 0.8 mm, THE PROJECTION IS ELIMINATED BY THE SLEECTION OF COMPONENTS, AND IF THE SELECTION IS NOT POSSIBLE COMPONENTS SHOULD BE GRINDED UPTO SPECIFIED DIMENSIONS.
11. 11 COVER ITEM 3 TO BE SET BY MARKING TO THE SIDE OF SLOT HOLE.

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

EST WT	TO BE STAMPED OR MARKED WHERE INDICATED THUS #
0.601	(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
17A	28-12-98	N OF A CQA (HV)/70/003/SPECN.
17	10.1.91	172M 30 'A'-89 (AL 12/1)
16	17 1 90	172M 388A - 88 (AL 10/3)
15	17.1.90	172M.370A- 88 (AL 10/3)
14	6.10.88	I/L SHEET 2 AMENDED
13	06-8-88	I/L SHEET 2 AMENDED.
12	05-8-88	I/L SHEET 1 AMENDED
11	05-8-88	AMDT LIST 6, PART II, BOOK-9.
10	05-8-88	AMDT LIST 6 PART II, BOOK-9

DRN
CHD
TCD
APPD
DATE 20-5-95
SCALE - 2 : 1
DIMENSIONS IN mm
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102 – 69
ALL THREADS TO CONFORM TO

MATERIAL – —

USED ON :–
172 45 060 Cб Cб

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)
AVADI

TITLE :
LEVER WITH SWITCH ASSY.

D S CAT NUMBER

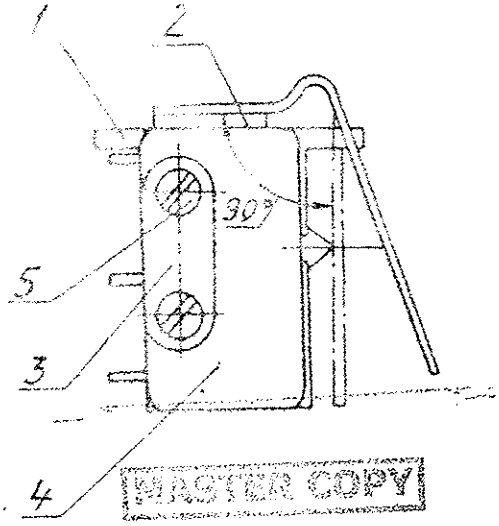
DRAWING NUMBER
172 70 033 Cб-4

DRG REINDIANISED BASED ISSUE- 17

140/5

SIZE A2

DRAWING NUMBER
172 70 173 C5



1. SPRING 2 SHOULD BE MOUNTED IN ACCORDANCE WITH DRAWING TO ENSURE THE ANGLE ABOUT 90° MICRO SWITCH 4 SNAPS IN TO ACTION. MATING SURFACES OF SPRING 2 SHOULD BE GLUED TO BRACKET 1 AND MICRO SWITCH 4 WITH AN EPOXIDE GLUE, BASED ON RESIN ЭД-20 GOST 10587-76. INGRESS OF GLUE ON TO PUSHER AND INSIDE OF MICRO SWITCH IS NOT PERMITTED.

2. SCREWS 5 SHOULD BE SECURED WITH AN EPOXIDE GLUE, BASED ON RESIN GOST 10587-76.

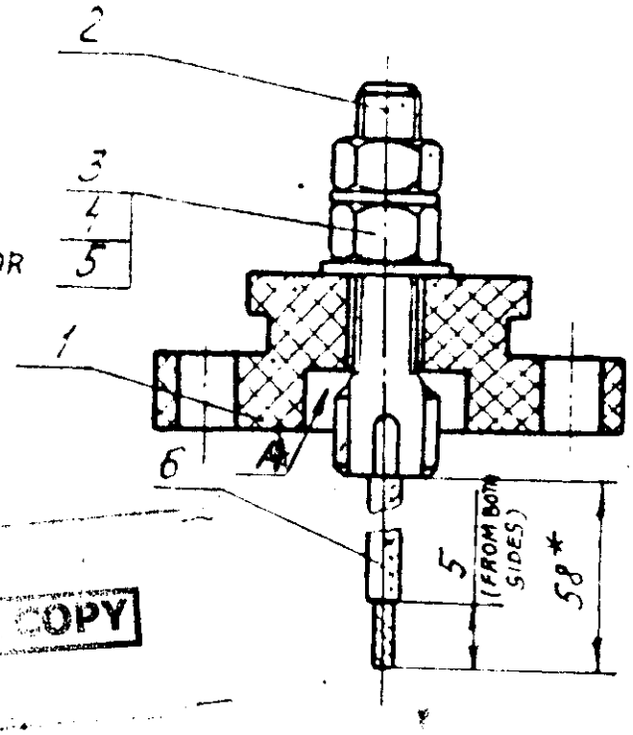
3. MICRO SWITCH SHOULD BE ACCEPTED BY INCOMING INSPECTION.

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

		EST. WT. 0.0112 kg	TO BE STAMPED OR MARKED WHERE INDICATED THUS ≠ 1 LETTERS)
		ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.	
2	21.8.92	AMENDED	MATERIAL:- FOR REFERENCE ONLY	USED ON 172 70 033 C5-4
1	14.1.88	AMENDED		
ISSUE	DATE	NATURE OF AMENDMENTS	SCALE:- 2:1	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.
DRN			DIMENSIONS IN mm	
CHD			TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102 -69	TITLE SWITCH ASSY.
			ALL THREADS CONFORM TO	D S CAT NUMBER
				DRAWING NUMBER 172 70 173 C5

DRG. REINDIANISED BASED ON RUSSIAN ORIGINAL ISSUE-4

DRAWING NUMBER
172 70 174 СБ



1. TO BE SOLDERED WITH ПОС-61 GOST 21930-76 OR 21931-76 BY USING ACID-FREE FLUX.
2. CAVITY "A" SHOULD BE SEALED WITH COMPONENT BASED ON EPOXIDE RESIN ЭД-20 GOST 10587-76.
3. INSTEAD OF NUT M4-6H.8.40.016 GOST 5927-70, NUT M4-6H.8.016 (5) GOST 5927-70

F-141
43

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

ISSUE	DATE	NATURE OF AMENDMENTS
5A	28.12.98	N OF A CQA (HV)/70/003/SPCN
5	14.8.88	AMDT. LIST 6/II, BOOK-10

DRN
CHD Chauhal
TCD
APPD
DATE 21.01.2000

SCALE:- 2:1
DIMENSIONS IN mm
TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102-69
ALL THREADS CONFORM TO

EST. WT. 0.005 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.

MATERIAL :- —

USED ON 172 70 033СБ-4

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI

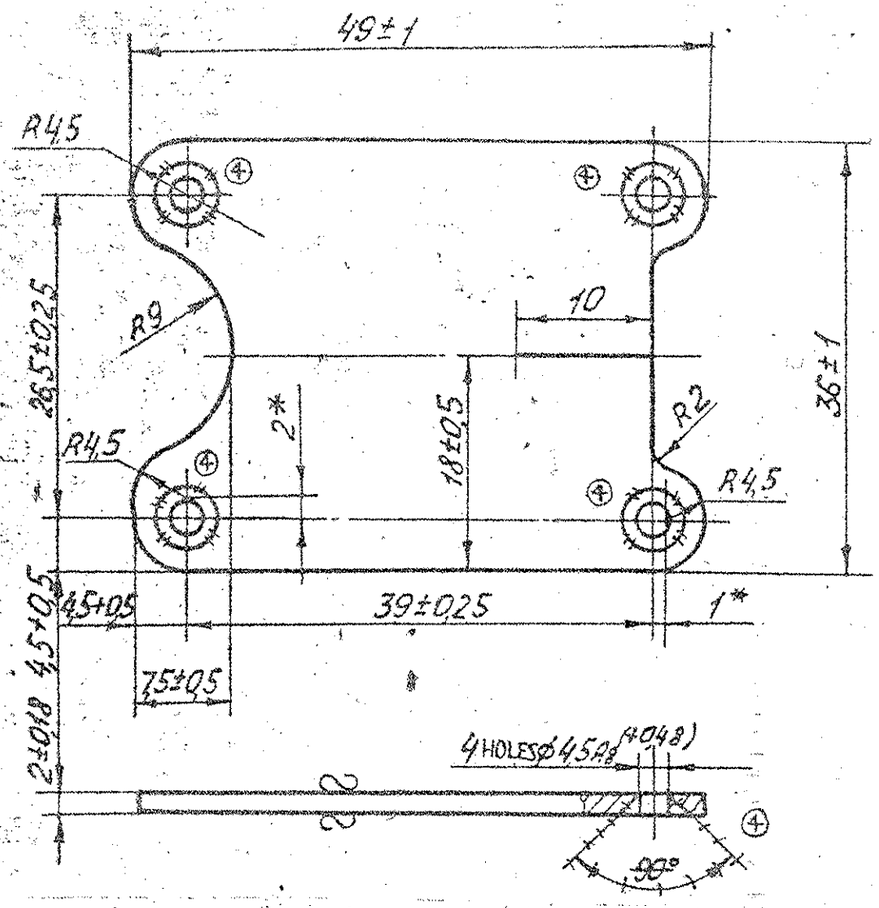
TITLE
CONTACT ASSY

D S CAT NUMBER

DRAWING NUMBER
172 70 174 СБ

SIZE A4

DRAWING NUMBER
172 70 311



1. MANUFACTURING FROM OPEN HEARTH STEEL 20-4-II, 10KII-5-II-I, GOST 16523-70 IS ALLOWED.
2. ON THE AXIS OF THE COMPONENT, THE MARK OF 10mm LENGTH, AND 0.5mm WIDTH AND DEPTH SHOULD BE PUNCHED.
3. COATING: Zn 12, CHROMATIZING.
4. * DIMENSIONS FOR REFERENCE.

EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED FROM OPEN-HEARTH COLD ROLLED QUALITY CARBON STEEL SHEET 3mm THICKNESS OF HIGH SURFACE FINISH 'II', WITH STANDARD CHARACTERISTICS CATEGORY '4' OF GRADE 15 (KILLED) TO GOST 16523-70.
ALTERNATIVELY IT MAY BE PRODUCED FROM STEEL SHEET OF HIGH SURFACE FINISH 'II', WITH STANDARD CHARACTERISTICS CATEGORY '5' DEEP DRAWN 'I' OF. GRADE 10KII (RIMMED) TO GOST 16523-70. OR STEEL SHEET OF HIGH SURFACE FINISH 'II' WITH STANDARD CHARACTERISTICS CATEGORY '4' OF GRADE 20 (KILLED) TO GOST 16523-70.

CHEMICAL COMPOSITIONS % AS PER GOST 1050-74.

GRADE OF STEEL	C	Si	Mn	Cr (MAX)
15	0.12-0.19	0.17-0.37	0.35-0.65	0.25
10KII	0.07-0.14	0.07(MAX)	0.25-0.50	0.15
20	0.17-0.24	0.17-0.37	0.35-0.65	0.25

NOTE:-
a) CONTENTS OF SULPHUR 0.040%(MAX) & PHOSPHORUS 0.035%(MAX).
b) RESIDUAL CONTENT OF COPPER AND NICKEL SHOULD NOT EXCEED 0.25 % EACH.

MECHANICAL PROPERTIES AS PER GOST 16523-70,

GRADE OF STEEL	TENSILE STRENGTH Kgf/mm²	RELATIVE ELONGATION % NOT LESS THAN
15	34 - 47	24
10KII	28 - 40	25
20	36 - 51	23

MASTER COPY

ALTERNATE MATERIAL:- STEEL 070M20 (EN-3A) BS: 970-83.
AUTHORITY:- CQA (HV), LETTER NO. 091/FD-V/MTPF/DE. DATED 17/03/2005.

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 27-08-91.
DRG. INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE -3.

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

EST. WT. 0.026Kg

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 & INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.

ISSUE	DATE	NATURE OF AMENDMENTS
4	17.1.90	172M.370 'A'-88(A.L 10/3)

DRN	
CHD	
TCD	
APPD	
DATE	30-10-86
SCALE:-	2 : 1
DIMENSIONS IN	mm
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS:2102-69	
ALL THREADS TO CONFORM TO	

MATERIAL:- SHEET 2 GOST 19904-74 4-II-15 GOST 16523-70

USED ON 172 70 033C6-4

CONTROLLERATE OF QUALITY ASSURANCE(HEAVY VEHICLES) AVADI

TITLE
COVER

D S CAT NUMBER

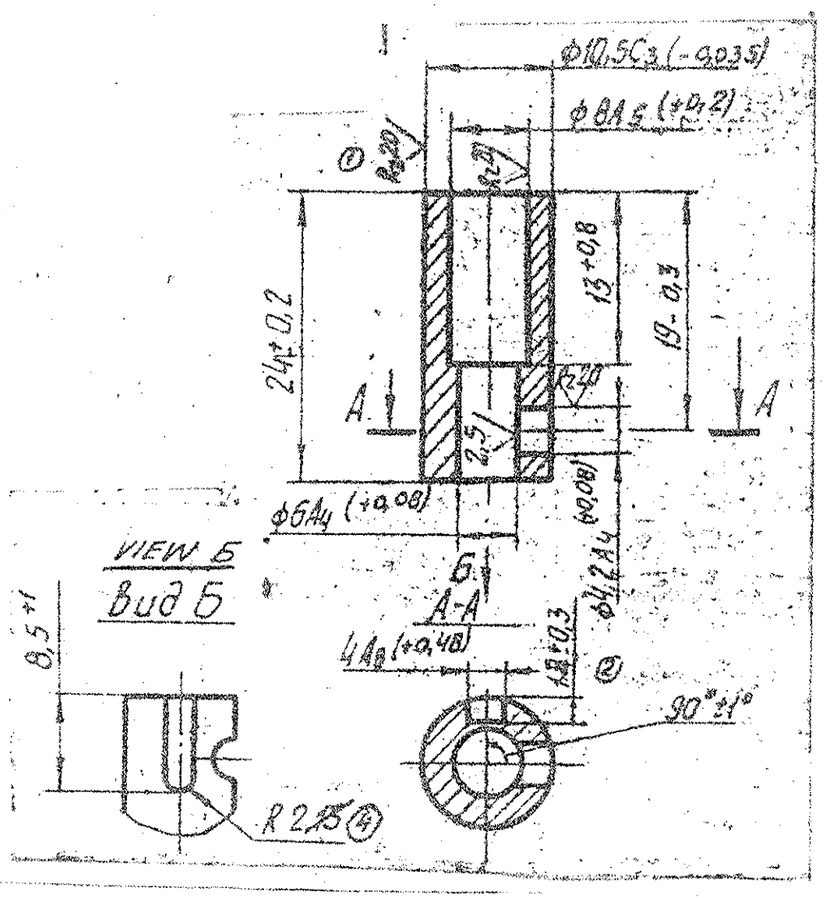
DRAWING NUMBER
172 70 311

144/72
SIZE A3

DRAWING NUMBER
172 70 312

UNLESS OTHERWISE SPECIFIED Rz 80 (√)

MASTER COPY



1. MANUFACTURING FROM БрАЖ9-4, GOST 18175-78 IS ALLOWED.
2. PENETRATION OF SLOT WITH DEPTH 1.2±0.3 mm IN TO THE CAVITY OF HOLES ϕ8A5 AND ϕ6A4 IS NOT ALLOWED.

