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(1)	(2)	(3)	(4)	(5)	(6)
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3e	Checking of Nominal paraters	1,2,3 B	3.4 B	+	+
d.	Checking of overheating of the collector and the body	1.2.3 F	3.4 F	+	+
e.	Checking of degree of sparking beneath the brushes.	1.2.3 A	3.4 A	-	+
f.	Checking of value of moment at fired armature	1.2.3 C	3.4 C	+	+
4.	Test of insulation resistance:				
a.	under normal climatic conditions	1.2.4 a	3.5	+	+
b.	under conditions of increased temperature	1.2.4 d	3.5	-	+
c.	under conditions of increased humidity	1.2.4 B	3.5	-	+
5	Test of electric strength of insulation	1.2.5	3.6	+	+
6.	Test from the effect of water splashes	1.2.10	3.7	-	+
7.	Checking of interchangeability	1.2.6	3.8	+	+
8.	Test for the absence of structural components and assembly units with resonance frequencies in the electric motor	1.2.7	3.9	-	+
9.	Test for the effect of increased relative humidity.	1.2.9	3.10	-	+

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10. Test for the effect of increased ambient humidity	1.2.9	3.12	-	+	+
11. Test for effect of reduced ambient temperature	1.2.9	3.11	-	+	+
12. Test for the resistance to the effect of hoar frost and dew	1.2.9	3.13	-	-	+
13. Test for the effect of sea (saline) fog	1.2.9	3.14	-	+	+
14. Test for the cyclic change of ambient temperature	1.2.9	3.15	-	+	+
15. Test for vibration strength	1.2.9	3.16	-	+	+
16. Test for impact strength	1.2.9	3.17	-	+	+
17. Test for the effect of reduced atmospheric pressure:					
a) upto 460 mm Hg	1.2.9	3.18	-	-	+
b) upto 170 mm Hg	1.2.9	3.18	-	-	+
18. Test for guaranteed life	1.2.11	3.19	-	+	+
19. Test for dust proofness	1.2.10	3.20	-	+	+
20. Test for life	1.2.12	3.21	-	-	+
21. Test for the effect of single impacts with big acceleration	1.2.9	3.22	-	-	+

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22. Test for the effect of vapours fumes of antifreezing agent and fuels and lubricants

1.2.9 3.23 - - +

23. Test for the effect of γ and η background hum

1.2.9 3.24 - - +

24. Test for level of radio interference

1.2.8 3.25 - - +

SYMBOLS: "+" - tests are carried out. "-" - test are not carried out.

REMARKS: 1) Test of electric strength of insulation should be carried out after the test for resistance of insulation. 2) The sequence of conducting tests for vibration strength and impact strength should be as per the methods of tests. 3) During periodical and type tests, the effect of water is checked after the test for the effect of dust.

3. CONTROL METHODS

3.1. All tests are carried out at normal climatic conditions except for those where climatic conditions are specified separately.

CHARACTERISTICS OF NORMAL CLIMATIC CONDITIONS:

- A) Ambient temperature + 25 ± 10°C; B) Relative humidity of air - 45-80%; C) Atmospheric pressure 630-800 mm Hg.

NOTE: At a temperature higher than 30°C relative humidity should not be higher than 70%.

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Instrumentation equipment should have accuracy class not less than 1.5.

3.2 Completeness of the electric motor, conformity with the requirements of drawings, quality of assembly, external finishing, quality of solderings, absence of loosened fastenings, quality of fitting of brushes are checked by visual inspection.; mounting dimensions and overall dimensions are checked with the help of control measuring devices.

Technological run-up is carried out without load at a voltage of 10-12 V.

3.3 Testing of the electric motor at increased frequency is carried out without load by smooth increase of voltage. Rotational frequency is measured by stroboscopic method. Reading of time is taken from the moment of attainment of specified speed.

The electric motor is considered to have passed the test, if it meets the requirements of para 1.2.2 present technical specifications.

3.4 Checking of functional parameters of the electric motor is carried out as follows:

a) Checking of current without load of the electric motor is carried out after test at increased frequency, at the same time voltage is decreased to 16V and measurements of the current and rotational frequency are taken. Electric motor is considered to have passed the test, if it meets the requirements of para 1.2.3a for para take Russian *ВН* of present technical specifications.

b) Checking of correctness of direction of rotation of the shaft is carried out simultaneously with the checking of the current without load; electric motor is considered to have passed the test, if it meets the requirement of para 1.2.3b of present technical specifications.

c) Checking of nominal data of the electric motor under load is carried out in retrograde unit ensuring a moment of 0.174 kgf-m at a rotational frequency of 2800 revolutions/minute. After 0.5 minutes of working of electric motor at a voltage of 24 V and with rated power, consumed current and rotational frequency are measured.

