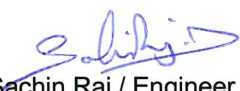



<b>Prüfbericht - Nr.:</b> 19616025 001 <i>Test Report No.:</i>			<b>Seite 1 von 13</b> <i>Page 1 of 13</i>		
<b>Auftraggeber:</b> <i>Client:</i>			Rotork controls (India) Pvt. Ltd. #165/66, Bommasandra-Jigani link road, KIADB Industrial area Anekal taluk, Jigani hobli, Bangalore- 562 106		
<b>Gegenstand der Prüfung:</b> <i>Test item:</i>			Actuator		
<b>Bezeichnung:</b> <i>Identification:</i>		Q-100 Actuator	<b>Serien-Nr.:</b> <i>Serial No.:</i>		EQ00114202
<b>Wareneingangs-Nr.:</b> <i>Receipt No.:</i>		1803131652	<b>Eingangsdatum:</b> <i>Date of receipt:</i>		2016.03.21
<b>Prüfart:</b> <i>Testing location:</i>			TÜV Rheinland (India) Pvt. Ltd. 82/A, West Wing, 3rd Main Road, Electronics City Phase 1 Bangalore – 560 100		
<b>Prüfgrundlage:</b> <i>Test specification:</i>			As per the customer specification with reference to EN 60068-2-27.		
<b>Prüfergebnis:</b> <i>Test Result:</i>			Refer section " Summary of Testing"		
<b>Prüflaboratorium:</b> <i>Testing Laboratory:</i>			TÜV Rheinland (India) Pvt. Ltd. 82/A, West Wing, 3rd Main Road, Electronics City Phase 1 Bangalore – 560 100		
<b>geprüft/ tested by:</b>			<b>kontrolliert/ reviewed by:</b>		
					
2016.03.31	Sachin Raj / Engineer		2016.03.31	Basavant Magadam / Asst. Manager	
<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>	<b>Unterschrift</b> <i>Signature</i>
<b>Sonstiges/Other Aspects:</b>					
This report consists of 13 pages including the following attachments: Attachment 1: Photo Document					
<b>Abkürzungen:</b>			<b>Abbreviations:</b>		
P(ass) = entspricht Prüfgrundlage			P(ass) = passed		
F(ail) = entspricht nicht Prüfgrundlage			F(ail) = failed		
N/A = nicht anwendbar			N/A = not applicable		
N/T = nicht getestet			N/T = not tested		
<b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b>					
<i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>					

<b>TEST REPORT</b>	
<b>ENVIRONMENTAL TESTING</b>	
<b>Report reference No</b> .....	: 19616025 001
Tested by (printed name and signature).....	: (see cover page) .....
Approved by (printed name and signature).....	: (see cover page) .....
Date of issue .....	: (see cover page)
<b>Testing Laboratory Name</b> .....	: TÜV Rheinland (India) Pvt. Ltd.
Address .....	: 82/A, West Wing, 3 <sup>rd</sup> Main Road, Electronics City Phase 1 Bangalore – 560 100
<b>Applicant's Name</b> .....	: Rotork controls (India) Pvt. Ltd.
Address .....	: #165/66, Bommasandra-Jigani link road, KIADB Industrial area Anekal taluk, Jigani hobli, Bangalore- 562 106
<b>Test name</b> .....	: Mechanical Shock Test
Standard .....	: As per the customer specification with reference to EN 60068-2-27.
Test procedure.....	: QMA 36.201.01
Non-standard test method .....	: N/A
<b>Test Report Form No.</b> .....	: TUVR_ENV_R2
TRF originator .....	: TUVR
Master TRF .....	: 2009.08.20
Copyright © 2008 TUVR PSQ for Conformity Testing and Certification of Electrical Equipment. All rights reserved.	
This publication may be reproduced in whole or in part for non-commercial purposes as long as the TUVR is acknowledged as copyright owner and source of the material. TUVR takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
Test item description.....	: Actuator
Manufacturer .....	: Rotork controls
Model and/or type reference.....	: Q-100 Actuator
Serial Number .....	: EQ00114202
Rating(s) .....	: 220V , 50Hz

Mechanical Test
-----------------

**Copy of marking plate:****General product information:**

The equipment under test is "Actuator" which is used for controlling small quarter turn valves.

