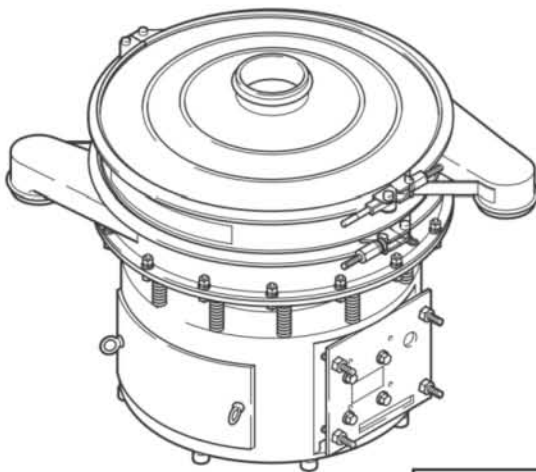


Innovation in Technology

**K O W A**

## **Vibrating Sifter**

### Operation Manual



Models:

KL

KLO

KLC

To operate the equipment correctly,  
be sure to read this manual thorough-ly  
before use.

# **KOWA KOGYOSHO CO., LTD.**

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Nagoya 467-0861, Japan

Phone: +81-52-872-2211

Fax: +81-52-872-2171

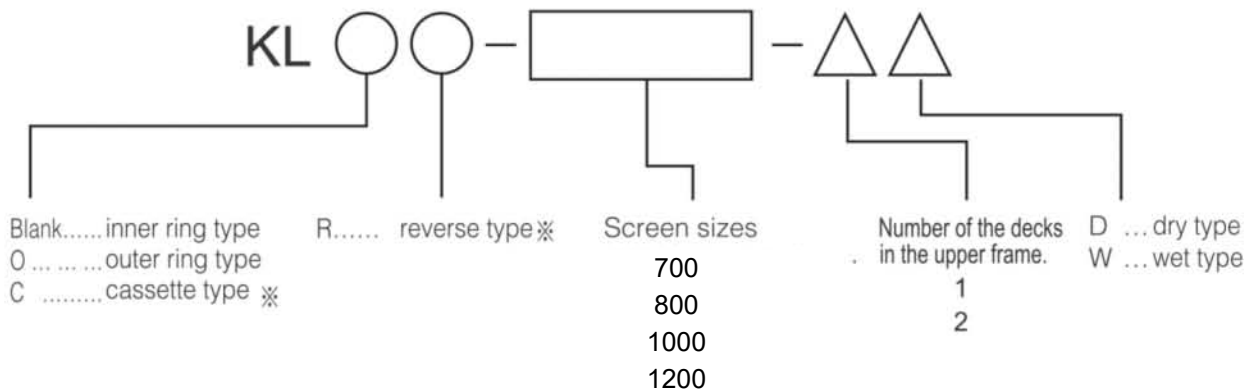
## ■ FOREWORD ■

- Thank you for selecting our Kowa Vibrating Sifter for your application.
- In addition to its application in the manufacturing sector, this sifter is used in a wide range of applications from medical to electronics. To meet these diverse needs, this sifter adopts Kowa's own three-dimensional vibration sifting system, which enables the efficient sifting of various types and forms of materials.
- This Operation Manual provides a detailed description of the Kowa Vibrating Sifter as follows:
  - 1. Precautions for safe operation
  - 2. Basic handling and adjustment methods
  - 3. Maintenance and inspectionTo enable this unit to attain its full potential, and to operate it in a safe and efficient manner, be sure to read this manual thoroughly before use.
- This unit should be operated in accordance with the instructions given in the Operation Manual. Operating it in a manner other than described in the manual may cause an inadvertent malfunction or accident. Therefore, all personnel who handle this unit, including the supervisory staff, are urged to become thoroughly familiar with the contents of this manual. Keep this Operation Manual in a location that is easily accessible by anyone at any time, and affix the (separately supplied) warning labels at the site where the unit is to be installed. Thus, these materials can be referred to whenever information is needed while operating the unit.
- In case this unit is lent to another party, be sure to also lend this Operation Manual and all accessories.
- If this Operation Manual becomes lost or damaged, contact the dealer where this unit was purchased, or Kowa.
- This manual was prepared with the utmost attention to detail. However, if any errors or omissions are encountered, contact the dealer from whom this unit was purchased, or Kowa.
- The content of this manual may not be copied in whole or in part without the consent of Kowa Kogyosho Co., Ltd.

■ Before Proceeding With This Manua ■

- Before proceeding with this manual, verify the model type of your Vibrating Sifter, which appears on the nameplate.
- Description of the model type:

■ L Type



※ For details on the cassette type and the reverse type, also refer to the operation manual that is provided separately.

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# 1







## Important Safety Issues

- The operation, maintenance, and inspection procedures for the Kowa Vibrating Sifter are neither difficult nor dangerous.
- However, insufficient information on the proper safe handling procedures or a failure to observe the proper precautions may result in a serious accident.
- The precautions listed here help prevent injury or hazard to you or to others. Therefore, to operate the unit correctly and safely, be sure to read the Safety Issues thoroughly before use.



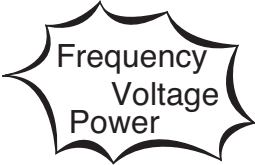
### ■ Explanation of symbols (marks)

-  : Operating the equipment erroneously by failing to observe this precaution may possibly lead to death or injury to humans.  
**WARNING!!**
-  : Operating the equipment erroneously by failing to observe this precaution may possibly cause injury to humans and serious damage to the product.  
**CAUTION**
- **[NOTE]** : Gives information that does not fall in the WARNING!! or CAUTION categories.





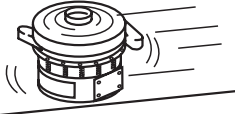

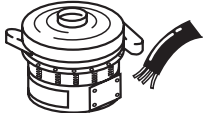
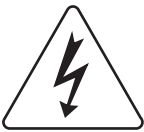
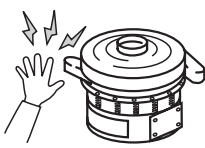


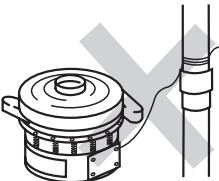

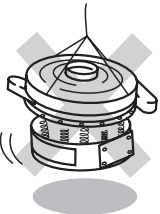
### ■ Examples of symbols (marks)



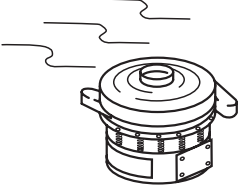

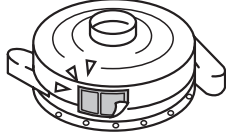
-  : The  mark indicates a DANGER, WARNING, or CAUTION item. The symbol inside the mark describes the precaution in more detail ("electrical shock", in the case of the example on the left).
-  : The  mark indicates a prohibited action. The symbol inside the mark describes the precaution in more detail ("do not touch", in the case of the example on the left).
-  : The  mark indicates an action that must be taken, or instructs how to perform a task. The symbol inside the mark describes the precaution in more detail ("provide ground work", in the case of the example on the left).

## Precautions on product specifications



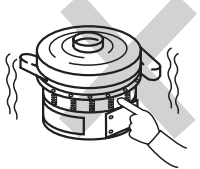
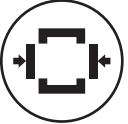
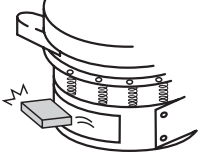

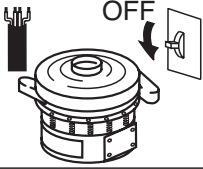

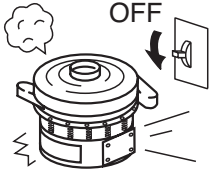


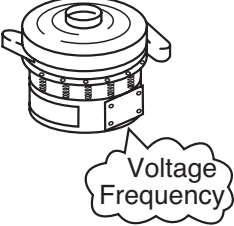
 <b>CAUTION</b>		
	<ul style="list-style-type: none"> <li>Do not use the unit under conditions that are different from those prescribed in the product specification, as they may lead to current leakage, electrical shock, fire, or malfunction.</li> </ul>	



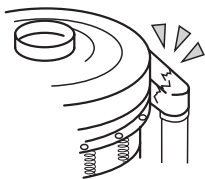

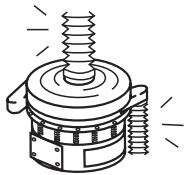


## Precautions during positioning and installation

 <b>WARNING!!</b>		
	<ul style="list-style-type: none"> <li>When positioning the unit, take the Vibrating Sifter's center of gravity and weight into consideration. If the unit is not suspended properly, it may fall and break, leading to injury.</li> </ul> <p><b>[NOTE]:To suspend the unit, use the eyebolts that are provided on the side of the unit.</b></p>	
	<ul style="list-style-type: none"> <li>For installation, follow the instructions in the Operation Manual. Improper installation may create an abnormal vibration or resonance, which may cause the unit to break or reduce its performance.</li> </ul>	
	<ul style="list-style-type: none"> <li>Perform all electrical work in compliance with local electrical equipment standards and internal wiring codes. Improper wiring may lead to current leakage, electrical shock, or fire.</li> </ul>	
	<ul style="list-style-type: none"> <li>Provide a secure ground, without sharing a common ground with other devices, and make sure to install a ground leakage circuit breaker and an overflow protector. Failure to observe this precaution may cause the Vibrating Sifter to fail or cause current leakage, which in turn may lead to electrical shock.</li> </ul>	
 <b>CAUTION</b>		
	<ul style="list-style-type: none"> <li>Provide a secure ground. Do not connect the grounding wire to a gas pipe, water pipe, lightning rod, or telephone ground line. Improper grounding may lead to electrical shock.</li> </ul>	
	<ul style="list-style-type: none"> <li>During the transport and installation of the Vibrating Sifter, use the eyebolts that are provided on the side of the unit. Do not suspend the unit by the band portion of the upper and lower frames, as it may seriously damage the driving spring and other areas.</li> </ul>	



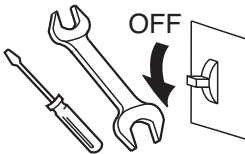

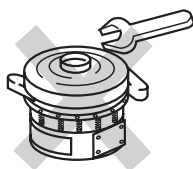


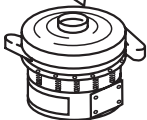

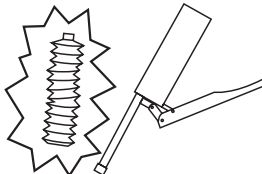
 <b>CAUTION</b>		
	<ul style="list-style-type: none"> <li>Do not mount the Vibrating Sifter in an area such as a machinery or chemical plant that is exposed to acids, alkalis, organic solvents, or paints that generate gases that are poisonous or corrosive, or in an area that contains a large amount of dust. Using the Vibrating Sifter in such an environment may lead to fire.</li> </ul> <p><b>[NOTE]:</b> In case of any questions regarding the location in which to install the unit, contact the dealer where this unit was purchased, or Kowa.</p>	
	<ul style="list-style-type: none"> <li>After the unit has been installed, affix the supplied warning and caution labels to areas where they can be easily seen.</li> </ul> <p><b>[NOTE]:</b> Refer to page 15, "Affixing warning and caution labels" for details on the locations in which the labels should be placed.</p>	

## **Precautions during trial operation and normal operation**



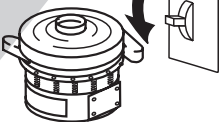
 <b>WARNING!!</b>		
	<ul style="list-style-type: none"> <li>During operation (or trial operation), do not touch the unit with your hands, feet, or any other part of your body, as you could become caught or entangled, which may lead to injury. Also, keep in mind that the unit generates a considerably larger amount of vibration during starting and stopping than when it is in operation.</li> </ul>	
	<ul style="list-style-type: none"> <li>During operation (or trial operation), make sure the doors are attached to the both sides of the unit. Failure to observe this precaution may lead to a serious accident, as a loose or damaged lower weight could be flung from the unit.</li> </ul>	
	<ul style="list-style-type: none"> <li>Before changing the connections for the reverse rotation of the motor, make sure that the power supply has been properly disconnected and that the drive mechanism has stopped completely. Failure to observe this precaution may lead to electrical shock, short circuit, or injury.</li> </ul>	
	<ul style="list-style-type: none"> <li>In case an abnormal condition is encountered, immediately stop the operation by shutting off the power and consult the dealer where the unit was purchased, or Kowa. Continuing the operation in an abnormal state may lead to electrical shock, or fire.</li> </ul>	
 <b>CAUTION</b>		
	<ul style="list-style-type: none"> <li>Do not use a voltage or frequency other than those that are rated for the respective model type. Particularly when using a generator, avoid using the Vibrating Sifter in conjunction with other types of equipment as much as possible, as it can cause the Vibrating Sifter to operate improperly.</li> </ul> <p><b>[NOTE]:</b> For further details on the voltage and frequency, refer to the nameplate on the unit, or to page 16, "Electrical wiring".</p>	

 <b>CAUTION</b>		
	<ul style="list-style-type: none"> <li>Do not connect heavy joining devices such as flanges or ferrules to the discharge outlets of the upper and lower frames, as they may damage the discharge outlets. (Specifications that have been approved by Kowa during the design stages are excepted.)</li> </ul>	
	<ul style="list-style-type: none"> <li>For connections to the discharge outlets at the upper and lower frames and to the supply inlet in the lid, use a joint with sufficient vibration absorption properties such as a flexible tube. If the joint's freedom of movement is small, it may cause damage to the frames, the supply inlet, and the discharge outlets.</li> </ul>	
	<ul style="list-style-type: none"> <li>If the Vibrating Sifter is sifting a material with a high temperature, the unit itself could be extremely hot. In this case, do not touch the unit during operation or immediately after operation, as it may lead to burns.</li> </ul>	

## **Precautions during maintenance and inspection**

 <b>WARNING!!</b>		
	<ul style="list-style-type: none"> <li>Before performing maintenance or an inspection, make sure that the power supply has been properly disconnected and that the drive mechanism has stopped completely. Failure to observe this precaution may lead to fatal accidents or other major damage.</li> </ul>	
	<ul style="list-style-type: none"> <li>To disassemble or repair areas other than those that have been designated in the Operation Manual, consult the dealer or Kowa. Improper assembly can lead to reduced performance, abnormal operation, electrical shock, or injury.</li> </ul>	
 <b>CAUTION</b>		
	<ul style="list-style-type: none"> <li>Be sure to perform a trial operation when starting the Vibrating Sifter after reassembly. If the unit was assembled improperly, it may lead to abnormal operation or electrical shock.</li> </ul>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Trial operation</div> 
	<ul style="list-style-type: none"> <li>For greasing, use only the grease that has been supplied with the unit, as other types of grease may damage the vibrating body.  <b>[NOTE]: Before using a different type of grease, consult the dealer or Kowa.</b></li> </ul>	

