

시험성적서

Certificate of Test

1. 신청자

Applicant

○ 회사명 : HIGEN Motor Co., Ltd.

Name

○ 주소 : 74-5, Seongsan-Dong, Changwon City, Gyeongnam, 641-714, Korea

Address

○ 접수일자 : Mar. 09, 2011

Date of Receipt

2. 시험대상품

Equipment Under Test

○ 시험품명 : Three Phase Induction Motor

Name of Product

○ 모델 : AF***2 (For detail, See Remark 1 of Page 11)

Model

○ 일련번호 : -

Serial No.

3. 성적서 용도 : For submission to Customer

Purpose of Test

4. 시험규격 : IEC 60034-5 Ed. 4.1 b:2006

Test Standards

5. 시험환경 : ○ Temperature : (18.0 ± 1.0) °C , ○ Relative Humidity : (45 ± 5) % R.H.

Environment

6. 시험기간 : Mar. 23, 2011 ~ Mar. 25, 2011

Test Period

7. 발행일자 : Apr. 04, 2011

Issued Date

8. 시험결과 : PASS

Test Result

본 시험성적서의 시험결과는 상기 신청인으로부터 제공된 시험품에만 적용되며, 본 연구원의 사전 서면승인 없이 성적서의 전부 또는 일부를 복사하여 사용할 수 없음.

The test results attached herewith contained apply only to the test sample(s) supplied by the named applicant, and this test report shall not be reproduced in full or in part without the prior written approval of the KOMERI.

Apr. 04, 2011

백상희

Prepared by Documentation Specialist

Name : Sang-Hee Baek

강제욱

Approved by Quality Manager

Name : Jae-Uk Kang



한국조선기자재연구원
Korea Marine Equipment Research Institute



TEST REPORT

1. APPLICANT INFORMATION

Company : HIGEN Motor Co., Ltd.
Address : 74-5, Seongsan-Dong, Changwon City, Gyeongnam, 641-714, Korea
Name of Client : Jae-Hak Kim
Telephone : +82-70-7710-3021
Facsimile : +82-55-603-3000

2. MANUFACTURER INFORMATION

Company : HIGEN Motor Co., Ltd.
Address : 74-5, Seongsan-Dong, Changwon City, Gyeongnam, 641-714, Korea
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Facsimile : +82-55-603-3000

3. LABORATORY INFORMATION

Laboratory : Korea Marine Equipment Research Institute
Address : 1125-22, Dongsam-Dong, Youngdo-Gu, Busan, 606-806, Korea
Telephone : +82-51-400-5000
Facsimile : +82-51-400-5091

4. EQUIPMENT UNDER TEST (EUT) INFORMATION

EUT Name : Three Phase Induction Motor
Model : AF***2 (For detail, See Remark 1 of Page 11)
Serial No. : -
Power : -

5. TEST SUMMARY

No.	Test Item	Test Standard	Result
1	TEST FOR INGRESS PROTECTION - IP5X -	IEC 60034-5 Ed. 4.1 b:2006	PASS
2	TEST FOR INGRESS PROTECTION - IPX4 -	IEC 60034-5 Ed. 4.1 b:2006	PASS

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1. TEST FOR INGRESS PROTECTION - IP5X -

1.1 TEST ENVIRONMENT

- Ambient temperature $(18.0 \pm 1.0) \text{ }^\circ\text{C}$ ※ $15.0 \text{ }^\circ\text{C}$ to $35.0 \text{ }^\circ\text{C}$
- Relative Humidity $(45 \pm 5) \text{ \% R.H.}$ ※ 25 \% R.H. to 75 \% R.H.

1.2 TEST STANDARD

- IEC 60034-5 Ed. 4.1 b:2006

1.3 TEST EQUIPMENT

	Description	Manufacturer	Model Number	Calibration Due
◆	Dust tester	Dongboo Industry	-	~ 2011. 11. 22

1.4 TEST SET-UP

• The test shall be carried out with the EUT in normal operational condition, including mounting and supports, under its secured mechanical arrangement.