**Summary of testing:**

Below are the mechanical test performed in sequence on Actuator.

Clause	Test Description	Operating Condition	Verdict	Serial number
1	Mechanical Shock Test	ON	Pass	EQ00114202

**Note:**

The EUT was subjected to functional test in two modes (mentioned below) after each shock by client and was found to be working fine.

Mode1: Local mode using knobs

Mode2: Remote mode using test box

<b>Mechanical Test</b>
------------------------

**Particulars: test item vs. Test requirements**

Equipment orientation ..... : Stationary

Operating condition ..... : ON

Weight of the component(kg) ..... : 13.4 Kg

Dimensions (L x W x H) ..... : 400mm X 300mm X 250mm

Condition of the equipment at the time of receipt ..... : Good

**Test case verdicts**

Test case does not apply to the test object . : N/A

Test item does meet the requirement ..... : P(Pass)

Test item does not meet the requirement .... : F(Fail)

**Testing**

Date of receipt of test item ..... : 2016.03.21

Date(s) of performance of test ..... : 2016.03.21

**General remarks**

The test result presented in this report relate only to the object(s) tested.

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“(See appended table)” refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

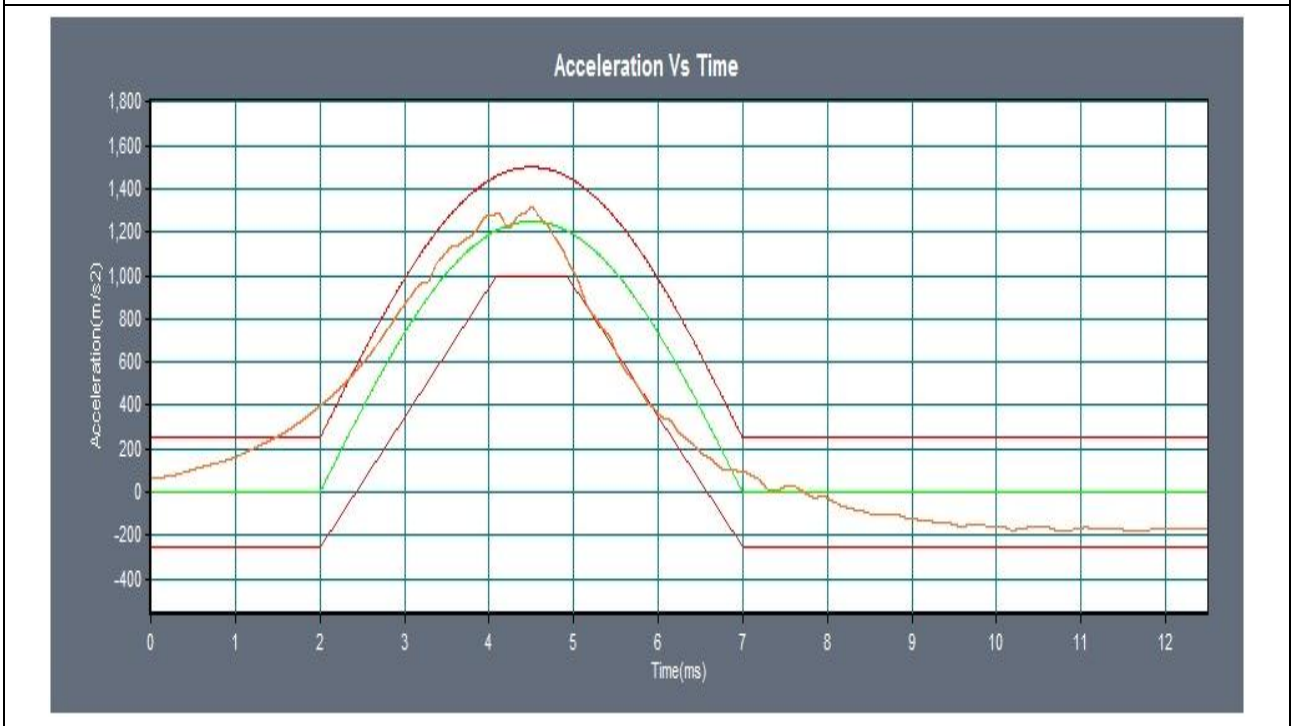
**Test equipment list**

Item	Type	Make / Model	Equipment No. / Sl. No.	Calibration due date
01	Mechanical shock tester	Spectral dynamics	30-2015-4093-1 / SD SB 400	N/A
02	Charge accelerometer	PCB	30-2015-4093-2 / LW47079	2017.05.01

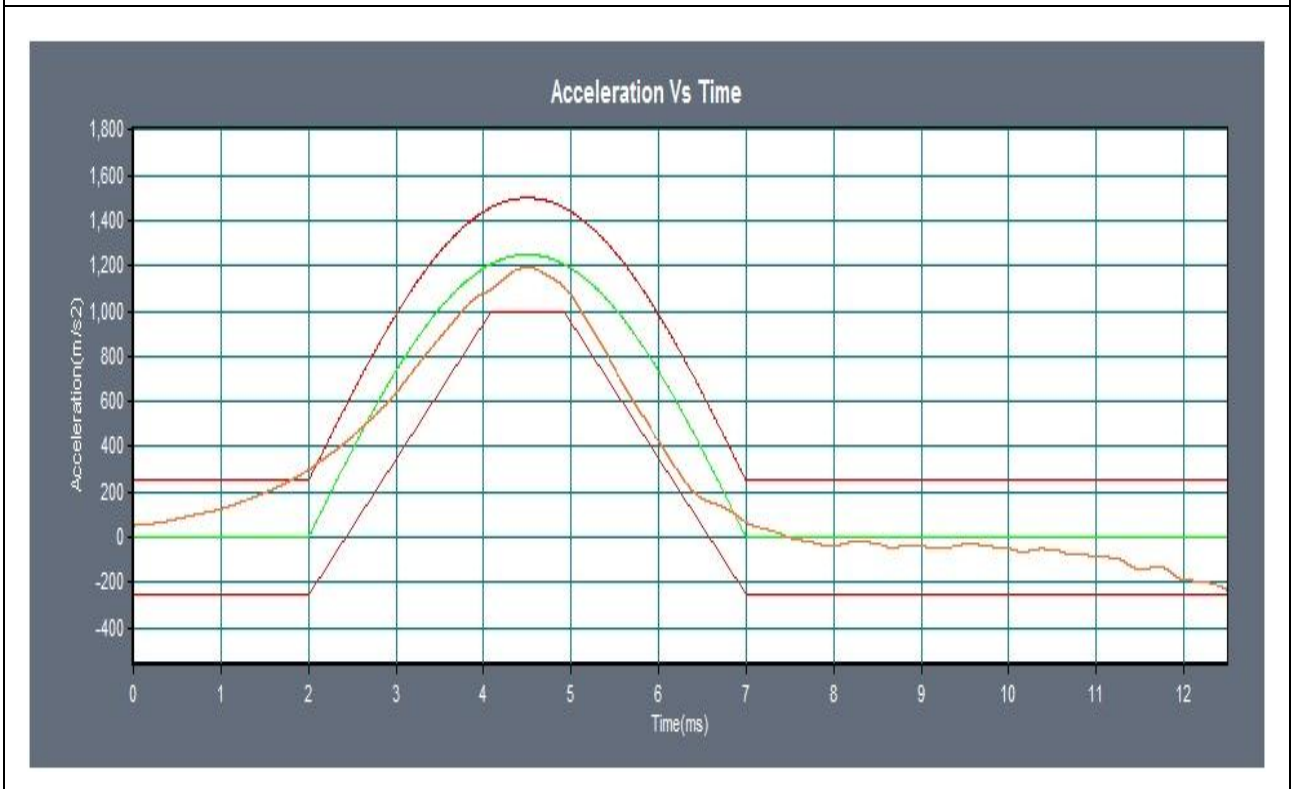
Mechanical Test			
Clause	Requirement + Test	Result - Remark	Verdict
1	<b>Mechanical Shock Test</b>		P
1.1	Pre-checks		P
	Functional checks:	EUT was working fine before shock test. Functional test done by the customer.	P
	Physical checks:	No physical damages were observed on EUT.	P
1.2	Mechanical Shock Test specification		
Direction of excitation : XX ,YY ,ZZ (Positive & Negative)			
EUT condition : ON			
	Acceleration (G)	Pulse Width (ms)	Pulse shape
	125	5	Half sinusoidal
			No. of Shocks
			1 per positive and negative axis
1.3	Post-checks		P
	Functional checks:	EUT was working fine after shock test. Functional test done by the customer.	P
	Physical checks:	No physical damages were observed on EUT.	P

