October 16, 2018

Company name: KYB Corporation
Representative name: Yasusuke Nakajima, Representative
Director, Chairman and President Executive Officer

About nonconforming acts in the inspection process, etc. for seismic isolation/mitigation oil dampers for buildings manufactured by us and our subsidiary

Kayaba System Machinery (HQ: Tokyo, President: Shigeki Hirokado), a subsidiary of KYB Corporation (HQ: Tokyo, President: Yasusuke Nakajima) manufactures and sells oil dampers as seismic isolation/mitigation materials for buildings (previously manufactured and sold at KYB's Gifu South plant until January 2007). Recently, it has come to light that some already shipped seismic isolation/mitigation oil dampers products that do not conform to performance evaluation standards approved by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), or the standards of our customers (hereafter called the "Nonconforming Products") where installed in buildings (hereafter called the "Target Properties") through falsification of performance inspection record data (hereinafter called the "Incident"). Therefore we decided to report the "Incident" to MLIT, and publicize our response status.

Our basic policy for handling this is to promptly replace nonconforming products and investigate products for which it is not clear whether falsification was performed for consideration to replace them as well. In the future, we will treat eliminating the concerns and anxieties of owners and residents as a top priority issue of our company, and report our response policy etc. to construction and design companies under the instruction and guidance of MLIT and related administrative agencies, as well as verify the safety of these products, and provide detailed explanations to all stakeholders.

We state the background of changes in the production of seismic isolation/mitigation oil dampers at our company and subsidiary together with the facts related to the Incident revealed through our internal investigations below.

1. Changes in the production of seismic isolation/mitigation oil dampers

1) Started production of seismic mitigation oil dampers in 1962 and seismic isolation oil dampers at our Sagami Plant in 1986, respectively.
2) Shifted production of seismic isolation/mitigation dampers from Sagami Plant to Gifu South Plant in March 2000, and then transferred the business from Gifu South Plant to Kayaba System Machinery in January 2007.

2. Period of falsification and nonconforming products

1) The period when falsification is presumed to have been done is from January 2003 to September 2018
However, considering the possibility that falsification of data may have occurred for products manufactured at the Gifu South Plant since 2000, we are treating products manufactured from March 2000 onward in 2) in the following table as "Unknown"

2) The number of target properties with non-conforming and unknown products for buildings are as follows:

		Nonconforming products *1		③Unknown (including those for which surveying is continuing)*2	① - ③ Total	Total No. of products shipped (reference) *3
		① Nonconforming to certification by Minister	② Out of customer standards			
Seismic isolation oil damper	No. of properties	128	256	519	903	1,052
	No. of products	499	1,914	5,137	7,550	10,369
Seismic mitigation oil damper	No. of properties		26	57	83	358
	No. of products		146	3,232	3,378	20,779

*1 There is no minister certification system for seismic mitigation oil dampers.

*2 Investigation is continuing on products for which the falsification of performance inspection record data cannot be currently confirmed.

*3 The total shipment is for the period from the start of production to September 2018.

3) The number of properties and nonconforming and unknown products (① - ③ of the table in 2.2)) by prefecture and application are follows:

① Seismic isolation oil damper

Prefecture	No. of properties	Prefecture	No. of properties	Prefecture	No. of properties	Prefecture	No. of properties
Hokkaido	9	Kanagawa	67	Osaka	98	Fukuoka	23
Aomori	2	Niigata	10	Hyogo	26	Saga	2
Iwate	5	Toyama	5	Nara	1	Nagasaki	2
Miyagi	49	Ishikawa	2	Wakayama	5	Kumamoto	4
Akita	3	Fukui	5	Tottori	3	Oita	5
Yamagata	3	Yamanashi	3	Shimane	3	Miyazaki	1
Fukushima	9	Nagano	9	Okayama	4	Kagoshima	1
Ibaraki	17	Gifu	14	Hiroshima	8	Okinawa	4
Tochigi	6	Shizuoka	57	Yamaguchi	5	Unknown	1
Gunma	4	Aichi	86	Tokushima	9	Total	903
Saitama	34	Mie	14	Kagawa	4		
Chiba	36	Shiga	1	Ehime	6		
Tokyo	222	Kyoto	5	Kochi	11		

Application	No. of properties	Application	No. of properties
Residence	253	Data center	16
Medical/welfare facilities	158	Complex facilities	16
Office	147	Accommodation facilities	12
Governmental offices	106	Commercial facilities	1
Education/research facilities	46	Others	2
Production facilities	46	Unknown	53
Sport/cultural facilities	25	Total	903
Logistics facilities	22		

