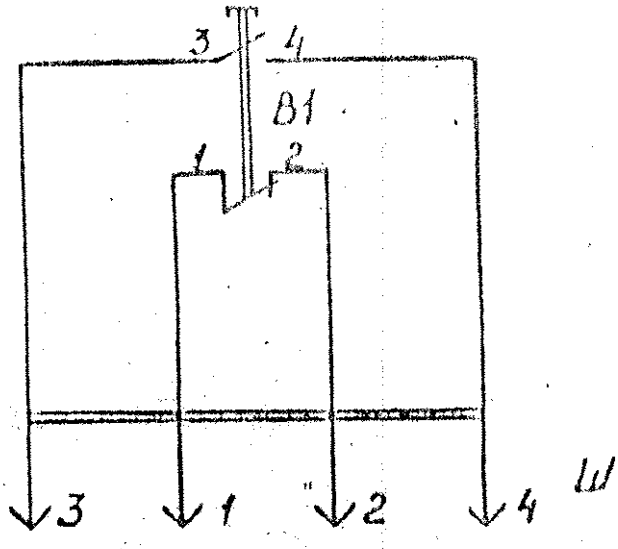
DRAWING NUMBER
Д20 000 Э3



PART No.	NOMENCLATURE	QTY	REMARKS
B1	MICROSWITCH D 301 НО.360.011	1	
Ш	PLUG WPГ20П53Ш7 ГЕО.364.108ТУ	1	

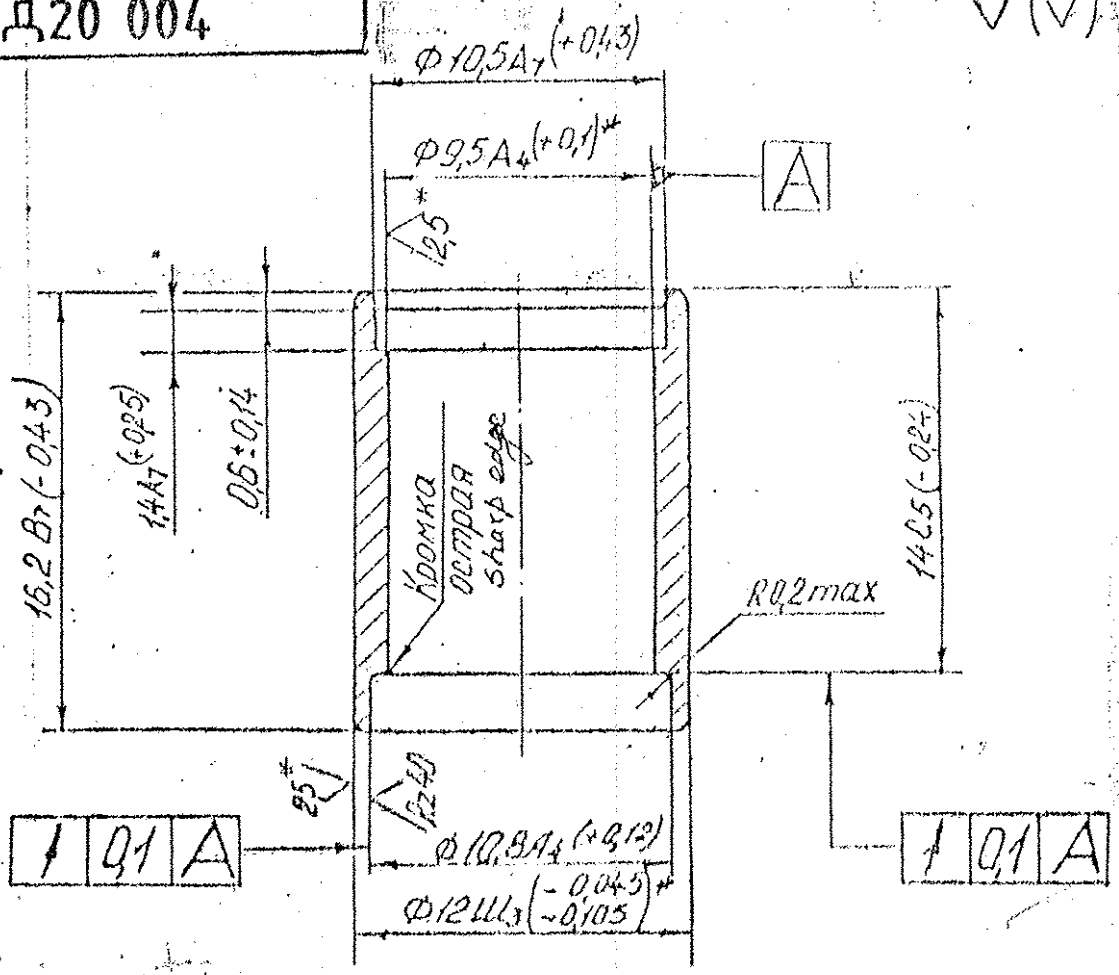
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

		EST. MASS	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 :- Д20 000 СБ
SUE	DATE	NATURE OF AMENDMENTS	
N		SCALE -	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
D		DIMENSIONS IN mm.	
D		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE :- SCHEMATIC CIRCUIT DIAGRAM SENDING UNIT Д20
PD		ALL THREADS CONFORM TO	D S CAT NUMBER
TE	18.2.98		DRAWING NUMBER Д20 000 Э3

