

# TEST REPORT

**DT&C Co., Ltd.**

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Tel : 031-321-2664, Fax : 031-321-0220

Report No : DRCREL1605-0206  
Pages : ( 1 ) / ( 23 ) page

**1. Customer**

• Name : Kun Hung Electric Co., Ltd.

• Address : 183, Hancheon-ro, Dongdaemun-gu, Seoul, 02534 Rep. of Korea

**2. Use of Report : Validation**

3. Product Name (Model / Serial No.) : Emergency Stop Switch (KSEB-30 Series / - )

4. Date of Test : May 02, 2016 ~ May 04, 2016

5. Test Method Used : Request of applicant

**6. Testing Environment**

• Temperature : (21 ± 5) °C • Humidity : (39 ± 10) % R.H.

**7. Test Result : Refer to the attached document**

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.  
This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Name : KiDeok Kim (Signature)	Technical Manager Name : JaeHan Jung (Signature)
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**2016. 05. 13.**

**DT&C Co., Ltd.**

\* If this test report is required to confirmation of authenticity, please contact to [report@dtnc.net](mailto:report@dtnc.net)

# TEST RESULT

## Contents

1. Overview .....	3
2. Product.....	3
2.1. Description.....	3
2.2. Photograph .....	3
3. Test condition & Test result .....	4
3.1. Vibration test.....	4
3.2. Shock test.....	10
3.3. IP6X.....	16
3.4. IPX6.....	20
※ Appendix 1. IP66 test result photograph.....	23

## TEST RESULT

### 1. Overview

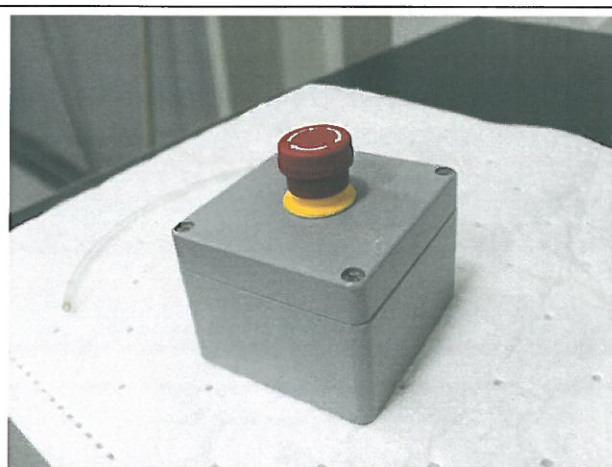
As requested by the applicant, this test was conducted on test sample according to the test specification presented by the applicant.

### 2. Product

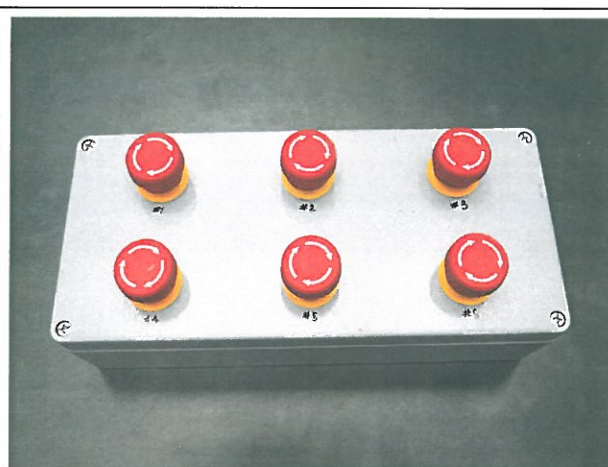
#### 2.1. Description

- (1) Applicant : Kun Hung Electric Co., Ltd.
- (2) Manufacturer : Kun Hung Electric Co., Ltd.
- (3) Product : Emergency Stop Switch
- (4) Model : KSEB-30 Series
- (5) Serial No. : -
- (6) Derivative model : KSEB-22 Series, KSEB-25 Series

#### 2.2. Photograph



a. IP66 Product



b. Vibration Product

[Photo 1. Emergency Stop Switch]

## TEST RESULT

### 3. Test condition & Test result

• p-p = Peak to Peak • 0-p = Zero to Peak • 0.254 mm = 0.01 inch

#### 3.1. Vibration test

<Table 1. Product information>

Applicant	Kun Hung Electric Co., Ltd.	Date	May 02, 2016
Product	Emergency Stop Switch	Test standard	IEC 60947-5-5
Model	KSEB-30 Series	Serial No.	-