② Seismic mitigation oil damper

Prefecture	No. of properties	Prefecture	No. of properties	Prefecture	No. of properties	Prefecture	No. of properties
Hokkaido	3	Saitama	4	Shizuoka	2	Unknown	3
Iwate	1	Tokyo	28	Aichi	7	Total	83
Miyagi	2	Kanagawa	4	Osaka	9		
Fukushima	1	Fukui	1	Hyogo	5		
Ibaraki	2	Yamanashi	1	Kagawa	1		
Gunma	4	Gifu	2	Fukuoka	3		

Application	No. of properties	Application	No. of properties
Office	28	Sport/cultural facilities	5
Residence	12	Accommodation facilities	3
Commercial facilities	8	Governmental offices	3
Complex facilities	8	Medical facilities	1
Education/research facilities	7	Unknown	1
Production facilities	7	Total	83

4) In addition, such oil dampers were also used in bridges (*4), and the following nonconforming products were found.

		① Nonconforming products/out of customer standards	② Unknown	Total of ① and ②	Total No. of products shipped (reference)
Oil dampers used in bridges	No. of properties	2	0	2	18
	No. of products	4	0	4	521

*4 Nonconforming products are used in bridges as well, but they are not targeted for certification by the Minister, since the provisions of the Building Standards Act do not apply.

3. Details of falsification

Details of normal procedures and falsification are as follows.

1) Normal procedure: when data is outside the standard range in the performance inspection process, disassemble the product, and adjust it until the performance data falls within the range of standard values.
2) Falsification: values outside the standard range in the performance inspection process were falsified, and submitted as inspection records.

4. Background revealing the Incident and our response

1) At Kayaba System Machinery, an investigation was commenced due to a report of the suspicion of falsification of performance inspection record data from employees, which resulted in an order prohibiting falsification being issued (September 8).
2) We received the internal investigation results of 1) from Kayaba System Machinery and established an internal task force, and started an investigation (September 12).
3) As a result of the investigation, we concluded that there was falsification of performance inspection record data, and reported the fact to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (September 19)
4) Since then, we have identified target products and properties, as well as performed structural calculation to verify the safety of properties with values significantly deviated from the standard values.
5) Established an external investigative committee (September 26)
6) After October 5, it was found that pistons and packings made of materials different from the specifications certified by the Minister were used, and this was reported to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).
7) After that, it was found that brides are also included in the target properties, and this was reported to MLIT as well (October 9)

5. Verification of safety

1) Based on the instructions from MLIT, of the nonconforming products we selected the following 7 properties that have oil dampers particularly different from the standard values (*5), and performed safety verification (structural calculation) through a third party.

2) We confirmed that our products can sufficiently withstand earthquakes with a seismic intensity ranging from upper 6 to about 7.

		Application	No. of oil dampers	Maximum deviation	Deformation in seismic isolation layer (Standard: less than 100%)	Deformation in upper structure (Standard: 1/100 or less)
Seismic isolation oil damper (5 properties)	Property A	Medical facilities	8	42.3%	58.9%	1/338
	Property B	Residence	8	31.8%	51.9%	1/331
	Property C	Residence	8	17.5%	71.9%	1/1064
	Property D	Residence	*6 15	*6 16.0%	84.6%	1/194
	Property E	Residence	8	19.9%	36.4%	1/150
					Conforms to the structural provisions in the Building Standards Act	
Seismic mitigation oil damper (2 properties)	Property F	Office	28	20.5%	Conforming	
	Property G	Office	36	-17.9%	Conforming	

*5 Seismic isolation: Within ±15% from criterion values for Minister certificate, within ±10% from criterion values for customer standards in contracts, etc.
Seismic mitigation: Within ±10% from criterion values for customer standards in contracts, etc.

*6 Values of 4 dampers for which deviations were clarified. There are 11 dampers for which it is unknown whether or not falsification was performed.

3) We have also started safety verification for other Target Properties through cooperation with construction and design companies.

6. Use of materials different from specifications certified by the Minister

The following is an overview of cases of materials different from the specifications certified by the Minister being used.