Mechanical Test			
Clause	Requirement + Test	Result - Remark	Verdict

Test Graph : XX-Positive ; Max acceleration A(g) = 133.99 , Pulse Duration D(ms) = 5.94

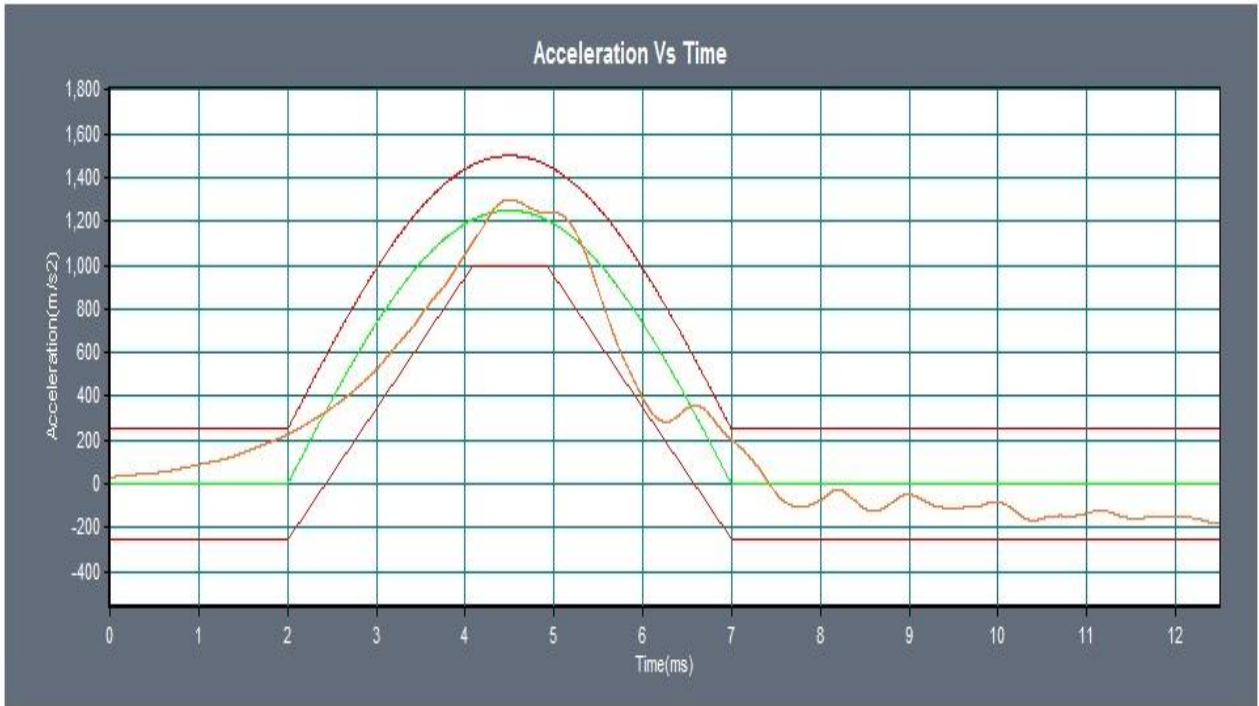


Test Graph : XX-Negative ; Max acceleration