#### (1) Test conditions

- 1) Test type : Sine
- 2) Frequency & acceleration, Displacement

<Table 2. Frequency & acceleration, Displacement>

Frequency (Hz)	Acceleration ( $\text{m/s}^2$ )	Displacement (mm)
(10 ~ 60.15)	-	0.7 (p-p)
(60.15 ~ 500)	50 (0-p)	-

- 3) Sweep rate : 1 oct/min
- 4) Test cycle : 10 cycles
- 5) Test time : 1 h 52 min in each axis
- 6) Test axis : X-axis, Y-axis, Z-axis
- 7) Total test time : 5 h 36 min
- 8) Sample check : Before the test and after the test visual check
- 9) Sample condition : ① Unpackaged ② Non-operation
- 10) Sample quantity : 1 Set (6 ea)



## TEST RESULT

### (2) List of used equipment

<Table 3. List of used equipment>

Description	Model / Manufacturer	Serial number	The next scheduled calibration date	Calibration laboratory
Vibration tester	K125 / IMV	14101525	August 24, 2016	SICT
Vibration tester	J260-HB10 / IMV	14101470	February 25, 2017	KTL
Accelerometer	VP-32 / IMV	8373U	December 31, 2016	SICT
Accelerometer	VP-32 / IMV	9602U	August 20, 2016	SICT
Hygrometer	PC-5000TRH-2 / SATO	-	January 19, 2017	HCT

### (3) Test method

- 1) Perform the visual inspection check of the test specimen.
- 2) Fixed the test specimen on the test table.
- 3) Perform the vibration test in accordance with test condition.
- 4) Perform the test for the 3-axis. (X, Y, Z)
- 5) Perform the visual inspection check of the test specimen.