## Precautions during power outage

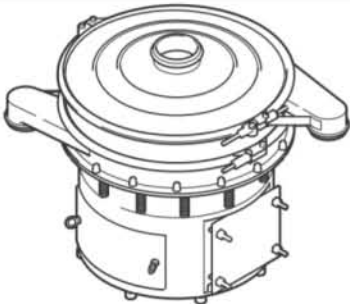



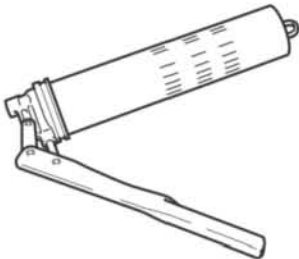
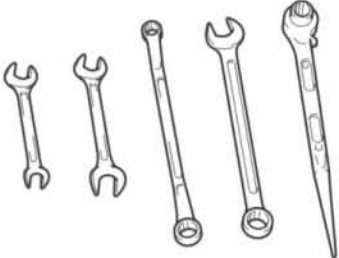
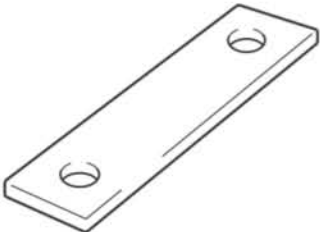
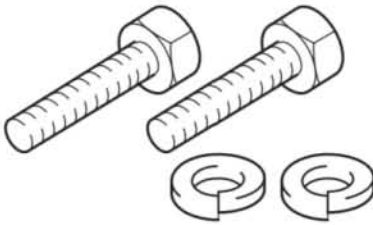
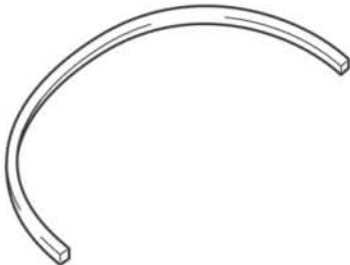
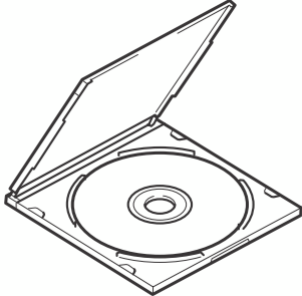
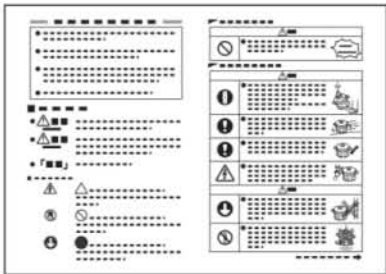
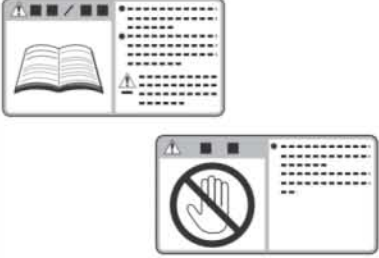
 <b>WARNING!!</b>		
	<ul style="list-style-type: none"><li>● During a power outage, be sure to keep the Vibrating Sifter OFF by disconnecting the power supply. The unintended operation of the Vibrating Sifter after power resumption may cause extreme danger to people around the unit.</li></ul>	<p>Power outage OFF</p> 

## 2

## Prior to operation

### Verifying the product

- After unpacking, verify the contents.

Unit 	Operation Manual 	Warranty Certificate 
Grease 	Grease gun 	Maintenance tool set 
Auxiliary weight 	Bolts and spring washers for installing auxiliary weight 	Discharge guide rubber 
Screen Tensioning Manual (video) 	Sheet of caution stickers 	Caution labels  (one each)

- Next, check for any damage to the product, or for any loosened bolts or nuts. Although areas that come in contact with powdered substances are cleaned at the factory, wash, disinfect, or sterilize them as necessary. Also, check the unit to make sure it is the product you have ordered. In case of any damage or other problems with the product, contact the dealer where it was purchased, or Kowa.

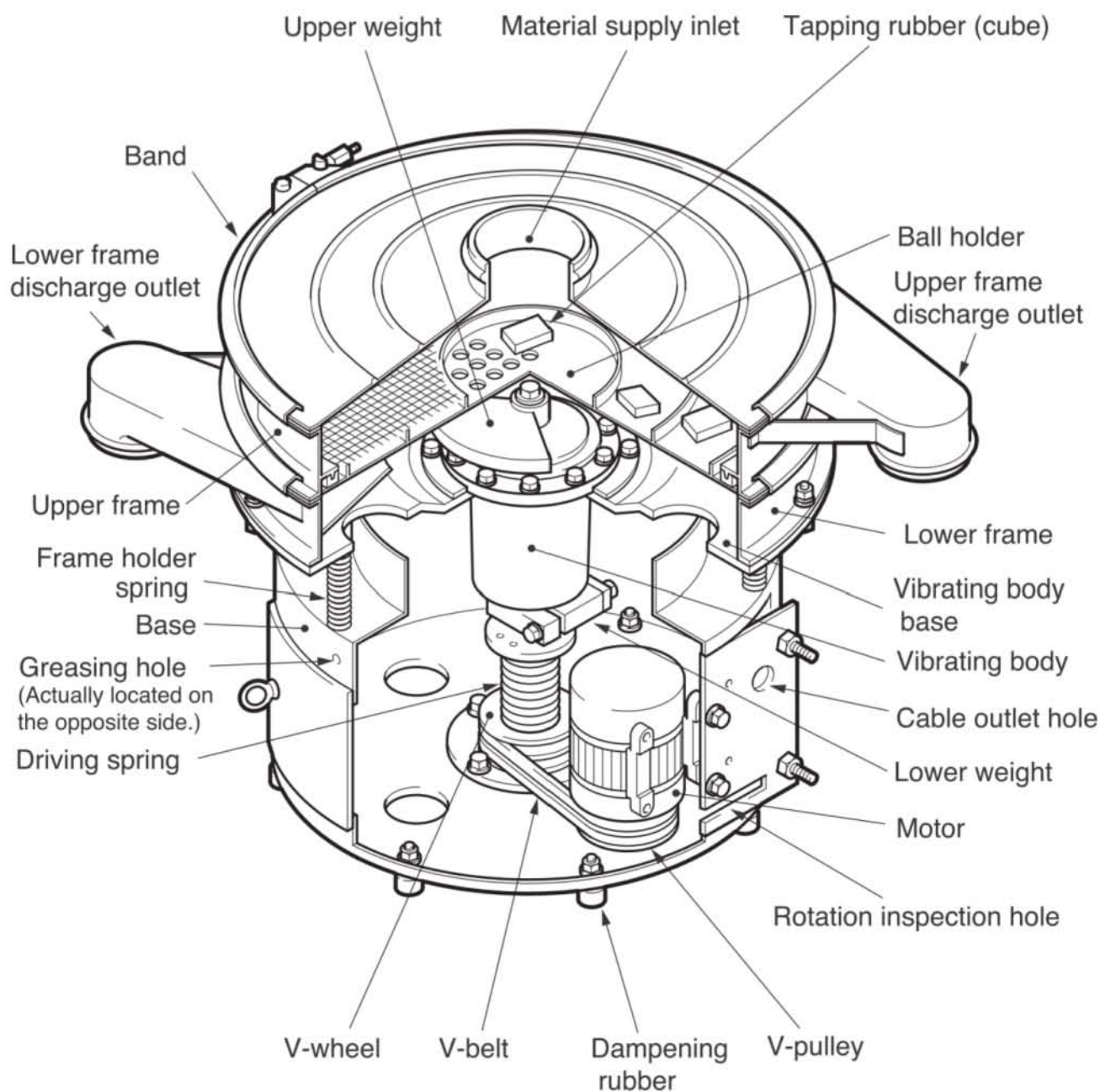


**Never use the product under conditions other than those that are specified in the product specification, as they may lead to current leakage, fire, or malfunction.**



### 3 Names of Parts (overview of the unit)

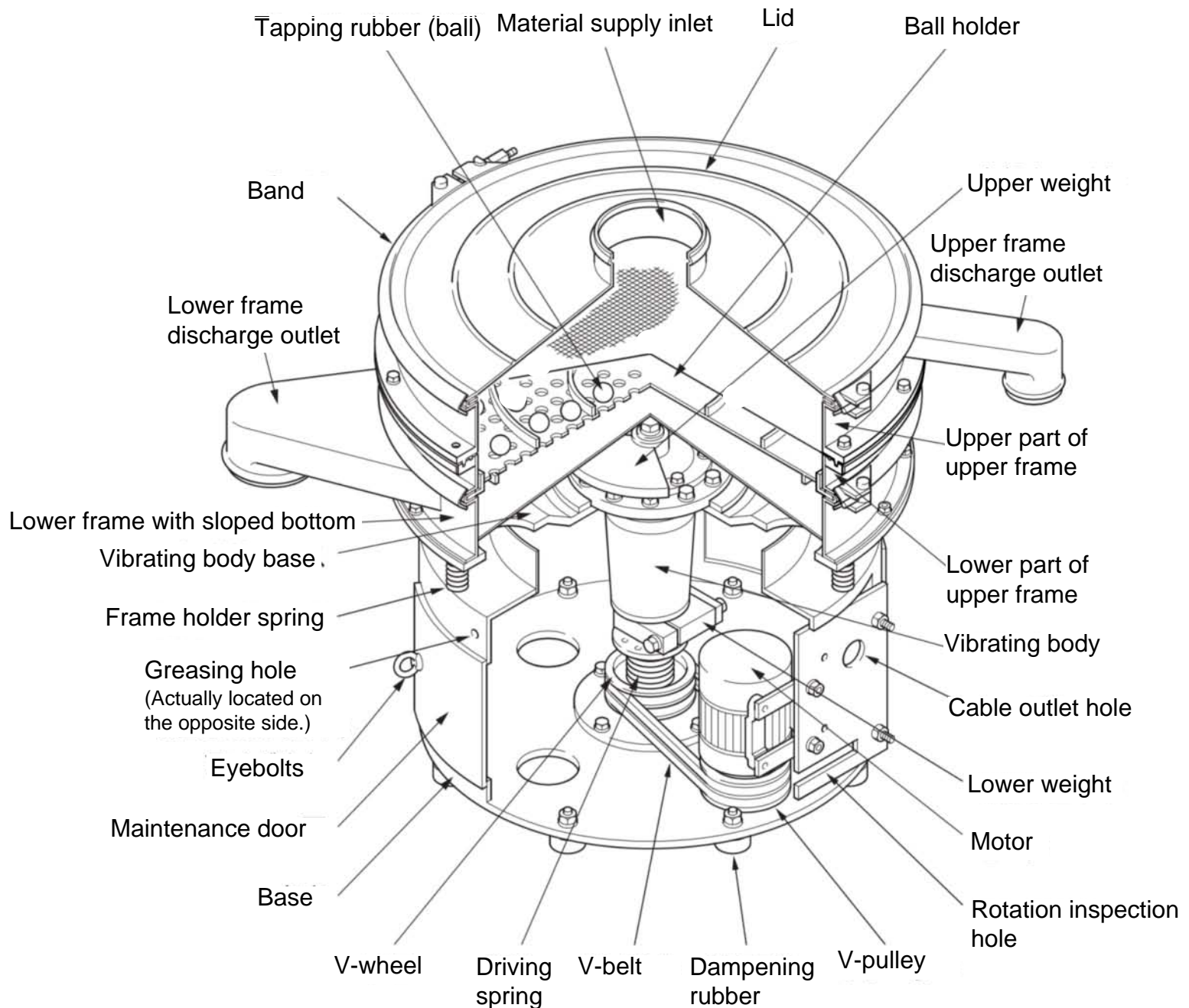
#### Type of KL (Inner ring type)



[NOTE] : The example illustrated above is for the KL-1000-1D Type. For detailed parts configuration for a specific model type, refer to "9. Assembly Diagrams" starting on page 46.

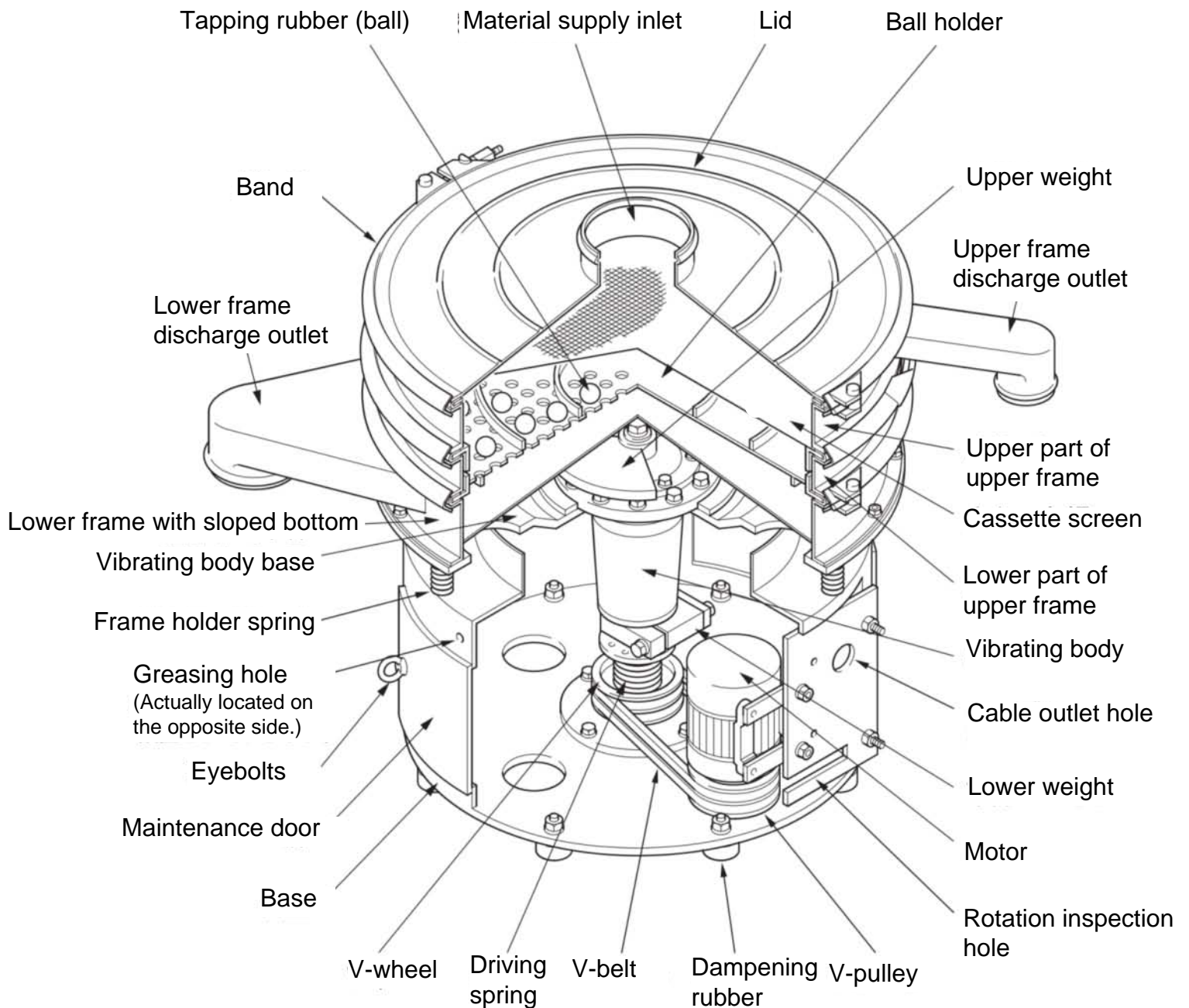


## Type of KLO (Out ring type)



[NOTE] : The example illustrated above is for the KL-1000-1D Type. For detailed parts configuration for a specific model type, refer to "9. Assembly Diagrams" starting on page 48.

## Type of KLC (CASSETTE type)



[NOTE] : The example illustrated above is for the KL-1000-1D Type. For detailed parts configuration for a specific model type, refer to "9. Assembly Diagrams" starting on page 50.

# 4

## Installation

### Pre-installation verification

Verify the items described below before installing the Vibrating Sifter.