1) In seismic isolation oil dampers certified by the Minister, materials different from the certified specifications were used for pistons, packings, and paints.
2) More specifically,
   ① For pistons
      A) Due to misunderstandings regarding requiring new certification due similarity in chemical components and mechanical properties in the approved specifications.
      B) Mistakenly entering actual materials when applying for certification
   ② Omission of materials actually used for paints in the application for approval requested by customers
   ③ Misunderstanding of different materials as certified by specifications for packings
3) The period of shipped products that use pistons made of materials different from the certified specifications is from January 2005 to September 2018. Details are as stated below (*For pistons, the number is included in the seismic isolation oil dampers in table in 2. 2 above)

Prefecture	No. of properties	Prefecture	No. of properties	Prefecture	No. of properties	Prefecture	No. of properties
Tokyo	13	Shizuoka	1	Shimane	1	Total	29
Fukui	1	Aichi	3	Ehime	1		
Gifu	1	Osaka	3	Fukuoka	5		

Application	No. of properties	Application	No. of properties
Office	15	Governmental offices	1
Residence	9	Sport/cultural facilities	1
Education/research facilities	2	Total	29
Commercial facilities	1		

4) The period of shipped products that use paints made of materials different from the certified specifications is from November 2009 to September 2018. Details are as stated below (*For paints, the number is included in the seismic isolation oil dampers in table in 2. 2 above)

Prefecture	No. of properties	Prefecture	No. of properties	Prefecture	No. of properties
Tokyo	10	Aichi	3	Ehime	1
Fukui	1	Osaka	1	Fukuoka	5
Shizuoka	1	Shimane	1	Total	23

Application	No. of properties	Application	No. of properties
Office	13	Governmental offices	1
Residence	7	Total	23
Education/research facilities	1		
Commercial facilities	1		

5) The period in which products that using packings made of materials different from the certified specifications were shipped is from June 2006 to December 2017, and of the targets we are investigating 113 cases (* For packings, the number is not included in the seismic isolation dampers listed in 2. 2).

6) From the results of safety verification by a third party organization on the materials of shipped products, we confirmed that the Incident causes no safety related problems, except pistons whose actual materials were erroneously described at the time of application, and we have started the proceedings required for obtaining certification by the Minister for the specifications of the said materials. We plan to continue confirming safety on the remaining issues.

Considering the significance of the Incident, immediately after we recognized the Incident we established an internal task force led by the President and an independent external investigative committee with professional skills chaired by Koichi Namba, a lawyer from Mori Hamada & Matsumoto legal office, and the former Chief Judge at the Tokyo High Court to follow up on investigations of the facts of the Incident, as well perform cause analyses and provide advice regarding recurrence prevention measures. Based on the investigation results and advice, together with the findings and knowledge of external technical experts, etc., we will promptly and diligently take appropriate measures. We will disclose investigation results of the external investigative committee or other data at an appropriate time in the future.

Moreover, we have started investigations on the existence of cases similar to the Incident for other products and services, and will proceed with internal investigations promptly by receiving advice from the external investigative committee.

We deeply apologize for all concerns and inconvenience the Incident may bring to the owners, residents, and construction and design companies of the Target Properties.

We will disclose information on the estimated effect of the Incident on business performance, etc.

END

Supplement Materials

Our Precision, Your Advantage

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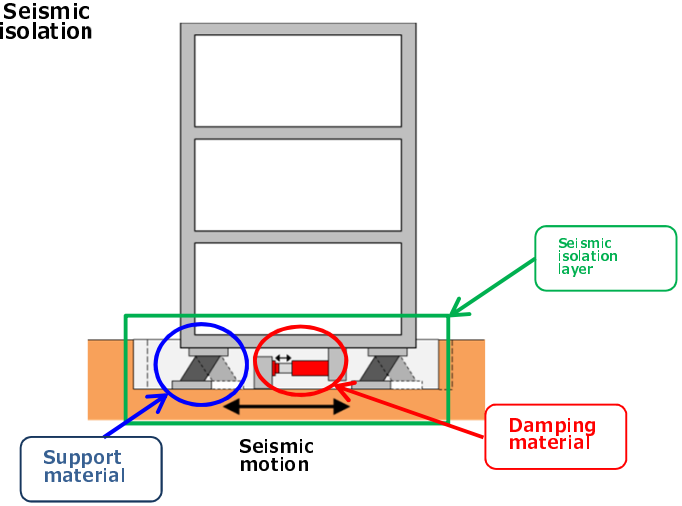
1. Product Explanations