## TEST RESULT

### (4) Test photograph



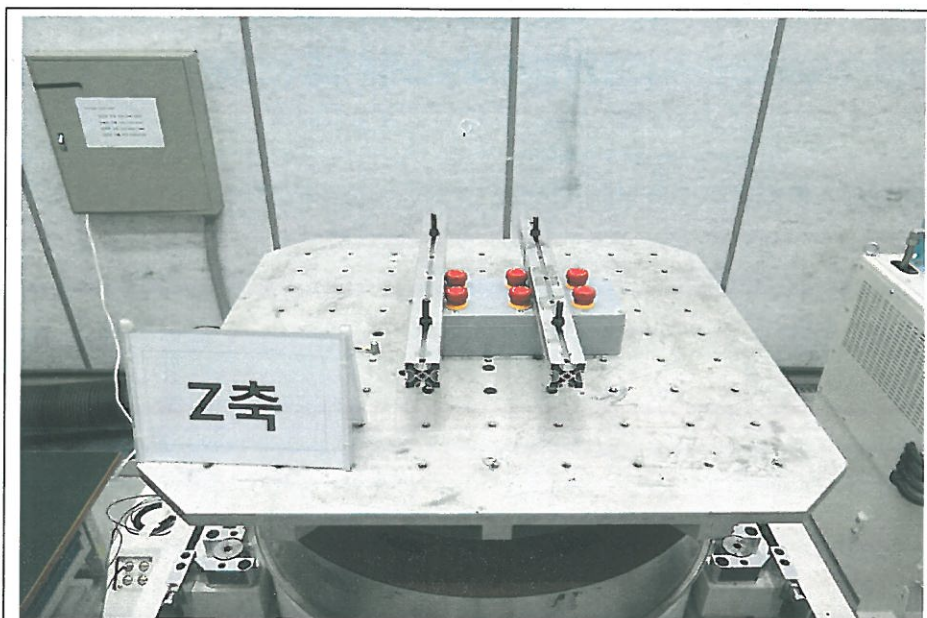
a. X-axis



b. Y-axis

## TEST RESULT

<Continue>



c. Z-axis

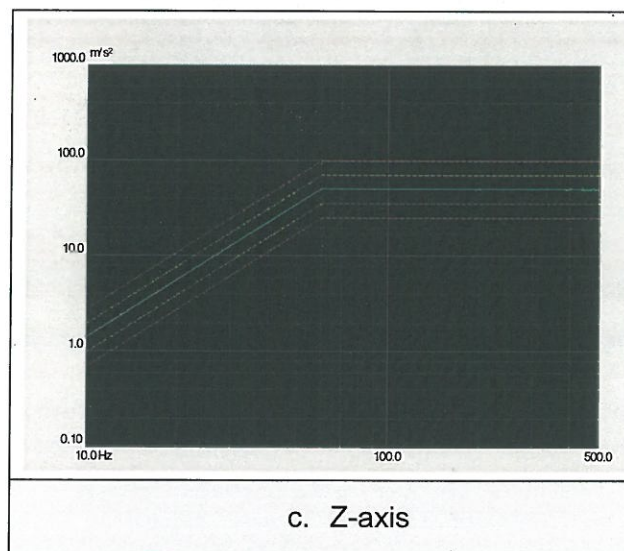
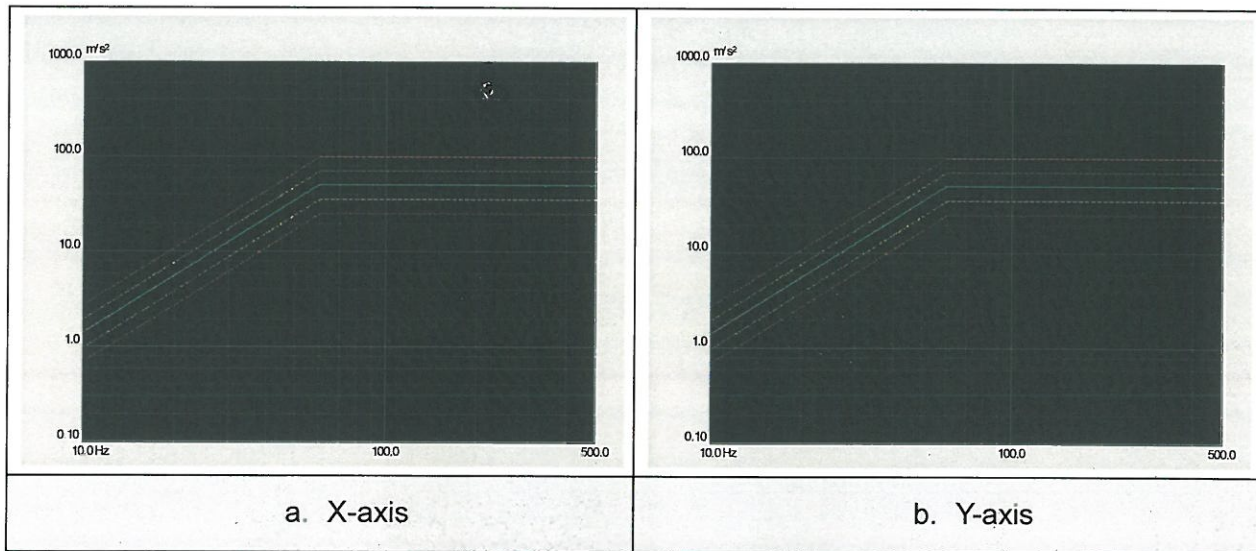
[Photo 2. Test photograph]



# TEST RESULT

## (5) Test result

### 1) Test profile



[Photo 3. Test profile]



## TEST RESULT

### 2) Check the product

<Table 4. Check the product list>

Division	Check list	Test result
Visual	- Mechanical damage such as deformation, crack, separating, loosening of screw, etc.	No abnormal was found

## TEST RESULT

### 3.2. Shock test

<Table 5. Product information>

Applicant	Kun Hung Electric Co., Ltd.	Date	May 02, 2016
Product	Emergency Stop Switch	Test standard	IEC 60947-5-5
Model	KSEB-30 Series	Serial No.	-

#### (1) Test Conditions

- 1) Test type : Half sine
- 2) Acceleration : 15 g
- 3) Duration time : 11 ms
- 4) Test time : 3 times in each axis
- 5) Test axis :  $\pm X$ -axis,  $\pm Y$ -axis,  $\pm Z$ -axis
- 6) Total test time : 18 times
- 7) Sample check : Before the test and after the test visual check
- 8) Sample condition : ① Unpackaged ② Non-Operation
- 9) Sample quantity : 1 Set (6 ea)

## TEST RESULT

### (2) List of used equipment

<Table 6. List of used equipment>

Description	Model / Manufacturer	Serial number	The next scheduled calibration date	Calibration laboratory
Vibration tester	K125 / IMV	14101525	August 24, 2016	SICT
Vibration tester	J260-HB10 / IMV	14101470	February 25, 2017	KTL
Accelerometer	VP-32 / IMV	8373U	December 31, 2016	SICT
Accelerometer	VP-32 / IMV	9602U	August 20, 2016	SICT
Hygrometer	PC-5000TRH-2 / SATO	-	January 19, 2017	HCT