#### ● Foundation for installation

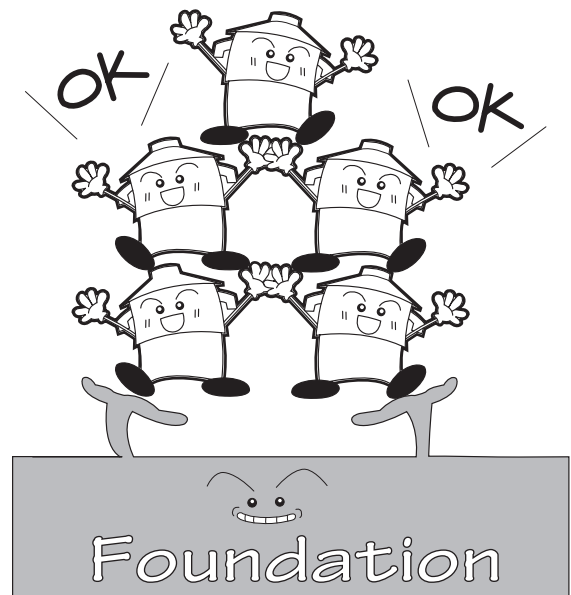
Although practically no vibration is transmitted through the bottom of the unit, resonance may be generated if the foundation is weak. The foundation is required to provide a load resistance that is equivalent to three to five times the weight of the unit.

Load Resistance
Minimum 5 times the weight



**For installing two or more units of the Vibrating Sifter, the foundation is required to provide the load resistance described below.**

Load Resistance
Minimum 8 times the weight



[NOTE] : The weight of the unit does not include the weight of the material to be sifted.

#### ● Location for installation

Using a level gauge, verify whether the location for installation is level.

■ Level requirement = within  $\pm 0.5^\circ$



**Ensure that the unit is placed perfectly level. If the unit is not level, the movement of the material in the sifter could become lopsided, thus reducing the sifting efficiency and causing the unit to malfunction.**

## ● Installation site

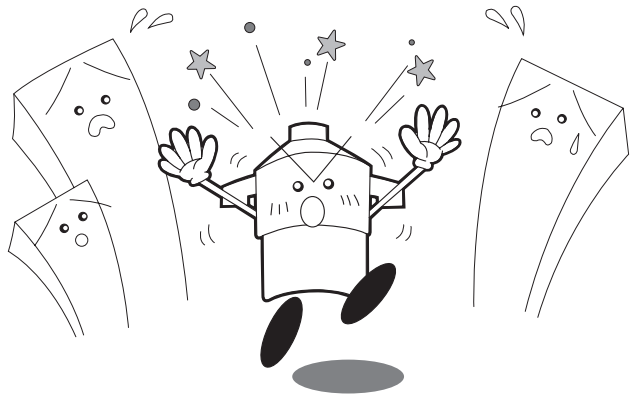


### **WARNING!!**

**Make sure the site in which the unit is to be installed provides sufficient space for servicing the unit during maintenance and inspection. Failure to observe this precaution could cause the operator to become caught or entangled during maintenance, inspection, or operation.**

Verify that the installation site provides sufficient space in which there is no interference between the unit and other equipment or piping in the vicinity.

[NOTE]: Due to the nature of the Vibrating Sifter, the unit generates a considerably larger amount of vibration during starting and stopping than when it is in operation. Therefore, make sure to install the unit a minimum of 200mm away from other machinery or piping.



## ■ Precautions during installation

### ● Raising or lowering the Vibrating Sifter unit



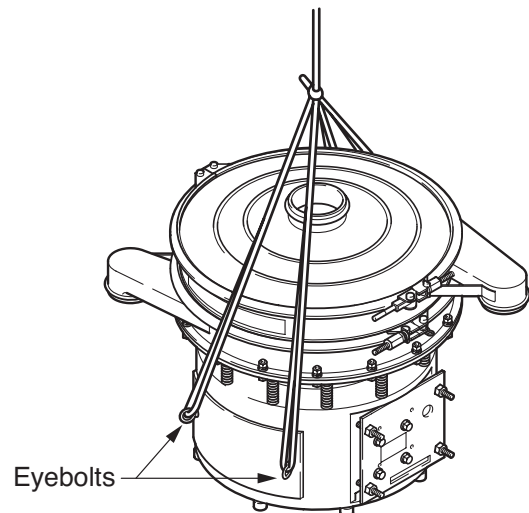
**WARNING!!** If the unit is not suspended correctly while it is being raised or lowered, it could fall and break, which may lead to injury.

When suspending the Vibrating Sifter, take the unit's center of gravity and weight into consideration. To suspend the unit, use the eyebolts that are provided on the side of the unit.



### **CAUTION**


**Never suspend the unit by the band portion of the upper and lower frames, as it may seriously damage the driving spring and other areas.**

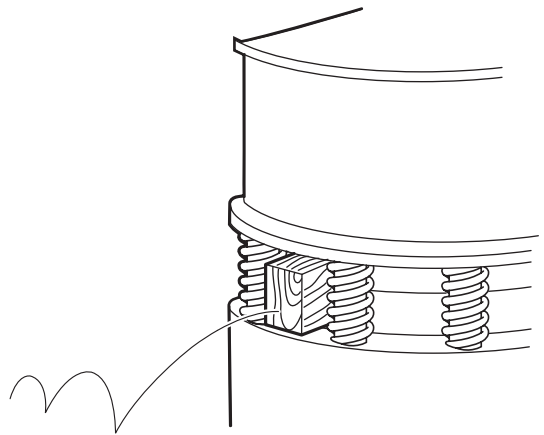


[The example illustrated is for the KL-1000 model.]

## ● Removing woodblocks used during transport

Remove the two woodblocks that are used for securing the frame holder spring area during transport.

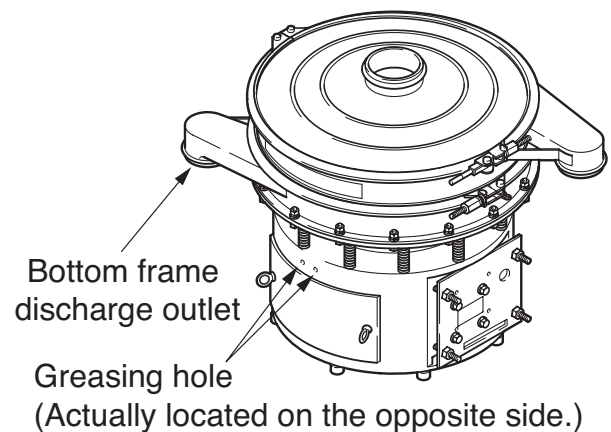
  
**WARNING!!** Failure to remove the woodblocks used during transport before operating the unit could not only damage the unit itself, but the wood pieces could be flung from the unit, which may lead to injury.



## ● Installation orientation

During installation, orient the unit so that it will be possible to grease unit when necessary.

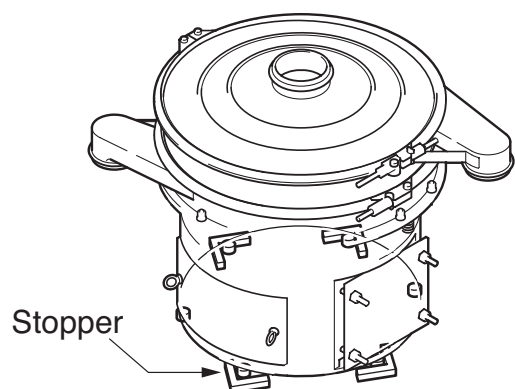
[NOTE] :If the location of the bottom frame discharge outlet is inconvenient during the installation, it can be oriented as desired.



[The example illustrated is for the KL-1000 model.]

## ● Securing the Vibrating Sifter unit

For safety, if the unit is installed on a frame, secure it to the frame, or provide stoppers to prevent the unit from shifting. If the unit is to be secured in place, use double-bolt type dampening rubber mounts.

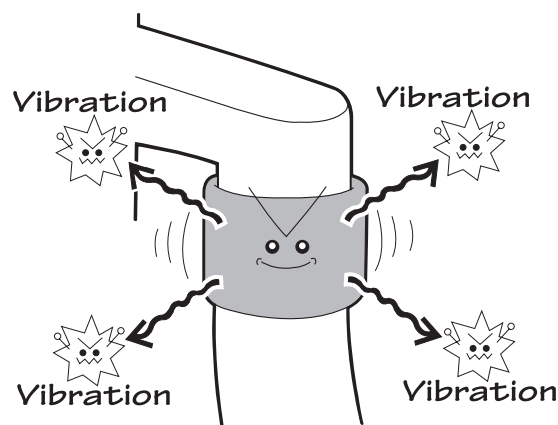


[The example illustrated is for the KL-1000 model.]

## ● Joints at the supply inlet and discharge outlets

Do not connect heavy joining devices such as flanges or ferrules to the supply inlet and the discharge outlets of the upper and lower frames. The weights of the flanges that can be connected are listed in the table below.

Common to both F and G types	Flange weight (kg)
700 · 800 · 1000	1.5kg max.
1200 · 1500	2.0kg max.

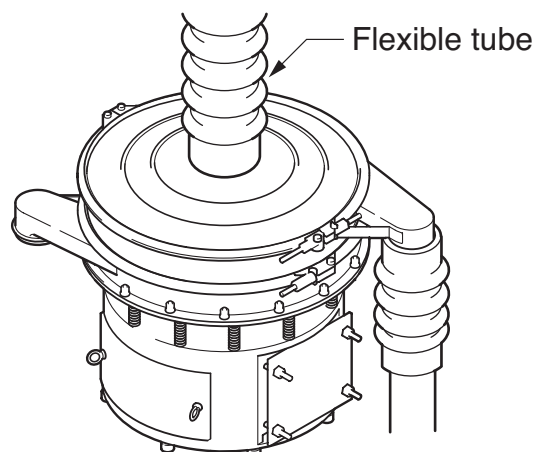


**Heavy joining devices may damage the supply inlet and the discharge outlets.**

For connections to the material supply inlet and the discharge outlets of the upper and lower frames, use a joint with sufficient vibration absorption properties such as a flexible tube.



**If the joint's freedom of movement is small, it may cause damage to the frames, the supply inlet, and the discharge outlets.**



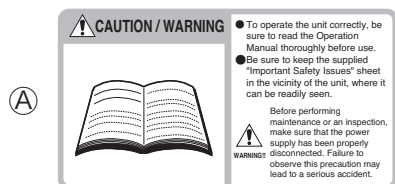
[The example illustrated is for the KL-1000 model.]



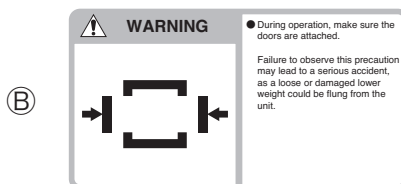
## Affixing warning and caution labels

Warning and caution labels are already affixed to the unit at the locations shown below. However, these labels could become hidden depending on the location in which the unit is installed or the orientation of the unit's discharge outlets. For this reason, each of the supplied warning and caution labels ① and ③ must be affixed to an easily visible location of the lower frame after the unit has been installed.

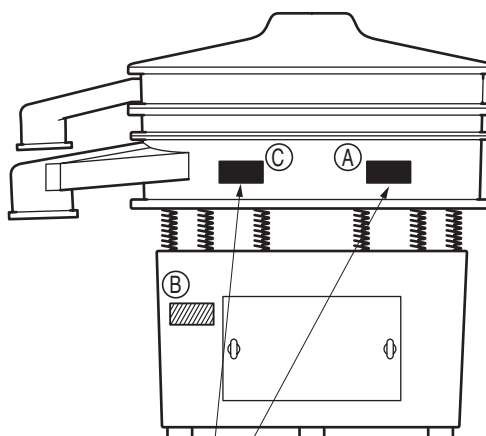
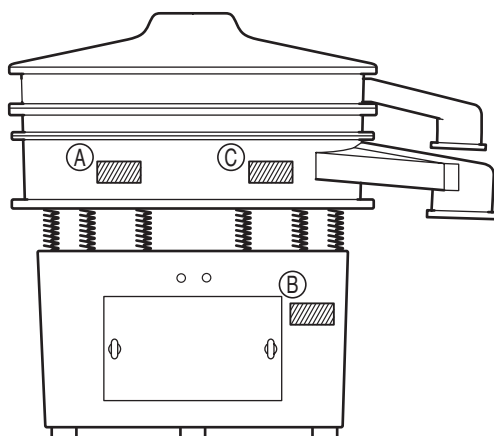
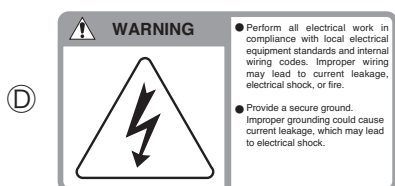
Example of affixing the labels (Illustrations show the KL-1000-1D Type.)



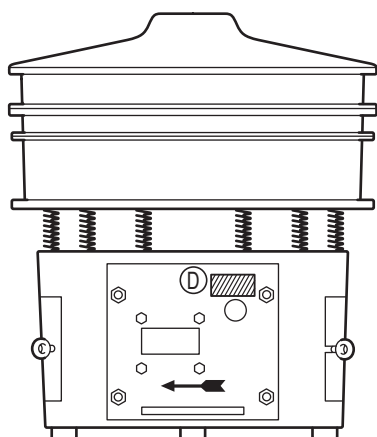
(Supplied)




(Supplied)



Affix the labels to locations where they will be easily visible.



[NOTE] : The portions marked  above indicate examples of locations in which the supplied warning and caution labels ① and ③ can be affixed.

## Electrical wiring

### ● Electrical wiring work



#### WARNING!!

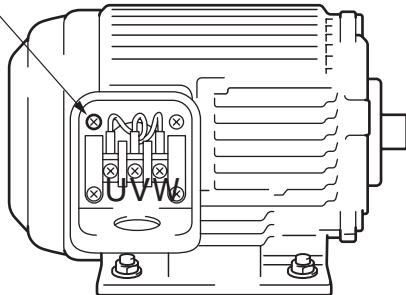
- All electrical work must be performed by an authorized electrician, in compliance with local electrical equipment standards and internal wiring codes. Improper wiring may lead to current leakage, electrical shock, or fire.
- Provide a secure, dedicated ground, without sharing it in common with other devices. Also, make sure to install a ground leakage circuit breaker and an overflow protector. Failure to observe this precaution may cause the Vibrating Sifter to fail or cause current leakage, which in turn may lead to electrical shock.
- To extend the cable outward from the motor, be sure to route it through the cable outlet hole located at the motor base. Routing the cable through any other holes or gaps could cause the cable to become caught and cut by the drive mechanism, which may lead to short circuit and electrical shock.



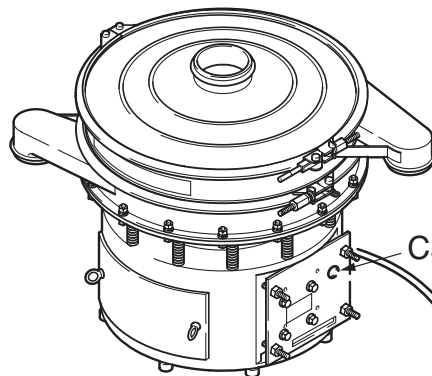
#### CAUTION

If a generator is used for operating the Vibrating Sifter, be wary of any voltage drop. Incorrect voltage may prevent the Vibrating Sifter from operating at its full potential or cause it to operate improperly.