7F AL

DRAWING NUMBER
Д20 004

Rz80



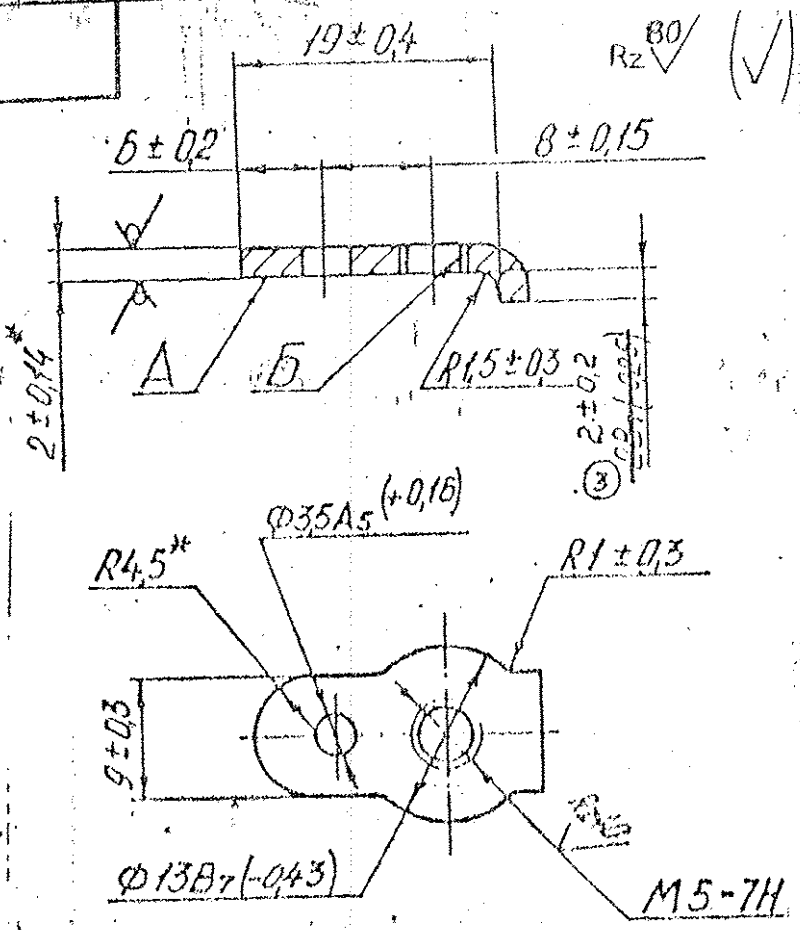
1. * Dimensions and roughness of surface after coating.
2. Coating: Cd9,Chromatizing.,
   ALT. MATL :- C14, IS: 2073-70
   AUTHORITY :- 98704/04/ID-CO-ORD/ALT.COM, APPENDIX 'A' Dated 3/5/2005
   PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

		EST. MASS 0.0047	TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)
	MASTER COPY	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.	
		MATERIAL :- STEEL 10 GOST 1050-74.	USED ON :- Д20 020 СБ
JE	DATE	NATURE OF AMENDMENTS	
		SCALE - 4 : 1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
		DIMENSIONS IN mm.	
		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE :- BUSHING
		ALL THREADS CONFORM TO	D S CAT NUMBER
			DRAWING NUMBER Д.20 004

F (B-2-1987)

A4.

DRAWING NUMBER
Д,20 007



1. * DIMENSIONS FOR REFERENCE.
2. COATING: Zn9, CHROMATIZING.
3. NON-SQUARENESS OF AXIS OF HOLE b RELATIVE TO SURFACE A SHOULD NOT EXCEED 1°.

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.
ALT MATL :- CRSS GRADE 'D' IS: 513-86
AUTHORITY :- CQA (HV) LETTER No 98704/04/D-CO-ORD/ALT.COM. DATED: 03/05/2005

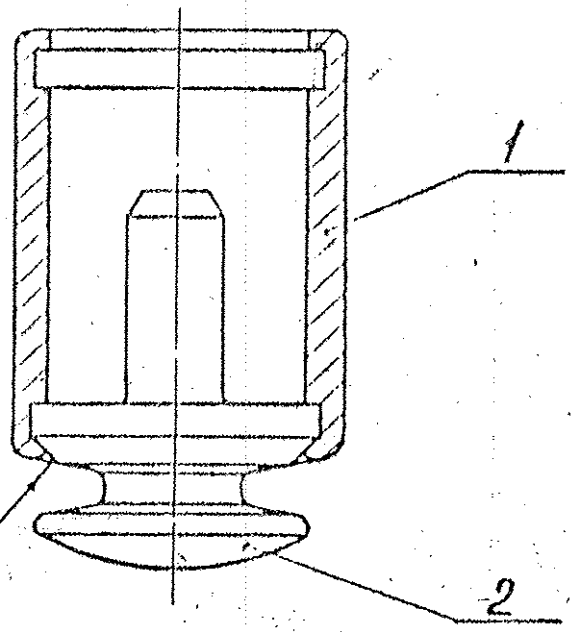
EST. MASS 0.0028	TO BE STAMPED OR MARKED WHERE INDICATED THUS * (LETTERS)
	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.
MATERIAL :- SHEET. 62 GOST 19904-74 4-11-10 GOST 16523-70	USED ON :- Д,20 030 СБ
	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
	TITLE :- BAR
ALL THREADS CONFORM TO	D S CAT NUMBER
	DRAWING NUMBER Д,20 007

MASTER COPY

ISSUE	DATE	NATURE OF AMENDMENTS
DRN V. Ramu		SCALE - 2:1
CHD Bellachew		DIMENSIONS IN mm.
TCD V. Ramu		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.
APPD		
DATE 18-2-1987		

SIZE A4

DRAWING NUMBER
Д20 020 СБ



To be flared flush

Забальцевать заподлицо

1. After flaring, the rotation of pin 2 is not allowed.
2. Place of flaring should be coated with lacquer

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

EST MASS
0.0070

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 ⊢
Д20 010 СБ

MASTER COPY

ISSUE | DATE | NATURE OF AMENDMENTS

SCALE - 4 : 1

DIMENSIONS IN mm.

TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.

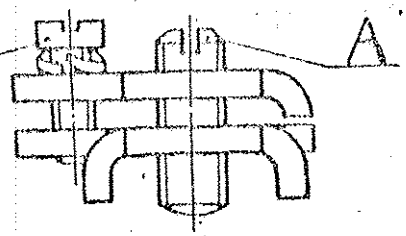
ALL THREADS

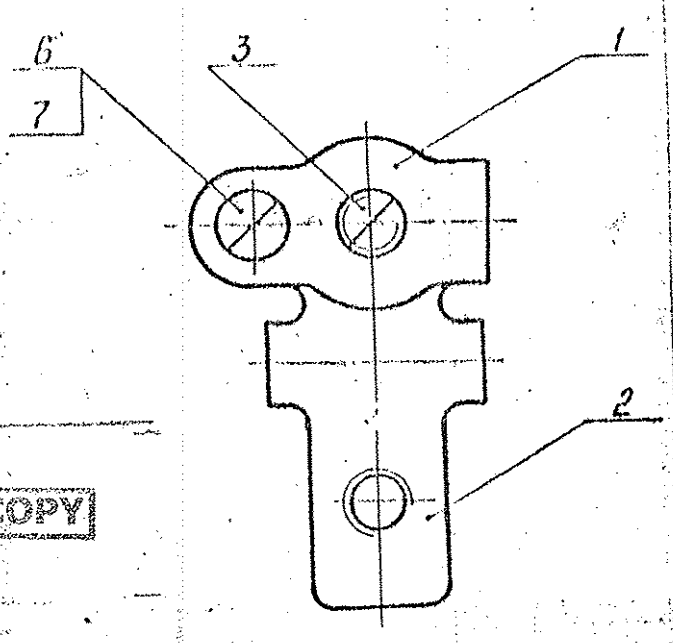
CONTROLLERATE OF INSPECTION (HEAVY VEHICLE)
AVADI