A(g) =123.74 , Pulse Duration D(ms) = 5.87

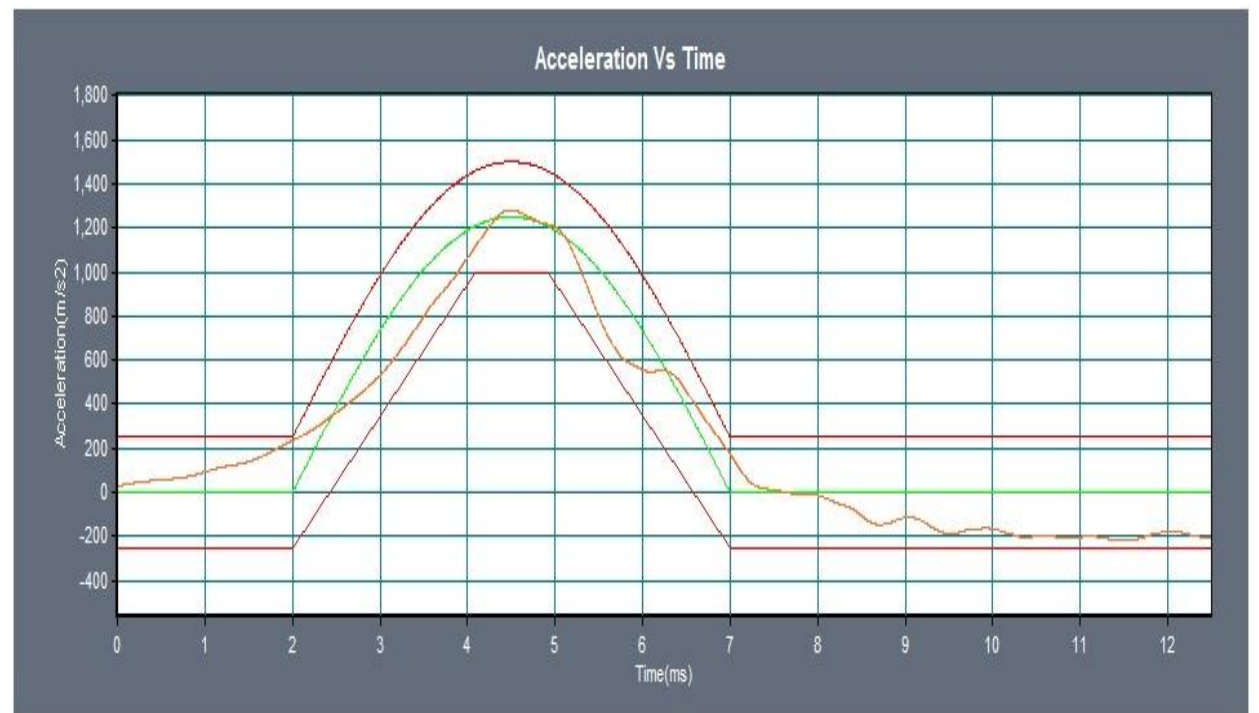


Mechanical Test			
Clause	Requirement + Test	Result - Remark	Verdict

Test Graph : YY-Positive ; Max acceleration A(g) = 130.74 , Pulse Duration D(ms) =5.77