Ground terminal



[Electrical inlet to the motor]



Cable outlet hole

[Cable outlet hole]



## Motor specifications

- A horizontal, general-purpose motor made by Hitachi, Ltd. is used as standard equipment.

Model	700type 800type	1000type	1200type
Raring	Continuous	Continuous	Continuous
Insulation	Type F	Type F	Type F
Protective strucure	Totally enclosed esternal sector interior	Totally enclosed esternal sector interior	Totally enclosed esternal sector interior
Type	TFO-FK	TFO-FK	TFO-FK
Output[kw]	2.2	3.7	3.7
Voltage[V]	200	200	200
Cycle[Hz]	60／50	60／50	60／50
Full-load current[A]	6.2／7.0	14.5／16.0	14.5／16.0
Rotational speed[rpm]	1800／1500	1800／1500	1800／1500
Increased safety explosion-proof system	TFOX-K	TFOX-K	TFOX-K
Pressure-resistant explosion-proof system	TFOXX-K	TFOXX-K	TFOXX-K

## Vibrating body specifications

Model	700type 800type	1000type	1200type
Rotational speed	1800	1800	1800
Cylindrical roller bearing	NU 2315G1C3 × 2	NU 2315G1C3 × 2	NU 2320G1C3 × 2
Deep groove ball bearing	6315L1C3	6315L1C3	6320L1C3
Cylindrical roller bearing	NU 2315G1C3	NU 2315G1C3	NU2320G1C3

[NOTE] : •The models given above are those manufactured by NTN .

•For details on greasing the bearings, refer to the section on "Greasing", on page 42.

## V-wheel specifications

Model	700type 800type	1000type	1200type
Bearing number	6006LLU	6006LLU	6206LLU
Quantity	2	2	2

# 5

## Operation

### Preparation for operation

Perform the items described below before starting the Vibrating Sifter.

#### ● Verifying the voltage and the cycle

Verify the nameplate on the Vibrating Sifter unit itself for correct voltage and cycle.



#### CAUTION

**A power supply with an incorrect voltage and cycle could prevent the Vibrating Sifter from operating at its full potential, and may lead to current leakage, electrical shock, or fire.**

Adjust the setting of the overflow protector (i.e. circuit breaker) to the Vibrating Sifter's rated current.

#### ● Verifying the tightness of the various bolts and nuts used on the unit

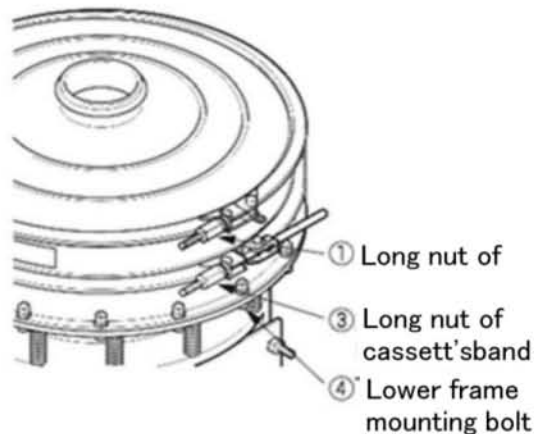
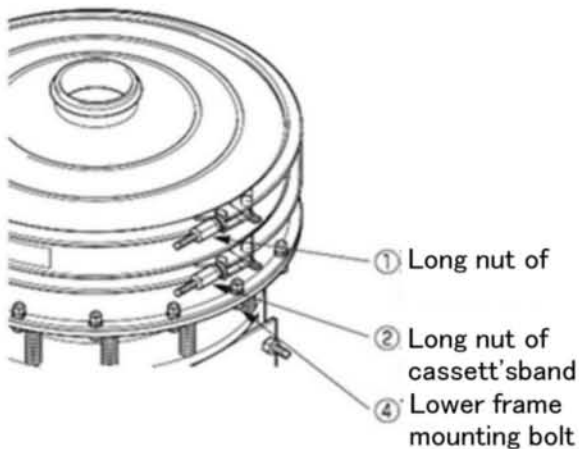


#### WARNING!!

**A loose or damaged lower weight or auxiliary weight could be flung from the unit, which may lead to a serious accident.**

#### ■ KL · KLO type

#### KLC type

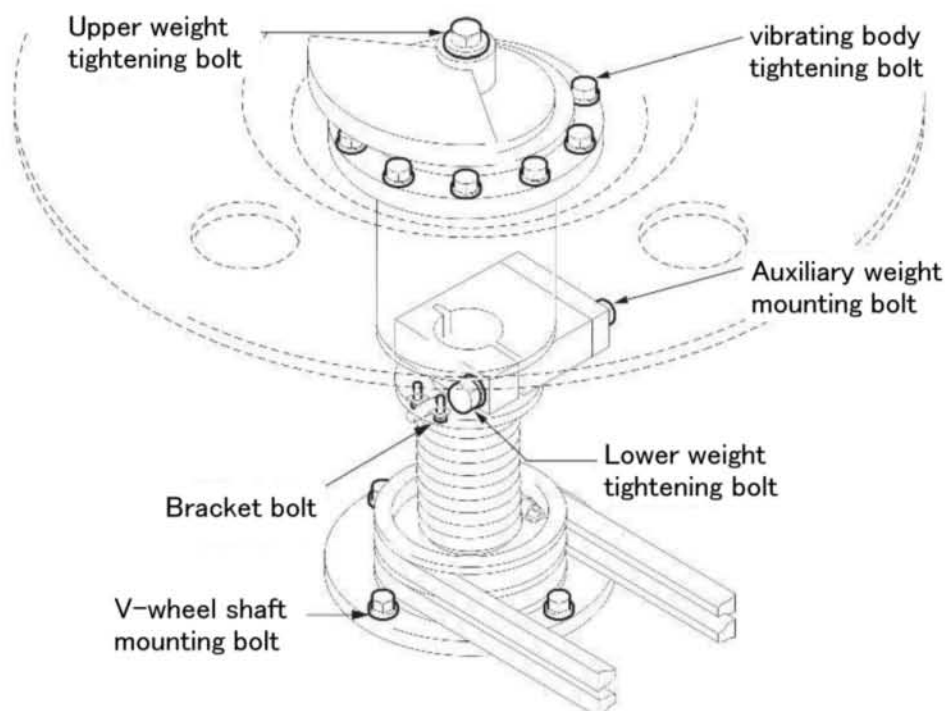


M o d e l		700 · 800 type	1000type	1200type
①	Long nut of Cover's band	$30 \pm 2.5 \text{ N} \cdot \text{m}$ $\{300 \pm 25 \text{ kgf} \cdot \text{cm}\}$		
②	Long nut of cassett'sband	$30 \pm 2.5 \text{ N} \cdot \text{m}$ $\{300 \pm 25 \text{ kgf} \cdot \text{cm}\}$		
③	Lower frame mounting bolt	$50 \sim 55 \text{ N} \cdot \text{m}$ $\{500 \sim 550 \text{ kgf} \cdot \text{cm}\}$	$85 \sim 90 \text{ N} \cdot \text{m}$ $\{850 \sim 900 \text{ kgf} \cdot \text{cm}\}$	



#### CAUTION

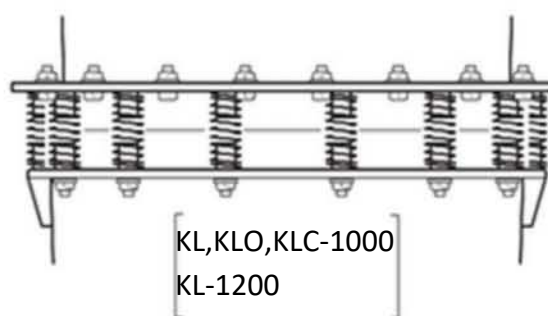
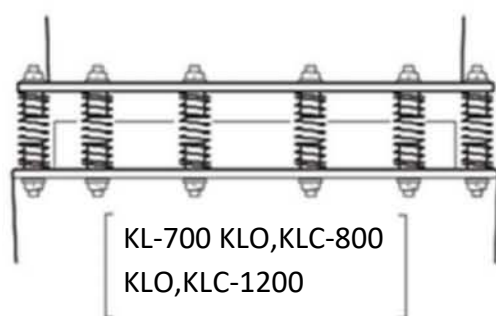
**Make sure that there is no slack in the screen because the tension of the screen greatly affects its sifting capability. Also, if the replaced screen develops a faulty condition (such as slack), it cannot be reused. In such a case, use a new screen and repeat the replacement process.**



M o d e l	700 · 800 type	1000type	1200type
Upper weight tightening bolt	8~13N · m {80~130kgf · cm}		
vibrating body tightening bolt	90~120N · m {900~1200kgf · cm}	100~140N · m {1000~1400kgf · cm}	
Lower weight tightening bolt	35~40N · m {350~400kgf · cm}	55~60N · m {550~600kgf · cm}	
Auxiliary weight mounting bolt	15~20N · m {150~200kgf · cm}		
Bracket bolt	15~20N · m {150~200kgf · cm}		
V-wheel shaft mounting bolt	60~65N · m {600~650kgf · cm}		

### ● Verifying the spring retainers

Verify that the spring retainers are completely engaged with the springs.

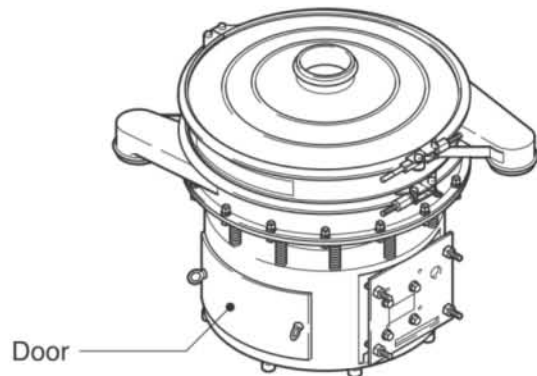


## ● Verifying the doors



**WARNING!!** A loose or damaged lower weight or auxiliary weight could be flung from the unit, which may lead to a serious accident.

Make sure the doors are attached to both sides of the Vibrating Sifter unit.



[The example illustrated is for the KL-1000 model.]

## Verifying the vibrating body's direction of rotation



**WARNING!!**

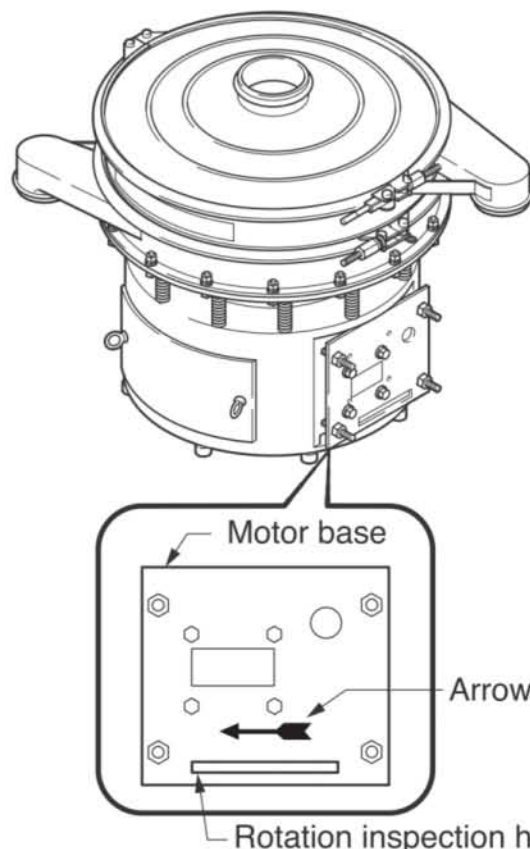
- Verify the direction of rotation through the rotation inspection hole that is provided at the motor base. Never open the doors for this purpose. Failure to observe this precaution may lead to a serious accident, as a loose or damaged lower weight could be flung from the unit.
- Before changing the connections for reverse operation, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the drive mechanism has stopped completely. Failure to observe this precaution may lead to electrical shock, short circuit, or injury.



**CAUTION**

Be sure to verify the direction of rotation, because operating the Vibrating Sifter in reverse may affect the performance of the unit.

Through the rotation inspection hole, make sure that the direction of rotation of the vibrating body is the same as that indicated by the arrow located at the motor base.




[The example illustrated is for the KL-1000 model.]



## Trial operation

### ● Performing a trial operation


  
**WARNING!!** Before performing a trial operation, follow the instructions given in the section on "Preparation for operation" on page 19 to verify the voltage and cycle, and to check the bolts and nuts for looseness. Failure to observe this precaution may lead to a serious accident.


Be sure to perform a trial operation to verify whether the unit is operating normally, if any of the conditions described below has occurred:

- The Vibrating Sifter unit has been moved.
- A maintenance or inspection service (such as disassembly or cleaning) has been performed.
- The unit has remained unused for a long time.

### ● Trial operation

Operate the unit for about one hour to verify the items described below.

  
**WARNING!!** If any abnormal conditions occur during the operation of the unit, or become evident after it has been stopped, immediately turn OFF the power to the unit. Then, refer to page 43, "8. Troubleshooting" to take the appropriate measures. If the problem cannot be corrected, or if an applicable symptom is not found in the "Troubleshooting" section, contact the dealer where this unit was purchased, or Kowa. It is extremely dangerous to continue operating the unit in an abnormal state, as it may lead to a serious accident, or damage the Vibrating Sifter unit itself.

Verification during operation	<ul style="list-style-type: none"><li>• Using a clamp-on type ammeter, measure the full-load amperage of the motor at the U, V, and W phases of the inlet side (power supply side).</li></ul> <p>[NOTE] Refer to the full-load amperage values listed in "Motor specifications" on page 17. The needle of the ammeter will fluctuate rapidly when the unit is first started; however, it will descend gradually and become stable.</p> <ul style="list-style-type: none"><li>• Verify if any abnormal odor or noise is present.</li></ul>
Verification after stopping the operation	<ul style="list-style-type: none"><li>• Verify that both upper and lower bands that tighten the frames are not loose.</li><li>• Verify that the lower frame nut and the bottom weight have been completely secured.</li></ul> <p> <b>WARNING!!</b> After verifying the tightness of the lower weight, make sure to attach the doors on both sides. It may lead to a serious accident if operation is resumed with the doors detached.</p>

## Operation

Resume operation if no abnormal conditions are found during the trial operation.



**WARNING!!**

**If the Vibrating Sifter is sifting a material with a high temperature, the unit itself could be extremely hot. In this case, do not touch the unit during operation or immediately after operation, as it may lead to burns.**

## 6 Adjusting the lower weight

Adjusting the angle of the lower weight allows the movement of the material on the sifter screen and the length of time the material remains on the screen to be varied. With respect to the reverse type, refer to the operation manual that is provided separately.



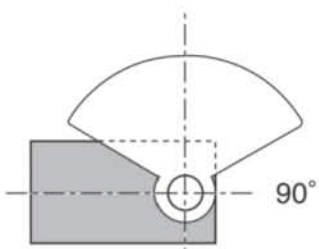
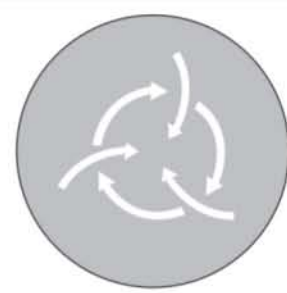
Before performing the adjustment of the lower weight, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the drive mechanism has stopped completely. In addition, indicate on the control board or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious accident.