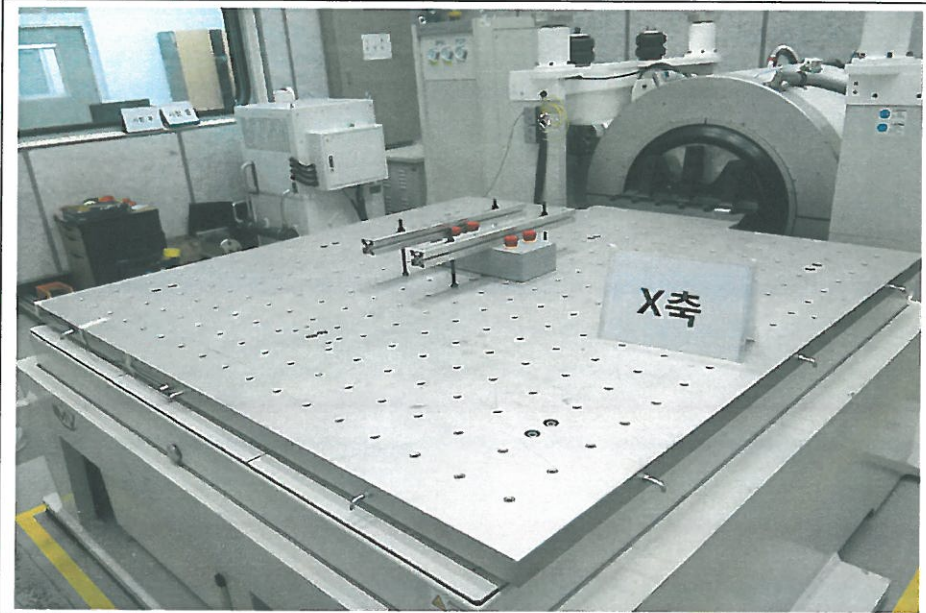
### (3) Test method

- 1) Perform the visual inspection check of the test specimen.
- 2) Fixed the test specimen on the test table.
- 3) Perform the shock test in accordance with test condition.
- 4) Perform the test for the 3-axis. ( $\pm X$ ,  $\pm Y$ ,  $\pm Z$ )
- 5) Perform the visual inspection check of the test specimen.