1-1.Seismic isolation and seismic mitigation

Our Precision, Your Advantage

Seismic isolation

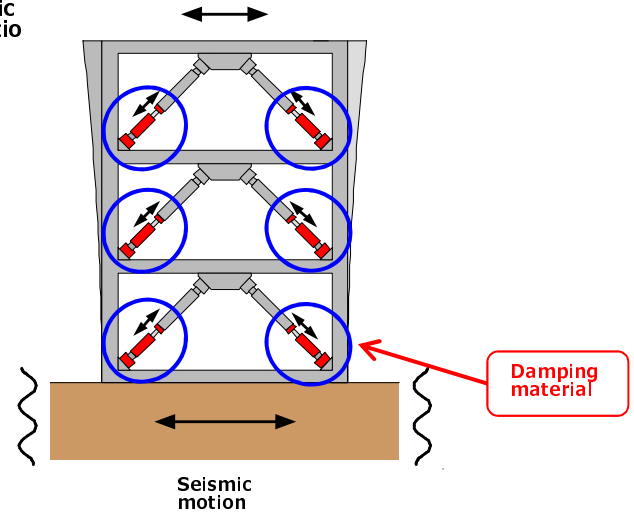


Structure to prevent transmission of underground vibration by establishing a seismic isolation layer and connecting the building and ground using support materials and damping materials assisting support materials.

Support materials made of laminated rubber, etc. have a function to prevent transmission of power to the building by being deformed by power of the ground to move horizontally.

Depending on the scale and structure of buildings, damping materials such as oil dampers are added to support materials, thereby curtailing vibration and excessive deformation of the seismic isolation layer.

Seismic mitigation



Structure of mitigating vibration of the building by wind or earthquake by placing damping materials on each floor

Damping materials such as oil dampers mitigate vibration by absorbing power from the wind or earthquake, therefore curtailing deformation of each floor of the building.

1. Product Explanations
1-2. Seismic isolation oil damper

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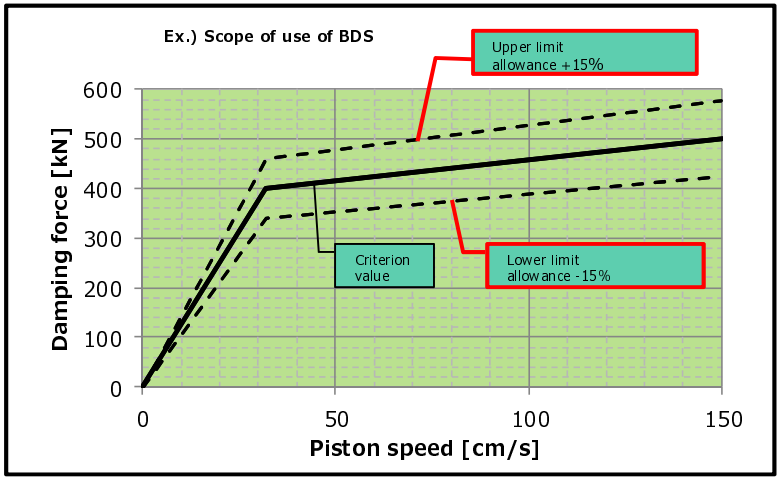
Seismic isolation oil dampers are certified as damping materials conforming to the Building Standards Act by the Minister of Land, Infrastructure and Transportation.

Damping performance of products certified by the Minister
: Deviation of ±15% against the standard value is allowed.

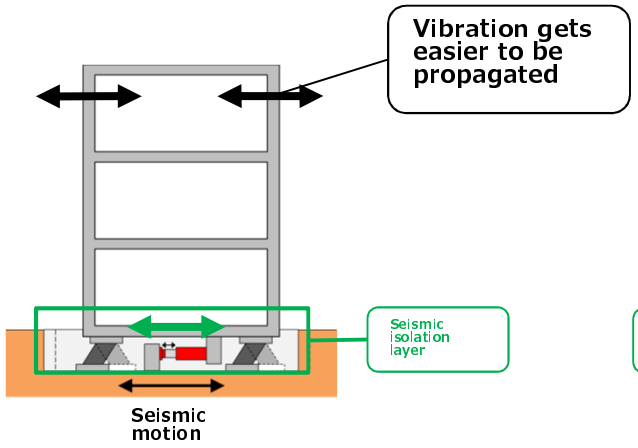
Damping performance as per contract with customer
: Deviation of ±10% against standard value is promised.