### Direction of movement of the substance on the sifter screen according to the upper/lower weight phase

Lower weight's installed angle		Upper/lower weight phase	Movement of material on the screen
For clockwise <sup>*1</sup>	For counterclockwise <sup>*1</sup>		
Angle 0°	Angle 0°		<p>The substance on the sifter screen advances outward in a straight line</p>
Angle 45°	Angle 60°		<p>The substance on the sifter screen advances outward in a spiral motion.</p>

\*1: The direction of rotation of the vibrating body



Lower weight's installed angle		Upper/lower weight phase	Movement of material on the screen
For clockwise <sup>※1</sup>	For counterclockwise <sup>※1</sup>		
Angle 90°	Angle 90°		 <p>The substance on the sifter screen advances towards the center in a spiral motion.</p>

[NOTE] The diagrams for the movement of the material on the screen represent typical movements. In actual use, the movement varies by the shape, specific gravity, and the grain size of the substance.

## Changing the installed angle of the lower weight

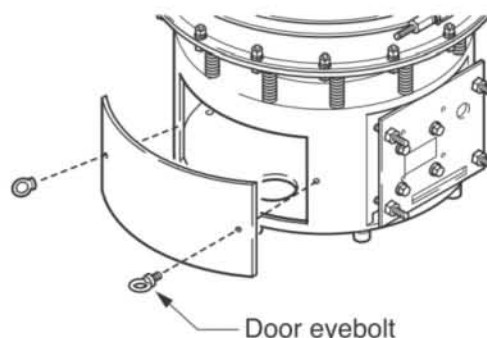


**WARNING!!**

After completing the adjustment of the lower weight, make sure to attach the doors on both sides of the unit. Operating the unit with the doors detached may lead to a serious accident, as a loose or damaged lower weight could be flung from the unit.

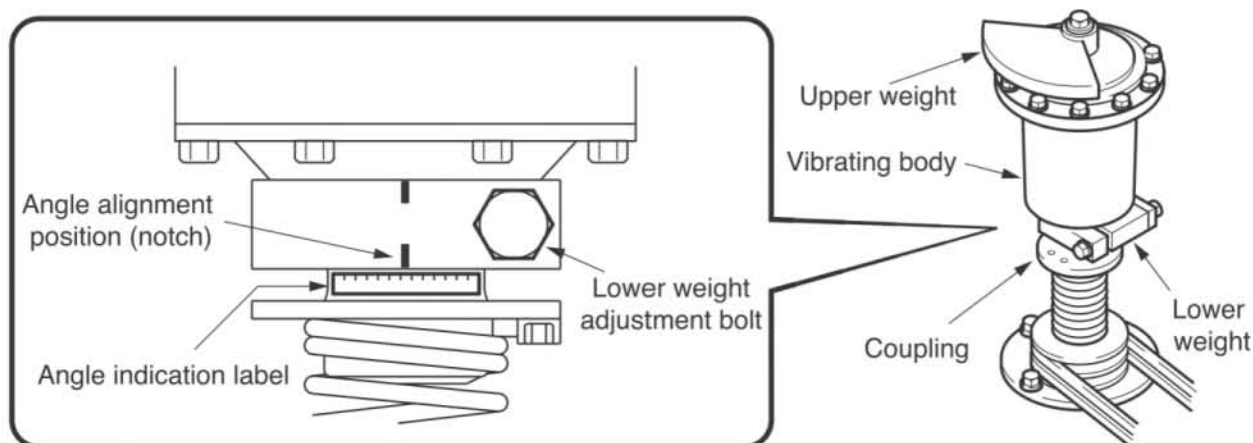
(1) Remove the door eyebolts to detach the door from the unit.

(2) Loosen the adjustment bolt for the lower weight.



[The example illustrated is for the KL-1000 model.]

[NOTE] The lower weight adjustment bolt is an M14 hexagon bolt



- (3) Align the notch on the lower weight to the desired angle as indicated on the angle indication label, which is affixed to the coupling.

[NOTE] • The angle indication label on the coupling shows a scale from 0 to 90° .  
• Ordinarily, a phase alignment is made in the +30 to +70° range. For details, refer to page 24, "Direction of movement of the substance on the sifter screen according to the upper/lower weight phase".

- (4) Tighten the lower weight adjustment bolt.

■ Tightening torque

Please refer to P.20 for the tightening torque of the lower weight adjustment bolt.

- (5) Using the door eyebolts, attach the door to the side of the unit.

- (6) Perform a trial operation to verify the movement of the material on the screen.

## Installing the auxiliary weight

- Because the installation of the auxiliary weight results in an increase in the vertical amplitude, the auxiliary weight should be installed only when the metal screen has the tendency to become clogged.



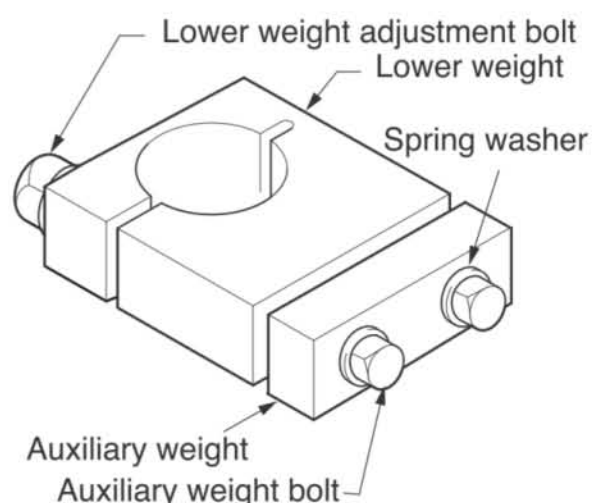
**CAUTION**

Installing the auxiliary weight unnecessarily causes the material to bounce around on the screen, which may lead to tearing of the metal screen or damage to the Vibrating Sifter.

- Using the auxiliary weight bolts that are supplied, attach the auxiliary weight onto the lower weight.

■ Tightening torque

Please refer to P.20 for the tightening torque of the lower weight adjustment bolt.



**WARNING!!**

Be sure to use spring washers to prevent the auxiliary weight bolts from loosening. After the auxiliary weight has been installed, make sure to attach the doors to the sides of the Vibrating Sifter unit. If the auxiliary weight becomes detached during operation, it could damage the drive mechanism or may lead to a serious accident.


# 7 Maintenance and Inspection

Proper maintenance and inspection must be performed regularly on the Vibrating Sifter unit to ensure its optimal performance. To enable the early discovery of any problems, we recommend that you perform a maintenance inspection in accordance with the guidelines described below, and prepare a checksheet such as the "Vibrating Sifter Inspection Checksheet" shown on page 28.


If an abnormal condition is found, be sure to refer to "8. Troubleshooting" on page 43 and take prompt action.

## Periodic inspection

### ● Before inspection

 **WARNING!!** Make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the vibrating body has stopped completely. In addition, indicate on the control board or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious injury or accident caused by electrical shock or by the unintended starting of the unit.

### ● Recommended periodic inspection areas and intervals

 **CAUTION** The intervals for inspecting the various areas are provided here for reference only. Depending on how the Vibrating Sifter is used, the inspection interval may need to be shortened, especially if the unit is used continuously.

Interval	Unit	Drive	Lubrication	Other
At all times	<ul style="list-style-type: none"> <li>•Check the bands for damage or looseness.</li> <li>•Check the frame packing for damage or wear.</li> </ul>	<ul style="list-style-type: none"> <li>•Noise from the vibrating body and the V-wheel</li> </ul>	<ul style="list-style-type: none"> <li>•Greasing (500h)</li> <li>•Check for any grease leakage.</li> <li>•Check the grease nipple and hose for looseness or damage.</li> </ul>	<ul style="list-style-type: none"> <li>•Damaged screen</li> <li>•Check the tapping rubbers for wear.</li> </ul>
Every month	<ul style="list-style-type: none"> <li>•Check the lower frame for cracks or loose bolts.</li> </ul>	<ul style="list-style-type: none"> <li>•Measure the motor's full-load amperage.</li> </ul>	—	—
Every 6 months	<ul style="list-style-type: none"> <li>•Check the frame holder springs and the spring retainers for looseness or wear.</li> </ul>	<ul style="list-style-type: none"> <li>•Check the drive spring for damage.</li> <li>•Check the V-belt for looseness or damage.</li> <li>•Check the drive spring bracket for looseness or damage.</li> </ul>	—	—



## ● Inspection Checksheet

Prepare an inspection checksheet like the one shown below to ensure that there will be no omissions during inspection.

### Vibrating Sifter Checklist (example)

Model type												
Unit number												
Delivered date												

No.	1	2	3	4	5	6	7	8	9	10	11	12	Inspection check marks
Inspection date	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	Month/Day/Year	
(Main unit)													Inspection V Lubrication L Adjustment A Replacement X Tightening T
Band - damage, looseness													
Frame packing - damage, wear													
Lower frame - crack, loose bolt													
Frame holder spring - looseness, wear													
Spring retainer - looseness, wear													
(Drive)													Remarks
Motor full-load amperage measurement													
Drive spring - damage													
V-belt - looseness, damage													
Bracket - looseness, damage													
V-pulley - tightness													
Vibrating body and V-wheel noise													
(Lubrication)													
Greasing													
Grease leakage													
Nipple, hose - looseness, damage													Inspector
(Other)													
Screen - damage													
Tapping rubber - wear													

\* An enlarged checksheet has been provided on page 58, which may be copied for your own use.

## ● Cleaning



Make sure not to damage the screen when cleaning the interior and the exterior of the Vibrating Sifter unit. In addition, use caution to prevent the motor from being exposed to water.

## ● Trial operation



Be sure to perform a trial operation after installing the doors, when starting the Vibrating Sifter after any parts have been replaced or the bolts and nuts have been retightened. Failure to observe this precaution may lead to injury, electrical shock, or malfunction caused by improper assembly.

[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.

## Replacing the screen

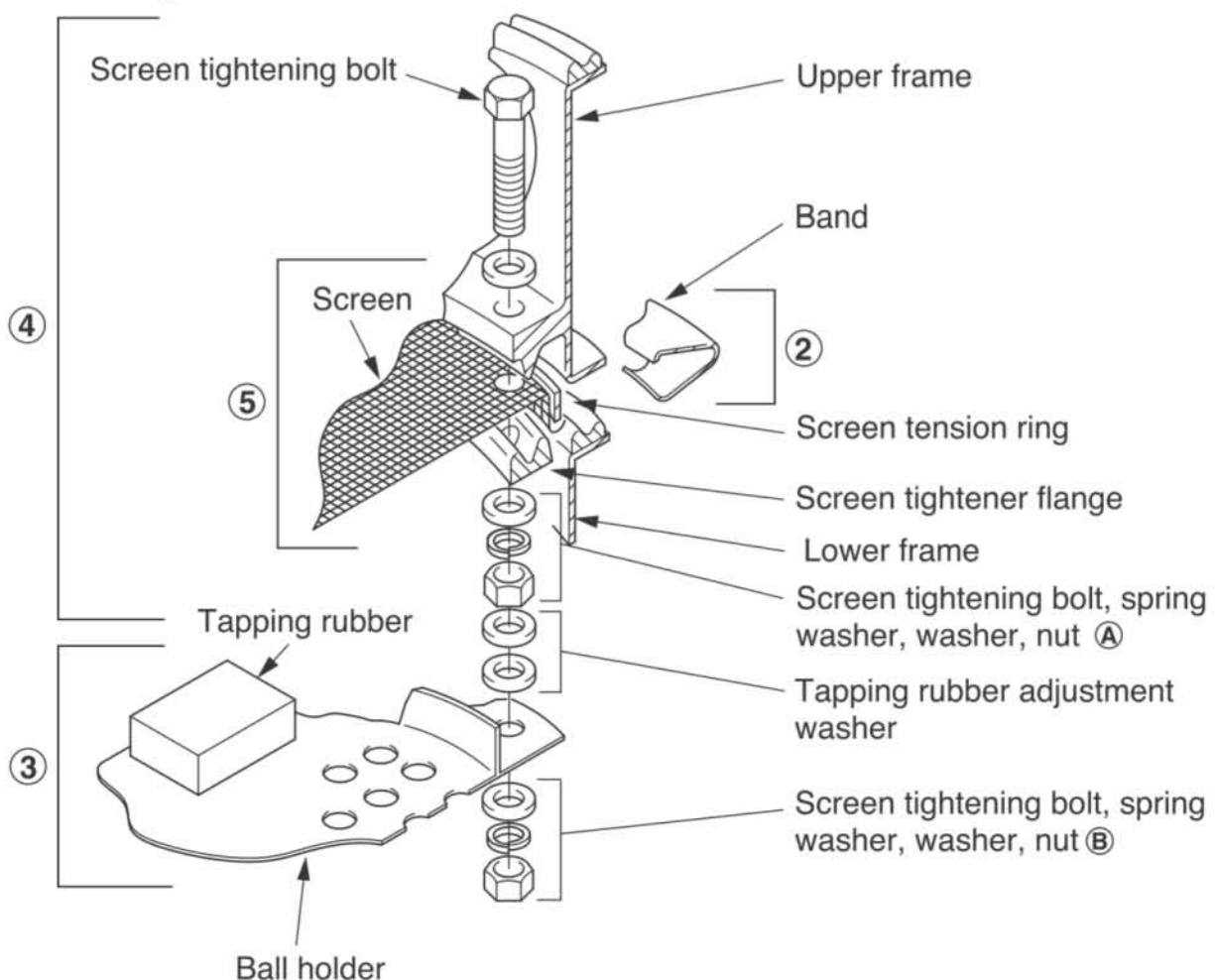
This section gives an outline of the procedure for replacing the screen. For detailed instructions, refer to the "Screen Replacement Manual" video that is supplied. For information on the cassette type screen, refer to the operation manual that is provided separately.

**WARNING!!** Because the edges of the screen are extremely sharp, make sure to wear safety gloves and exercise extreme caution when handling the screen.

**CAUTION** The screen is an expendable item. The screen's replacement interval varies according to the type of screen and the material that is sifted, as well as the use conditions of the Vibrating Sifter. Make sure to inspect the screen at appropriate times for tears to prevent it from intermixing with the material that is being sifted.

### ● Replacing the inner-ring type (KL) screen

#### 1. Removing the screen



- ① Detach the band and remove the cover.
- ② Detach the band and remove the upper frame portion, which contains the screen, from the lower frame.

- ③ Detach nut ⑥ , and remove the ball holder, the tapping rubbers, and the tapping rubber adjustment washer.
- ④ Detach nut ⑤ , and from the upper frame, remove the screen portion (including the screen tightener flange, the screen, and the screen tension ring).
- ⑤ Detach the screen tension ring and remove the screen from the screen tightener flange.

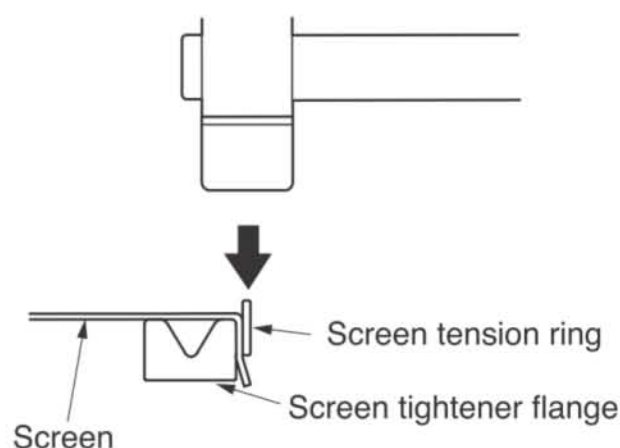
## 2.Dimension requirements for replacement screens

The required screen dimensions are listed in the table below.