ROD ASSY

DRAWING NUMBER
Д20 020 СБ

DRAWING NUMBER
D, 20 030 CB





MASTER COPY

1. BAR 1 SHOULD BE SCREWED COMPLETELY ON SCREW A WHICH IS SCREWED IN LEVER.
2. SCREW 6 SHOULD BE SCREWED-IN. SPRING WASHER SHOULD NOT BE COMPRESSED.

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

ISSUE	DATE	NATURE OF AMENDMENTS
DRN	V Ramesh	SCALE - 2 : 1
CHD	[illegible]	DIMENSIONS IN mm.
TCD	V Ramesh	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.
APPD	[illegible]	ALL THREADS CONFORM TO
DATE	18.2.1987	

EST. MASS 0.0114

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 :-

CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI

TITLE :- LEVER ASSY

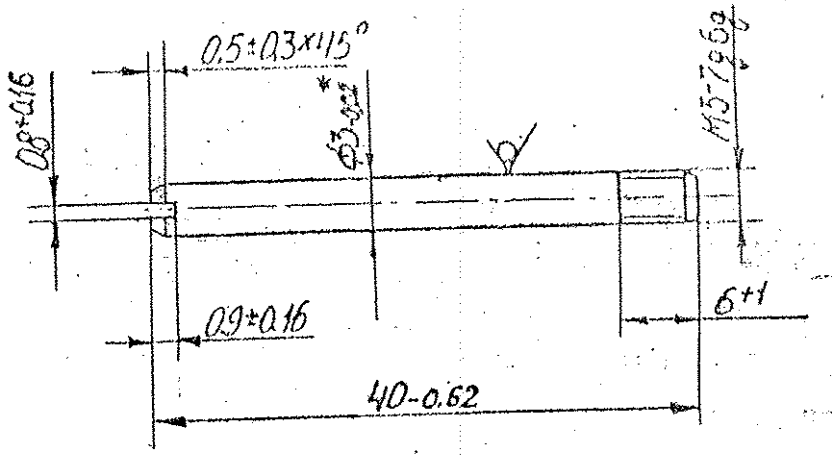
D S CAT NUMBER

DRAWING NUMBER D20 030 CB

SIZE A4

DRAWING NUMBER
D,74 001

Rz 80 (✓)



1. * DIMENSION FOR REFERENCES
2. COATING: Zn6, CHROMATIZING.

MASTER COPY

ALT. MAT'L :- STEEL C40 IS: 1570
AUTHORITY :- CQA (HV) LETTER NO. 98704/04/D-CO-ORD/ALT.COM DATED: 03-05-2005

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

ISSUE	DATE	NATURE OF AMENDMENTS
RN		
ND		
CD		
PPD		
DATE		

SCALE - 2 : 1

DIMENSIONS IN mm.

TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.

ALL THREADS CONFORM TO

SIZE A4

EST. MASS 0.0025

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 :-
BAR 3-A-3-y8A
GOST 14955-77

USED ON :-
A20 000 CB

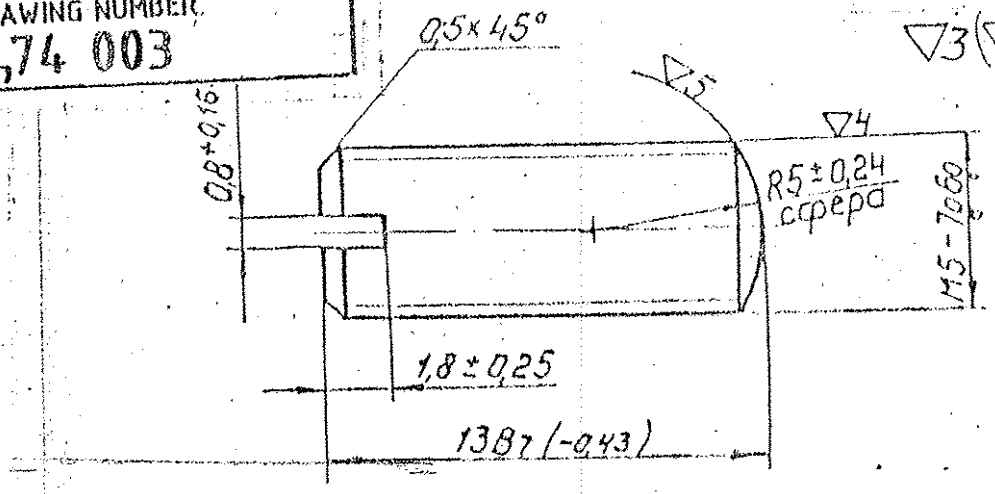
CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)
AVADI

TITLE :- STUD

D S CAT NUMBER

DRAWING NUMBER
D,74 001

DRAWING NUMBER
Д74 003



MASTER COPY

1. Допускаемое смещение шлица относительно оси винта 0,3 не более.
2. Термообработка. Калить HRC 30÷35.
3. Покрытие Ц9хр.

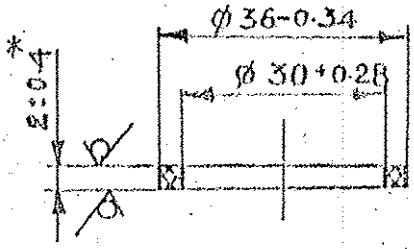
1. Permissible shift of slot relative to axis of screw should not exceed .0.3.
2. Heat treatment: To be heated to HRC 30÷35.
3. Coating: Zn9, Chromatizing.