ALT. MATL: ALUMINIUM BRONZE 9% IS:6912-73

AUTHORITY: CQA (HV) LETTER NO. 091/IFD/IND-V/OE DATED: 17-03-2005

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

EST. WT.	TO BE STAMPED OR MARKED WHERE INDICATED THUS #: (LETTERS)
0.011Kg	

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

EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE MANUFACTURED FROM TIN-FREE PRESSURE-WORKED BRONZE OF GRADE БрАЖМЦ 10-3-1.5 AND ALTERNATE GRADE OF БрАЖ 9-4 TO GOST 18175-78.
CHEMICAL COMPOSITION % AS PER GOST 18175-78.

GRADES	PARTS OF BASIC COMPONENTS (BY WEIGHT)							
	Al	Br	Fe	Mn	Ni	Si	Ti	Cd
БрАЖМЦ 10-3-1.5	9.0 - 11.0	—	2.0 - 4.0	1.0 - 2.0	—	—	—	—
БрАЖ 9-4	8.0 - 10.0	—	2.0 - 4.0	—	—	—	—	—

GRADES	PARTS OF BASIC COMPONENT (BY WEIGHT)		PARTS OF IMPURITIES (BY WEIGHT) MAXIMUM									
	Mg	Cu	Sn	Si	Al	Ni	Pb	Ph	Fe	Zn	Mn	TOTAL
БрАЖМЦ 10-3-1.5	—	THE REST	0.1	0.1	—	—	0.03	0.1	—	0.5	—	0.7
БрАЖ 9-4	—	"	0.1	0.1	—	—	0.01	0.01	—	1.0	0.5	1.7

NOTE:-
NICKEL UPTO 0.5% (PART BY WEIGHT) WITHOUT CONSIDERING IT IN TOTAL IMPURITIES, IS ALLOWED TO EACH GRADE.

ISSUE	DATE	NATURE OF AMENDMENTS

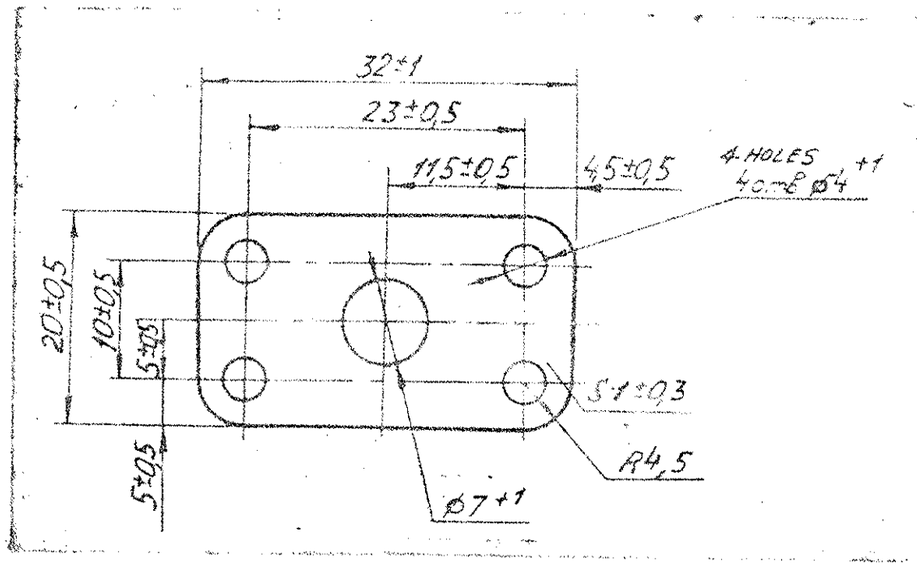
DRN		MATERIAL:- БрАЖМЦ 0.3-1.5 GOST 18175-78. TIN FREE PRESSURE WORKED BRONZE
CHD		USED ON 172 70 033C6-4
TCD		
APPD		
DATE	30-10-86	CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI
SCALE:-	2 : 1	
DIMENSIONS IN mm		TITLE BUSH
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.		
ALL THREADS TO CONFORM TO		D S CAT NUMBER / DRAWING NUMBER 172 70 312

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 27-07-91.

144/73

SIZE A3

DRAWING NUMBER
172 70 314



INSIDE THE HOLES AND EDGES FLUFFINESS IS ALLOWED..

ALTERNATE MATERIAL:- COMPR. ASBESTOS FIBER JOINTING SHEET "0/1" TO IS: 2712-79
AUTHORITY: CQA (HV) LETTER NO. 98704/04/ID-CORD ALT. COM DATED: 04.04.2006

EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED FROM PARONITE AND PARONITE GASKETS 1±0.3mm THICK OF GRADE BMB (OIL AND BENZENE RESISTANT) TO GOST 481-80.

S.No.	TECHNICAL REQUIREMENTS	GRADE BMB
1.	WORKING MEDIUM	HEAVY PETROLIUM PRODUCT ISOLAR OIL, DIESEL FUEL, FURNACE OIL)
2.	LIMITTING PRESSURE MPa(Kgf/cm²)	2.0 (20)
3.	LIMITTING TEMPERATURE °C	300
4.	DENSITY g/cm³	1.5 - 2.0
5.	CONVENTIONAL BREAKING POINT IN THE TRANSVERSE DIRECTION MPa (Kgf/cm²) NOT LESS THAN	13 (130)
	AFTER SOAKING IN KEROSENE AT 23°C FOR 12 HOURS	7 (70)
	AFTER SOAKING IN OIL MS-20 OR MK-22 AT 150°C FOR 12 HOURS	10 (100)
6.	INCREASE IN WEIGHT IN LIQUID MEDIA % NOT MORE THAN IN KEROSENE AT 23°C FOR 12 Hrs IN OIL MS-20 OR MK-22	~~10~~ ~~24~~ 23
7.	COMPRESSIBILITY AT 35 MPa (350 Kgf/cm²) %	5 - 16
8.	RECOVERY AFTER REMOVAL OF PRESSURE 35 MPa (350 Kgf/cm²) % NOT LESS THAN	35

MASTER COPY

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 28-07-91.

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

EST. WT. 0.0008Kg	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.	

ISSUE	DATE	NATURE OF AMENDMENTS

DRN	
CHD	
TCD	
APPD	
DATE	30-10-86
SCALE:-	2 : 1
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.	
ALL THREADS TO CONFORM TO	

MATERIAL:- RUBBERISED ASBESTOS FABRIC BMB GOST 481-80

USED ON
172 70 033C6-4

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.

TITLE
GASKET

D S CAT NUMBER

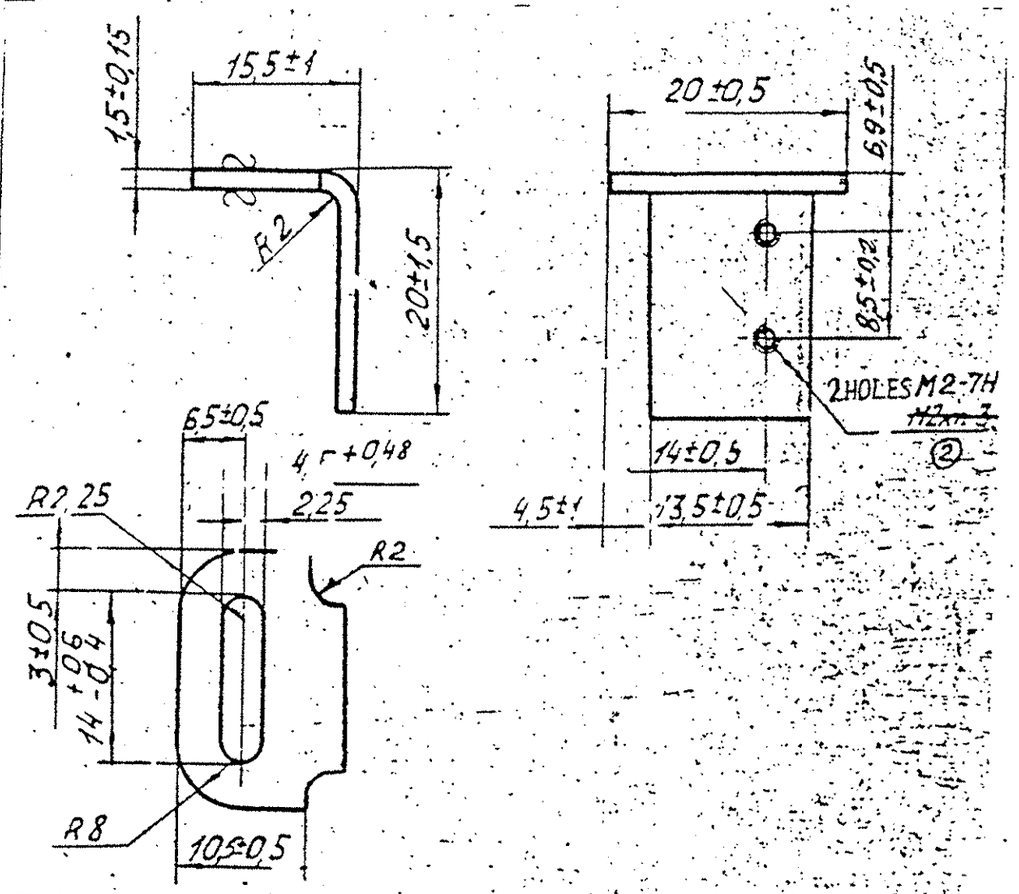
DRAWING NUMBER
172 70 314

144/74

SIZE A3

DRAWING NUMBER
17 70 315

UNLESS OTHERWISE SPECIFIED R/ 3.20



1. MANUFACTURING FROM OPEN-HEARTH STEEL 20-4-II, GOST 16523-70 IS ALLOWED.

2. COATING: Zn 12, CHROMATIZING.

ALTERNATE MATERIAL :- STEEL GRADE 070M20 (EN-3A) TO BS:970-83

AUTHORITY :- CQA(HV), LETTER NO. 091/IFD-V/MTPF/DE DATED :- 17/03/2005

PILOT SAMPLE SHOULD BE APPROVED BY AHSP BEFORE BULK PRODUCTION

EST. WT. 0.052 Kg 0.052Kg

TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTER)

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

EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED FROM OPEN-HEARTH COLD ROLLED STEEL SHEET 1.5mm THICK TO GOST 19904-74. WITH HIGH QUALITY SURFACE FINISH II STANDARD CHARACTERISTICS STEEL OF CATEGORY '4' OF GRADE 15 'KILLED' TO GOST 16523-70.
ALTERNATIVELY IT MAY BE PRODUCED FROM OPEN-HEARTH QUALITY CARBON STEEL SHEET OF GRADE 20 (KILLED) TO GOST 16523-70.

CHEMICAL COMPOSITION % AS PER GOST 1050-74.

GRADE OF STEEL	C	Si	Mn	Cr (MAX)
15	0.12 - 0.19	0.17 - 0.37	0.35 - 0.65	0.25
20	0.17 - 0.24	0.17 - 0.37	0.35 - 0.65	0.25

NOTE:-
a) CONTENTS OF SULPHUR 0.040%(MAX) & PHOSPHORUS 0.035%(MAX).
b) RESIDUAL CONTENT OF COPPER & NICKEL SHOULD NOT EXCEED 0.25% EACH.

MECHANICAL PROPERTIES AS PER GOST 16523-70.

GRADE OF STEEL	TENSILE STRENGTH Kgf/mm²	RELATIVE ELONGATION % NOT LESS THAN
15	34 - 47	25
20	36 - 51	24

ISSUE	DATE	NATURE OF AMENDMENTS

DRN	
CHD	
TCD	
APPD	
DATE	30-10-86
SCALE:-	2 : 1
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.	
ALL THREADS TO CONFOR 4-TO	

MATERIAL:- 1.5 GOST 19904-74 4-II-15 GOST 16523-70

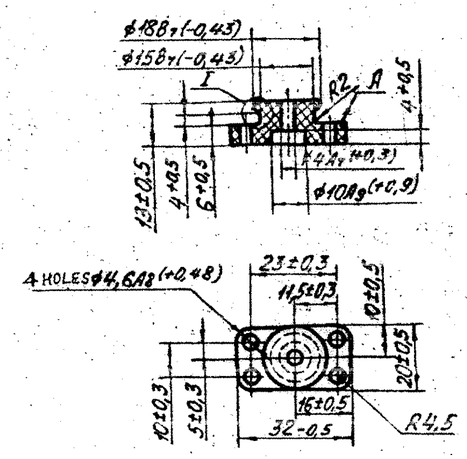
USED IN 172 70 173 CP

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI

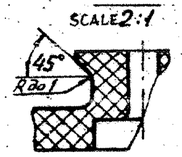
TITLE BRACKET

DRAWING NUMBER 172 70 315

DRAWING NUMBER
172 70 316



I
SCALE 2:1



EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED FROM PHENOLIC PLASTIC, COMPRESSION AND DIECAST MOULDING FIBROUS COMPOUND OF GRADE Y1-301-07 TO GOST 5689-79.
THE PROPERTIES OF MOULDING COMPOUND OF GRADE Y1-301-07 ARE AS UNDER.