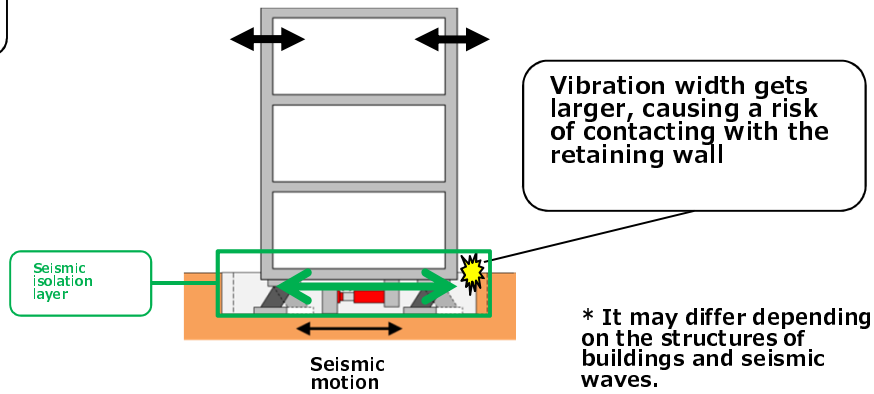


Effect when deviation exceeds ±15% against standard damping performance

<<When deviating to the positive side>>
Damper movement gets hardened, making seismic motion gets easier to be transmitted without shielding.

<<When deviating to the negative side>>
Damper movement gets softened, making vibration width larger, causing a risk of contacting with the retaining wall.





* It may differ depending on the structures of buildings and seismic waves.

1. Product Explanations
1-3.Seismic mitigation oil damper

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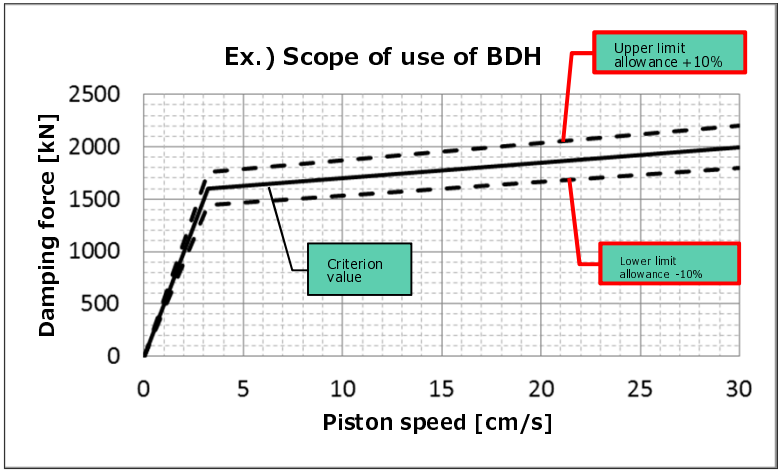
Standard values for damping performance of seismic mitigation oil dampers are determined by contracts with customers

Damping performance as per contract with customer
: Deviation of ±10% against standard value is promised.

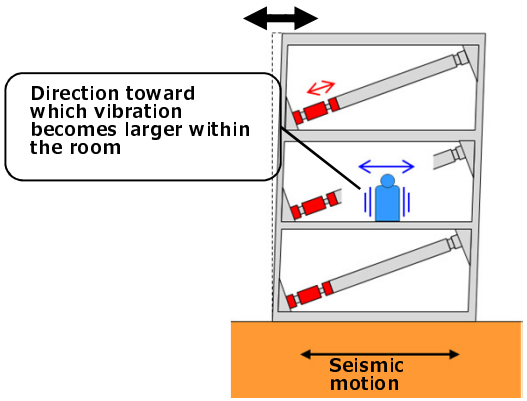
Our seismic mitigation oil dampers are not certified by the Minister of Land, Infrastructure and Transportation.

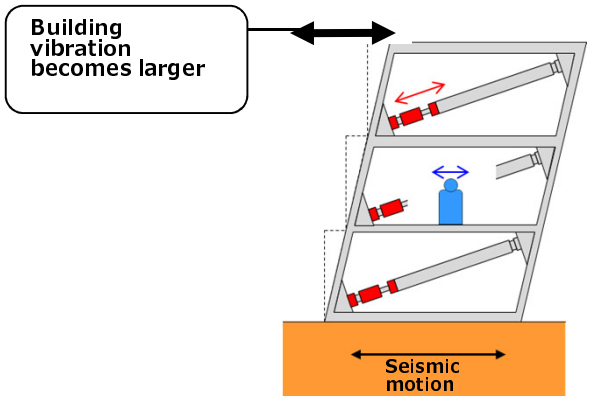


Effect when deviation exceeds ±10% against standard damping performance

<<When deviating to the positive side>>
Damper movement gets hardened, causing a risk of increase in acceleration

<<When deviating to the negative side>>
Damper movement gets softened, causing a risk of not absorbing energy, and larger vibration in buildings.