## TEST RESULT

### (4) Test photograph



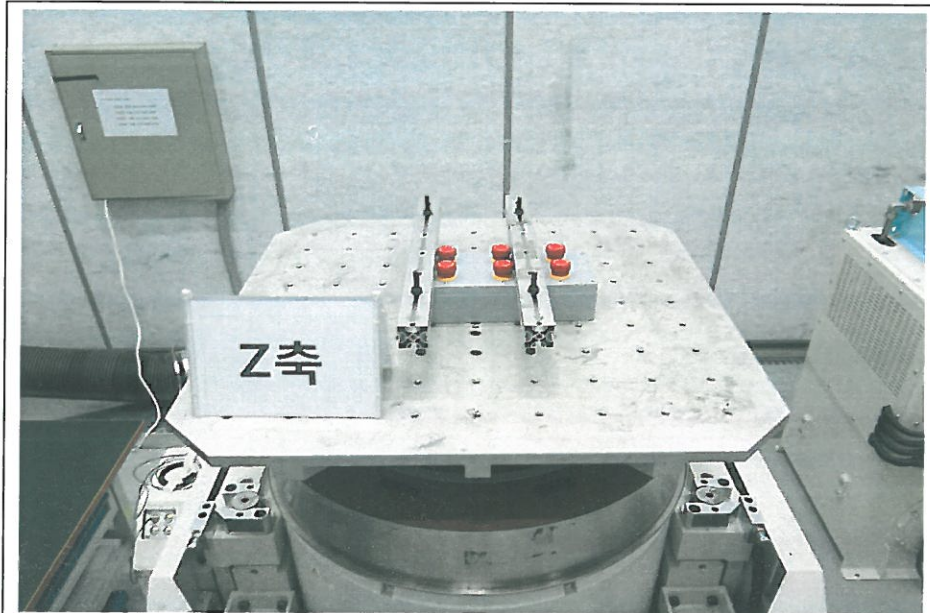
a.  $\pm X$ -axis



b.  $\pm Y$ -axis

## TEST RESULT

<Continue>



c.  $\pm Z$ -axis

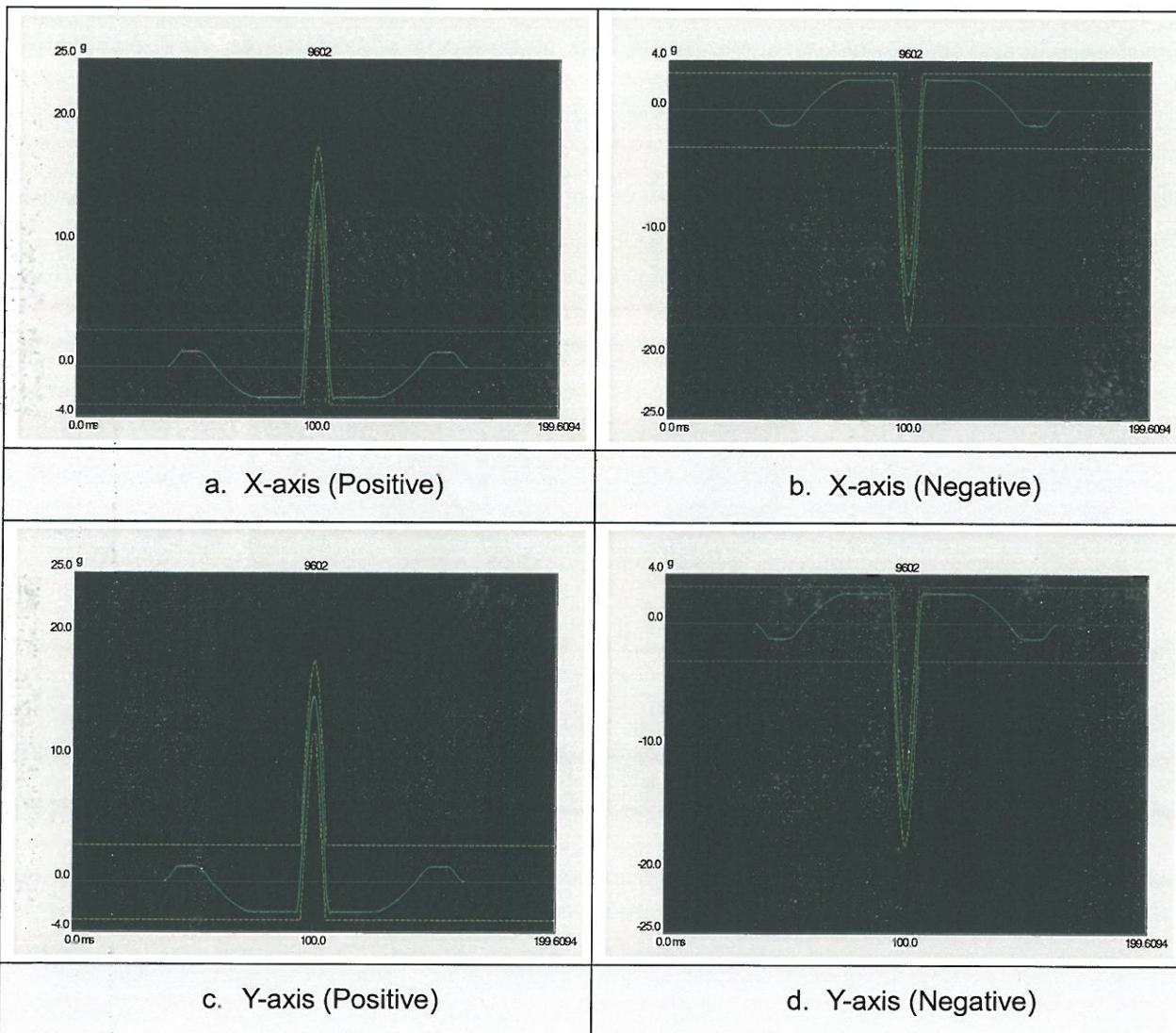
[Photo 4. Test photograph]