S.No.	TECHNICAL REQUIREMENTS	Y1-301-07
1.	COLOUR	FROM LIGHT BROWN TO DARK BROWN.
2.	FLUIDITY mm.	40 - 140
3.	IMPACT STRENGTH ON SPECIMENS WITHOUT INCISIONS KJ/m^2(Kgf.cm/cm^2) (NOT LESS THAN)	8.8 (9.0)
4.	BREAKING COMPRESSIVE STRESS Mpa(Kgf/cm^2) BREAKING TENSILE STRESS Mpa(Kgf/cm^2)	98 (1000) 29.4 (300)
5.	BREAKING BENDING STRESS Mpa.(Kgf/cm^2) (NOT LESS THAN)	78.4 (800)
6.	HARDNESS Mpa (Kgf/cm^2)	245 (2500)
7.	HEAT STABILITY AS PER MARTINS °C (NOT LESS THAN).	160
8.	WATER ABSORBTION IN mg (NOT MORE THAN)	70
9.	SHRINKAGE %	0.3 - 0.5
10.	DENSITY g/cm^3 (NOT MORE THAN)	1.45
11.	BULK DENSITY g/cm^3 (NOT LESS THAN)	0.16
12.	WORKING TEMPERATURE °C	FROM -40 TO +110

1. EDGES MAY BE ROUNDED OFF UPTO R2 OR CHAMFER 2x45°.
2. (3) MAY BE MANUFACTURED BY MECHANICAL PROCESSING OF ~~KAPRON B1 MPTY 6-05-988-66.~~ BLOCK POLYAMIDE ПА6, 1st QUALITY TY6-05-988-78.
3. ALONG THE COMPONENTS HEIGHT, MARKS FROM DIE JOINT ARE ALLOWED.
4. GROOVE ALONG Φ15B7 MAY BE MADE BY MECHANICAL MEANS: IN THIS CASE PRESENCE OF SHOULDER NOT EXCEEDING 0.3mm HEIGHT ON SURFACE 'A' IS ALLOWED.
5. THE REST OF THE REQUIREMENTS IN ACCORDANCE WITH TY6-05-1609-77.

ALTERNATE MATERIAL :- GLASS FIBRE FILLED PHENOL FORMAL DEHYDE RESIN HX 5.911.
AUTHORITY :- V.Q.A.W,C LETTER NO. V.Q.A.W.K/22384/27/SO DATED: 05/02/2005.

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 26-08-91.
DRG. INDIANISED BASED ON RUSSIAN ORIGINAL ISSUE -2.

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

			DRN		MATERIAL :- PHENOLIC PLASTIC Y1-301- 07 GOST 5689-79.
			CHD		USED ON 172 70 1746
			TCD		CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI
			APPD		
			DATE	30-10-06	
			SCALE :-	1 : 1	
			DIMENSIONS IN mm		TITLE : PLATE
			TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS 2102-69		
3	23.8.08	AMDT LIST No.6/PART II BOOK-10	ALL THREADS TO CONFORM TO		D S CAT NUMBER
ISSUE	DATE	NATURE OF AMENDMENTS			DRAWING NUMBER 172 70 316

EST. WT. 0.003Kg

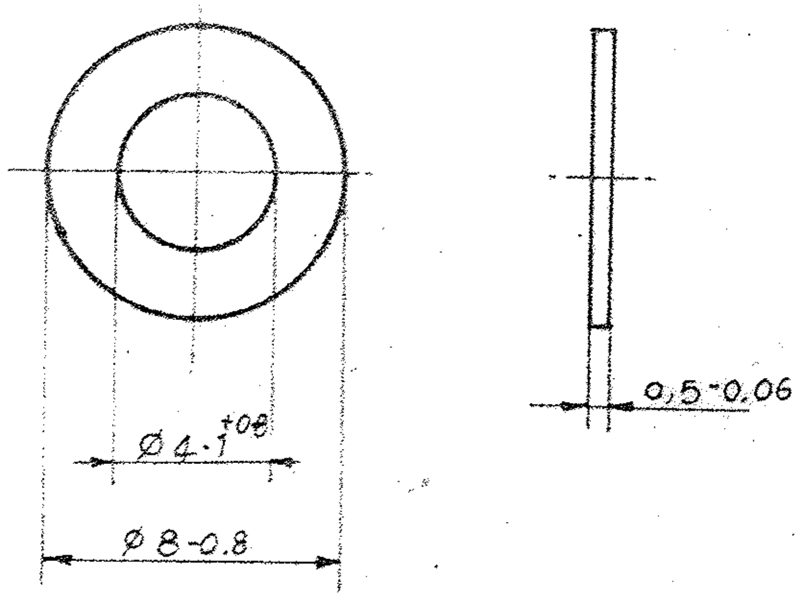
TO BE STAMPED OR MARKED WHERE INDICATED THUS (LETTERS)

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

144/76

SIZE A2

DRAWING NUMBER
54 26 342



1. BURRS ARE NOT ALLOWED
2. TO BE NICKLE PLATED. REQUIRED THICKNESS OF NICKLE COAT 0·01 mm. MINIMUM.

ALTERNATE MATERIAL:- BRASS GRADE CuZn37 '0' COND. IS: 410-77
AUTHORITY :- CQA (HV), AVADI. LETTER NO.091/IFD-V/MPF/OE. DATED :- 17-03-2005

DRG REINDIANISED BASED ON ...

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

EST. WT. 0·00015	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.	
MATERIAL:- SHEET Л63М GOST 931-70	USED ON 172 70 033 СБ-4

MASTER COPY

ISSUE	DATE	NATURE OF AMENDMENTS

DRN · CHD · TCD · APPD · DATE
SIZE A4

SCALE - 5:1
DIMENSIONS IN mm

TOLERANCE ON DIMENSIONS UNLESS OTHERWISE STATED IS 2102-69
ALL THREADS CONFORM TO

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.

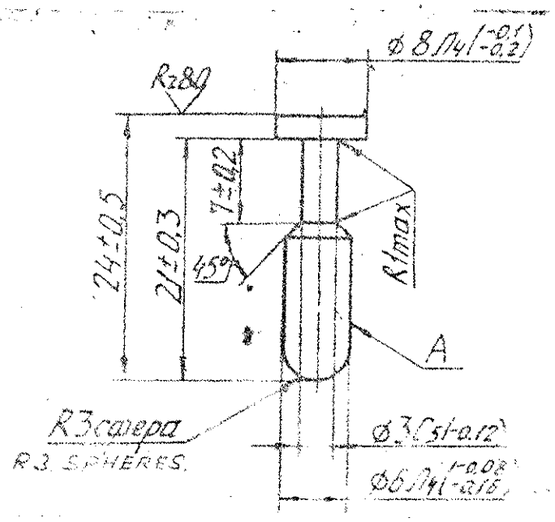
TITLE
WASHER

D S CAT NUMBER

DRAWING NUMBER
54 26 342

DRAWING NUMBER
172 70 495

UNLESS OTHERWISE SPECIFIED. $R_z 20$ (√)



1. HB 302÷255 (DIA. OF INDENTATION 3.5÷3.8) MAY BE CHECKED IN BLANK.

2. COATING: CHROMATIZING ALL AROUND OF SPHERE AND SURFACES A-X15 IS ALLOWED.

3. REST OF REQUIREMENTS AS PER 520 Ty1.

EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE MANUFACTURED FROM CHROMIUM SILICON-QUALITY STEEL OF GRADE 38XC TO GOST 4543-71.

CHEMICAL COMPOSITION % AS PER GOST 4543-71.

STEEL GROUP	GRADE OF STEEL	PROPORTION OF ELEMENTS %							
		C	Si	Mn	Cr	Ni	S	P	Cu
CHROMIUM SILICON STEEL	38XC	0.34-0.42	1.00-1.40	0.30-0.60	1.30-1.60	MAXIMUM 0.30	0.035	0.035	0.30

MECHANICAL PROPERTIES:- AS PER GOST 4543-71.

STEEL GROUP	GRADE OF STEEL	TENSILE STRENGTH Kgf/mm²	YIELD STRENGTH Kgf/mm²	ELONGATION %	IMPACT STRENGTH Kgf·m/cm²	RELATIVE REDUCTION ALONG CROSS SECTION %
		MINIMUM				
CHROMIUM SILICON STEEL	38XC	95	75	12	7	50

MASTER COPY

ALTERNATE MATERIAL:- STEEL 817 M40 (EN-24) BS:970-83
AUTHORITY:- CQA (HV). LETTER NO. 091/IFD/IND-V/MTPF/DE DATED:-17/03/2005

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 09-07-1991

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

EST. WT. 0.0035 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

ISSUE	DATE	NATURE OF AMENDMENTS

DRN	
CHD	
TCD	
APPD	
DATE	30-10-86
SCALE-	2 : 1
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.	
ALL THREADS TO CONFORM TO	

MATERIAL:- STEEL 38XC GOST 4543-71

USED ON 172 70 033CB-4

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI

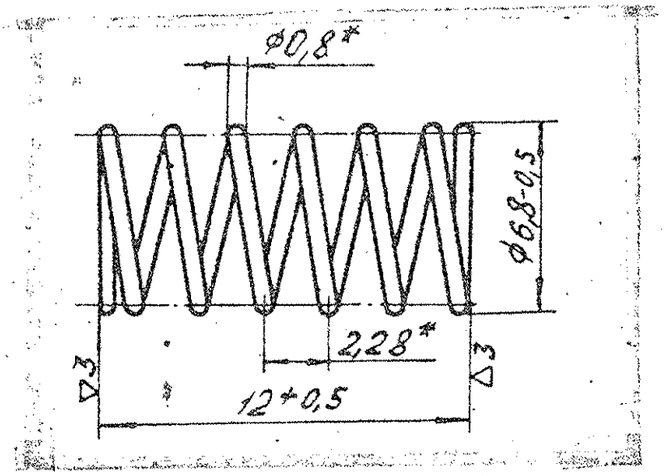
TITLE ROD

D S CAT NUMBER

DRAWING NUMBER 172 70 495

-145
35
E A3

DRAWING NUMBER
175 70 365



1. MANUFACTURING FROM WIRE -I ; III GOST 9389 -75 IS ALLOWED.
2. LENGTH OF THE STRAIGHTENED SPRING -132 mm.
3. NUMBER OF OPERATING COILS -5.5 .
4. TOTAL NUMBER OF COILS 7 .
5. SPRING COILING IS ARBITRARY.
6. AFTER THREE TIMES COIL TO COIL COMPRESSION OF THE SPRING, RESIDUAL DEFORMATION IS NOT ALLOWED.
7. SUPPORTING SURFACE OF SPRING SHOULD BE NOT LESS THAN 3/4 COILS.
8. COATING : Zn 6, CHROMATIZING.
9. * DIMENSION FOR REFERENCE..

ALTERNATE MATERIAL :- WIRE Gr. 3 IS: 4454-81 Pt-1

AUTHORITY :- CQA (HV), AVADI 091/IFD-V/MPF/0E DATED : 17/03/2005

EXPLANATORY NOTE :-

THE COMPONENT SHOULD BE MANUFACTURED FROM CARBON STEEL SPRING WIRE OF CATEGORY ' II ' WITH NORMAL ACCURACY OF WIRE ø $0.8^{-0.03}_{-0.02}$ mm OF GRADE KT-2 OR SK-7 TO GOST 9389-75.
ALTERNATIVELY IT MAY BE PRODUCED FROM WIRE OF CATEGORY 'I, III TO GOST 9389 -75.
CHEMICAL COMPOSITIONS % AND MECHANICAL PROPERTIES AS PER GOST 9389-75 ARE AS UNDER.

CHEMICAL COMPOSITION % :-

GRADE OF STEEL	C	Mn	Si	S	P	Cr	Ni	Cu
				MAXIMUM				
KT-2	0.86-0.91	0.20-0.40	0.17-0.37	0.020	0.020	0.05	0.05	0.10
SK-7	0.68-0.76	0.50-0.80	0.17-0.37	0.030	0.020	0.05	0.05	0.04

MECHANICAL PROPERTIES :-

WIRE DIA. mm	WIRE CATEGORY	U T S Kgf/mm²	NUMBER OF BENDS	NUMBER OF TWISTS
			MINIMUM	
0.8	I	260-295	11	16
	II	215-260	12	17
	III	170-215	12	17

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 23-09-91.

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

EST. WT. 0.00053 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.

ISSUE	DATE	NATURE OF AMENDMENTS

DRN	Sant Prakash
CHD	[illegible]
TCD	[illegible]
APPD	[illegible]
DATE	30.10.86
SCALE:- 5:1	
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.	
ALL THREADS TO CONFORM TO	

MATERIAL:- WIRE II 0.8 GOST 9389-75

USED ON 172 . 70 . 033 CB - 4

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.

TITLE
SPRING

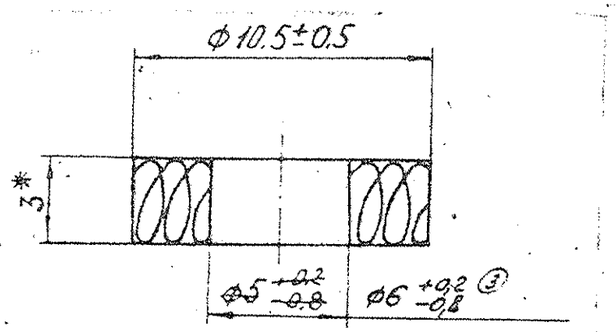
D S CAT NUMBER

DRAWING NUMBER
175 70 365

143/34

SIZE A3

DRAWING NUMBER
175 70 366



* DIMENSION FOR REFERENCE.

EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED FROM FINE WOOL FELT 'T', RING TYPE PACKING GASKET ' ПР ', 3.0±0.75mm THICK TO GOST 288-72.
FINE-WOOL FELT IS FABRICATED FROM A MIXTURE OF THE FOLLOWING COMBINATION:-
FINE VIRGIN WOOL NOT BELOW GRADE- 60 - 30%.
SEMI-FINE VIRGIN WOOL - 20%.
SEMI COURSE VIRGIN WOOL - 25%.
FINE AND SEMI-FINE LARGE COMBINGS AND FURRY SHEEP WOOL OF I AND II CATEGORY - 25%.