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.
ALT. MATL :- STEEL 40, IS:1570. AUTHORITY :- CQA (HV) LETTER No. 98704/04/D-CO-ORD/ALT. COM DATED: 03-05-2005

		EST. MASS 0.0014.	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 :- STEEL 40 GOST 1050-60.	USED ON :- А20 030 СБ
ISSUE	DATE	NATURE OF AMENDMENTS	
DRN		SCALE - 5 : 1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
APD		DIMENSIONS IN mm.	
CD		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE :- SCREW
PPD		ALL THREADS CONFORM TO	D S CAT NUMBER
DATE	18-2-1980		DRAWING NUMBER Д74 003
SIZE A4			

4 3 1

DRAWING NUMBER
A 74 006



1. * DIMENSION FOR REFERENCES, OTHER DIMENSIONS ARE ENSURED BY TOOLS.
2. REST OF TECHNICAL REQUIREMENTS AS PER SPECIFICATION TY 005 216-75

MASTER COPY

ALT. MATL :- NITRILE BA 70, BS:2751-82
AUTHORITY :- 98704/04/ID-CO-DRD/ALT.COM, APPENDIX 'A' DATED 3/5/2005

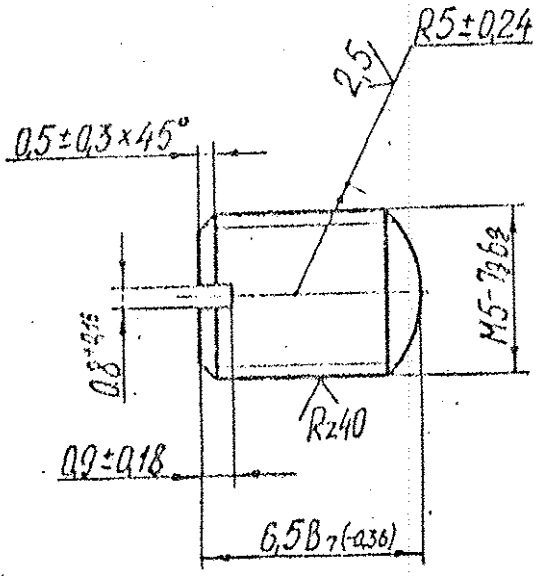
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

			EST. MASS 0.0005	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 PERMISSBLE.	
			MATERIAL :- PLATE 254311-2 RUBBER 110-68-1 TY 005 216-75	USED ON :- A 20 000 CB
SUE	DATE	NATURE OF AMENDMENTS		
IN J. Ram		SCALE - 1 : 1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
D		DIMENSIONS IN mm.		
D		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE :- GASKET	
PD		ALL THREADS CONFORM TO	D S CAT NUMBER	DRAWING NUMBER A 74 006
TE	18-2-1987			

7F AL

DRAWING NUMBER
A 74 008

Rz80 (√)



ALT. MATL :- STEEL 40, IS: 1570
AUTHORITY :- CQA (HV) LETTER NO. 98704/04/ID-CO-ORD/ALT. COM, APPENDIX 'A' DATE 03/05/2005

1. HRC 32,,...37.
2. SHIFT OF SLOT RELATIVE TO SCREW AXIS SHOULD NOT EXCEED 0.3mm.
3. COATING Cd9.

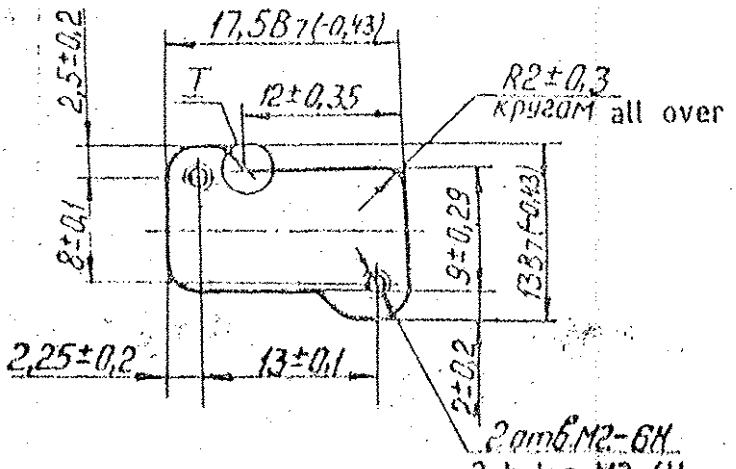
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

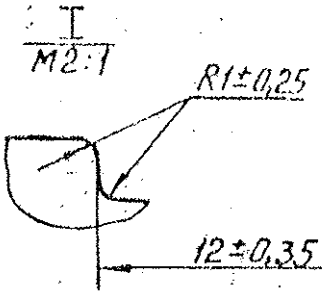
		EST. MASS 1g	TO BE STAMPED OR MARKED WHERE INDICATED THUS # (LETTERS)
	MASTER COPY	ALL SHARP EDGES AND CORNERS TO BE REMOVED UNLESS OTHERWISE STATED MACHINED CORNERS TO HAVE R OUTSIDE R INSIDE EQUIVALENT CHAMFERS ARE PERMISSIBLE.	
		MATERIAL :- STEEL 40 GOST 1050-74.	USED ON :- A20 000 CB
ISSUE	DATE	NATURE OF AMENDMENTS	
DRN		SCALE - 5 : 1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI
CH		DIMENSIONS IN mm.	
APPD		TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE :- SCREW
DATE	19.2.1981	ALL THREADS CONFORM TO	D S CAT NUMBER / DRAWING NUMBER A74 008

SIZE A4

DRAWING NUMBER
Д.74 014

▽3 (▽)





ALT. MATL :- GRADE 'D' IS:513-86
AUTHORITY :- CQA(HV) LETTER NO. 98704/04/D-CO-ORD/ALT.COM DATED: 03-05-2005

1. Coating: Zn6, Chromatizing.
2. Burrs are not allowed.

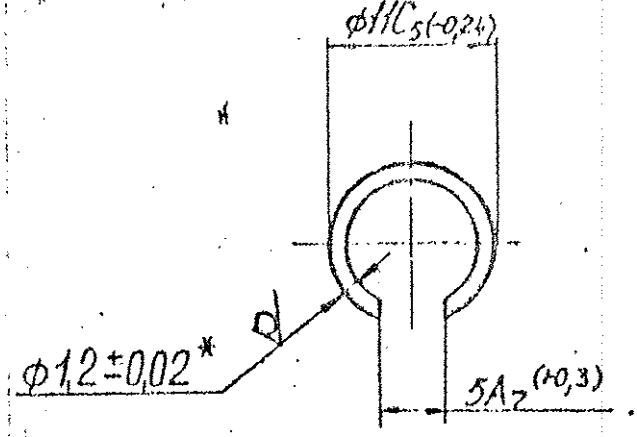
PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.