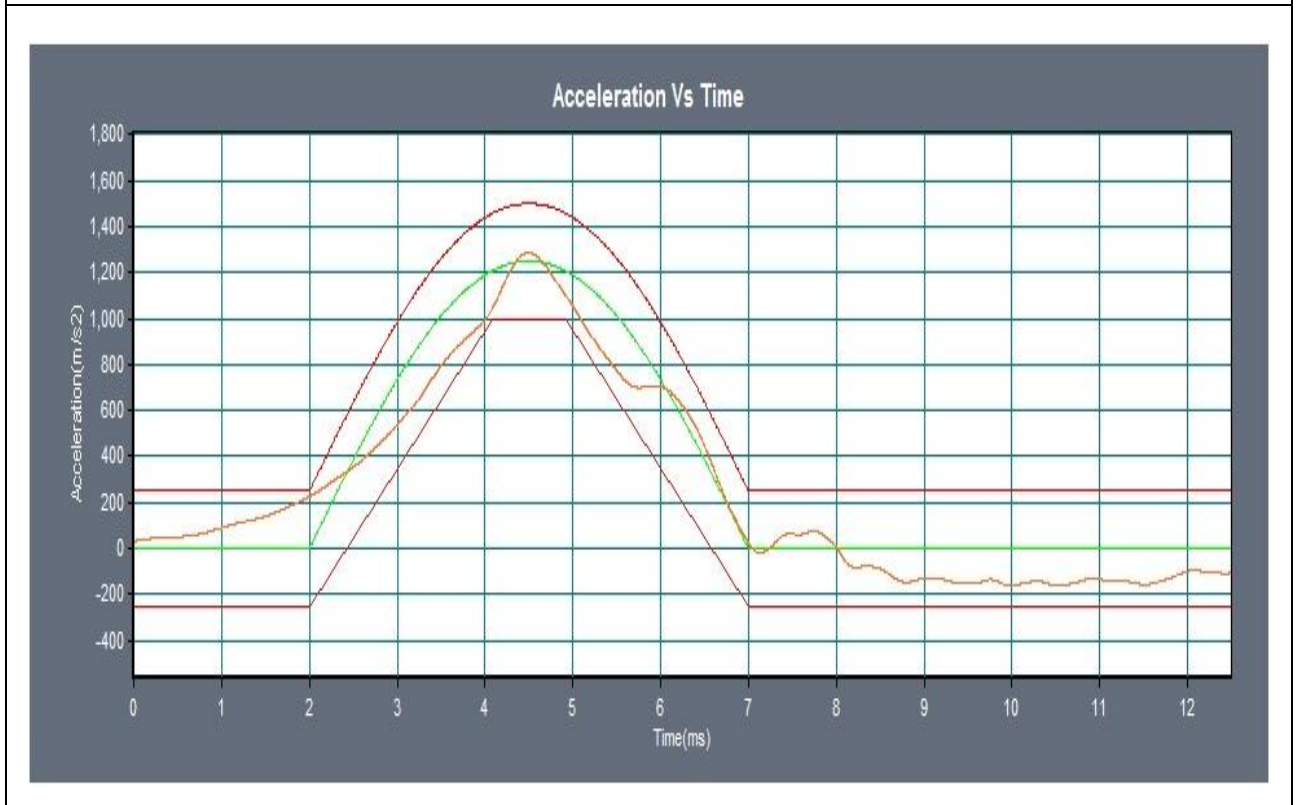


Test Graph : YY-Negative ; Max acceleration A(g) =130.35 , Pulse Duration D(ms) =5.70