S.No.	THE PHYSICAL - MECHANICAL AND CHEMICAL PROPERTIES.	THICKNESS OF FINE WOOL FELT IS 3.0mm
1.	VOLUMETRIC WEIGHT, gm/cm³(NOT LESS THAN)	0.27
2.	TENSILE STRENGTH (AT ACTUAL FELT THICKNESS), Kg/cm², (NOT LESS THAN)	15
3.	ELONGATION AT RUPTURE , % (NOT MORE THAN)	180
4.	CONTENT OF FREE-STATE SULPHURIC ACID % (NOT MORE THAN)	0.2
5.	MOISTURE CONTENT (STANDARD), %	13
6.	CONTENT OF VEGITABLE ADMIXTURE % (NOT MORE THAN)	0.5
7.	CONTENT OF NON-WOOLEN FIBERS, % (NOT MORE THAN)	5.0
8.	CONTENT OF MINERAL ADMIXTURES (TOGETHER WITH ASH FROM VEGITABLE ADMIXTURE), % (NOT MORE THAN)	0.12

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 09-10-91.

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

EST. WT. 0.0007Kg

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.

ISSUE	DATE	NATURE OF AMENDMENTS

DRN	
CHD	
TCD	
APPD	
DATE	30-10-86
SCALE:-	5 : 1
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.	
ALL THREADS TO CONFORM TO	

MATERIAL:- FELT Тпр 3 GOST 288-72.

USED ON
172 70 033C6-4

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.

TITLE
OIL SEAL

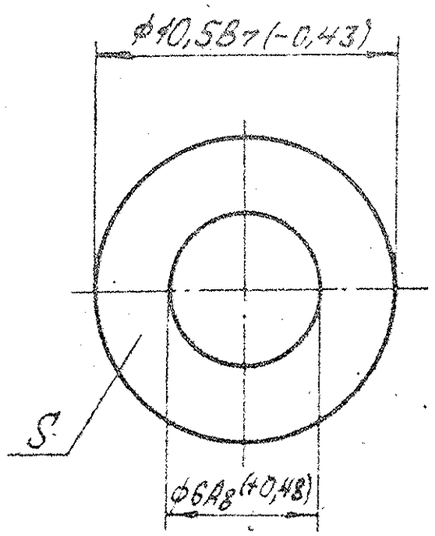
D S CAT NUMBER

DRAWING NUMBER
175 70 366

F-143
35

SIZE A3

DRAWING NUMBER
175 70 367



PART No. Обозначение	S MM	MASS kg. Масса кг	
175.70.367	0,3±0,03	0,000016	
-01	0,5±0,05	0,000027	*
-02	1±0,12	0,000057	*

ALTERNATE MATERIAL:- 1) FLEXOIDE

AUTHORITY :- CQA (HV), AVADI, LETTER NO. 09/IFD/IND-V/MPF/OE dtd. 17.03.2005

ALTERNATE MATERIAL: 2) PRESS PAN PAPET

AUTHORITY :- VQAW, KANPUR LETTER NO. 22384/27/SO DATED: 05/02/2005

EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED FROM GRADE 'B' UNIMPREGNATED CARDBOARD TO GOST 9347-74.
TECHNICAL PARAMETERS OF CARDBOARD GASKET ARE AS UNDER.

S.No.	PARAMETERS	GRADE - B	
		CARDBOARD THICKNESS IN mm.	
		FROM 0.3 TO 0.5	FROM 0.8 TO 2.5
1.	FIBRE COMPOSITION % OF UNBLEACHED CONIFEROUS SULPHATE PULP OF GRADE HC-2 (NS-2) TO GOST 11208-82, (NOT LESS THAN)	100	27
2.	WEIGHT PER UNIT VOLUME, g/cm³ (NOT LESS THAN)	0.70	0.75
3.	ABSORBTIVITY, AFTER 6 HOURS OF COMPLETE IMMERSION % (NOT MORE THAN), IN WATER	150	120
4.	ULTIMATE TENSILE STRENGTH INTRANSVERSE DIRECTION IN Kgf/mm². (NOT LESS THAN)	2.0	1,6
5.	LINEAR DEFORMATION IN TRANSVERSE DIRECTION AFTER HOLDING THE SAMPLE IN HYDROSTATE FOR 24 HOURS, % (NOT MORE THAN)	0.8	0.8
6.	MOISTURE CONTENT %	10±2	10±2

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 05-10-91.

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

EST. WT. SEE TABLE

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.

ISSUE	DATE	NATURE OF AMENDMENTS

DRN
CHD
TCD
APPD
DATE 30-10-86

MATERIAL:- GASKET BOARD-B GOST 9347-74.

USED ON 172 70 033CB-4 *

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.

SCALE:- 5 : 1

DIMENSIONS IN mm

TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.

ALL THREADS TO CONFORM TO

TITLE
GASKET

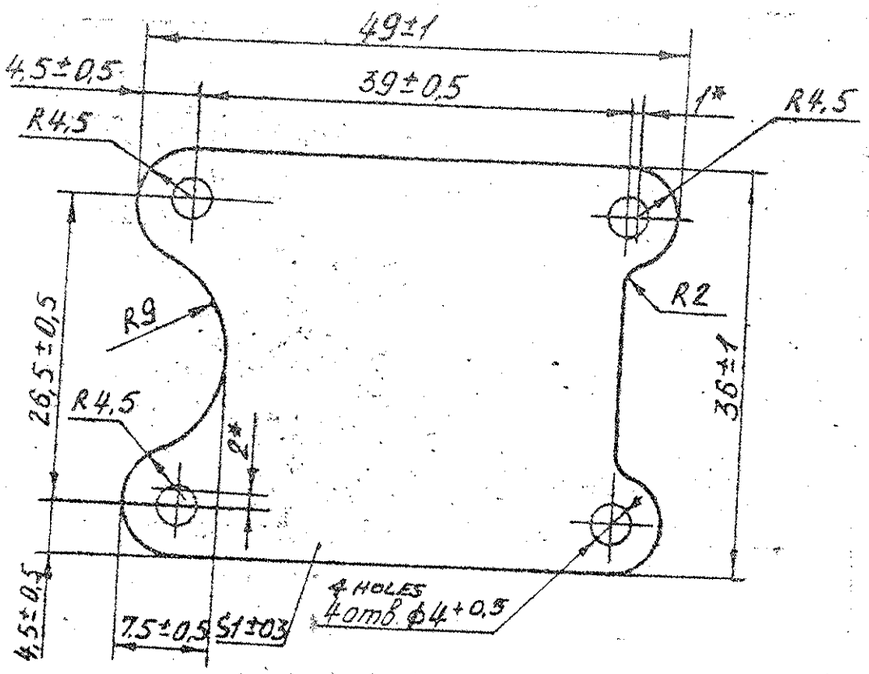
D S CAT NUMBER

DRAWING NUMBER
175 70 367

F-143
36

SIZE A3

DRAWING NUMBER
175 70 368



EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED AS PER RUBBER GRADE HO-68-1 TO TY 005-216-75.

NOMENCLATURE OF RUBBER	RUBBER PLATES WITHOUT CLOTH LINING.
TYPE OF RAW RUBBER	CKH-18
WORKING MEDIA	WATER, AIR.
OPERATING TEMPERATURE °C	-50°C TO +100°C
DESTINATION AND LIMIT PARAMETERS OF USE	PROTECTION FROM DUST AND SPLASHES.
HARDNESS	55 - 70
RUPTURE STRENGTH Kgf/cm² (NOT LESS THAN)	90
ELONGATION AT RUPTURE % (NOT LESS THAN)	250
RESIDUAL ELONGATION AFTER RUPTURE (NOT MORE THAN)	12
DENSITY g/cm³	1.24±0.05

MASTER COPY

1. UNSPECIFIED RADII SHOULD BE 4.5mm.
2. TEARS, NOTCHES AND LAMINATIONS ARE NOT ALLOWED.
3. * DIMENSIONS FOR REFERENCE.
4. REQUIREMENTS TO FINISHED COMPONENT ACCORDING TO TY 005216-75.
5. ALTERNATE MATERIAL : PLATE 254311-1 / RUBBER 316 TY 005216-75.

ALTERNATE MATL. RUBBER GRADE BAGO BS:2751-2001
AUTHORITY : VQAWK/22384/27/50 dtd. 05.02.2005

DRG. REDRAWN AND EXPLANATORY NOTE ADDED ON 26-09-91.

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

EST. WT. 0.0012Kg

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.

ISSUE	DATE	NATURE OF AMENDMENTS

DRN	R. [illegible]
CHD	Bhattacharya
TCD	[illegible]
APPD	[illegible]
DATE	230-10-86
SCALE:- 2 : 1	
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS : 2102-69.	
ALL THREADS TO CONFORM TO	

MATERIAL:- PLATE 254311-1 / RUBBER HO-68-1 TY 005216-75.

USED ON 172 70 033C6-4

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES) AVADI.

TITLE
GASKET

D S CAT NUMBER

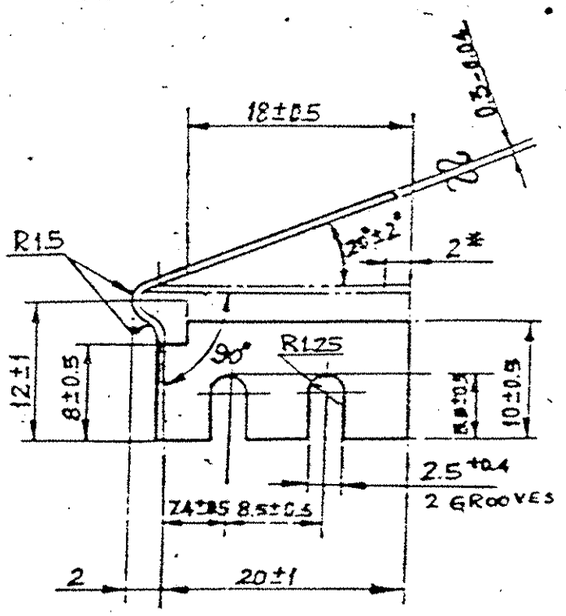
DRAWING NUMBER
175 70 368

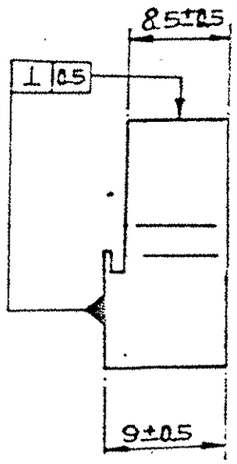
F-143 / 37

SIZE A3

DRAWING NUMBER
175 70 370

UNLESS OTHERWISE SPECIFIED Rz 320 (√)





EXPLANATORY NOTE:-

THE COMPONENT SHOULD BE PRODUCED FROM COLD ROLLED SPRING STEEL STRIP OF GRADE Y7A WITH BRIGHT SURFACE 'C' AND TRIMMED EDGES 'D' TO GOST 2283-79.

CHEMICAL COMPOSITIONS % AS PER GOST 1435-74.

GRADE OF STEEL	C	Mn	Si	S	P	Ni	Cu	Cr
				MAXIMUM				
Y7A	0.65 - 0.74	0.15 - 0.30	0.15 - 0.35	0.020	0.030	0.20	0.20	0.20 - 0.35

MECHANICAL PROPERTIES AS PER GOST 2283-79.

GRADE OF STEEL	RELATIVE ELONGATION % (MIN)	UTS Kgf/mm² (N/mm²) (MAX)
	COLD WORKED TAPE	
Y7A	15	750-1200 (75 - 120)

FOR REFERENCE ONLY

1. HRC 40÷52. HARDNESS SHOULD BE CHECKED ON A TEST PIECE WITH THICKNESS 1mm.
2. UNSPECIFIED RADII SHOULD BE BENT TO 1mm.
3. DURING FIVE TIMES COMPRESSION OF SPRING AT AN ANGLE OF 90°, RESIDUAL DEFORMATIONS ARE NOT ALLOWED.
4. COATING : CHEMICAL OXIDIC PHOSPHATING, OIL FINISHING.
5. * DIMENSION SHOULD BE ENSURED BY TOOL.

MASTER COPY

ALTERNATE MATERIAL :- 2) STEEL GRADE 4(70C6) TO IS:2507
AUTHORITY :- C&A (HV), AVADI LETTER NO. 091/IFD/IND-V/MTPF/OE DATED 17/03/2005.

L-14

ORG. REDRAWN AND EXPLANATORY NOTE ADDED ON 23-05-91.

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

EST. WT.	TO BE STAMPED OR MARKED WHERE INDICATED THUS = (LETTERS)
0.001Kg	

ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUT SIDE [illegible] BURR EDGES ARE PROHIBITED

DRN.	
CHD.	
TCD	
APPD.	
DATE	20.10.05
SCALE= 2 : 1	
DIMENSIONS IN mm	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED IS:2102-69	
ALL THREADS TO CONFORM TO	

MATERIAL :- BAND Y7A-C-0.3, GOST 2283-79.