		EST. MASS 0.003	TO BE STAMPED OR MARKED WHERE INDICATED THUS ⁂ (LETTERS)
	MASTER COPY	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	MATERIAL :- SHEET Б-2 GOST 19904-74 4-Ш.10 GOST 16523-70	USED ON :- Д.20 000 СБ
DRN	SCALE - 2 : 1	CONTROLLERATE OF INSPECTION (HEAVY VEHICLES) AVADI	
CHD	DIMENSIONS IN mm.		
CD	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE :- STRIP	
APPD	ALL THREADS CONFORM TO	D S CAT NUMBER	DRAWING NUMBER Д.74 014
DATE 18.2.1980			

SIZE A4.

DRAWING NUMBER
Д74 021

Rz 30 (V)



1. Low temperature tempering.
2. *Dimensions for references.
3. Non-flateness should not exceed 0.5mm.
4. Coating: Chemical oxidation, lacquer ГФ-95 GOST 8018-70.

1. Низкий отпуск.

ALT. MATL :- GRADE. '2' IS: 4454 (Part I) - 1975
AUTHORITY :- 98704/04/ID-CO-ORD/ALT, APPENDIX 'A' DATED: 03/05/2005

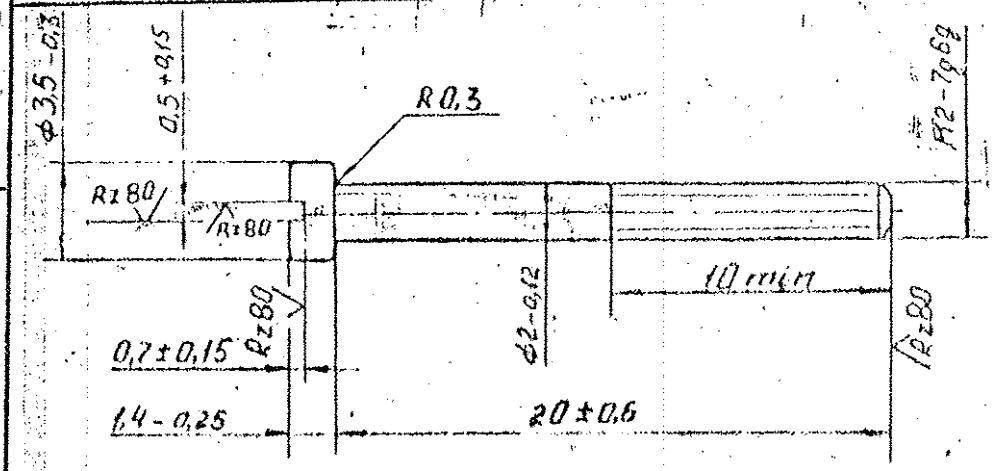
MASTER COPY

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

		EST. MASS 0.1g	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 :- WIRE I-1.2 TY 144821-77.	USED ON :- Д,20 010 СБ
ISSUE	DATE	NATURE OF AMENDMENTS	CONTROLLERATE OF INSPECTION (HEAVY VEHICLE) AVADI
DRN	V. Ramu	SCALE - 2:1	
CHD	Bhattacharya	DIMENSIONS IN mm.	
TCD	V. Ramu	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.	TITLE:- RING
APPD		ALL THREADS CONFORM TO	D S CAT N°
DATE	18.2.1980		DRAWING NUMBER Д74 021
SIZE	A4		

DRAWING NUMBER.
X1 11352

Rz40 (√)



1. Предельное отклонение от соосности осей вки и шлица относительно оси стержня 0,15мм.
2. Покрытие.. ~~Hfi.xo~~ Ц3-6.Х
3. Технические требования по ГОСТ 1759-70

1. Limit deviation from alignment of head axis and slot relative to rod axis should be 0.15mm.
2. Coating : Zn3-6, Chromatizing.
3. Technical requirements as per GOST 1759-70.

PILOT SAMPLE SHOULD BE APPROVED BY A H S P BEFORE BULK PRODUCTION.
ALT.MATL:-STEEL 070M20 IS:970-93./En3A AUTHORITY:-CQA(HV)Letter No.98704/D -CO-ORD/ALT. COM. DATED:-03-05-2005

EST. MASS 0,404 g

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 :-
STEEL A12
GOST 1414-75

USED ON :-
A20 000 СБ

CONTROLLERATE OF INSPECTION (HEAVY VEHICLES)
AVADI

TITLE :- SCREW

D B EAT NUMBER

DRAWING NUMBER
X1 11352

ISSUE	DATE	NATURE OF AMENDMENTS
RN		SCALE - 4 : 1
PRD		DIMENSIONS IN mm.
ATE	10-2-1987	TOLERANCE ON DIMNS UNLESS OTHERWISE STATED.
		ALL THREADS CONFORM TO

SIZE A4.

1

706-

1139

SENSOR A-20 SPECIFICATION

A 20.000 TY

Translated by	Authenticated by	ARMOURED VEHICLE PROJECT AVADI
INSDOC	ORLOV	
Date	Compiled by	SPECIFICATION No. A 20.000 TY
10.11.85	13/12	
		Page No. 1 of 44
		Approved by

These specifications cover sensing device A-20, hereinafter referred to as sensor, meant for commutation of automatic equipment electrical circuits.

Designation of the sensor while ordering: A-20, A20.000TY

1. TECHNICAL REQUIREMENTS

Sensor must conform to the requirements of these specifications, set of documents according to the specifications A.20.000 TY and OCT B3- 1164-72.