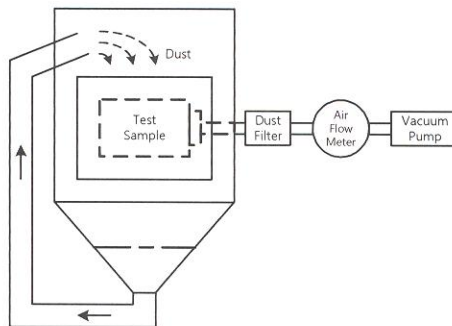


Figure 1-1 Test diagram

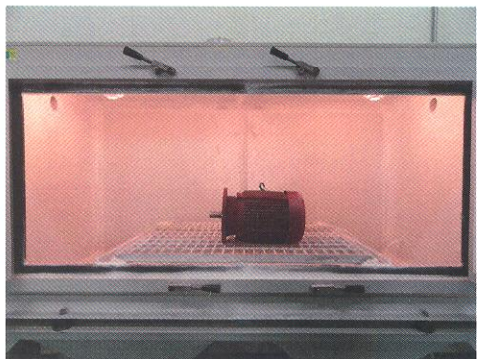


Photo 1-1 Test set-up for IP5X (Model : AF2152)

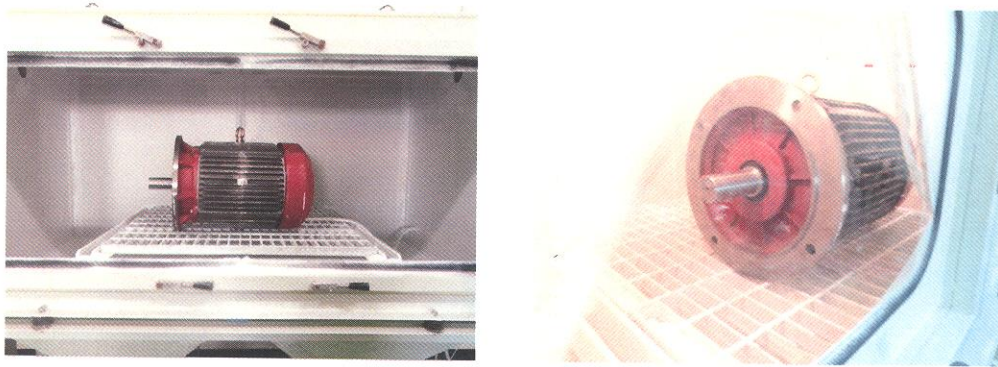


Photo 1-2 Test set-up for IP5X (Model : AF3502)

1.5 TEST PROCEDURE

- The test specimen was installed in normal position and in accordance with the manufacture's instructions.
- This examination retracts air that become 80 times of bulk of specimen tank that abstraction is tested doing not exceed 60 bulks per time inside tank repeatedly.
- Because maximum pressurization is 2 kPa and the abstraction speed is smaller than 40 bulks per time, test was gone during 8 hours until draw 80 bulks.

1.6 TEST RESULT

- The protection is satisfactory because no deposit of dust is observable inside the enclosure at the end of the test.

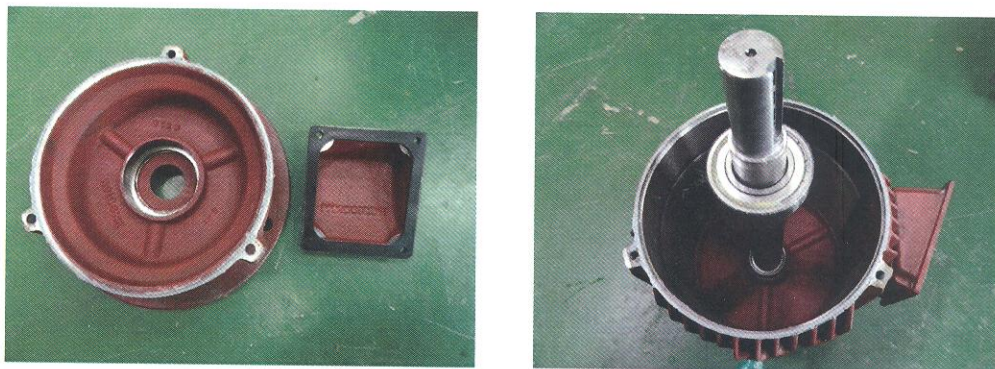


Photo 1-3 Test result for IP5X (Model : AF2152)

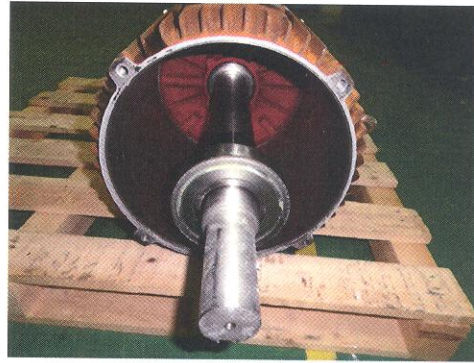


Photo 1-4 Test result for IP5X (Model : AF3502)

손준용

Tested by : Jun-yong Shon

권혁상

Technical Manager : Hyuk-sang Kwon

2. TEST FOR INGRESS PROTECTION - IPX4 -

2.1 TEST ENVIRONMENT

- Ambient temperature (18.0 ± 1.0) °C ※ 15.0 °C to 35.0 °C
- Relative Humidity (45 ± 5) % R.H. ※ 25 % R.H. to 75 % R.H.