USED ON
172 70 173 CB

CONTROLLERATE OF QUALITY ASSURANCE (HEAVY VEHICLES)
AVADI

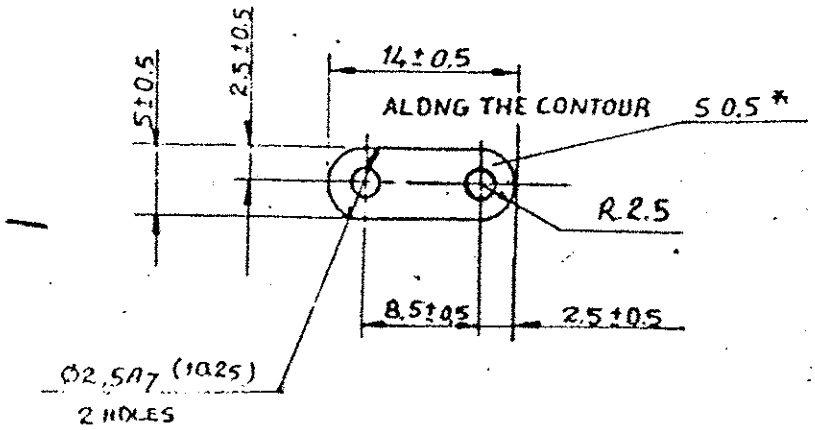
TITLE
SPRING

D S CAT NUMBER

DRAWING NUMBER
175 70 370

143
38

175.74.003



1. MAY BE MADE OF SHEET AMГ6БМ-1 GOST 21631-76
2. R2.5 MAY NOT BE CARRIED OUT.
3. *DIMENSIONS FOR REFERENCE.

ALTERNATE MATL:- 1) ALUMINIUM SHEET GRADE 19500 COND. 'O' IS:737-74
AUTHORITY:- CQA (HV), AVADI LETTER NO. 091/IFD/IND-V/MTPF/OE DATED: 17-03-2005

ALTERNATE:- ALUMINIUM SHEET GRADE 56000 TO IS:737-74
AUTHORITY:- VQAW, KANPUR LETTER NO. VQAWK/22384/27/SO DATED: 05/02/2005

FOR REFERENCE ONLY

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

L14

EST. MASS 0.0002	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.	
MATERIAL :- SHEET A1 AT -0.5 GOST 21631-76.	USED ON :- 175.74.004 CG 172 70 173 CG
SCALE - 2:1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
DIMENSIONS IN mm.	
TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE :- STRIP
ALL THREADS CONFORM TO	D S R T NUMBER
	DRAWING NUMBER 175.74.003

ISSUE	DATE	NATURE OF AMENDMENTS
DRN		
CHD		
TCD		
APPD		
DATE	30.10.86	

SIZE A4

DECSRIPTION	d	PITCH	d_p	n NOM. MIN. MAX.	t MIN. MAX.	L	THREAD DETAILS MAJ. DIA.	THREAD DETAILS PITCH DIA.	THREAD DETAILS MIN. DIA.	STRENGTH CLASS AND SPECN.	ALT. MATERIAL	PLATING THICK NESS IN MICRONS	TYPE OF PLATING	USED ON :
B M4- 6g X 10.14H.016 GOST 1477-84	M4	0.7	2.25 - 2.5	0.6 0.66 0.8	1.12 1.42	12	$4^{-0.022}_{-0.162}$	$3.545^{-0.022}_{-0.112}$	$3.141^{-0.022}_{-0.162}$	* 14H GOST 25556	PROPERTY CLASS - 6.8 IS:1367 Pt. III - 1979	6	01 = ZINC CHROMATING	(172-70-033CD-4) (CODE-45/T-72)
M4- 6g X 10.46.016 GOST 1477-93	M4	0.7	2.25 - 2.5	0.6 0.66 0.8	1.12 1.42	12	$4^{-0.022}_{-0.162}$	$3.545^{-0.022}_{-0.112}$	$3.141^{-0.022}_{-0.162}$	*	PROPERTY CLASS - 6.8 IS:1367 Pt. III - 1979	6	01 = ZINC CHROMATING	(172-70-033CD-4) (CODE-45/T-90)

@ THIS SKETCH ALONGWITH ALL DETAILS IS AN ABSTRACT BASED ON GOST-1477-84-93

VETTED
5 JAN 2007
JWM/STD-CELL

CHEMICAL COMPOSITION (%)	
ELEMENT	PROPERTY CLASS - 6.8 IS:1367 Pt. III - 1979
C	0.55 MAX.
S	0.06 MAX.
P	0.05 MAX.

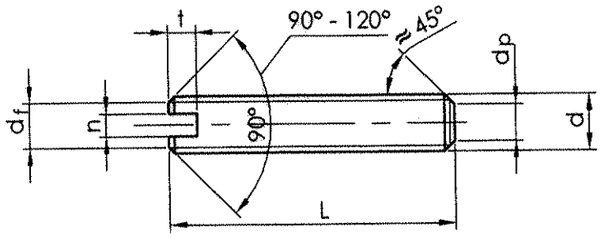
MECHANICAL PROPERTIES
PROPERTY CLASS - 6.8 IS:1367 Pt. III - 1979
NOMINAL TENSILE STRENGTH N / mm^2 600 MIN.
YEILD STRESS N / mm^2 480 MIN.
ELONGATION AFTER FRACTURE % , MIN. 8
HARDNESS HB = 181 - 238

EQUIVALENT DESIGN & MATERIAL
SLOTTED GRUB SCREW IS: 2388-71 6.8 GRADE

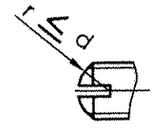
ALT. MATERIAL : PROPERTY CLASS - 6.8 IS:1367 Pt. III - 1979

AUTHORITY :- CQA (HV), AVADI, LETTER No. 98704/04/ID-CO-ORD/ALT.COM. DATED 02.05.2006

* REFER ALT. MATERIAL



TYPE OF DESIGN



ALTERNATE MAKE

1	SCREW	21	*			
संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS

सामान्य सहिष्णुता GENERAL TOLERANCE	
रेखिक परिमाप LINEAR DIMENSION	
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2
कोणिक परिमाप ANGULAR DIMENSION	
1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'
मापांक 'म्यू एम' में VALUE IN "um"	
~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

@ DRG NO. CHANGED. NOTE ADDED 6.12.11

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2007 दिनांक DATE	नाम NAME

SCREW
FLAT POINT STRAIGHT SLOTTED
CODE-45 / T-90 & T-72

मापमान SCALE			
NTS	आरेखित DRAWN	28/12/06	अशोक
	जाँचा CHECKED	04/01/07	VKJ
	अनुमोदित APPROVED	04/01/07	DPS

द्वारा बदला REPLACED BY
हेतु बदला REPLACED FOR
आरेखण क्र. DRAWING NO. MPF/1GB/1477

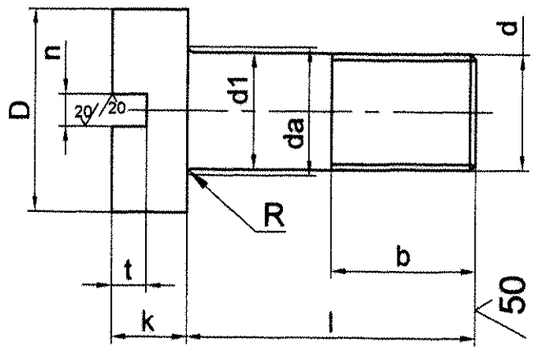
मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE D. O.

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT | विचलन DEVIATION

FILE PATH : D :\sudam\CODE-45\LEVER - WITH - SWITCH - ASSY \GOST 1477-93 & 84

MPF/1GB/1477



$ = TYPE OF COATING

* 01= ZINC CHROMATED

DIMENSIONS:- AS PER GOST 1491-80

DESIGNATION	da	d	l	b	k	t	R	D	n	$	* COATING THK.
M4-7g6gx10.36.016	4.7	4	10	10	$2.6^{-0.25}$	1.2-1.6	0.2 MIN.	$7^{-0.36}$	1.06-1.20	*01	6 MICRONS
M4-6gX10.46.016	4.7	4	10	10	$2.6^{-0.25}$	1.2-1.6	0.2 MIN.	$7^{-0.36}$	1.06-1.20	*01	6 MICRONS
M3-7g6gx8.36.016	3.6	3	8	8	$2^{-0.25}$	0.9-1.3	---	5.5	0.86-1.00	*01	6 MICRONS

CHEMICAL COMPOSITION (%) AS PER IS:1367 Part III -1979 OR ISO 898-1 :1988
PROPERTY CLASS 6.8
C = 0.55 MAX.
S = 0.06 MAX.
P = 0.05 MAX.

MECHANICAL PROPERTIES AS PER IS:1367 Part III -1979 OR ISO 898-1 :1988
PROPERTY CLASS 6.8
TENSILE STRENGTH N/mm ^{2} 600 MIN.
YIELD STRESS N/mm ^{2} 480 MIN.
ELONGATION, AFTER FRACTURE %. 8 MIN.
HARDNESS, HV F>98 N 190 - 250
HARDNESS , HB HB, F =30 D^2 181 - 238

MECHANICAL PROPERTIES AS PER GOST 1759-70	
STRENGTH CLASS 36	STRENGTH CLASS 46
(STEEL 20 GOST 1050-74) AS PER ICV/STD/01-00	
TENSILE STRENGTH Kgf/ mm^2 40 - 55	
YIELD STRENGTH Kgf/ mm^2 24 MIN.	
ELONGATION %. 25 MIN.	
IMPACT STRENGTH Kgf.m/cm^2 5.5	
HARDNESS, BHN 110-170	

CHEMICAL COMPOSITION AS PER GOST 1050-74 (REF. GOST 1759-70)	
STRENGTH CLASS 36	STRENGTH CLASS 46
STEEL 20 GOST 1050-74	
C = 0.17 - 0.24 % Si = 0.17 - 0.37 % Mn = 0.35 - 0.65 % Cr = 0.25 MAX.	Ni = 0.25 MAX. S = 0.04 MAX. P = 0.035 MAX.

VETTED
21 APR 2007
JWM/STD-CELL

** ALT. MATL : MATERIAL AS PER PROPERTY CLASS 6.8 , IS:1367 PART III - 1979
AUTHY : CQA (HV) LETTER NO. 98704/04/ID-CO-ORD/ALT COM
DATED : 02-05-2006

3	SCREW	26	**			
संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS

		@	Drg. updated		14/9/11	

सामान्य सहिष्णुता GENERAL TOLERANCE

रेखिक परिमाप LINEAR DIMENSION

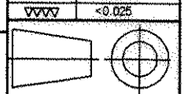
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2

कोणिक परिमाप ANGULAR DIMENSION

1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'

मापांक 'म्यू एम' में VALUE IN "um"

-	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025



संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2007	दिनांक DATE	नाम NAME

SCREW

TRANSMISSION GEAR UNIT

CODE - 45 / T72 & T90 GOST 1491

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE: D. O.

मापमान SCALE	आरेखित DRAWN	21.04.07	VML
NTS	जाँचा CHECKED	21.04.07	
	अनुमोदित APPROVED	21.04.07	AKN

द्वारा बदला REPLACED BY

हेतु बदला REPLACED FOR

आरेखण क्र. DRAWING NO. @ MPF/IGB/1491

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

@ This sketch alongwith all details is an abstract of GOST 1491-72 & 80

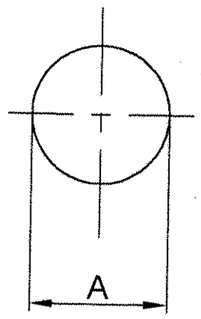
ok

DRG. DEVELOPED FROM H.V.F AVADI ORIGINAL PRINT DATED: 13.08.2004

FILE PATH:-D:\VML\OLD-PC\CODE-45\T-90\COMPONENTS\175-45-026.dwg

BALL SPECIFICATION	NOMINAL DIA. OF BALL 'A'	DEGREE OF ACCURACY	DEVIATION OF MEAN DIAMETER OF BALLS USED AS SEPERATE PARTS, μ (MICRONS)	DIMENSIONAL DIFFERENCE OF BALLS AS PER DIAMETER IN A BATCH. MAX	VARIATIONS IN A SINGLE DIAMETER	DEVIATION FROM SPHERICAL SHAPE	SURFACE ROUGHNESS		BREAKING LOAD Kgf, (MIN.)
							Ra	Rz	
9.525-60	9.525	60	±30	3.00	1.50	1.50	1.00	0.500	4800
Б 10.319-100	10.319	100	±40	5.00	2.50	2.50	0.125	0.600	5600
Б 7.938-100	7.938	100	±40	5.00	2.50	2.50	0.125	0.600	3350
Б 7.938-200	7.938	200	±60	10.00	5.00	5.00	0.200	0.800	3350
Б 10-100	10	100	±40	5.00	2.50	2.50	0.125	0.600	5300
V 4 MM 60	4	5	±5	0.25	0.13	0.13	0.020	0.100	860
Б 6-200	6	200	±60	10.00	5.00	5.00	0.200	0.800	1850
Б 5 - 11 MM H	11	5	±5	0.25	0.13	0.13	0.020	0.100	6500
4-60	4	60	± 30	3·00	1·5	1·5	1·0	0·500	860

CHEMICAL COMPOSITION IN %		
ELEMENT	Шх15 GOST:801-78	103 Cr2 IS:4398-72
C	0.95 - 1.05	0.95 - 1.10
Mn	0.20 - 0.40	0.25 - 0.45
Si	0.17 - 0.37	0.15 - 0.35
Cr	1.30 - 1.65	1.40 - 1.60
S	0.02 MAX	0.025 MAX
P	0.027 MAX	0.025 MAX
Ni	0.30 MAX	—
Cu	0.25 MAX	—



ALT. MATL. :- 103 Cr 2 TO IS 4398-72 OR EN-31
AUTHO. :- CQA(HV),LETTER No.98704/04/ID-CO-ORD/ALT COM
DT. : 03-05-2005

HARDNESS : 62 - 66 HRC

This sketch alongwith all details is an abstract based on GOST 3722

	BALL		Шх15	GOST:801-78		
संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS

सामान्य सहिष्णुता GENERAL TOLERANCE	
रेखिक परिमाप LINEAR DIMENSION	
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2
कोणिक परिमाप ANGULAR DIMENSION	
1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'
मापांक 'म्यू एम' में VALUE IN "um"	
~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

			②	4-60 added	27/10/06
			①	dtg. updated	23/08/11

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2006	दिनांक DATE	नाम NAME
				मापमान SCALE	आरेखित DRAWN	21-12 VML
				NTS	जाँचा CHECKED	
					अनुमोदित APPROVED	
					द्वारा बदला REPLACED BY	
					हेतु बदला REPLACED FOR	

BALL
CODE-45 / T-72 & T-90

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE: D.O.

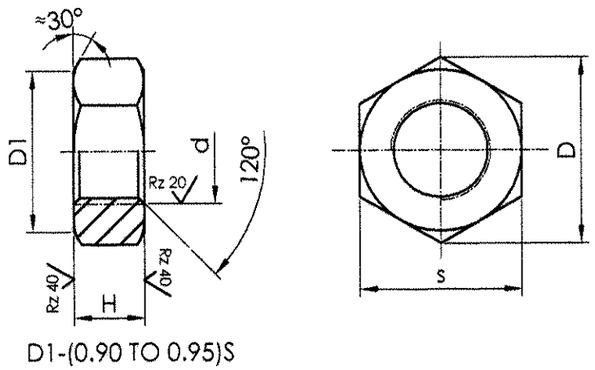
आरेखण क्र. DRAWING NO. ⑤
MPF/IGB/3722

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

REF. STDS:- GOST - 3722, IS : 4398

FILE PATH:-D:\VML\OLD-PC\CODE-45\T-90\COMPONENTS\GOST-3722.DWG.