All articles and materials, used for manufacturing of the sensor must conform to valid standards and specifications on them.

1.1 BASIC PARAMETERS AND DIMENSIONS

1.1.1 The sensor has the following main parameters.

a) rated switching voltage	27V DC;
b) commutated current	0.5A;
c) operating condition	long-term;
d) ~~connected~~ of connections diagram	two-wire;
e) version	dust & splash proof.
f) working position	left;
g) Mass	not more than 0.35 kg.

1.1.2 Overall dimensions as per the drg. A20.000 TY4-1.

1.2 Characteristics

1.2.1 Sensor must conform to the drawing A20.000 TY4-1 and set of documents as per specifications A20.000 w.r.t. overall and installation dimensions and exterior view..

1.2.2 Sensor must withstand the action of vibrations at one of the f frequencies in 20-25 Hz range with 2 g acceleration.

1.2.3 ~~Electrical installation~~ Wiring and assembly of the sensor must conform to schematic circuit diagram A 20.000 Э3 assembly drawing A.20.000 СБ and ensure:

a) stem working stroke till direct actuation of microswitch ~~controls~~ contacts - 1-2 mm (after guaranteed operating time 1-2.15 mm);

b) force during stem working stroke not more than 3 kgf (at ambient air temperature of minus 50°C not more than 3.5 kgf);

c) total stem travel (till stop) - 6 mm, min;

d) force, required to achieve 6 mm stem travel - not more than 4 kgf (at minus 50°C ambient air temperature - not more than 4.5 kgf).

1.2.4 Insulation resistance between electrical circuits and casing and also between electrically disconnected circuits must be;

a) under normal climatic conditions, practically in cold state - not less than 20 Mohm;

b) under high temperatuye conditions - not less than 5 Mohm;

c) under high humadity conditions -not less than 1 Mohm.

1.2.5 Insulation between electrical circuits and casing and also between electrically disconnected circuits under normal climatic conditions must withstand:

625 V (effective value) 50 Hz, AC test voltage without breakdown or surface flashover.

1.2.6 Parts and assembly units of sensors of one ~~series~~ batch must be interchangeable.

1.2.7 Sensor must not have structural parts and assembly units with resonance frequencies upto 40 Hz.

1.2.8 Sensor must be fit for work and preserve its parameters under the conditions, specified in OCT 3-1164-72.

1.2.9 To meet guaranteed operating time, sensor must withstand 20000 ~~activations~~ switchings during bench-tests at manufacturing plant.

1.2.10 Sensor service life must ~~amount to three~~ be twice of guaranteed operating time.

1.2.11 Sensor must not create interferences to radio-reception and TNYF operation. (JS) Interphone system

1.2.12 Before acceptance tests, conduct sensor technological operation amounting to 700 ~~activations~~ switchings at 27V in bench-simulator circuit A20.000TM per the procedure on guaranteed operating test.

1.3 Completeness of set

1.3.1 The set consists of

a) sensor A 20

b) certificate

1.4 Marking

1.4.1 Sensor must be marked according to the set of documents on specifications A20.000. according

Packing and preservation of sensor to be made according to the requirements of OCT B3- 1164-72 and valid packing drawing. Preservation of articles, supplied as spare parts is made according to the requirements of OCT B3- 2881-84

2. ACCEPTANCE RULES

2.1 These specifications, OCT B3 -1164-72 and set of documents according to specification A20.000 are the main documents for manufactiring, testing and acceptance of the sensor.

2.2 All purchased articles must be checked by external acceptance section of QTD before installation in sensor. Amount and procedure of incoming inspection is established in agreement with the customer's representative.

2.3 Sensor tests are divided into acceptance, periodic and type tests.

2.4 Each sensor is subjected to acceptance tests in amount and sequence according to table 1.

Sensors are offered for acceptance in batches of 80-100 pieces.

2.5 Periodic tests are conducted twice in a year on two specimen in amount and sequence as per table 1.

2.6 Type tests are conducted in order to check conformance of sensor to the requirements of these specifications; in case of basic changes in circuit, design or manufacturing technology of the sensor, which may effect on operational characteristics; in case of necessity to check service life of sensor and measures

undertaken for ~~effected~~ eliminating of sensor defects and also on ~~trial~~ initial batch of ~~series~~ lot production.

Necessity of conducting type tests including service life tests is determined and agreed between manufacturer and customers representative in amount sufficient for checking the effectiveness of measures undertaken or service life, as per the agreed test programme, guided by the types of tests in table 1.

See page No. 33b-36 - Table 1 -

3. CHECKING METHODS

3.1 All tests are conducted under normal climatic conditions, except where climatic conditions are specifically stipulated.

Characteristics of normal climatic conditions:

a) ambient air temperature +25±10°C;

b) air relative humadity- 45-80%;

c) atmospheric pressure 630- 800 mm Hg. col.

Note: At a temperature higher than 30°C, relative humadity must not be higher than 70%.

Instruments must have a class of accuracy not less than 1.5.

3.2 Completeness, conformance to the requirements in drawings, quality of assembly, exterior finish, quality of soldering & absence of loose fixtures are checked visually; conformance of assembly to ~~drawings~~ wiring diagram by ~~devices~~ instrument; installation and overall dimensions by ~~instruments~~ test tools.

3.3 Vibration-strength test at one frequency is conducted in order to expose rough technological defects, permitted in the manufacturing cycle of the sensor. Before testing, correctness of ~~connecting wires~~ wiring and assembly of sensor is checked. Sensor in disconnected state is rigidly fixed to bench platform in any position.

Test is conducted at one of the frequencies in the range of 20-25 Hz, with 2 g acceleration. Test's duration is 30 min. Sensor is considered as withstood the test, if there are no mechanical damages and loosening of fixtures, and if ~~electrical~~ wiring and working and full travel, forces conform to the requirements in cl.1.2.3 of these specifications.