Model type	Dimensions
700 type	0.8m×0.8m
1000 type	1.0m×1.0m
1200 type	1.2m×1.2m

## 3.Replacing the screen

- (1) Place the screen tightener flange with its concave surface facing upward on a horizontal surface.
- (2) Place a screen with the prescribed dimensions (refer to "Dimension requirements for replacement screens" on page 30) over the concave portion of the screen tightener flange.
- (3) While bending the edge of the screen downward, use a wooden mallet to lightly tap the screen tension ring over the screen tightener flange, along the outer periphery of the flange's concave portion.



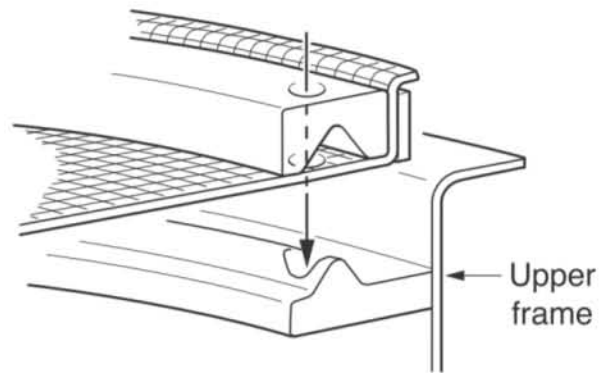
[NOTE] •Screens of 80-mesh or above must be doubled. (If the working screen is between 80 to 150-mesh, the bottom screen should be 20-mesh, with a mesh opening of approximately 950μm. If the working screen is over 150-mesh, the bottom screen should be 40-mesh, with a mesh opening of approximately 450μm.)

- At times, the screen tension ring is not used, such as when using a screen with a minimum wire diameter of 0.3mm or 20-mesh maximum.

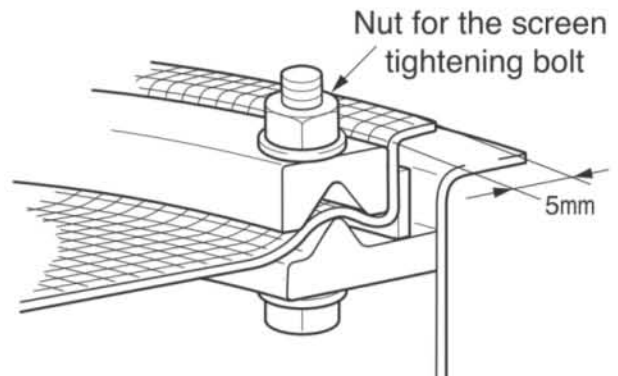


(4) Make a thru-hole for the screen tightening bolt.

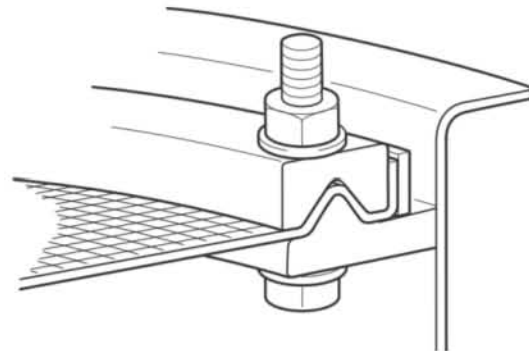
(5) Flip the upper frame right side up (with the convex portion of the upper frame flange facing upward), face the screen prepared in step "(3)" downward, and align the holes.



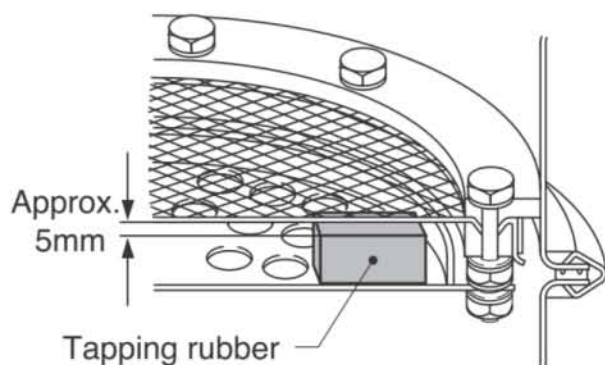
(6) Insert the screen tightening bolts, and uniformly tighten the nuts for the screen tightening bolts halfway. At this time, using a pair of metal shears, cut the screen along the screen tension ring, leaving approximately 5mm extending outward past the ring.



(7) In two to three steps, uniformly tighten the nuts for the screen tightening bolts in a crisscross pattern along the mesh.




(8) Place the tapping rubber over the screen. Install the tapping rubber adjustment washer and the ball holder, and tighten the nuts for the screen tightening bolts.




**Make sure that the tapping rubber is not in contact with the screen. Using the tapping rubber adjustment washer, adjust a clearance of approximately 5mm between the tapping rubber and the screen.**

(9) Place the upper frame on the lower frame and secure them together with the band.

(10) Place the cover and secure it with the band.

 **WARNING!!** After completing the replacement of the screen, perform a trial operation to make sure that the assembled parts are not loose. Improper assembly can lead to injury or malfunction.

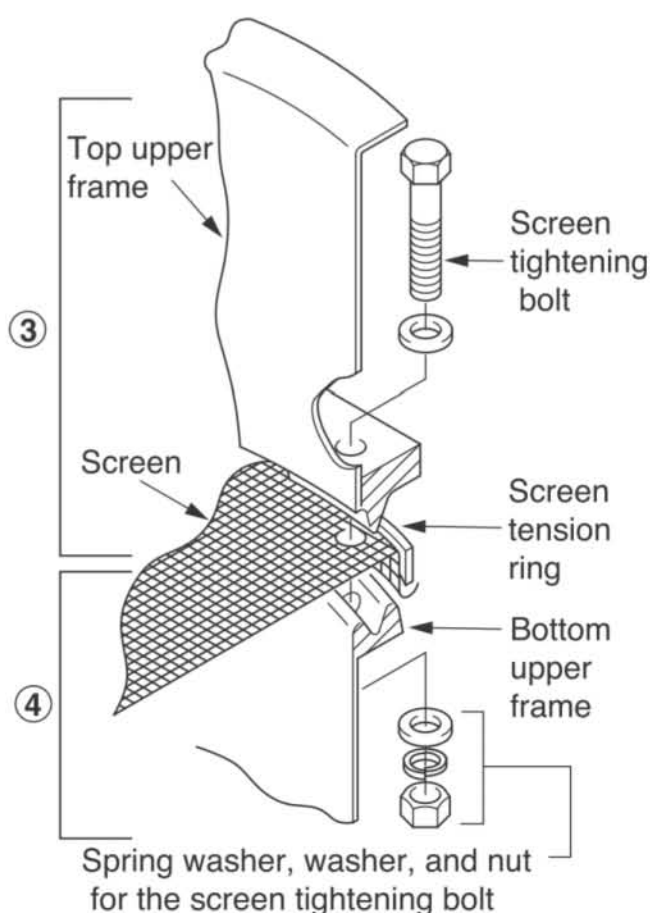
[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.

 **CAUTION** Make sure that there is no slack in the screen because the tension of the screen greatly affects its sifting capability. Also, if the replaced screen develops a faulty condition (such as slack), it cannot be reused. In such a case, use a new screen and repeat the replacement process.

## ● Replacing the outer-ring type (KLO) screen

### 1. Removing the screen

- ① Detach the band (the KGO type uses the one-touch system) and remove the cover.
- ② Detach the band and remove the upper frame portion, which contains the screen, from the lower frame.
- ③ Detach the nuts for the screen tightening bolts, and remove the screen portion (bottom upper frame, screen, and screen tension ring) from the top upper frame.
- ④ Detach the screen tension ring and remove the screen from the bottom upper frame.



### 2. Dimension requirements for replacement screens

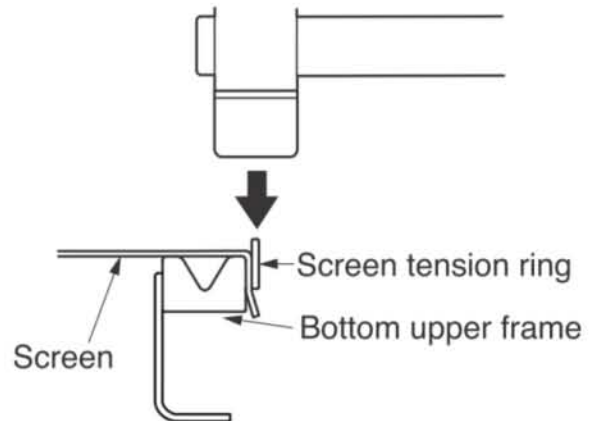
The required screen dimensions are listed in the table below.

Model type	Dimensions
800 type	0.9m×0.9m
1000 type	1.0m×1.0m
1200 type	1.2m×1.2m



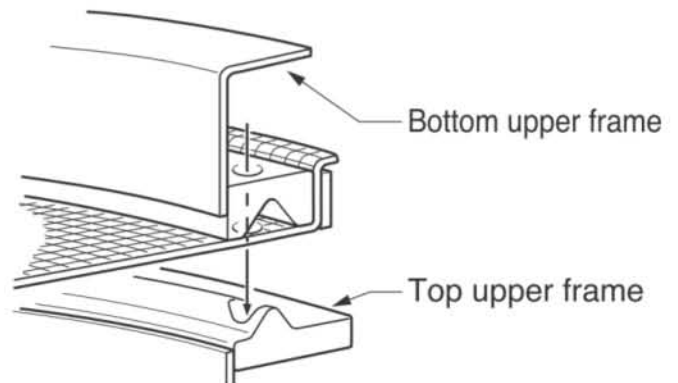
### 3.Replacing the screen

- (1) Place the bottom upper frame with its concave surface facing upward on a horizontal surface.
- (2) Place a screen with the prescribed dimensions (refer to "2. Dimension requirements for replacement screens") over the concave portion of the bottom upper frame.
- (3) While bending the edge of the screen downward, use a wooden mallet to lightly tap the screen tension ring over the bottom upper frame, along the outer periphery of the frame's concave portion.

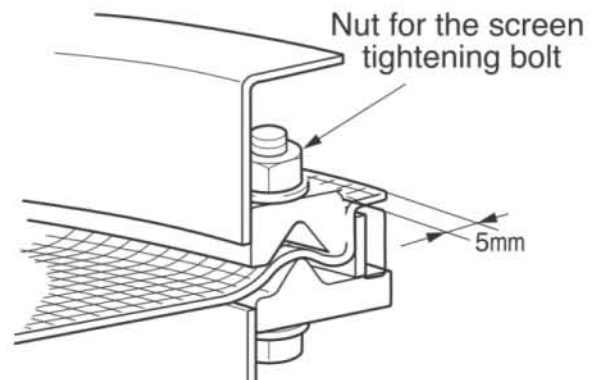


- [NOTE] • Screens of 80-mesh or above must be doubled. (If the working screen is from 80 to 150-mesh, the bottom screen should be 20-mesh, with a mesh opening of approximately 950 $\mu$ m. If the working screen is over 150-mesh, the bottom screen should be 40-mesh, with a mesh opening of approximately 450 $\mu$ m.)
- At times, the screen tension ring is not used, such as when using a screen with a minimum wire diameter of 0.3mm or 20-mesh maximum.

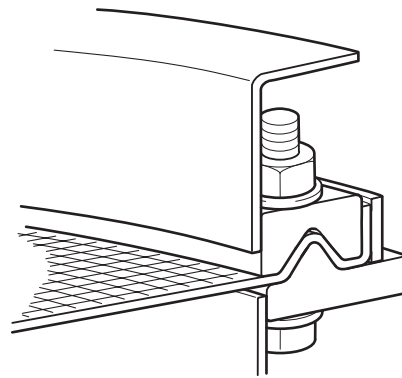
- (4) Make a thru-hole for the screen tightening bolt.
- (5) Flip the top upper frame right side up (with the convex portion of the top upper frame flange facing upward), face the screen prepared in step "(3)" downward, and align the holes.



- (6) Insert the screen tightening bolts, and uniformly tighten the nuts for the screen tightening bolts halfway. At this time, using a pair of metal shears, cut the screen along the screen tension ring, leaving approximately 5mm extending outward past the ring.




- ( 7 ) In two to three steps, uniformly tighten the nuts for the screen tightening bolts in a crisscross pattern along the mesh.




- ( 8 ) Place the upper frame on the lower frame and secure them together with the band.

- ( 9 ) Place the cover and secure it with the band.

 **WARNING!!** After completing the replacement of the screen, perform a trial operation to make sure that the assembled parts are not loose. Improper assembly can lead to injury or malfunction.

[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.

 **CAUTION** Make sure that there is no slack in the screen because the tension of the screen greatly affects its sifting capability. Also, if the replaced screen develops a faulty condition (such as slack), it cannot be reused. In such a case, use a new screen and repeat the replacement process.

## Replacing the cassette type (C) screen

### ●Features of the cassette

The flange is specially made for the cassette screen and it realized light weight.

Even the woman can replace the screen easily.

In addition, it has superior in a sanitary uses.

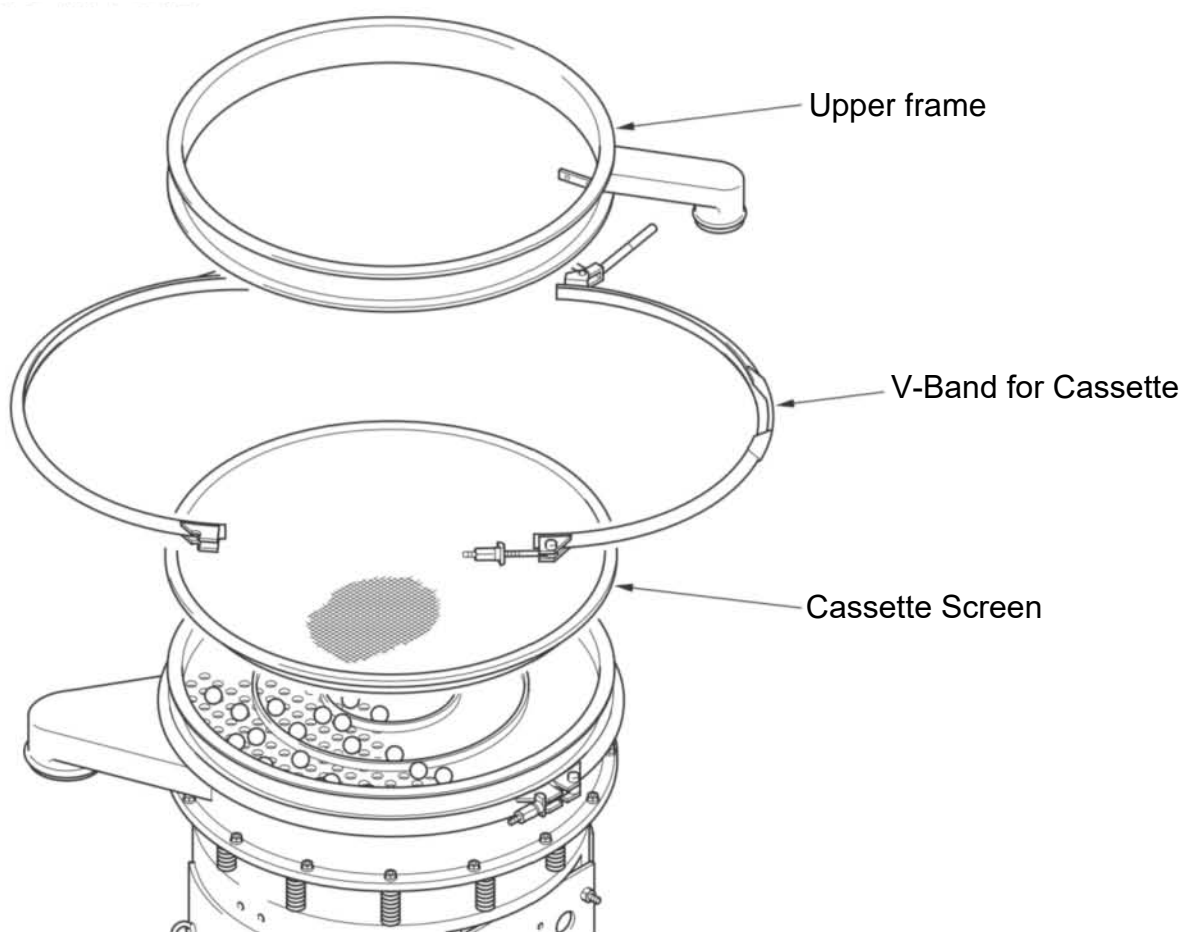
### ●The standards of the screen

The Standards of the screen tension are different by a kind of a screen. Please refer to the following list.

