

MD Series Vibration testing excerpt

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Technical requirement Test method

vibration rating of rotated.

compressor body part 5.4.12 6.5.12

inverter (control parts) 5.5.5 6.6.5

5.4.12

after test according to 6.5.12, electric compressor should meet the following requirements.

- a) inside of compressor every part can appear cracks and damage
- b) according to 6.5.3 test , totally leakage of electric compressor not more than 15g/year
- c)insulation between stator and compressor shell should meet the demand of 5.4.7.
- d) voltage resistance should meet the demand of 5.4.8.
- e) according to test condition 4000 r/min, cooling capacity should not be less than 90% before before test, COP should not less than 82% before the test

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6.5.12

after injecting $50\text{m}^3 \pm 1$ lubricate oil and $63\text{g} \pm 1\text{g}$ R134a, instal compressor to air condition system.

center of gravity of air condition system and compressor located in vibration center shaft.

vibration test condition

continuous test time/h	frequency/Hz
20	200

5.5.5

according to 6.6.5 test, inverter (control parts) should meet the following demand.

a) bolt shouldn't loosen, internal wiring shall not be broken, components and parts shouldn't loosen.

b) insulation resistance should meet the demand of 5.5.2, withstand voltage should meet the demand of 5.5.3

c) inverter can work normally.

6.6.5

instal inverter (control parts) to air condition system under actual working situation

inverter vibration test condition

continuous test time/h	frequency/Hz
2 4	33

6.5.3

airtightness

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after pouring lubricate from the compressor, through suction and discharge hole inject R134A, atop nitrogen.

reached to 1.5Mpa, make high pressure air below inflatable place and other place 2min, adopt test precision.

less than 1×10^{-6} atm, cm^3 electric refrigerant leakage detection test and record compressor leakage.

5.4.7

insulation resistance between stator and compressor shell

according to 6.5.7 test method

a) empty compressor inside oil, insulation resistance should more than 50 M Ω between stator winding and compressor shell

b) inject $50\text{cm}^3 \pm 1\text{cm}^3$ lubricate oil and $63\text{g} \pm 1\text{g}$ R134, insulation resistance should more than 20M Ω between stator windings and compressor shell

5.4.8

withstand voltage between stator and compressor shell.

according to 6.5.8 test method, stator winding face compressor shell should bear table 4 test voltage, insulation should not.

be broken, flashover and flying fox, current leakage should meet the demand of table 4.

table 4 test voltage and current leakage

rotated voltage U_n /V	test voltage (effective value) /V
≤ 60	500
$> 60 \sim 125$	1000
$> 125 \sim 250$	1500
$> 250 \sim 500$	2000
≥ 500	$1000 + 2U_k$

5.5.3

according 6.6.3 test method, inverter should not be broken, flashover or flying fox.

6.5.7

insulation resistance between stator and compressor shell

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rotated voltage	tramegger voltage
≤ 250	250
$> 250 \sim 500$	500
$> 500 \sim 1000$	1000

Testing requirements

according to 6.5.3 test , totally leakage of electric compressor not more than 15g/year

insulation between stator and compressor shell should meet the demand of 5.4.7.

according to test condition 4000 r/min , cooling capacity should not be less than 90% before after injecting $50\text{m}^3 \pm 1$ lubricate oil and $63\text{g} \pm 1\text{g}$ R134a, instal compressor to air condition system.

center of gravity of air condition system and compressor located in vibration center shaft.

direction of vibration:

crosswise

longitudinal

vertical

Testing demand

bolt shouldn't loosen, internal wiring shall not be broken, components and parts shouldn't loosen.

insulation resistance should meet the demand of 5.5.2, withstand voltage should meet the demand of 5.5.3.

instal inverter (control parts) to air condition system under actual working situation

direction of vibration:

crosswise

longitudinal

vertical

holes inject R134A, atop nitrogen.

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reached to 1.5Mpa, make high pressure air below inflatable place and other place 2min, adopt test precision.

less than 1×10^{-6} atm, cm^3 electric refrigerant leakage detection test and record compressor leakage.

empty compressor inside oil, insulation resistance should more than 50 MΩ between stator winding and compressor shell

inject $50\text{cm}^3 \pm 1\text{cm}^3$ lubricate oil and $63\text{g} \pm 1\text{g}$ R134, insulation resistance should more than 20MΩ between stator windings and compressor shell.

according to 6.5.8 test method, stator winding face compressor shell should bear table 4 test voltage, insulation should not.

be broken, flashover and flying fox, current leakage should meet the demand of table 4.

Power supply power/Hz	voltage continue time/s	current leakage
50~60 sine wave	60	≤ 5
		≤ 10
		≤ 20
		≤ 25