3.4 Correctness of ~~electrical connection~~ wiring and assembly of sensor is checked by any method, which ensures checking of ~~electrical connection~~ wiring and assembly of sensor on conformance to circuit A20.00093 and drawing A20.00006 or as per the procedure, given below:

a) connect power supply PLUS to ~~contact~~ terminal 1, and MINUS through rheostat to ~~contact~~ terminal 2 of plug type connector, set 0.5±0.05A current with the help of rheostat and measure. Voltage drop across ~~contacts~~ terminals 1-2, whose magnitude must not exceed 185 mV, disconnect supply.

b) connect power supply PLUS to ~~contact~~ terminal 3, and MINUS through rheostat to ~~contact~~ terminal 4 of plug connector, drive-in sensor stem and set 0.5±0.05A current with the help of rheostat,

measure voltage drop accross terminals 3-4, whose magnitude must not exceed 185 mV;

disconnect supply;

c) correctness of sensor assembly (forces of working & full travel) is checked on a special device according to the requirements of drg. A20.000 СБ . Checking to be made in 2 positions of the drive: in case of projecting position of pusher by 3 mm from joint face and in case of sunk position of pusher by 1 mm from joint face.

Sensor is considered as withstood the test, if measured values of voltage drop do not exceed 185 mV and sensor conform to the requirements in cl.1.2.3 of these specifications.

Notes: 1. Connect power supply MINUS only when rheostat resistance value is maximum.

2. Procedure of checking wiring and assembly of sensor, and also technological instruction must be agreed with the customer's representative.

3.5 Insulation resistance is tested with 550 V DC megohmmeter.

Insulation resistance is measured:

a) in free state of sensor stem, across terminals 2-3, 2-4 and 3-4 of plug connector and also array sensor casing and each of the terminals 2,3,& 4 of plug connector;

b) in pressed state of sensor stem, between terminals 1-2 of plug connector.

Sensor is considered as withstood the test, if the measured values of insulation resistance correspond to cl.1.2.4a of these specifications.

3.6 Insulation electricalstrength is checked on a special high-voltage device of not less than 0.5 kVA capacity by feeding test voltagefor 1s.

Test voltage is applied between casing and each of the following plug connector terminals successively: 1 2,3 and 4.

Insulation electricalstrength between electrically disconnected circuits is tested between the following terminals of plug connector: 2-3, 2-4 and 3-4; in case of sensor stem pressed till stop, between contacts 1-2 of plug connector.

Sensor is considered as withstood the test, if there is no breakdown or surface flashover of insulation during checking.

Note: In case of subsequent checkings of sensor, before installation on the article, norm of test voltage is established as 80% of that envisaged by the requirements of these specifications.

3.7 In case of splash-proofability test, sensor in disconnected state is installed in the spray chamber in any position and subjected to the action of water jet directed from top with an intensity of 2-2.5 mm/ min, uniformly sprayed by compressed air at 3.35kg/cm^2. pressure spraying Jet atomisation must takes place over the sensor at a height of not less than 100 mm.

During test the sensor is gradually rotated by 360° around vertical axis. Test duration is 5 minutes.

At the end of the test, sensor is dried from outside and opened for inspection.

Sensor is considered as passed the test, if there is no water inside it.

3.8 In order to check the sensor on conformance to drawings and interchangeability as per ~~the requirement~~ of customer's representative, request one specimen from the accepted batch is disassembled. In this case conformance of parts and assembly units to the requirements of design documents is checked.

In case there are no parts and assembly units on the assembly line, two sensors are disassembled.

Sensor is considered as passed the check on interchangeability, if parts and assembly units conform to drawings and after their replacement sensor will conform to the clauses of acceptance tests in these specifications.

Note: covers and other detachable parts and removed and replaced in the sensor.

3.9 Test on absence of resonance in structural parts is conducted during type tests after visual inspection & checking of ~~wiring~~ wiring and assembly.

Sensor in non-working position with removed cover is rigidly fixed to vibration table.

Test is conducted in three mutually perpendicular positions of the sensor (fig.1) successively as per the norms at table 2 with smooth change in vibration frequency in each sub-range.

- Fig. 1 - See page NO 38

- Table 2 - See page NO. 37.

Passage time through each subrange must be sufficient for exposure of resonance, but not less than 2 min. Absence of resonance in structural parts and assembly units of sensor is checked during the test with the help of instruments. Visual determination of resonance is permitted.

Sensor is considered as witstood the test, if there is no resonance of structural parts and assembly units in the range of specified frequencies or amplitude of vibrations of any part & assembly unit does not exceed twice of the amplitude of its fix point and if no mechanical damages are observed as result of visual inspection.

3.10 In case of moisture-resistance test, sensor in disconnected state with removed cover is located in hygrostat with a relative humedity of 93-97% and 20-25°C temperature and kept in it for 5 days.

Increase in humedity upto 98% and temperature upto plus 35° is permitted.

After withdrawal of sensor from hygrostat but not later than 2-3 minutes, following is checked;

a) insulation resistance as per the procedure in cl.3.5 of these specifications;

b) forces of working and full travels as per the procedure in cl. 3.4c of these specifications;

c) sensor fitness for work by three time switching as per the condition of guaranteed operating time tests at 22+1V supply voltage;

d) absence of corrosion;

e) preservation of varnish-and-paint coatings.

After holding the sensor with removed cover for 12 hours under normal climatic conditions, insulation resistance and also insulation electrical strength are checked as per the procedures in cl.3.5 and 3.6 and forces of working and full travel as per the procedure in cl.3.4c of these specifications. Sensor is considered as withstood the test, if it remains fit for work, insulation resistance conforms to the requirements in cl. 1.2.4C of these specifications there is no separation of varnish-and-paint coatings and traces of corrosion are absent and after holding under normal climatic conditions, electrical strength and insulation resistance values conform to the requirements in cl.1.2.5 and 1.2.4a respectively and forces of working and full travel conform to the requirements in cl.1.2.3 of these specifications.

3.11 In case of cold-resistance test, sensor in disconnected state is put into a cooling chamber in which temperature is

reduced to minus 50°C and maintained with an accuracy of ±3°C. After acheiving this temperature, sensor is kept in the chamber for 4 hours, then it is withdrawn from the chamber and not later than 2-3 minutes, sensor fitness for wrok is checked by three time switching at 22 V as per guaranteed operating time test condition and working and full travel forces are checked as per the procedure of cl.3.4C of these specifications.

Sensor is considered as passed the test, if it remains fit for work and if working (forces) and full travels conform to the requirements of cl.1.2.3 of these specifications.

Note: It is permitted to place the sensor in cooling chamber in which temperature is already reduced to minus 50°C. In this case, sensor is kept for 5 hours in the chamber.