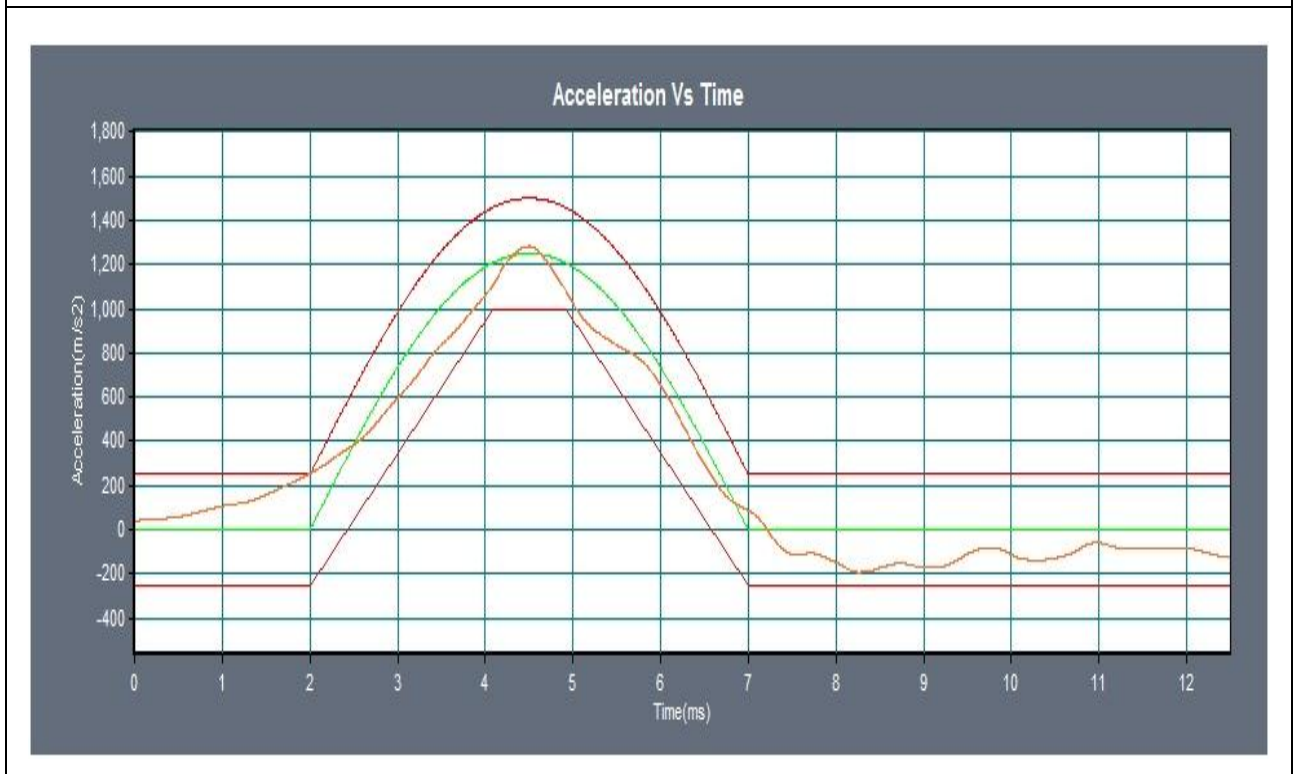


Mechanical Test			
Clause	Requirement + Test	Result - Remark	Verdict

Test Graph : ZZ-Positive ; Max acceleration A(g) =131.09 , Pulse Duration D(ms) =5.45



Test Graph : ZZ-Negative ; Max acceleration A(g) = 130.84 , Pulse Duration D(ms) =5.52