## TEST RESULT

### (5) Test result

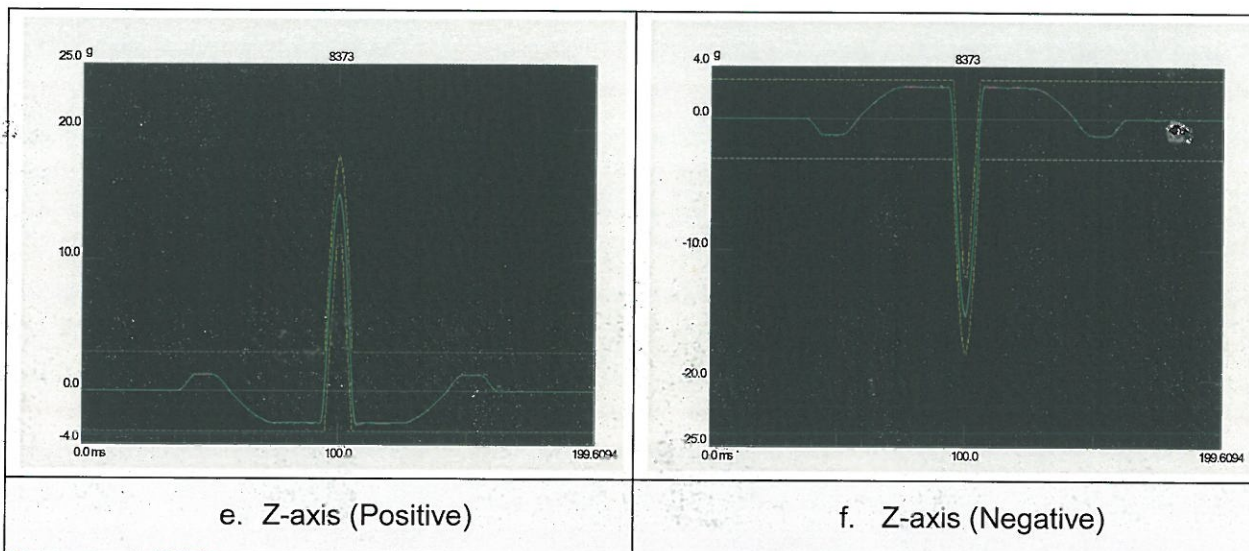
#### 1) Test profile





## TEST RESULT

<Continue>



[Photo 5. Test profile]

### 2) Check the product

<Table 7. Check the product list>

Division	Check list	Test result
Visual	- Mechanical damage such as deformation, crack, separating, loosening of screw, etc.	No abnormal was found

## TEST RESULT

### 3.3. IPX6

<Table 8. Product information>

Applicant	Kun Hung Electric Co., Ltd.	Date	May 03, 2016
Product	Emergency Stop Switch	Test standard	IEC 60529 : 2013
Model	KSEB-30 Series	Serial No.	-

#### (1) Test Conditions

- 1) IP Code : IPX6 (Protected against powerful water jets)
- 2) Waterproof rate: 100 x (1 ± 5 %) L/min
- 3) Spray distance : (2.5 ~ 3.0) m
- 4) Test time : 3 min
- 5) Sample condition : ① Unpackaged ② Non-operation
- 6) Sample quantity : 1 ea

## TEST RESULT

### (2) Used equipment

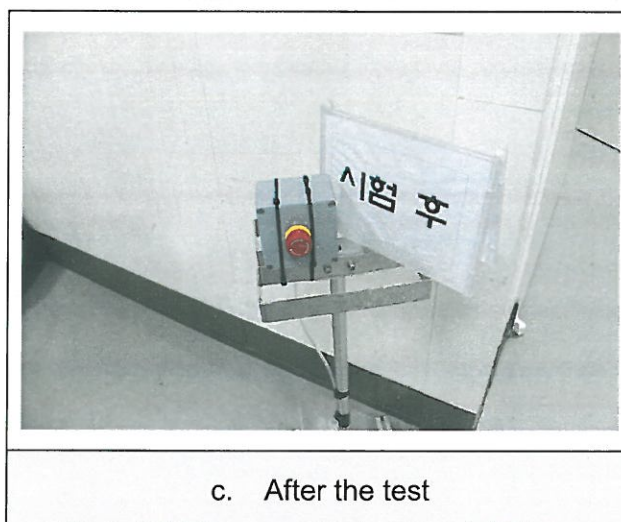
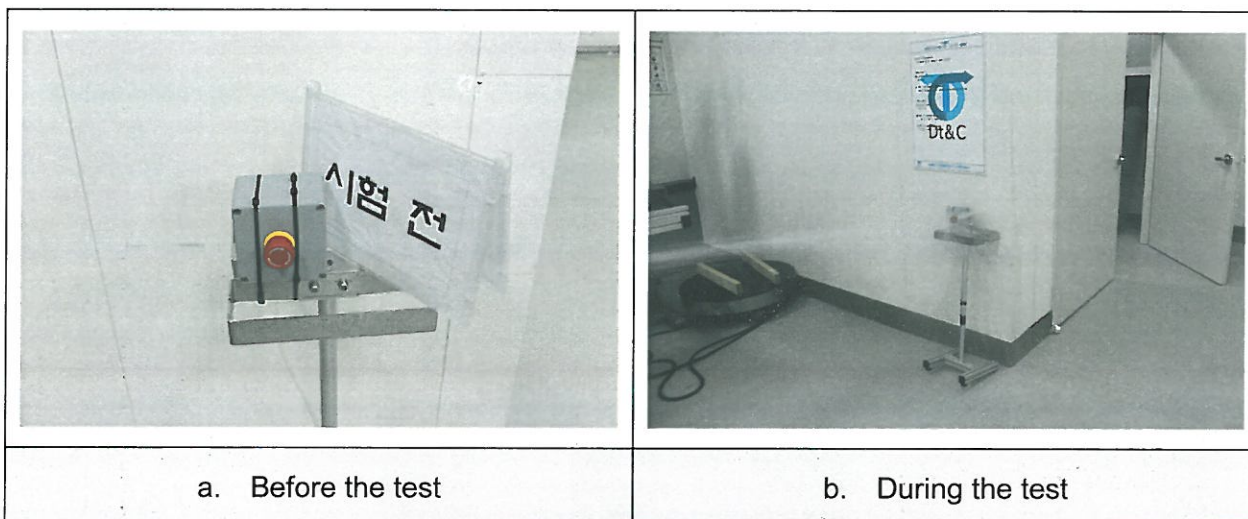
<Table 9. List of used equipment>