Code 38, 84, 74, deleted



D1-(0.90 TO 0.95)S

DESIGNATION	NOMINAL THREAD DIA. d	PITCH P	WIDTH ACROSS FLATS, S	WIDTH ACROSS CORNERS, D min.	HEIGHT H	THREAD DETAILS		
						MAJOR Ø	PITCH Ø	MINOR Ø
M4 - 6H - 8 - 40 - 01 - 6	4	0.7	$7.0^{-0.20}$	7.7	$3.2^{-0.30}$	4.0	$3.545^{+0.118}_{0}$	$3.242^{+0.180}_{0}$

@ THIS SKETCH ALONGWITH ALL DETAILS IS AN ABSTRACT BASED ON GOST-5927-70

VETTED
21 DEC 2007
JWM/STD-CELL

* MATERIAL: STEEL 40 GOST 1050-74

ALTERNATE MATERIAL: 080M40 TO BS:970 - 83

(AUTHORITY - CQA(HV), AVADI, LETTER NO. 98704/04/ID-CO-ORD/ALT COM, DATED 03/05/2005.)

CHEMICAL COMPOSITION:

MATERIAL DESIGNATION	% C	% Si	% Mn	% Cr	% S	% P	% Cu	% Ni
STEEL 40 GOST 1050 - 74	0.37 0.45	0.17 0.37	0.50 0.80	0.25 max	0.040 max	0.035 max	0.25 max	0.25 max
080M40 BS:970-83	0.36 0.44	---	0.60 1.00	---	0.050 max	0.050 max	---	---

MECHANICAL PROPERTIES:

MATERIAL DESIGNATION	ULTIMATE TENSILE STRENGTH, kgf/mm^2	YIELD POINT kgf/mm^2 (min)	RELATIVE ELONGATION, % (min)	IMPACT STRENGTH $kgf.m/cm^2$ (MIN)	HARDNESS
STEEL 40 GOST 1050 - 74	80 - 100	64	12	6	225 - 300 HB
	TENSILE STRENGTH N/mm^2	YIELD STRENGTH N/mm^2	ELONGATION, % (min)	IMPACT STRENGTH ft.lb (min)	HARDNESS
080M40 BS:970-83	700 - 850	465	16	25	201 - 255 HB

NATIONAL DESIGNATION OF PLATING		TYPE OF PLATING
NUMERICAL	ACCORDING TO GOST 9073-77	
01	Zn, Cr	ZINC CHROMATING
02	Cd, Cr	CADMIUM CHROMATING
03	Cu, Ni	MULTILAYER COPPER NICKEL
04	Cu Ni Cr	MULTILAYER COPPER NICKEL CHROMIUM
05	Chem. Oxid.	OXIDING
06	Chem. Phos. Oil Imp.	PHOSPHATING WITH OIL IMPREGNATION
07	Cu	COPPER
08	Zn	ZINC
09	Hot Zn (Galv.)	HOT ZINC (GALVANISING)
10	Anod. Oxid. Cr	OXIDING WITH POTASSIUM BICHROMATE SOLUTION
11	Chem. Pass.	OXIDING WITH ACID SOLUTION
13	Ni	NICKEL
14	Cd	CADMIUM

DESIGNATION EXAMPLE :-
M4 - 6H - 8 - 40 - 01 - 6

M4 - - - - - THREAD DESIGNATION
6H - - - - - THREAD TOLERANCE ZONE
8 - - - - - - - STRENGTH CLASS AS PER GOST-1759-70
40 - - - - - - STEEL GRADE
01 - - - - - - TYPE OF PLATING
6 - - - - - - - THICKNESS OF PLATING IN MICRONS

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

सामान्य सहिष्णुता GENERAL TOLERANCE

रैखिक परिमाप LINEAR DIMENSION

0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2

कोणिक परिमाप ANGULAR DIMENSION

1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'

मापांक 'म्यू एम' में VALUE IN "um"

~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS
	NUT HEXAGONAL		*			

			@	DRG NO. CHANGED. NOTE. AGREED	16.12.05	

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2005	दिनांक DATE	नाम NAME

NUT [illegible]

TRANSMISSION GEAR UNIT

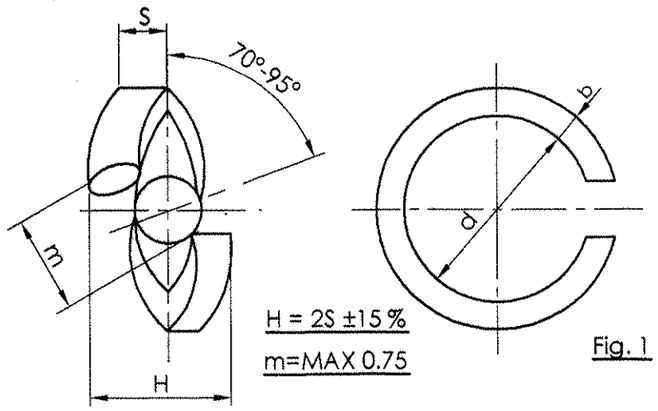
CODE - 45 / T-72 & T-90

मापमान SCALE	आरेखित DRAWN	03/09/05	RRK
NTS	जाँचा CHECKED	21.9	
	अनुमोदित APPROVED		
द्वारा बदला REPLACED BY			
हेतु बदला REPLACED FOR			
आरेखण क्र. DRAWING NO. MPF/IGB/5927			

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE
DESIGN OFFICE

MPF/IGB/5927-70



H = 2S ±15 %

m=MAX 0.75

Fig. 1

DESIGNATION EXAMPLE: -

5 T - 65Γ - 01 - 6

5 - - - THREAD DIAMETER

T - - - CONDITION

65Γ - MATERIAL

01 - - TYPE OF FINISH

6 - - THICKNESS OF PLATING IN MICRONS

CONDITION	DESCRIPTION
L	LIGHT
N	MEDIUM
T	HEAVY
OT	VERY HEAVY

CONVENTIONAL SYMBOL OF FINISH	TYPE OF FINISH
00	WITHOUT FINISH.
01	ZINC PLATING FOLLOWED BY CHROMATE PASSIVATION.
02	CADMIUM PLATING FOLLOWED BY CHROMATE PASSIVATION.
03	NICKEL PLATING
	MULTILAYER COPPER NICKEL PLATING
04	MULTILAYER NICKEL CHROME PLATING
	MULTILAYER COPPER NICKEL CHROME PLATING
05	OXIDE COATING
06	PARKERISING FOLLOWED BY OILING
09	ZINC PLATING
10	OXY ANODIZING FOLLOWED BY CHROMATE PASSIVATION.
11	PASSIVATION.

VETTED
15 FEB 2006
JWM/STD-CELL

SPRING WASHER DESIGNATION	NOMINAL DIA.	d	s	b
4 - 65Γ	4	$4.1^{+0.30}$	$1.2^{\pm0.125}$	$1.2^{\pm0.125}$
5 - 65Γ - 05	5	$5.1^{+0.30}$	$1.4^{\pm0.125}$	$1.4^{\pm0.125}$
5 T - 65Γ - 01 - 6	5	$5.1^{+0.30}$	$1.6^{\pm0.125}$	$1.6^{\pm0.125}$
6 T - 65Γ - 01 - 6	6	$6.1^{+0.58}$	$2.0^{\pm0.125}$	$2.0^{\pm0.125}$
8 - 65Γ - 01 - 6	8	$8.1^{+0.58}$	$2.0^{\pm0.125}$	$2.0^{\pm0.125}$
8 T - 65Γ - 01 - 6	8	$8.1^{+0.58}$	$2.5^{\pm0.125}$	$2.5^{\pm0.125}$
10 - 65Γ - 01 - 6	10	$10.1^{+0.70}$	$2.5^{\pm0.125}$	$2.5^{\pm0.125}$
12 OT - 65Γ - 01 - 6	12	$12.1^{+0.70}$	$4.0^{+0.24}$	$4.0^{+0.24}$
@ 3 - 65Γ - 06.	3	$3.1^{+0.30}$	$1^{\pm0.125}$	$1^{\pm0.125}$

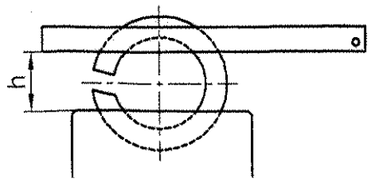


Fig. 2

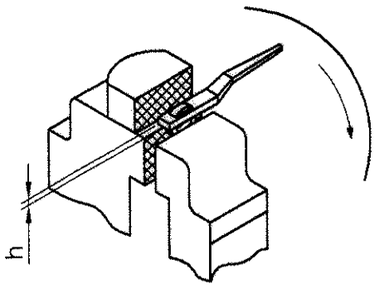


Fig. 3

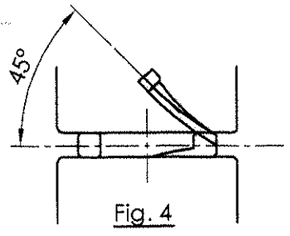


Fig. 4

CHEMICAL COMPOSITION (%)			MECHANICAL PROPERTIES		
ELEMENT	STEEL 65Γ GOST 14959-79	STEEL 70C6 IS: 2507-75	DESCRIPTION	STEEL 65Γ GOST 14959-79	STEEL 70C6 IS: 2507-75
C	062 - 0.70	0.65 - 0.75	TENSILE STRENGTH	981 (MIN.) MPa	1180-1420 MPa
Si	0.17 - 0.37	0.10 - 0.35	YIELD STRENGTH	785 (MIN.) Mpa	1030 (MIN.) MPa
Mn	0.90 - 1.20	0.50 - 0.80	RELATIVE ELONGATION	8 % MIN.	6 % MIN.
Cr	0.25 MAX.	----------	RELATIVE REDUCTION	30 % MIN.	------
Ni	0.25 MAX.	----------	HARDNESS	40 - 50 HRC	350 - 425 VPN
Cu	0.20 MAX.	----------			
S	----------	0.05 MAX.			
P	----------	0.05 MAX.			

ALTERNATE MATERIAL :- STEEL GRADE 70C6 TO IS:2507-75

AUTHORITY :- CQA(HV), AVADI, LETTER NO. 98704/04/ID-CO-ORD/ALT COM. DATED 03/05/2005

@ THIS SKETCH ALONG WITH ALL DETAILS IS AN ABSTRACT BASED ON GOST-6402-70

TESTING THE TENACITY:

ONE END OF THE WASHER IS CLAMPED IN VICE, IT'S OTHER END IS BENT WITH MONKEY WRENCH OR HANDLE HAVING A SLOT TO THE SIDE OF INCREASE OF DIMENSION 'H'. DURING THE TEST, DIMENSION 'h' SHOULD BE MAINTAINED (BETWEEN THE JAWS OF VISE AND WRENCH) EQUAL TO HALF THE INNER DIAMETER OF WASHER (SEE FIG. 2, 3, 4).

SPRING WASHER		STEEL 65Γ	GOST 14959-79		HRD. & TEMP.
संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS

		@	Added as required.		5/4/07
		b)	DRG UPTO DATED ON. 31-5-01		
			DIMN. 4·0 WAS 4·50, Ref. Letter No. 8.5.06		
		@1	7100/STD CELL/DRGAMD/SW Dt. 14·3·06		

सामान्य सहिष्णुता GENERAL TOLERANCE	
रेखिक परिमाप LINEAR DIMENSION	
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2

कोणिक परिमाप ANGULAR DIMENSION	
1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'

मापांक 'म्यू एम' में VALUE IN "um"	
~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2006	दिनांक DATE	नाम NAME

SPRING WASHER

TRANSMISSION GEAR UNIT

CODE - 45 / T-72 & T-90

मापमान SCALE			
NTS	आरेखित DRAWN	14.02.05	krb
	जाँचा CHECKED	16.02	
	अनुमोदित APPROVED		
द्वारा बदला REPLACED BY			
हेतु बदला REPLACED FOR			

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ

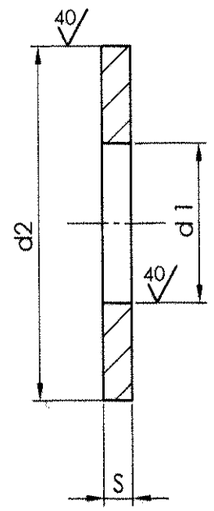
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE: D.O.

आरेखण क्र. DRAWING NO.: MPF/IGB/6402

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

VARIANT 1



WASHER AS PER IS:2016-67, ACCEPTABLE

DESIGNATION	NOMINAL DIA.	INTERNAL DIA. (d1)	EXTERNAL DIA. (d2)	THICKNESS S
4.01.016	4	4.3	9.0	0.8
05.01.016	5	5.3	10.0	1.0
C5.01.016	5	5.3	10.0	1.0
C6.01.016	6	6.4	12.5	1.6
C8.01.016	8	8.4	17.0	1.6

DESIGNATION EXAMPLE :-
C5.01.01.6

C - - - - - - TOLERANCE CLASS
5 - - - - - - NOMINAL DIA. OF THREAD
01- - - - - - VARIANT 1
01 - - - - - - TYPE OF PLATING
6 - - - - - - - THICKNESS OF PLATING IN MICRONS

NATIONAL DESIGNATION OF PLATING		TYPE OF PLATING
NUMERICAL	ACCORDING TO GOST 9073-77	
01	Zn, Cr	ZINC CHROMATING
02	Cd, Cr	CADMIUM CHROMATING
03	Cu, Ni	MULTILAYER COPPER NICKEL
04	Cu Ni Cr	MULTILAYER COPPER NICKEL CHROMIUM
05	Chem. Oxid.	OXIDING
06	Chem. Phos. Oil Imp.	PHOSPHATING WITH OIL IMPREGNATION
07	Cu	COPPER
08	Zn	ZINC
09	Hot Zn (Galv.)	HOT ZINC (GALVANISING)
10	Anod. Oxid. Cr	OXIDING WITH POTASSIUM BICHROMATE SOLUTION
11	Chem. Pass.	OXIDING WITH ACID SOLUTION
13	Ni	NICKEL
14	Cd	CADMIUM

VETTED
07 DEC 2007
JWM/STD-CELL

VETTED
02 DEC 2005
JWM/QC

* MATERIAL: STEEL 10KΠ GOST 1050-74

ALTERNATE MATERIAL: STEEL Gde. 'D' TO IS:513 - 94

(AUTHORITY - CQA(HV), AVADI, LETTER NO. 98704/04/ID-CO-ORD/ALT COM, DATED 03/05/2005.)