* It may differ depending on the structures of buildings and seismic waves.

2. Details of falsification and process/inspection procedures

2-1. Overview of falsification of data

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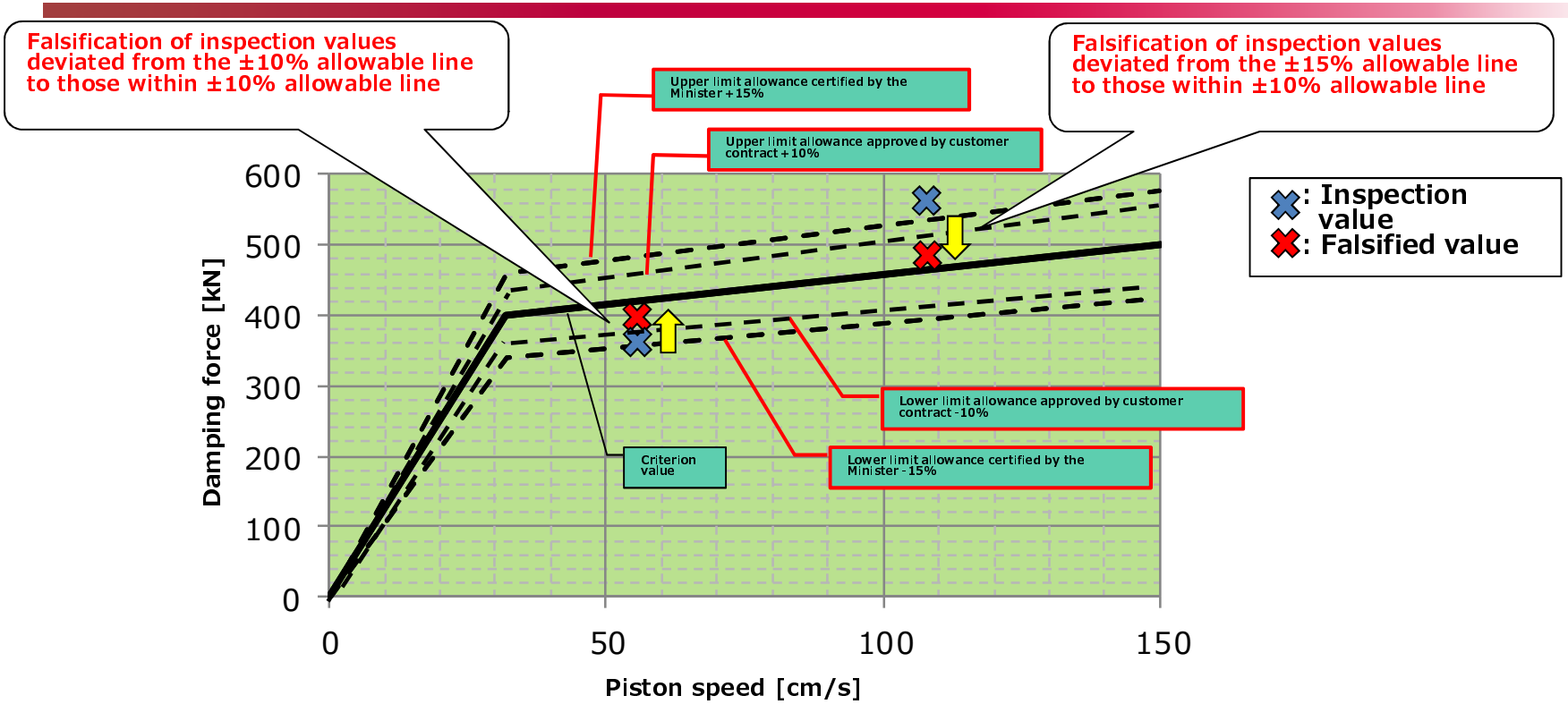

Falsification activities are classified as follows.

① Out of damping performance certified by the Minister (±15% allowance line)
=>Falsified data to the one in the range of the damping performance specified in the contract with customers (±10% allowance line)
(That naturally caused changing in writing to values within damping performance for products certified by the Minister(±15% allowance line).