Description	Model / Manufacturer	Serial number	The next scheduled calibration date	Calibration laboratory
Water Resistance Tester	SOS-100 / SCM TECH	-	-	-
Area flow meter	GA-101 / Kometer	G-1503240	March 12, 2017	Kometer
Stop Watch	Stop Watch / CASIO	412Q08R	February 24, 2018	HCT
Tape line	SFGL25-75(7.5m) / TAJIMA	258954	February 25, 2017	SICT



## TEST RESULT

### (3) Test photograph



[Photo 6. Test photograph]

## TEST RESULT

### (4) Test result

<Table 10. Test result>

Check list	Test result
Confirmation of dust penetration	No dust penetration was found (Refer to ※ Appendix 1.)

## TEST RESULT

### 3.4. IP6X

<Table 11. Product information>

Applicant	Kun Hung Electric Co., Ltd.	Date	May 03, 2016 ~ May 04, 2016
Product	Emergency Stop Switch	Test standard	IEC 60529 : 2013
Model	KSEB-30 Series	Serial No.	-

#### (1) Test Conditions

- 1) IP Code : IP6X (Dust-tight)
- 2) Talcum powder(mesh) : wire diameter of which is 50.μm and the nominal width of  
a gap between wires 75 μm
- 3) Amount of talcum powder of the test chamber : 2 kg/m<sup>3</sup>
- 4) Maximum depression : 2 kPa (20 mbar)
- 5) Test time : 8 h
- 6) Sample condition : ① Unpackaged ② Non-operation
- 7) Sample quantity : 1 ea