CHEMICAL COMPOSITION:

MATERIAL DESIGNATION	% C	% Si	% Mn	% Cr	% S	% P	% Cu	% Ni
STEEL 10KΠ GOST 1050 - 74	0.07 0.14	0.07 max	0.25 0.50	0.15 max	0.040 max	0.035 max	0.25 max	0.25 max
STEEL Gde.'D' IS:513 - 92	0.12 max	---	0.50 max	---	0.040 max	0.040 max	---	---

MECHANICAL PROPERTIES:

MATERIAL DESIGNATION	YIELD POINT kg/mm^2 (min)	ULTIMATE TENSILE STRENGTH , kg/mm^2	ELONGATION, % (min)	REDUCTION OF AREA % (min)	HARDNESS
STEEL 10KΠ GOST 1050 - 74	21	34	31	55	143 HB max

	TENSILE STRENGTH MPa	YIELD STRESS MPa (max)	ELONGATION, % (min)	IMPACT STRENGTH ft.lb (min)	HARDNESS (max)
STEEL Gde.'D' IS:513 - 94	270 - 410	280	23	---	65 HRB

@ This sketch alongwith all details is an abstract of GOST 11371-78 & 68

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

सामान्य सहिष्णुता GENERAL TOLERANCE	
रेखिक परिमाप LINEAR DIMENSION	
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2
कोणिक परिमाप ANGULAR DIMENSION	
1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'

मापांक 'म्यू एम' में VALUE IN "um"

~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS
	WASHER		*			
			@	Note added and dwg. no amended		

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2005 दिनांक DATE	नाम NAME

WASHER
TRANSMISSION GEAR UNIT
CODE - 45 / T-72 & T-90
Gost 11371 - 78

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE: D.O.

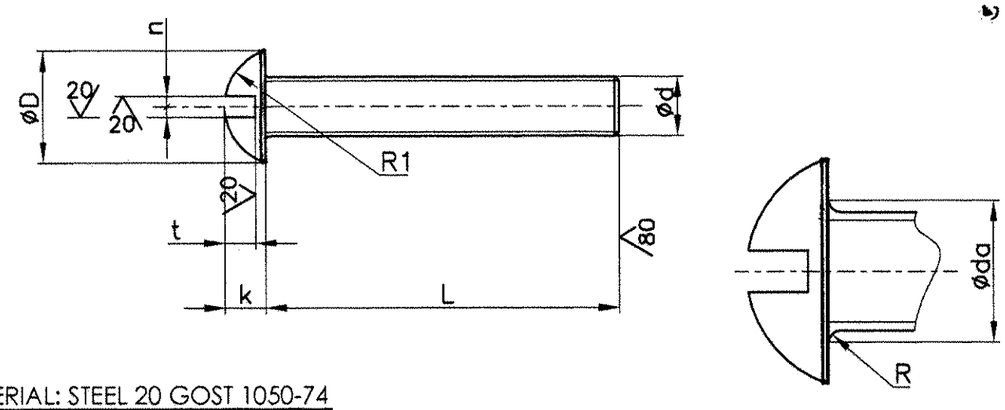
मापमान SCALE	आरेखित DRAWN	06/09/05	RRK
NTS	जाँचा CHECKED	2.12.05	
	अनुमोदित APPROVED	05.12	
द्वारा बदला	REPLACED BY		
हेतु बदला	REPLACED FOR		

आरेखण क्र. DRAWING NO.
MPF/IGB/11371

10/ (√)

	DESIGNATION	Ød	P	ØD	K	R1	n Min. Max	t Min. Max	R Min.	L	Øda Max.	TOLERANCE FOR ALIGNMENT OF HEAD WITH RESPECT TO STEM IN DIAMETRICAL EXPRESSION.	TOLERANCE FOR SYMMETRY OF SLOT WITH RESPECT TO STEM IN DIAMETRICAL EXPRESSION.	DETAILS OF THREAD MAJOR Ø	DETAILS OF THREAD PITCH Ø	DETAILS OF THREAD MINOR Ø
@	AM2-6g x 12 - 46 - **013**	2	0.4	$3.8^{-0.25}$	$1.4^{\pm0.07}$	2	0.56 0.70	0.75 1.05	0.1	$12^{\pm0.35}$	2.6	0.28 (ACCURACY DEGREE- 'A')	0.28 (ACCURACY DEGREE- 'A')	$2^{-0.019}_{-0.114}$	$1.740^{-0.019}_{-0.086}$	$1.509^{-0.019}$
	M4-6g x 12 - 46 - 016	4	0.7	$7.0^{-0.3}$	$2.8^{\pm0.12}$	3.6	1.06 1.20	1.6 2.0	0.2	$12^{\pm0.35}$	4.7	--	--	$4^{-0.022}_{-0.162}$	$3.545^{-0.022}_{-0.112}$	$3.141^{-0.022}$

b) THIS SKETCH ALONGWITH ALL DETAILS IS AN ABSTRACH BASED ON GOST-17473-80



* MATERIAL: STEEL 20 GOST 1050-74

ALTERNATE MATERIAL: 070M20 TO BS: 970 - 83

(AUTHORITY - CQA(HV), AVADI, LETTER NO. 98704/04/ID-CO-ORD/ALT COM, DATED 03/05/2005.)

CHEMICAL COMPOSITION:

MATERIAL DESIGNATION	% C	% Si	% Mn	% Cr	% S	% P	% Cu	% Ni
STEEL 20 GOST 1050 - 74	0.17 0.24	0.17 0.37	0.35 0.65	0.25 max	0.040 max	0.035 max	0.25 max	0.25 max
070M20 BS:970-83	0.16 0.24	---	0.50 0.90	---	0.050 max	0.050 max	---	---

MECHANICAL PROPERTIES:

MATERIAL DESIGNATION	ULTIMATE TENSILE STRENGTH , kg/mm²	YIELD POINT kg/mm² (min)	RELATIVE ELONGATION, % (min)	IMPACT STRENGTH kgf.m/cm² (MIN)	HARDNESS
STEEL 20 GOST 1050 - 74	40 - 55	24 Min	25	5.5	BHN 110-170
	TENSILE STRENGTH N/mm² (min)	YIELD STRENGTH N/mm²	ELONGATION, % (min)	IMPACT STRENGTH ft.lb (min)	HARDNESS
070M20 BS:970-83	400	200	21	---	116 - 170 HB

NATIONAL DESIGNATION OF PLATING		TYPE OF PLATING
NUMERICAL	ACCORDING TO GOST 9073-77	
01	Zn, Cr	ZINC CHROMATING
02	Cd, Cr	CADMIUM CHROMATING
03	Cu, Ni	MULTILAYER COPPER NICKEL
04	Cu Ni Cr	MULTILAYER COPPER NICKEL CHROMIUM
05	Chem. Oxid.	OXIDING
06	Chem. Phos. Oil Imp.	PHOSPHATING WITH OIL IMPREGNATION
07	Cu	COPPER
08	Zn	ZINC
09	Hot Zn (Galv.)	HOT ZINC (GALVANISING)
10	Anod. Oxid. Cr	OXIDING WITH POTASSIUM BICHROMATE SOLUTION
11	Chem. Pass.	OXIDING WITH ACID SOLUTION
13	Ni	NICKEL
14	Cd	CADMIUM

DESIGNATION EXAMPLE :-
AM2-6g x 12 - 46 -016

A ----------ACCURACY DEGREE
M2 - - - THREAD DESIGNATION
6g - - - - - - THREAD TOLERANCE ZONE
12 - - - - - - LENGTH
46 - - - - - - STRENGTH CLASS AS PER GOST-1759-70
01 - - - - - - TYPE OF PLATING
6 - - - - - - - THICKNESS OF PLATING IN MICRONS

HALF ROUND HEAD SCREW | * | संख्या NO.OFF | विवरण DESCRIPTION | पुर्जा क्र. PART NO. | पदार्थ MATERIAL | मानक STANDARD | परिमाप DIMENSIONS | अभ्यक्ति REMARKS

@	AM2-6gX12.46.016 changed to AM2-6gX12.46.013 as per original Part list dt. 21-01-2000				18/12/06
b)	DRG NO. CHANGED. NOTE ADDED			10.12.11	

सामान्य सहिष्णुता GENERAL TOLERANCE

रेखिक परिमाप LINEAR DIMENSION

0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2

कोणिक परिमाप ANGULAR DIMENSION

1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'

मापांक 'म्यू एम' में VALUE IN "um"

~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

संख्या NO.OFF | संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART | सूचक INDEX | संशोधन ALTERATION | 2005 | दिनांक DATE | नाम NAME

SCREW
TRANSMISSION GEAR UNIT
CODE - 45 / T-72 & T-90

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE: D.O.

मापमान SCALE	NTS	
आरेखित DRAWN	08/09/05	DHR
जाँचा CHECKED	23/12/05	
अनुमोदित APPROVED	23.12	
द्वारा बदला REPLACED BY		
हेतु बदला REPLACED FOR		
आरेखण क्र. DRAWING NO.	MPF/IGB/17473	

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT | विचलन DEVIATION

MPF/IGB/17473

TB-40 = GRADE OF THE TUBE, 230 , 305 = COMPOUNDING OF THE RAW MTERIAL AT A TEMPERATURE FROM (-40 TO +70°)

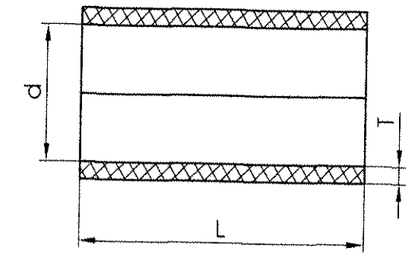
@ This sketch alongwith all details is an abstract of GOST 19034 -73&82

NORM FOR GRADE	HIGH	FIRST QUALITY
1. ELECTRICAL VALUME RESISTIVITY Ohm. cm. MINIMUM UNDER CONDITIONS OF GOST-6433-1-71: 6(15-35) 45-75M (15-35) 45-75 6(15-35) 45-75 : 1(70) 20M (70) 20	1.10^{12}	1.10^{12}
	1.10^{10}	1.10^{10}
2. ELECTRIC STRENGTH. KV / mm MIN. UNDER CONDITIONS OF GOST-6433.1-71 6(15-35) 45-75M (20) TRANSFORMER OIL.	15	15
3. ELECTRIC STRENGTH UNDER CONDITIONS OF LOW TEMPERATURE KV/mm MINIMUM UNDER CONDITIONS OF GOST 6433.1-71 6(15-35) 45-75 : 2 . (-60)M (20) TRANSFORMER OIL.	16	10
4. ELECTRIC STRENGTH UNDER CONDITIONS OF RAISED HUMIDITY, KV/mm. MINIMUM UNDER CONDSDITIONS OF GOSST-6433.1-71 6(15-35) 45-75 : 24 (20) 95M (20) TRANSFORMER OIL.	15	10
5. ELECTRIC STRENGTH UNDER CONDITIONS OF RAISED TEMPERATURE KV/mm. MINIMUM 6(15-35) 45-75 : 48(105) 20M (20) TRANSFORMER OIL. 6(15-35) 45-75 : 48(120) 20M (20) TRANSFORMER OIL	12	10
6. TENSILE STRENGTH. MPa(Kgf/cm^2) MINIMUM.	16.3 (170)	15.3 (160)
7. ELECTRIC STRENGTH UNDER CONDITIONS OF RAISED HUMIDITY	220	200

CHARACTERISTICS OF PVC PLASTIC OF FORMULA 230 T AND 355

1. EXTERNAL APPEARANCE : GRAINS WITH DIMENSIONS AND SHAPE PERMITTING FOR THEIR REPROCESSING, IN EXISTING EQUIPMENT, THE PLASTIC SHOULD BE UNIFORM ALONG THE BASE WITHOUT DIRT. FINE SPOTTED FOREIGN INCLUSIONS ARE ALLOWED.
2. COLOUR (230T) : UN-COLOURED OR COLOURED IN THE FOLLOWING COLOUR : WHITE, YELLOW, ORANGE, ROSE, RED, RED, BLUE, LIGHT BLUE,GREEN, BROWN, VOILET, BLACK, GREY.
2. COLOUR (355) : UNCOLOURED OR COLOURED IN BLACK. UNACOLOURED PLASTIC MAY BE COLOURED USING THE SPECIFIED COLOURS WITH CONCENTRATEDLY COLOURED PLASTIC.

	(230T)	(355)
3. ELECTRICAL VOLUME RESISTIVITY AT 20°C ohm, cm, min.	1.10^{11}	1.10^{10}
4. TENSILE STRENGHT MPa (Kgf/cm^2) MIN.	(15.3) 160	(9.8) 100
5. ELONGATION AT RUPTURE, % MIN.	200	250
6. TEMPERATURE OF BRITTLENESS °C MIN.	-40	-50
7. LIGHT RESISTANCE AT 70°C, Hrs. MIN.	1000	----
8. WATER ABSORPTION % MIN.	1	----



DESIGNATION	USED ON	COLOUR	d (INTERNAL DIA.)	T	L mm
SLEEVE III TB-40-230-3.5 WHITE L = 10 mm	172-70-033CD-4 (T-72)	WHITE	3.5 $^{\pm 0.25}$	0.40 $^{\pm 0.1}$	10
SLEEVE 305 TB-40 , 3.5 L = 20 mm	172-70-033CD-4 (T-90)	REFER NOTE 2	3.5 $^{\pm 0.25}$	0.40 $^{\pm 0.1}$	20
SLEEVE TB-40-230-3X 0·4 WHITE	D20·000CD (D20)	WHITE	$3^{\pm 0.25}$	0.4 ± 0.1	96

NOTE :- TUBES ARE USED FOR SOLDER WIRE INSULATION.

ALT. MATL.:- COMMERCIAL QUALITY CAN BE USED WHICH IS SUITABLE FOR END USE.