Attachment -1: Photo Document



Top View



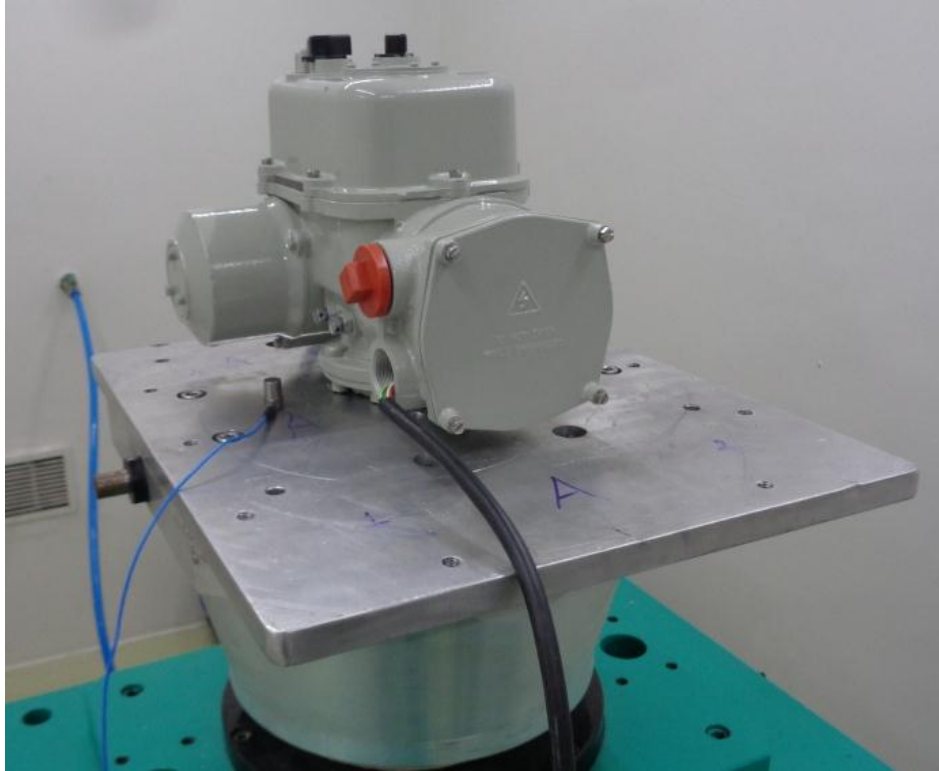
Front View

Attachment -1: Photo Document



Overall view

Attachment -1: Photo Document



XX-Axis (Positive)



XX-Axis (Negative)

Attachment -1: Photo Document

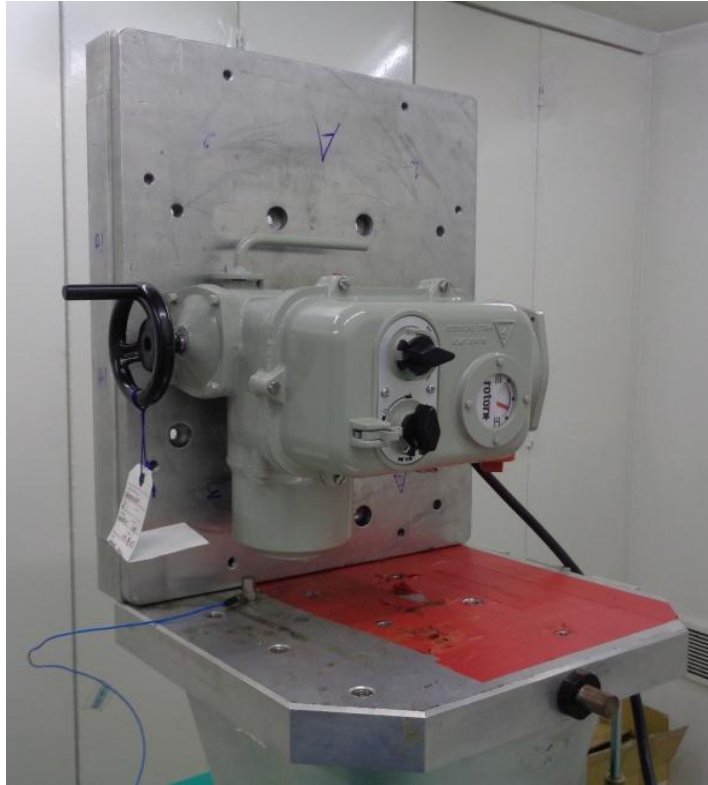


YY-Axis (Positive)



YY-Axis (Negative)

Attachment -1: Photo Document



ZZ-Axis (Positive)



ZZ-Axis (Negative)

**\*\*\*End of Test Report\*\*\***