Furthermore, the screen tension would be down under the standards,

## ● Replace the screen

### 1.How to replace the cassette



1. Take off the V-Band for Cassette.
2. Remove the Upper flame and cassette screen
3. Take off the U-packing from cassette screen

### 2.How to assemble the cassette screen

1. Fitting the U-packing to the cassette screen
2. Put the cassette screen on the lower flame, then put the Upper flame on the assette screen
3. Fixing the flame and cassette screen by using V-band

### 3.Dimension requirements for replacement screens

The required screen dimensions are listed in the table below.

Model type	Dimensions
800 type	1.0m × 1.0m
1000 type	1.2m × 1.2m
1200 type	1.5m × 1.5m



After completing the replacement of the screen, perform a trial operation to make sure that the assembled parts are not loose.

Improper assembly can lead to injury or malfunction.

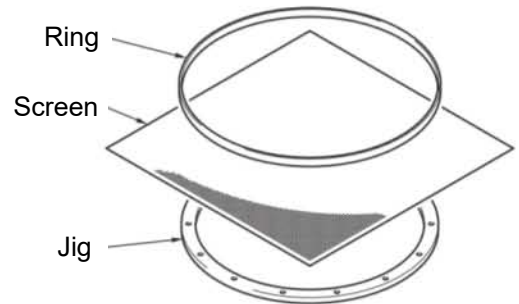
[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.

## ● How to change the screen

Jig for changing the screen is sold separately.

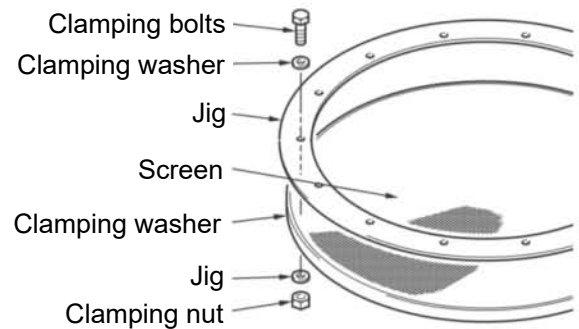
Please contact us or distributor agent for more information.

- (1) Put the screen over the jig and stretch.  
Use the ring to hold down the screen.
- (2) Cover the other side of the jig and insert the screen. Tighten the upper and lower screen clamping jig with bolts and stretch the screen.

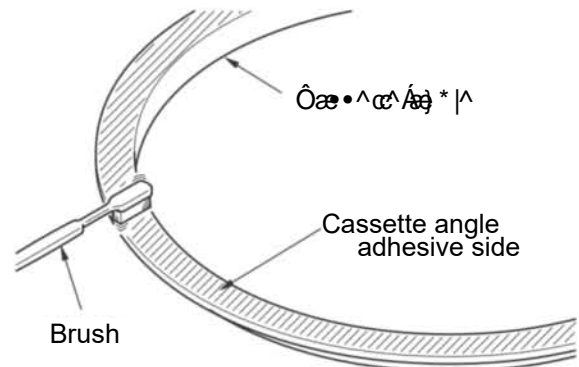


**NOTE:** When changing the screen for cassette type, the tension on the center part of the screen should be set below 0.5mm

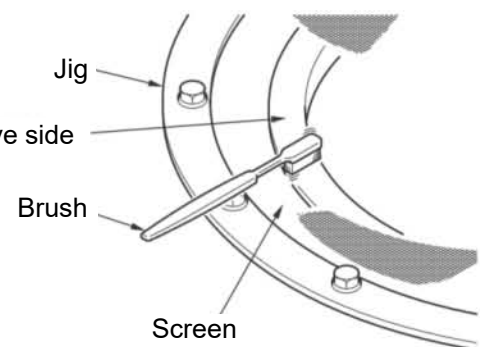
Tension gauge is sold separately.  
Please contact us or your distributor agent for more information.



- (3) Cut excess screen parallel to the jig.
- (4) Wipe the cassette angle adhesive side with thinner to fully remove excess oil
- (5) Apply adhesive (epoxy) to the flange adhesive side using a brush.
- (6) Put the stretched screen on the flange. Then apply more adhesive on top of the screen, onto the Cassette angle adhesive side.



**NOTE:** Please leave the screen for 24 hours until it is completely hardened.

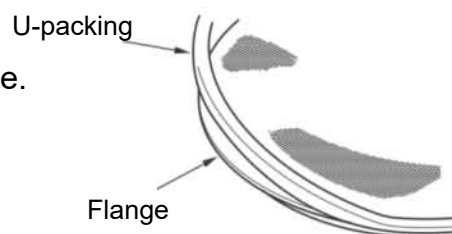


- (7) When adhesive is hardened, grind the excess screen on the outer edge of the Cassette angle.



**Caution:** Please grind the cassette screen as neat as possible. The outer edge of cassette screen (cut end) is extremely sharp there is a possibility of cutting yourself. Therefore, please be very careful when touching.

- (8) Before setting the flange to the sifter, put U-packing on the outer edge of the flange.



**Caution:** The screen condition brings a huge effect to the capacity a sifter can make, please stretch without loosening the screen. If the screen is in a bad condition (loosen etc.), it can no longer be used. Therefore, please use the new screen to redo them.

**NOTE:** When set the one touch band, please set the torque according to the following. If the band is too tight, it could cause the cassette ring to change shape and could cause the screen to be damaged.

- Please see P. 19 <Preparation for Operation> for the torque for coupling nut at one touch band.  
For type 1200 and 1500, re-torque the coupling nut after the setting at one touch is finished.
- Please see P. 19 <Preparation for Operation> for value when re-torque the coupling nut.



## ● Tapping rubbers

The tapping rubbers (refer to the table below), which help prevent the screen from becoming clogged, must be replaced after they have been worn approximately 20%.

## ● Tapping rubbers -- quantity and dimensions

Model type		1	2	3	Total	Dimensions and material
KL 700 type	Cube	6	14		20	Dimensions Cube : 60mm(L) × 40mm(W) × 25mm(H) Sphere : Φ 32mm  Material Both cube and sphere nuggets made of natural rubber
	Sphere	12	48		60	
KL 1000 type	Cube	6	12	14	32	
	Sphere	15	30	55	100	
KL 1200 type	Cube	10	16	24	50	Dimensions : Φ 32mm  Material : Silicon rubber
	Sphere	20	40	90	150	
KLO•KLC 800type	Sphere				90	
KLO•KLC 1000type	Sphere				150	
KLO•KLC 1200type	Sphere				225	

[NOTE] • The ball is divided into segments 1, 2, and 3, from the center outward.

- Because the tapping rubbers are placed on top of the screen, the KGO and KGC types do not have a ball holder. (If the unit is equipped with a ball holder, the specifications for the KFO and KFC types apply.)

## Adjusting or replacing the V-belt



### WARNING!!

- Before performing the operation, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the vibrating body has stopped completely. In addition, indicate on the control board or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious accident.
- After completing the operation, make sure to attach the doors on the unit and perform a trial operation to ensure that the unit operates properly. Improper assembly can lead to injury, electrical shock, or malfunction.

[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.

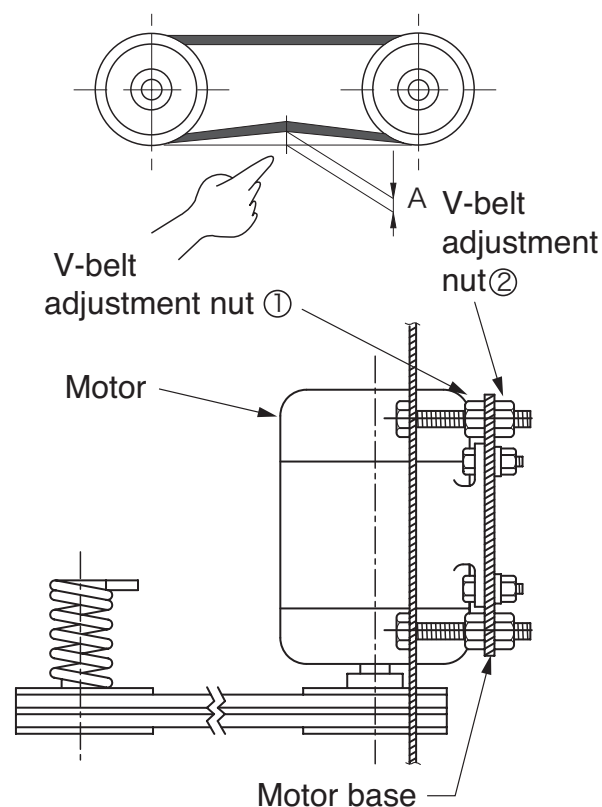


## ● Adjusting the V-belt tension

Adjust the V-belt tension so that measurement "A", which is the deflection of the belt, is approximately 5mm.

The belt tension is adjusted as follows:

- (1) Loosen the four V-belt adjustment nuts ②.
- (2) Lightly press the V-belt by hand, and uniformly tighten the four V-belt adjustment nuts ① so that the amount of belt deflection is approximately 5mm.
- (3) After completing the adjustment, tighten the four V-belt adjustment nuts ②.



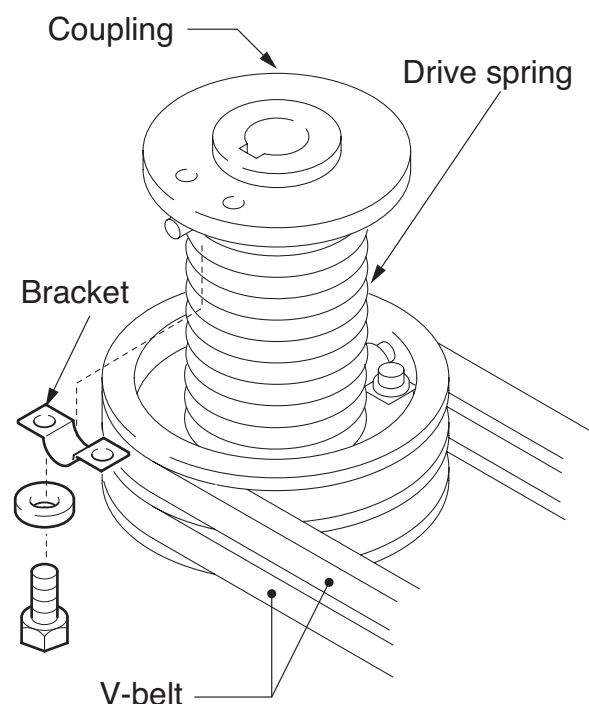
## ● Replacing the V-belt

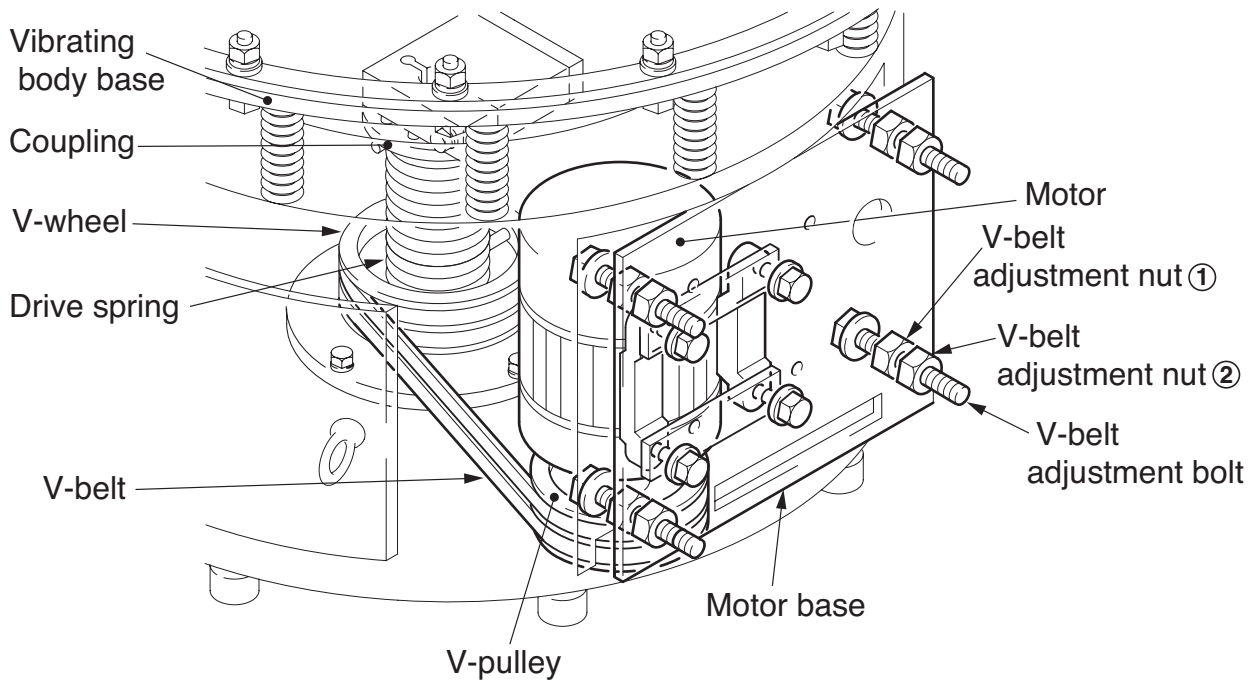
Replace the V-belt if it has cracks or shows any signs of deterioration.

The V-belt is replaced as follows:

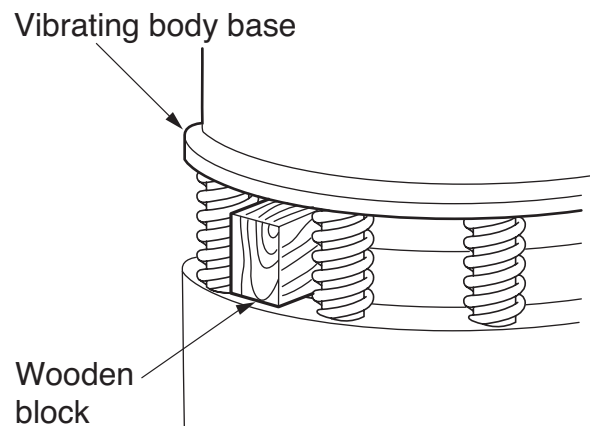
- (1) Loosen the V-belt tension by uniformly loosening the four V-belt adjustment nuts ①. Then, remove the V-belt from the V-pulley of the motor.
- (2) Remove the bracket from the coupling that joins the vibrating body and the drive spring.