② Though damping performance are within the range of values certified by the Minister(±15% allowance line), inspection values were out of damping performance as per contract with customer(±10% allowance line).
=>Falsified data to the one in the range of the damping performance specified in the contract with customers (±10% allowance line)

2. Details of falsification and process/inspection procedures

2-2. Seismic isolation/mitigation oil damper process

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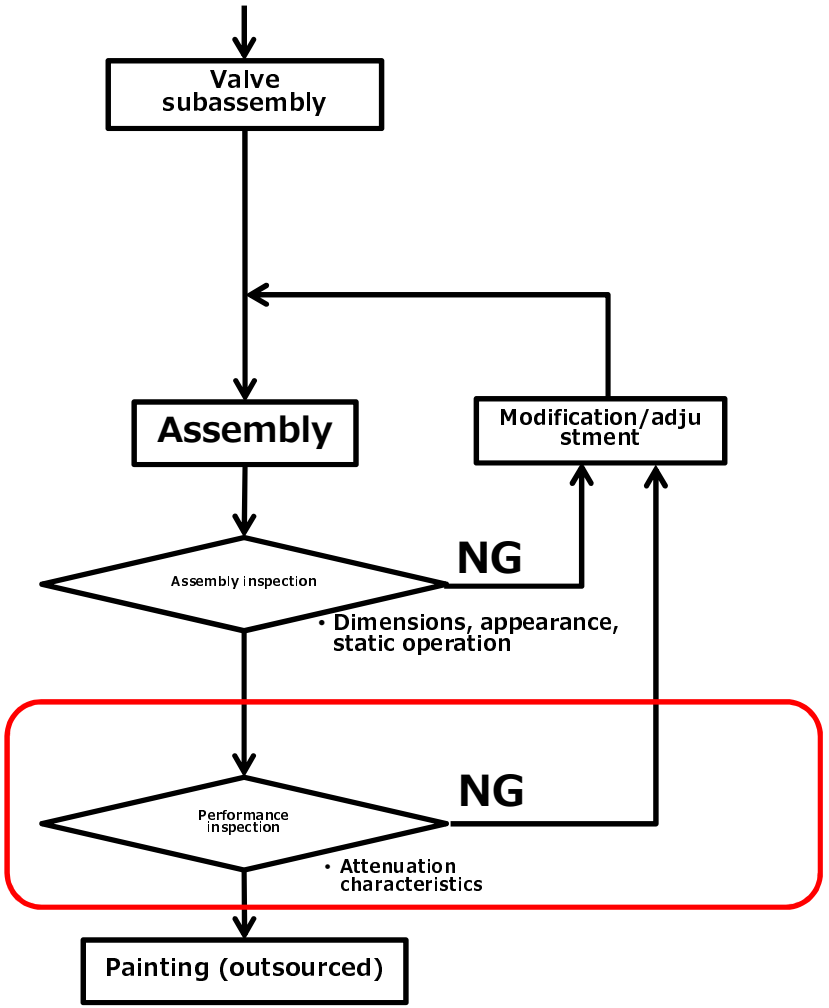
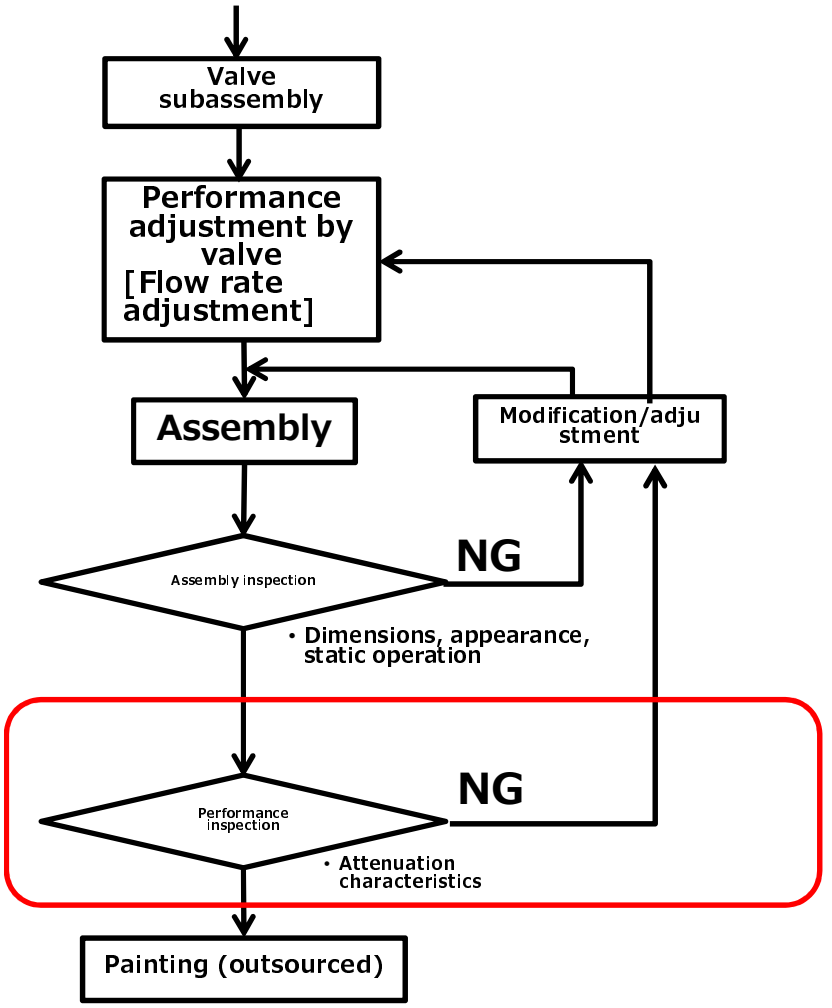
Seismic isolation oil damper (BDS) process