AUTHORITY; LETTER NO. 98704/04/ID-CO-ORD/ALT COM DT. 03/05/2005

* PLOYVINYL CHLORIDE (PVC) PLASTIC

	TUBES OF PVC PLASTIC		*			
संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS
			@	Dwg. updated		12/06

सामान्य सहिष्णुता GENERAL TOLERANCE	
रेखिक परिमाप LINEAR DIMENSION	
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2
कोणिक परिमाप ANGULAR DIMENSION	
1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'
मापांक 'म्यू एम' में VALUE IN "um"	
~	>25
▽	8-25
▽▽	1.6-6
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2006 दिनांक DATE	नाम NAME

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

SLEEVE
TUBES OF POLYVINYL CHLORIDE PLASTIC
TRANSMISSION GEAR UNIT
CODE - 45 / T-72 & T-90 GOST 19034-73/82

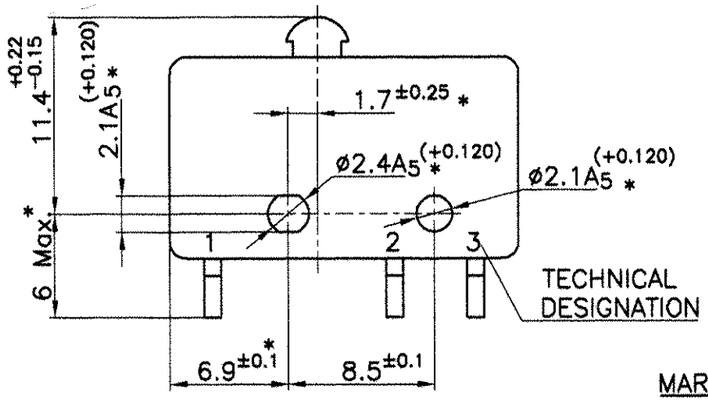
मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

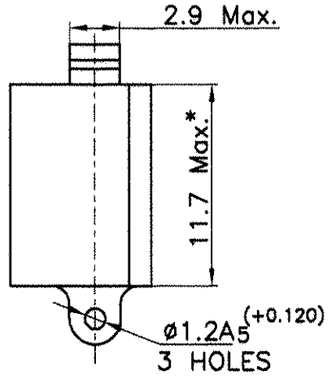
कार्यालय OFFICE: D. O.

मापमान SCALE			
NTS	आरेखित DRAWN	28-12	अुकाम
	जाँचा CHECKED	28-12	VKJ
	अनुमोदित APPROVED	30/12	
द्वारा बदला REPLACED BY			
हेतु बदला REPLACED FOR			
आरेखण क्र. DRAWING NO. @	MPP/IGB/19034		

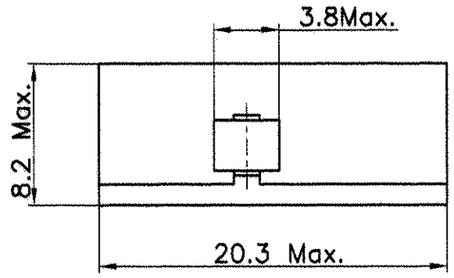
FILE PATH : D:\sudam\CODE-45\GOST 19034-82

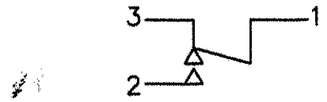
MICRO SWITCH MП1-1





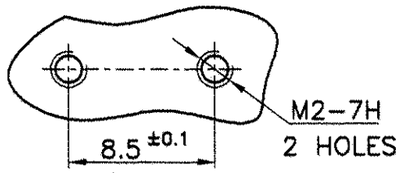
* DIMENSIONS ARE FOR REFERENCE



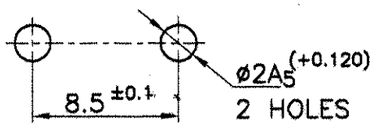


ELECTRICAL CIRCUIT DIAGRAM

MARKING OUT FOR FASTENING



VARIANT–I



VARIANT–II

NAME OF THE PARAMETER	NORMS
RESISTANCE OF ELECTRICAL CONTACT	⩽ 0.1 ohm
RESISTANCE OF INSULATION	⩾ 100Mega ohm
TEST VOLTAGE	550 V
ACTUATION FORCE N (kgf) FOR FORWARD ACTUATION.	0.98 TO 2.7 N (0.1 to 0.28 Kgf.)
ACTUATION FORCE N (kgf) FOR REVERSE ACTUATION.	0.26 N (0.027 kgf)
WORKING TRAVEL OF MICRO SWITCH	0.17 TO 0.60 mm
ADDITIONAL TRAVEL	⩾ 0.20 mm
DIFFERENTIAL TRAVEL	⩽ 0.10 mm
ACTUATION TIME	⩽ 0.015 seconds

TECHNICAL REQUIREMENTS.

1. THE PULLING FORCE, DIRECTED ALONG THE AXIS OF A TERMINAL, SHOULD BE NOT LESS THAN 19.6 N (2.0 kgf.) PERPENDICULAR TO THE AXIS NOT LESS THAN 4.9 N(0.5 kgf).
2. THE ACTUATION TIME SHOULD BE NOT MORE THAN 0.02 SECOND.
3. GENERAL SPECIFICATIONS:–
   a). WORKING TRAVEL OF MICRO SWITCH FROM 0.17 TO 0.6
   b). ADDITIONAL TRAVEL, NOT LESS THAN 0.2 mm.
   c). DIFFERENTIAL TRAVEL NOT MORE THAN 0.10 mm
4. ELECTRICAL PARAMETERS:–
   CURRENT 10 A
   CURRENT FLOW TIME NOT MORE THAN 100 SECONDS
   WORKING OF MICRO SWITCH IN AC AND DC CIRCUITS.

RESISTANCE OF ELECTRICAL CONTACT.	RESISTANCE OF INSULATION	TEST VOLTAGE.
0.5 ohm	⩾ 100 Mega ohm	550 V
0.1 ohm	⩾ 5 Mega ohm	1100 V

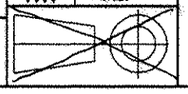
5. MECHANICAL LOADS.
   a). VIBRATION IN THE RANGE OF FREQUENCIES FROM 1 TO 2000 Hz WITH ACCELERATION UP TO 98.1 m/s^2 (10g).
   b). MULTIPLE IMPACTS WITH ACCELERATION UP TO 1471 m/s^2 (150g) WITH IMPACT DURATION OF 1–5 milliseconds.
   c). SINGLE IMPACT WITH ACCELERATION UPTO 4905 m/s^2 (500g) WITH IMPACT DURATION OF 1–2 milliseconds.
   d). LINEAR (CENTRIFUGAL) LOADS WITH ACCELERATION UPTO 981 m/s^2 (100g).
   e). ACOUSTIC NOISES IN THE RANGE OF FREQUENCIES FROM 50 TO 10000 Hz WITH LEVEL OF SOUND PRESSURE UPTO 150dB
6. AMBIENT TEMPERATURE UPTO 125° C @ THIS SKETCH ALONGWITH ALL DETAILS IS AN ABSTRACT
   ATMOSPHERIC PRESSURE 5 mm OF MERCURY BASE ON. H00-360-007TY
   MAXIMUM ACCRUED OPERATING TIME = 500 hrs.

VETTED
20 DEC 2007
JWM/STD-CELL

FIRST ANGLE PROJECTION

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

सामान्य सहिष्णुता GENERAL TOLERANCE	
रैखिक परिमाप LINEAR DIMENSION	
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2
कोणिक परिमाप ANGULAR DIMENSION	
1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'
मापांक 'म्यू एम' में VALUE IN "um"	
~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025



संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS
	MICRO SWITCH MП1-1					3.6 gm.

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2005	दिनांक DATE	नाम NAME
		@	DRG NO. CHANGED. NOTE ADDED		16.12.11	

MICRO SWITCH MП1-1
FOR LEVER WITH SWITCH ASSY (172-70-033CD-4)
TRANSMISSION GEAR UNIT
CODE-45 / T90
Y00-360-007TY
H00-360-007TY

मापमान SCALE	आरेखित DRAWN	22.11.05 DHR
NTS	जाँचा CHECKED	22/11/05
	अनुमोदित APPROVED	24.11
द्वारा बदला REPLACED BY		
हेतु बदला REPLACED FOR		

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE: D.O.

आरेखण क्र. DRAWING NO. MPF/IGB/H00-360-007TY

MPF/IGB/H00-360-007TY

CONSTRUCTIONAL DIMENSIONS AND NOMINAL MASS OF THE WIRES

WIRE SPECIFICATION	NOMINAL SECTION mm²	EXTERNAL DIAMETER OF WIRE, mm			NOMINAL WIRE MASS FOR 1 Km LENGTH, 1Kg.	
		MINIMUM	MAXIMUM			
			WITH FIBROUS INSULATION	WITH FILM INSULATION	WITH FIBROUS INSULATION	WITH FILM INSULATION
МГшВ-0.35 (MGSHV-0.35)	0.35	1.4	1.9	1.8	5.9	5.5

МГшВ : - FLEXIBLE FIBROUS AND PVC - INSULATED HOOK UP WIRES

LENGTH REQUIREMENT AS PER ASSY. DRG. PARTLIST

USED ON	МГшВ-0.35 (MGSHV-0.35)		
172-70-033CD-4 CODE-45	200 mm	--	--
172-70-174CD CODE-45	62 mm	--	--
D20.000CD CODE-45	0.32 M	--	--
675-71-CN4 CODE-71.4	0.15 M	--	--

* MATERIAL AS PER TY16-505-437-82	ALT. MATL. AS PER IS:9567:2001
TIN LEAD SOLDER AS PER GOST 21930-76 WIRE COPPER TINNED AS PER GOST 21930-76 LAVSAN SILK TRIACETATE RAYON. POLYETHYLENE TEREPHTHALICE FILM FLEXIBLE PVC OF GRADE И 40 / 14 OR И 40-13A FOR INSULATION AND И 45-12 FOR SHEATH GOST 5960-72 UPON AGREEMENT WITH THE MANUFACTURER, APPLICATION OF OTHER MATERIALS ARE ALLOWED.	TIN OR TIN-LEAD COATED COPPER WIRE 1) THE BASIC CONDUCTOR OF THE COATED WIRE SHALL BE PRODUCED FROM HIGH CONDUCTIVITY ANNEALED COPPER. 2) THE COPPER WIRE SHALL BE COVERED WITH A SMOOTH, UNIFORM, CONTINUOUS AND ADHERENT LAYER OF TIN OR TIN-LEAD ALLOY. 3) TIN SHALL BE GRADE OF 99.75 TO IS:26. 4) TIN LEAD ALLOY SHALL BE NON- ANTIMONIAL EUTECTIC 63 % TIN 37 % LEAD NOMINAL ALLOY. TIN SHALL BE MAINTAIN AT 63 ±5% TIN.

VETTED
16 JAN 2007
JWM/STD-CELL

ALT. MATERIAL :- COMMERCIAL QUALITY CAN BE USED WHICH IS SUITABLE FOR END USE

AUTHORITY :- 98704/04/ID CO ORD/ALT COM 03-05-2005

PROPERTIES OF TIN OR TIN-LEAD COATED ACOPPER WIRE AS PER IS:9567:2001

1) THE RESISTIVITY AT 20°C OF THE PLAIN ANNEALED COPPER WIRE BEFORE COATING SHALL NOT EXCEED 0.017 241 ohm.mm²/m.
2) RESISTANCE (COATED) MAX. 8.93 ohm/km. FOR Ø1.6 mm.
3) ELONGATION, MIN. = 15% FOR Ø > 0.5 mm.
4) BREAKING STRENGHT, MIN. N/mm² = 200 N/mm²
5) THE WIRE SHALL SATISFY THE FOLLOWING BEND TEST CONDITION:

NOMINAL DIA. COATED	No. OF BENDS BEFORE FAILURE, MIN.
1.6 TO 2.0 mm	12

6) THE COATED WIRE SHALL SATISFY SOLDERABILITY AND DEWETTING TEST ACCORDANCE WITH IS:9000 (PART 18/ SECTION 1-3), AFTER ACCELERATED AGEING.
7) THE WIRE SHALL MEAT CONTINUTY OF COATING WHEN TESTED BY HYDROCHLORIC ACID-SODIUM POLLYSULPHIDE TEST.
8) THE WIRE SHALL MEET ADHERENCE OF COATING TEST WHEN TESTED BY WRAPPING AND IMMERSION TEST.

@ All details mentioned are abstract of Ty.16-505/5.5-437

मूलमाप व अन्वायोजन NOMINAL SIZE & FIT	विचलन DEVIATION

संख्या NO.OFF	विवरण DESCRIPTION	पुर्जा क्र. PART NO.	पदार्थ MATERIAL	मानक STANDARD	परिमाप DIMENSIONS	अभ्यक्ति REMARKS
	WIRE		*			

सामान्य सहिष्णुता GENERAL TOLERANCE	
रेखिक परिमाप LINEAR DIMENSION	
0-6	±0.1
6-30	±0.2
30-120	±0.3
120-315	±0.5
315-1000	±0.8
1000-2000	±1.2
कोणिक परिमाप ANGULAR DIMENSION	
1-10	±1°
10-50	±30'
50-100	±20'
>100	±10'
मापांक 'म्यू एम' में VALUE IN "um"	
~	>25
▽	8-25
▽▽	1.6-8
▽▽▽	0.025-1.6
▽▽▽▽	<0.025

संख्या NO.OFF	संबंधित पुर्जोका आरेखण क्र. DRG. NO. OF ASSOCIATED PART	सूचक INDEX	संशोधन ALTERATION	2007	दिनांक DATE	नाम NAME
		@	Drg. updated		12/09/1.	

WIRE
TIN OR TIN-LEAD COATED COPPER WIRE
FILM OR FIBROUS AND 'PVC' INSULATED HOOK UP WIRES
CODE - 45 / T - 72 & T - 90 AND CODE - 71.4
TY-16-505/5.5-437

मशीनी औजार आदिरूप फैक्टरी, अम्बरनाथ
MACHINE TOOL PROTOTYPE FACTORY, AMBERNATH

कार्यालय OFFICE: D. O.

मापमान SCALE	NTS	आरेखित DRAWN	11/01
		जाँचा CHECKED	12/01
		अनुमोदित APPROVED	16/01

द्वारा बदला REPLACED BY
हेतु बदला REPLACED FOR
आरेखण क्र. DRAWING NO. @
MPF/IGB/TY-16-505/5.5-437

A3

FILE PATH: D:\sudam\CODE-45\LEVER WITH SWITCH ASSY.\TY-16-505-437.dwg.