## TEST RESULT

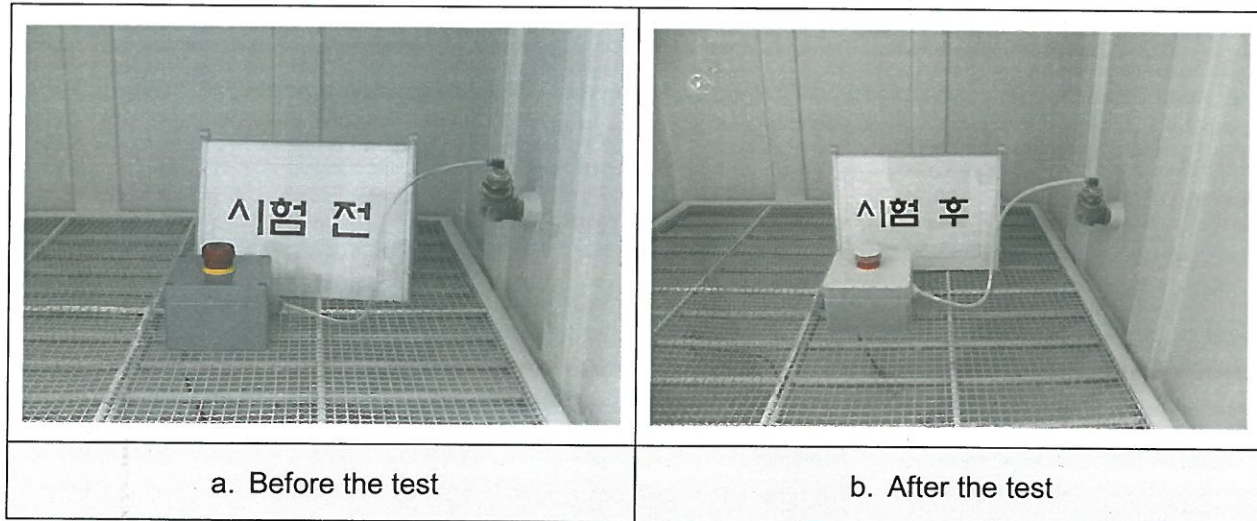
### (2) List of used equipment

<Table 12. List of used equipment>

Description	Model / Manufacturer	Serial number	The next scheduled calibration date	Calibration laboratory
Dust Tester (Timer)	EN-DCT-1000F / Enex (LE3S)	- (14-16764)	- (April 17, 2017)	- (Cal Lab)
Standard Sieve	75 $\mu$ m / ChungGye Industrial Mfg., Co.	N/A	March 27, 2017	KTL
Differential Pressure Gauge	(0 ~ 2.9) kPa / DWYER	N/A	June 10, 2016	SCTI
Gas Flow Meter	RMA-14-SSV / DWYER INSTRUMENTS	N/A	May 07, 2016	KTL

## TEST RESULT

### (3) Test photograph



[Photo 7. Test photograph]

### (4) Test result

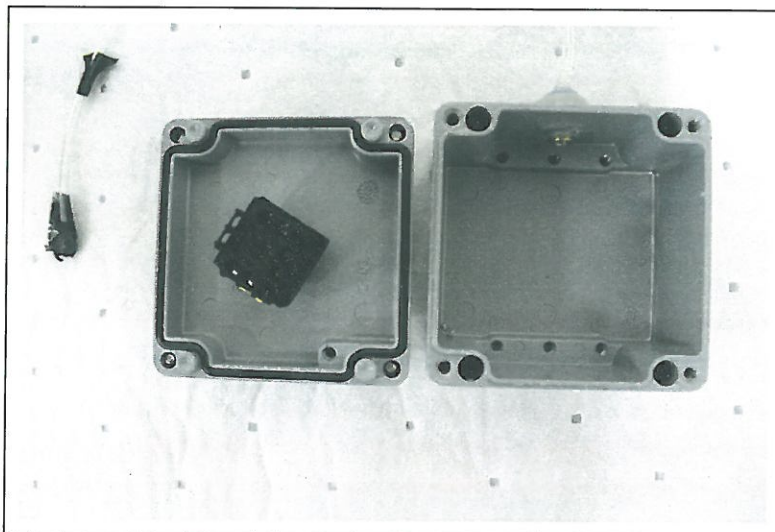
<Table 13. Test result >

Check list	Test result
Confirmation of dust penetration	No dust penetration was found (Refer to ※ Appendix 1.)

## TEST RESULT

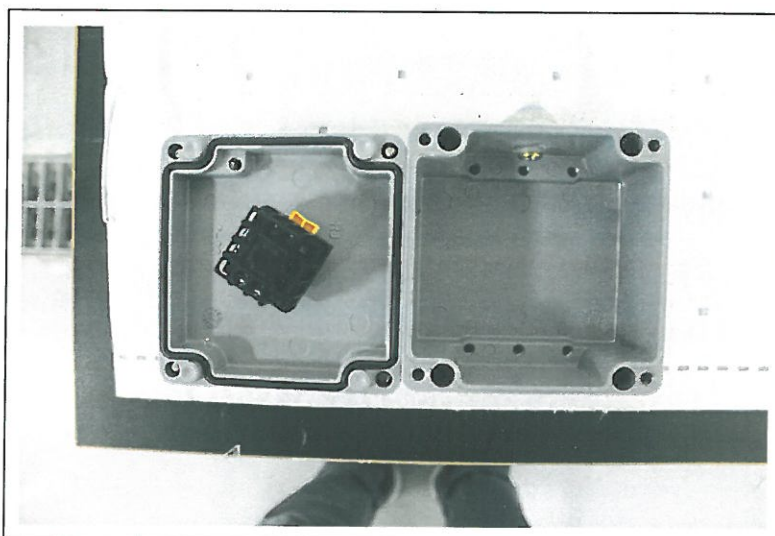
※ Appendix 1. IP66 test result photograph

(1) IPX6



[Photo 8. IPX6 Test result]

(2) IP6X



[Photo 9. IP6X Test result]

- End -