3.12 In case of heat-resistance test, temperature of plus 50°C is set in the heating chamber and maintained with an accuracy of ±3°C.

Sensor is connected to bench simulator circuit kept in heating chamber in connected state at 29V for 4 hours, after that sensor is withdrawn from the heating chamber and not later than 3 minutes its fitness for work is checked by triple switching as per the guaranteed operating time test condition with 22 V power supply.

Then the sensor is again put into a heating chamber in which temperature is set at plus 65°C and maintained with an accuracy of ±3°C and kept at this temperature for two hours.

At the end of the test, sensor is withdrawn from the chamber and within three minutes insulation resistance is checked as per procedure ~~in~~ at cl.3.5 and working and full travel forces as per the procedure ~~in~~ at cl. 3.4C of these specifications.

Sensor is considered as withstood the test, if it remains fit for work, insulation resistance conforms to the requirements ~~in~~ at cl.1.2 4b and if working and full travel forces, conforms to the requirements in cl.1.2.3 of these specifications.

3.13 In case of test on stability to the action of frost and dew, ~~as~~ the ~~sensor~~ sensor in disconnected state is ~~located~~ placed in cooling chamber and kept in it for 2 hours at a temperature of minus 20±5°C.

After this, the sensor is withdrawn from the chamber kept under normal climatic conditions and connected to bench circuit Д20.000 ПМ ; in this case immediately after connection and after every 15 minutes ~~for~~ in 2 hours, and also under conditions of frost and dew formation sensor fitness for work is checked by triple ~~activation~~ switching at 22 V as per the procedure of guarantee tests.

Sensor is considered as withstood the test, if it remains

fit for work during stay under normal climatic conditions after withdrawal from the cooling chamber.

3.14 In case of test on the action of sea(salt) fog, sensor with closed covers is put into a chamber, in which temperature is set at 27-30°C and subjected to the action of salt fog. Before placing in the chamber, absence of damaged varnish-and-paint coatings is checked by visual inspection.

Sensor is located in the chamber in such a way that solution splashes and also drops from ceiling, walls and suspension system do not fall on the sensor during test.

Fog is formed by spraying with centrifugal aerosol equipment or pulverizer of salt solution, which is prepared by dissolving 33±3 g/l of sodium chloride in distilled water (GOST 4233-77). Fog must have particle size of 1-10 μ (95% drops) and water content of 2-3 g/m^3.

Solution is sprayed for 15 minutes after every 45 minutes. Total test duration is 2 days. Test duration is counted from the time of first solution spray.

At the end of the test, sensor is washed with wad, wetted in distilled water, after that it is dried for 1 hour at a temperature of +55±2°C followed by cooling and visually inspected.

Sensor is considered as withstood the test, if no traces of corrosion and damage to varnish-and-paint coatings is observed.

3.15 In case of test on resistance to cyclic changes in temperature,

sensor in disconnected state is subjected to the action of three cycles of changes in temperature continously one after another.

Each cycle is conducted in the following sequence:

Sensor is put into cooling chamber, in which temperature is already reduced to minus 50°C and kept at this temperature for 4 hours.

From the cooling chamber, sensor is immediately transferred to heating chamber at +65°C and kept at this temperature for 4 hrs.

Holding time in heating and cooling chamber is counted from the time of achieving the specified air temperature in chamber after insertion of the sensor.

At the end of the last cycle, sensor is withdrawn from heating chamber and kept under normal climatic conditions for 4 hours.

After that, sensor is visually inspected, working and full travels forces, are checked as per the procedure in cl. 3.4C of these specificationsand sensor fitness for work is checked by triple ~~operation~~ switching at 22 V as per guaranteed operating time test conditions.

Sensor is considered as withstood the test, if it remains fit for work, and working and full travels forces, conforms to the requirements ~~in~~ of cl.1.2.1 and 1.2.3 of these specifications.

Note: It is permitted to conduct test on ~~stability~~ resistance to cyclic changes in temperature in one chamber with rate of change in temperature not less than 0.5°C per minute .

3.16 Vibration-resistance test is conducted on the table with single-component vertical or horizontal vibration successively in three mutually perpendicular positions of sensor, given in cl.3.9 of these specifications. Sensor is visually inspected before the test.

Sensor is rigidly fixed to the table and connected to the bench A20.000TM, then 22V power supply is fed to the bench, lamp Л1 on bench glows and sensor is subjected to vibrations according to the standards, given in table 3.

- Table 3 - See page NO.37.

Test is conducted with smooth change in frequency in each sub-range in one direction from lower frequency to upper or viceversa, in this case absence of false actuations is checked (lamp Л1 must not extinguish and lamp Л2 must not glow). Passage time through each sub-range must not be less than 2 minutes.

At the end of the test, sensor is visually inspected and fitness for work is checked by triple switching at 22 V as per the procedure on guaranteed operating time tests, working forces, and full travels are checked as per the procedure in cl. 3.4C of these specifications.

Sensor is considered as withstood the test, if mechanical damages and false actuations are absent and also if working forces, and full travels after vibrations conform to the requirements in cl.1.2.3 of these specifications.

3.17 Impact-resistance test is conducted on impact stand. Sensor is fixed rigidly to the stand and connected to functional check bench А20.000 ПМ.

Test is conducted successively in three mutually-perpendicular positions of the sensor, indicated in cl.3.9.

Sensor is visually inspected before the test, then 22 V power is supplied to the bench (lamp Л1 on bench glows) and sensor is subjected to the action of impact loads as per the norms given in table 4, in this case lamp Л1 must not extinguish and lamp Л2 must not glow.

- Table 4 - See page 38

At the end of the test sensor is visually inspected, its fitness for work is checked by triple switching at 22 V as per the procedure of guaranteed operating time test, and forces, working and full travels ~~forces~~ are checked as per the procedure in cl. 3.4C of these specifications.

Sensor is considered as withstood the test if mechanical damages and false actuations are absent, there are no loosening of fixtures and separation of coatings and also if sensor remains fit for work and if forces, working and full travels conform to the requirements in cl.1.2.3 of these specifications.

3.18 Vibration-strength test is conducted in disconnected state of sensor. It is visually inspected before the test.

Sensor is mounted on the table with single-component hori-