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if Electric motor is considered to have passed the test, if it meets the requirements of para 1.2.3c of present Technical Specifications

d) During checking of nominal data of electric motor, the degree of sparking beneath the brushes is estimated visually with naked eye. The electric motor is considered to have passed the test, if it meets the requirements of point 1.2.3d of present Technical Specifications.

e) Measure the overheating of the collector by thermocouple by means of extrapolation cooling curve as of switching-off moment according to GOST 11828-75.

Overheating of body is also measured by thermocouple; the electric motor is considered to have passed the test, if it meets the requirements of para 1.2.3c of present technical specifications.

f) Checking of moment at the fixed armature is carried out in cold condition of the electric motor on retrograde unit.

During the test, the armature of the electric motor is slowed down.

The electric motor is considered to have passed the test if it meets the requirements of para 1.2.3f present technical specifications.

3.5 Testing of insulation resistance is carried out by Megohmmeter of d.c with a voltage of 500V. Insulation resistance is measured between the body and any of the terminal bolts.

Electric motor is considered to have passed the test, if the measured value of resistance of insulation corresponds with the requirements of para 1.2.4 of present Technical Specifications (for corresponding conditions of tests).

3.6 Checking of electric strength of insulation of the electric motor is carried out at high-voltage plant with a power not less than 0.5 KVA by means of feeding of full test-voltage for one minute. Test voltage is applied between the body and any of the terminal bolts.

The electric motor is considered to have passed the test, if during checking there was no break-down or surface overlapping of the insulation.

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- NOTE: 1. Reduction in time of Keeping the insulation is allowed at a voltage upto one second with simultaneous increase in testing voltage upto 625 V (effective value)
2. In case of subsequent checkings of the electric motor, before installing on the machine thenorm of test voltage is set as 80% of the specified by requirements of present technical specifications.

3.7 During the test for splash proofness electric-motor with closed collector openings in switched-off condition, is placed in the sprinkling chamber in horizontal position and is exposed to downward spray of water with in a rate of 2-2.5mm/minute evenly sprayed by the compressed air with a pressure of 3-3.5 kgf/cm². Spraying of jet should be done above the electric motor at a height of atleast 100 mm. In the process of testing the electric motor gradually rotated by 360° around vertical axis. The duration of the test is 5 minutes.

After the end of the test electric motor is externally wiped dry and is opened up for inspection.

Electric motor is considered to have passed the test, if water is not detected inside it.

3.8 For checking of electric motor for conformity with drawings and interchangeability as per the requirement of the representative of customer, disassembly of one of the samples of batch to be accepted is carried out.

At the same time checking of the conformity of the parts and assembly units with the requirements of the Design documents is carried out.

Interchangeability is checked by replacing the parts and assembly units in the electric motor from the quantity available in the assembly line with subsequent approved adjustment. Two electric motors are disassembled in the absence of parts and assembly units in the assembly line.

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Electric motor is considered to have passed the checking for interchangeability, if the parts and assembly units are in conformity with the drawings and after their replacement, the electric motor meets the requirements of paragraphs pertaining to acceptance tests present technical specifications.

3.9 Test for absence of resonance in structural elements is carried out during type tests after visual inspection. The electric motor in non-working position with detached safety belt (band) is fastened rigidly to the platform of the vibration-testing machine.

Testing is carried out in two mutually perpendicular positions of the electric motor, in one of which, the shaft of the electric motor is placed horizontally and in the other the shaft of the electric motor is placed vertically with output end of the shaft upwards as per the norms of the

TABLE 2., at smooth change in frequency of vibration in each sub-range.

SUB-RANGE OF FREQUENCIES Hertz	VALUE OF AMPLITUDE	
	Acceleration, g	displacement, mm
From 5 to 10	0.05 - 0.30	
above 10 to 20	0.30 - 1.00	0.5 - 0.8
Above 20 to 25	1.00 - 2.00	
Above 25 to 40	2.00	0.3

NOTE: Checking is carried out by one of the methods:
By Acceleration OR Displacement.

Time of passing of each sub-range should be sufficient for the detection of resonance, but not less than 2 minutes. During the process testing of the electric motor absence of resonance in structural elements and assembly units is checked visually or with the help of instruments.