2.2 TEST STANDARD

- IEC 60034-5 Ed. 4.1 b:2006

2.3 TEST EQUIPMENT

Description	Manufacturer	Model Number	Calibration Due
◆ IPX4 Test Nozzle	PTL	P05.24	~ 2012. 02. 11

2.4 TEST SET-UP

· The test shall be carried out with the EUT in normal operational condition, including mounting and supports, under its secured mechanical arrangement.

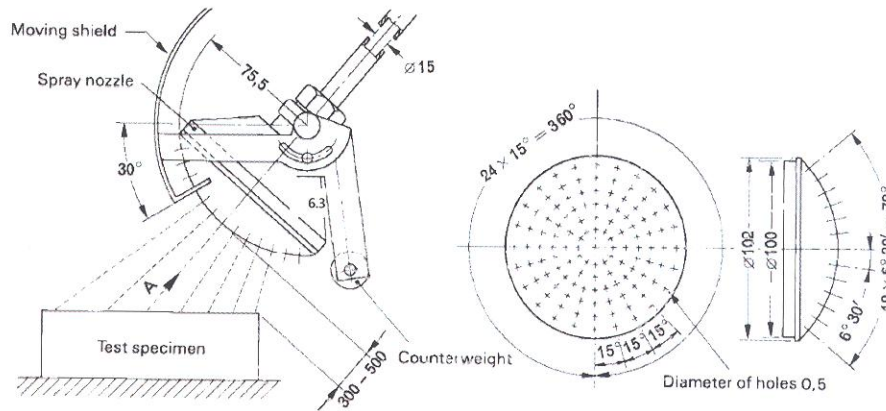


Figure 2-1 Test diagram

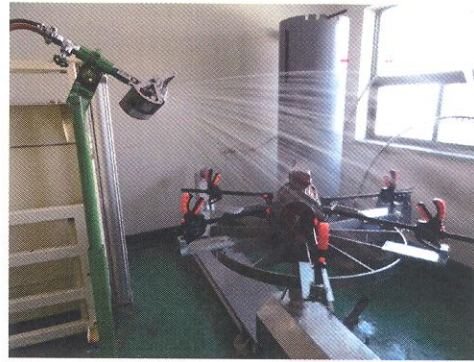


Photo 2-1 Test set-up for IPX4 (Model : AF2152)



Photo 2-2 Test set-up for IPX4 (Model : AF3502)

2.5 TEST PROCEDURE

- The test specimen was installed in normal position and in accordance with the manufacture's instructions.
- The counterbalanced shield is removed from the spray nozzle and the enclosure is sprayed from all practicable directions.
- The water pressure is adjusted to give the specified delivery rate.
- The pressure to achieve this delivery rate will be in the range of 50 kPa to 150 kPa.
- The test duration is 1 min/m^2 of the calculated surface area of the enclosure, with a minimum duration of 5 min.

2.6 TEST RESULT

- Water sprayed against the enclosure from any direction shall have no harmful effects.

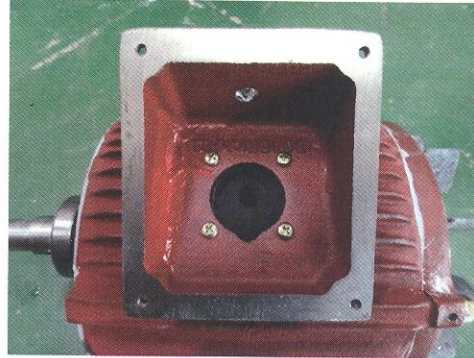


Photo 2-3 Test result for IPX4 (Model : AF2152)

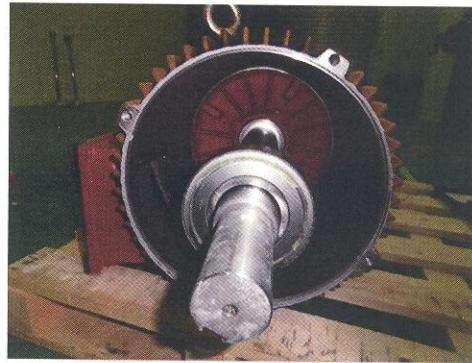


Photo 2-4 Test result for IPX4 (Model : AF3502)

손준용

Tested by : Jun-yong Shon

권혁상

Technical Manager : Hyuk-sang Kwon

APPENDIX

I . REMARK

- Model name description :
 - Types : AF***2
 - "****" is size (center height or flange mounting PCD)

- Test sample : AF2152, AF3502

- Test sample types and other types are exactly same as each other except for center height and output.

II. DRAWING OF EQUIPMENT UNDER TEST

