KES

Electric Horn

KES D - C646

Contents

KIA MOTORS

1. Scope of Application

This standard specifies the ELEC. Horn for automobile.

2. Relation with Specification

This standard describes test method, judgment condition, quality rank employed as standard. In case of requiring other judgmentstandard , they shall be indicated in speification . In this case, specifications shall govern..

3. Environment Condition of Test Place, Test Voltage

Ambient temperature shall be 24±5°C (75±10° F) and test voltage shall be normal test voltage.
Unless otherwise specified, the, test shall be performed at normal temperature, normal humidity and normal voltage.

Note(1) The normal temperature and normal humidity refer to class 4 temperature(20±15°C) and 3class 3 humidity (65±20%) specified in KS A 0006(Standard condition of test place).

(2) Standard test voltage refers to 12.8V for 12V series and 25.6V for 24V series.
Here, ( ) refers to 24V series

4. Test Item, Method, Judgement Standard, Quality Rank.

The test item, method, judgement standardand quality rank shall be as shown in Attached Table 1.

Appendix

This standard is effective from the date of establishment and revision.

Standard Quoted:
- KS A 0006 (Standard atmospheric conditions for testing)
- KS D 9502 (Salt water spray test)
- KS R 0013 (General rules for electric plating of automobile parts)

Attached Table 1

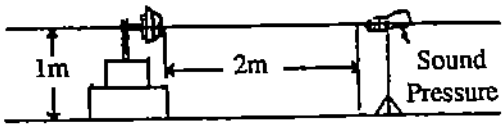
<table>
<tr><th>No.</th><th>Test Item</th><th>Test Condition and Method</th><th>Judgment Standard</th><th>Quality Rank</th><th>Remark</th></tr>
<tr><td>1</td><td>Current Consumption</td><td>Measure at rated voltage.</td><td>3.5A or less</td><td>B</td><td></td></tr>
<tr><td>2</td><td>Sound Pressure</td><td>Perform at rated voltage as shown in Figure 1.
 

Fig. 1</td><td>110±5 dB</td><td>AR</td><td></td></tr>
<tr><td>3</td><td>Basic Frequency</td><td>Measure at rated voltage</td><td>fo±20Hz
※ Hlhg: fo= 415Hz
Low: fo=370Hz</td><td>B</td><td></td></tr>
<tr><td>4</td><td>Operation Voltage</td><td>12V series: 10V - 14.5V
(24V series): 20V - 29V</td><td>Normal operation within specified range.
Good feeling of nearing</td><td></td><td></td></tr>
<tr><td>5</td><td>Insulation Resistance</td><td>Measure between terminal an frame with DC 500V megger.</td><td>1MΩ or more</td><td>B</td><td></td></tr>
<tr><td>6</td><td>Endurance</td><td>Operate according to following Figure 1.
<table><tr><td>Test Frequency</td><td>50,000</td></tr><tr><td>ON-OFF Time</td><td>1sec ON, 4 sec OFF</td></tr><tr><td>Terminal voltage</td><td>12V series: 13.0±0.5V
(24V series): 26.0±0.</td></tr></table>(After 25,000 times or test, it is possible to adjust by adjusting screw).</td><td>95dB or more of sound pressure after testing Normal tone of sound Normal operation</td><td></td><td></td></tr>
<tr><td>7</td><td>Vibration Resistance</td><td>Mount the test piece on test stand as instructed and proceed as follows.</td><td>After test, nothing wrong with appearance and should satisfy following performances.</td><td>B</td><td></td></tr>
</table>