Seismic isolation oil damper (BDH) process



2. Details of falsification and process/inspection procedures

2-3. Falsification of performance inspection record data

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Installation of damper to tester

Selection of model for inspection target
Input of property name, test conditions
(Frequencies, amplitudes)

Preparation of testers for operation

Excitation tester measurement results

NG

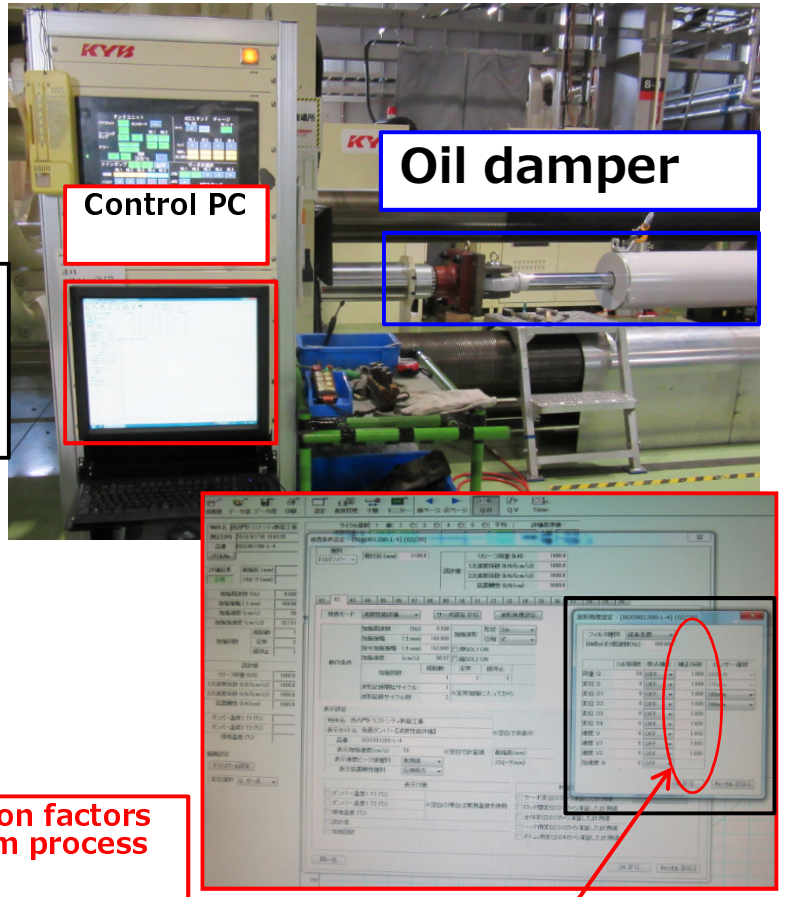
OK

NG

Output of record

Damper removal/disassembly ->adjustment (Tuning)

Input correction factors from waveform process settings.



Black: Appropriate action
Red: Inappropriate action

Appropriate action does not use correction factors.

Reference: Structure and mechanism of oil damper

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The mechanism of generating damping force of the oil damper is roughly stated below.

The rod extends/shrinks → Oil passes the control valve → Passing resistance by oil generates pressures in the cylinder → Pressures pushes the rod to generate the resistance (damping force)