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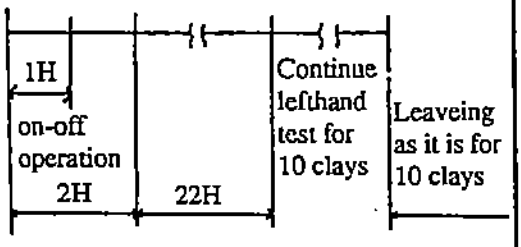
<tr><th>No.</th><th>Test Item</th><th>Test Condition and Method</th><th>Judment Standard</th><th>Quality Rank</th><th>Remark</th></tr>
<tr><td></td><td></td><td><table>
<tr><td>Frequncy</td><td>20-200 Hz</td></tr>
<tr><td>Acceleration</td><td>4.4G(Amplitude 2mm)</td></tr>
<tr><td>Vibration Direction</td><td>Up, down</td></tr>
<tr><td>Test Period</td><td>8H</td></tr>
<tr><td>Sweep Time</td><td>Log sweep period
15 cycle</td></tr>
</table></td><td>(1) Current consumption: Within ±20% compared with the one before test.
(2) Sound pressure: 95dB or more
(3) Basic frequency: Within ±5% compared with the one before test.
(4) Operation voltage: 11 -14.5V
(5) Insulation resistance: 1MΩ/500V megger or more</td><td></td><td></td></tr>
<tr><td>8</td><td>Temperature Test</td><td>(1) After exposing the Horn to +80°C and -30°C each for 1 hour, and then returning to normal temperature, check the operating state.</td><td>(1) Current consumption: Within ±20% of the one before test.
(2) Sound pressure: 95dB or more.
(3) Basic frequency: ±5% of the one before test.
(4) Operation voltage: 11 -14.5V
(5) Insulation resistance: 1MΩ/500V or more</td><td></td><td></td></tr>
<tr><td></td><td></td><td>(2) After leaving it for 1 hour at +70°C and -20°C respectively, operate it by test voltage and check the operating condition.</td><td>Normal Operation</td><td></td><td></td></tr>
</table>

<table>
<tr><th>No.</th><th>Test Item</th><th>Test Condition and Method</th><th>Judgment Standard</th><th>Quality Rank</th><th>Remark</th></tr>
<tr><td>9</td><td></td><td>Attach Horn as specified operate the Horn continuously under the conditions in Table 3 carry out test as flowing water.
<table><tr><td>Test Period</td><td>10 days</td></tr><tr><td>Precipitation</td><td>152mm/H</td></tr><tr><td>Precipitation Direction</td><td>Downward</td></tr><tr><td>Continuous Operation</td><td>10 hours(1 hour per 1day)</td></tr><tr><td>ON-OFF period</td><td>1 sec ON, 9 sec OFF</td></tr><tr><td>Operation Voltage</td><td>13±0.5V(26±0.5V)</td></tr></table>Precipitation period ON-OFF operation pattern
 
</td><td>(1) Less than 5dB of sound pressure decrease when operating by test voltage just after the test and normal operation.
(2)
after leaving for 10 days at normal temperature, normal humidity.</td><td>B</td><td></td></tr>
<tr><td>10</td><td>Corrosion Resistamce Test</td><td>Perform KS D 9502(Salt Water Spray Test Method) for 72 hours according to "Corrosion Resistance Test Method" of KS R 0013 (Generalrules for electric plating method) item 7-3.</td><td>No occurance of rust according to KS R 0013-8-3 (But, caulking part and terminal screw part of surface cover shall be excluded).</td><td>B</td><td></td></tr>
<tr><td>11</td><td></td><td>As mounting it on horn stand, apply 15V between terminal and test stand, spray salt water according to KS D 9502, and perform test continuously for 200 hours(ϕ 100) or for 150 hours (ϕ 80).</td><td>Nothing abnormal to functions.</td><td></td><td></td></tr>
</table>

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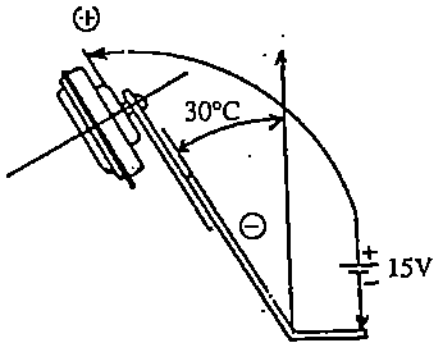
<tr><td></td><td></td><td> 

Fig. 2</td><td></td><td></td><td></td></tr>
<tr><td>12</td><td>Continuous Operation Test</td><td>Operate according to following table 4.
Table 4
<table>
<tr><td>Terminal Voltage</td><td>13±0.5V(26±0.5V)</td></tr>
<tr><td>Time</td><td>30 sec.</td></tr>
</table></td><td>After leaving it as it is for 30min after test, it should conform to following conditions.
(1) Current consumption: Within ±20% of the one before test
(2) Sound pressure: 95dB or more
(3) Basic Frequency: Within ±5% of the one before test
(4) Operation Voltage: 11-14.5V
(5) Insulation Resistance: 1MΩ/500V or more</td><td>B</td><td></td></tr>
</table>