[NOTE] There are two brackets on the drive spring. Be sure to remove the upper bracket.





- (3) Lift up on the vibrating body base to create enough clearance between the coupling and the drive spring that enables the V-belt to pass through. Then, remove and replace the V-belt.



### **WARNING!!**

**After lifting the vibrating body base, place a block (such as a wooden block) under it to prevent the vibrating body base from falling. Failure to observe this precaution may cause a serious accident. (Refer to the illustration above.)**



### **CAUTION**

- Use caution when lifting the vibrating body base, to prevent the grease hose from being cut.
- After replacing the V-belt, and before lowering the vibrating body base, make sure that the frame holder springs are properly engaged with the spring retainers.

- (4) Using the bracket, connect the coupling and the drive spring.  
 (5) Apply tension to the V-belt in accordance with "Adjusting the V-belt tension" on page 39.  
 (6) Perform a trial operation.

[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.

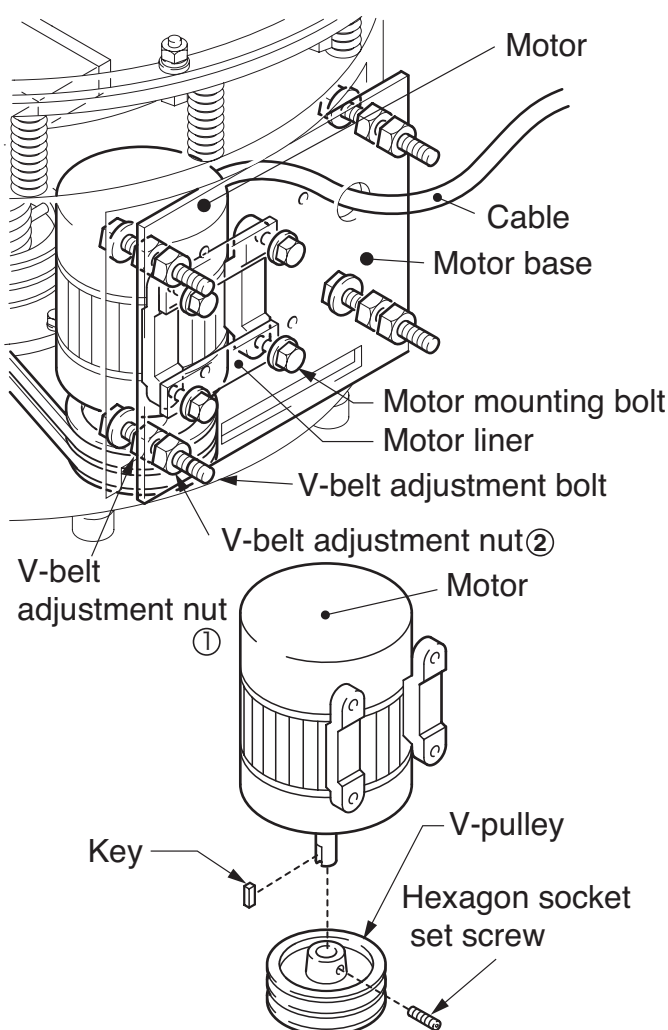
## Replacing the motor



- Before performing the operation, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the vibrating body has stopped completely. In addition, indicate on the control board or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious injury or accident caused by electrical shock or by the unintended starting of the unit.
- After completing the assembly, make sure to attach the doors on the unit and perform a trial operation to ensure that the unit operates properly. Improper assembly can lead to injury, electrical shock, or malfunction.

[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.

- (1) Loosen the V-belt tension by uniformly loosening the four V-belt adjustment nuts ①. Then, remove the V-belt from the V-pulley of the motor.
- (2) Detach the four V-belt adjustment nuts ② and remove the motor base from the unit.
- (3) Remove the power cord from the motor.
- (4) Detach the motor mounting bolts and remove the motor from the motor base.
- (5) Detach the V-pulley set screw and remove the V-pulley/motor aligner key from the motor.
- (6) Replace the motor with a new motor, and assemble it on the unit by reversing steps "(1)" through "(5)" described above.



[NOTE] During assembly, refer to "Adjusting the V-belt tension" on page 39 and "Electrical wiring" on page 16. After completing the assembly, refer to "Verifying the vibrating body's direction of rotation" on page 21 and "Trial operation" on page 22.

## Replacing the vibrating body and the V-wheel

Refer to "10. Replacing the vibrating body and the V-wheel" on page 52 for procedures on replacing the vibrating body and the V-wheel.

## Greasing



### **WARNING!!**

Before greasing the bearings of the vibrating body, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the vibrating body has stopped completely. In addition, indicate on the control board or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious accident.



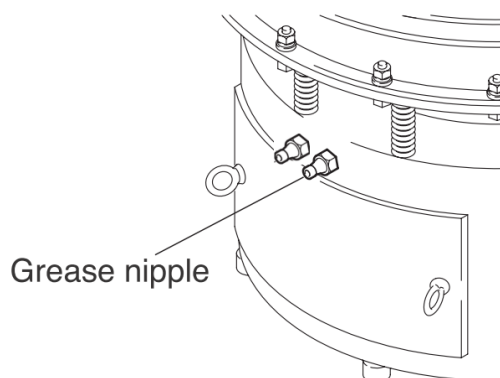
### **CAUTION**

For greasing, use only the grease that has been specified by Kowa. Failure to observe this precaution may cause the vibrating body to malfunction.

[NOTE] If a different type of grease is used, it could become solidified.

### ● Greasing procedure

Use the supplied grease in the grease gun that is also supplied. Inject the grease into the grease nipple that is provided on the side of the unit.



### ● Specified grease

■ Cosmogrease Teion Grease No. 2 (Cosmo Oil Co., Ltd.)

### ● Greasing interval and amount

Model	700type 800type	1000type	1200type
Greasing interval	500 hr	500 hr	500 hr
Amount of grease	One nipple 25g total 50g	One nipple 35g total 70g	One nipple 35g total 70g



### **CAUTION**

The warranty on the vibrating body is valid for one year. However, this warranty will be voided if the greasing interval and amount that are prescribed above for the respective model have not been observed.

# 8

## Troubleshooting

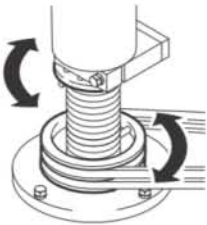
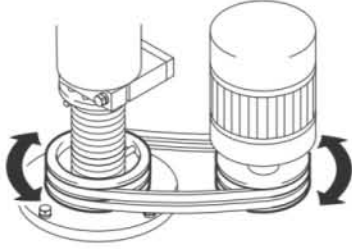


### WARNING!!

Before performing an inspection on the Vibrating Sifter unit, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the vibrating body has stopped completely. In addition, indicate on the control board or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious accident.

Carefully read this Operation Manual and inspect the unit before requesting a repair. In case an abnormal condition is encountered, contact the dealer where this unit was purchased, or Kowa.

[NOTE] Be sure to provide the model type and the unit number that are inscribed on the nameplate when contacting the dealer where the unit was purchased or Kowa.

Symptom	Investigation	Cause	Action
The unit does not start	Remove the bracket and manually rotate the coupling and the V-wheel separately. The component that does not rotate is the one with a malfunction. On the motor side, loosen the belt that links the motor with the V-wheel. Then, manually rotate the motor and the V-wheel separately. The component that does not rotate is the one with a malfunction.	<p>The motor does not rotate.</p> <ul style="list-style-type: none"> <li>•There is no voltage applied.</li> <li>•The electrical cord is faulty.</li> <li>•The terminals have poor contact.</li> <li>•The motor is faulty. <ul style="list-style-type: none"> <li>The coil is burned out.</li> <li>The bearings are faulty.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Inspect the switch and the fuse for open circuit and check if the terminals have been properly tightened.</li> <li>•Replace the motor</li> </ul>
		<p>The v-wheel does not rotate</p> <ul style="list-style-type: none"> <li>•The bearings are faulty.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the V-wheel.</li> </ul>
		<p>The vibrating body does not rotate.</p> <ul style="list-style-type: none"> <li>•The bearings are faulty.</li> </ul>	<ul style="list-style-type: none"> <li>•Replace the vibrating body.</li> </ul>



Symptom	Investigation	Cause	Action
Abnormal sound	The sound is generated by the rotating parts. Separate the components in accordance with the procedure described above. Then, apply current to the motor to enable the motor to rotate, in order investigate the abnormal sound.	<p>Abnormal sound from the rotating parts</p> <ol style="list-style-type: none"> <li>Noise generated by the motor: <ul style="list-style-type: none"> <li>Faulty bearings</li> </ul> </li> <li>Noise generated by the V-wheel: <ul style="list-style-type: none"> <li>Faulty bearings</li> </ul> </li> <li>Noise generated by the vibrating body: <ul style="list-style-type: none"> <li>Faulty bearings</li> </ul> </li> </ol> <p>Noise generated at the various fastening areas</p> <ul style="list-style-type: none"> <li>Looseness of tightening bolts: <ul style="list-style-type: none"> <li>Vibrating body tightening bolts</li> <li>Lower frame tightening bolts</li> <li>Band tightening bolts</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Replace the motor.</li> <li>Replace the V-wheel.</li> <li>Replace the vibrating body.</li> <li>Retighten.</li> </ul>
The unit starts but does not vibrate.	Check whether the V-belt is transmitting the rotational movement of the motor.	<p>The rotational movement is not being transmitted:</p> <ul style="list-style-type: none"> <li>Loose V-belt</li> <li>Torn V-belt</li> </ul>	<ul style="list-style-type: none"> <li>Tighten the V-belt.</li> <li>Replace the V-belt.</li> </ul>



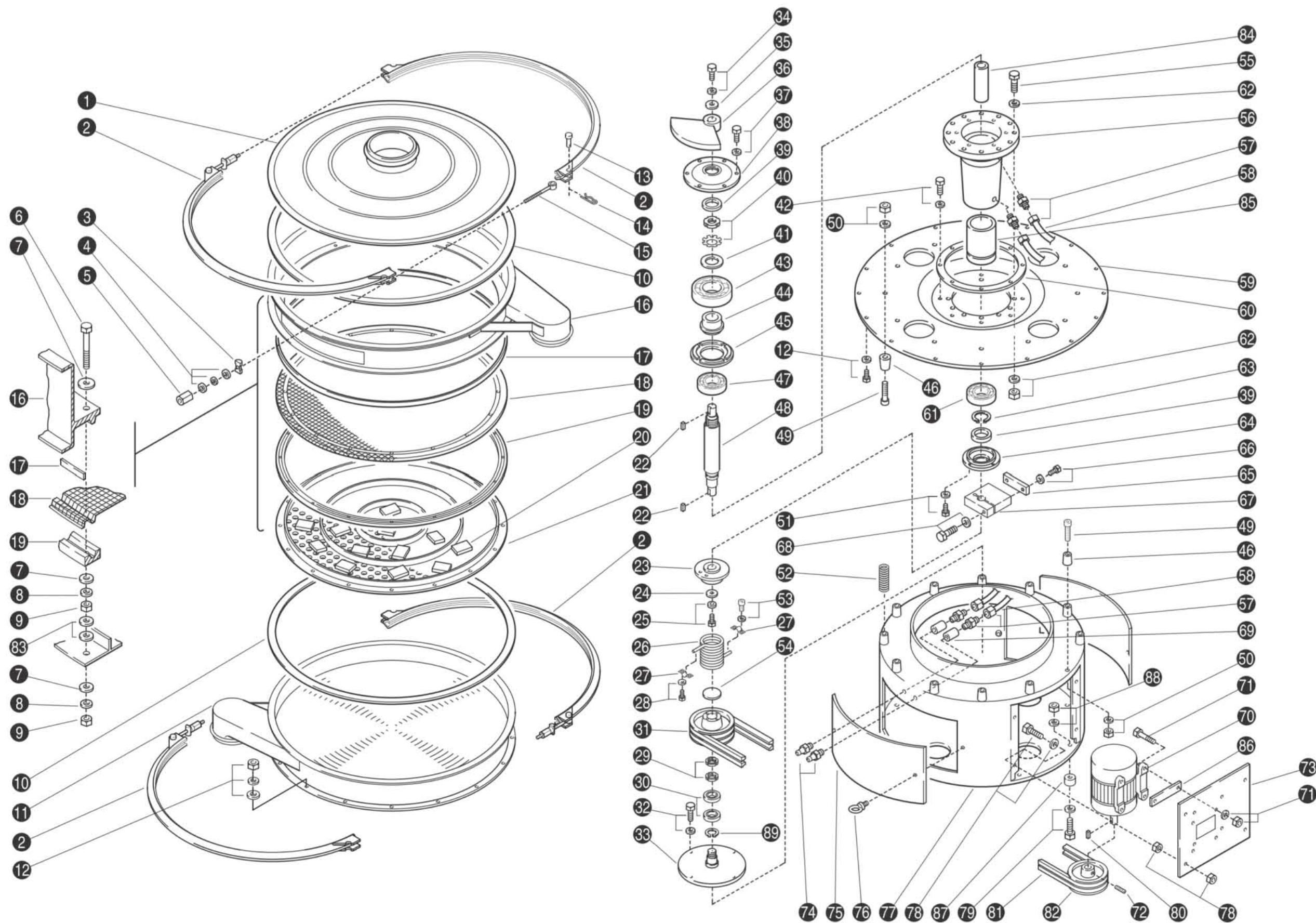
Symptom	Investigation	Cause	Action
Reduced performance	Check the condition of the movement of the material placed on the sifting screen.	<p>The movement is normal:</p> <ul style="list-style-type: none"> <li>• Clogged screen</li> <li>• Abnormal grain configuration of the material</li> </ul> <p>The movement is abnormal:</p> <ul style="list-style-type: none"> <li>• Changed angle of the lower weight</li> <li>• Insufficient screen tension</li> <li>• The V-belt is loose. Thus, the motor's rotational movement is not being properly transmitted.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the screen.</li> <li>• Install an auxiliary weight.</li> <li>• Check the previous process.</li> <li>• Tighten the lower weight adjustment bolt.</li> <li>• Replace the screen.</li> <li>• Tighten the V-belt.</li> </ul>

# 9 Assembly Diagrams

## KL type parts list

Number	Name	Material	Surface treatment	Number	Name	Material	Surface treatment
1	Cover	SUS304		46	Spring retainer	SS400	Hot dip galvanizing
2	Band	SUS304		47	Ball bearing	Commercially available	
3	Cotter	SCS13		48	Shaft	S45C	
4	Pinbolt spring washer, washer	SUS304		49	Spring retainer mounting hexagon socket bolt	SS400	Chromium plating
5	Pinbolt long nut	C3604BD		50	Spring retainer mounting nut, spring washer	SS400	Chromium plating
6	Screen tightening bolt	SUS304		51	Lower bearing cover mounting bolt, spring washer	SUS304	
7	Screen tightening bolt, washer	SUS304		52	Frame holder spring	SWPA	Nylon coating
8	Screen tightening bolt, spring washer	SUS304		53	Bracket hexagon socket bolt, spring washer	SS400	
9	Screen tightening bolt, nut	C3604BD		54	V-wheel seal	A ℓ	Coating
10	Packing	Natural rubber		55	Vibrating body mounting bolt	11T	
11	Lower frame	SUS304		56	Vibrating body	FC250	Coating
12	Lower frame mounting bolt, nut, spring washer, washer	SUS304		57	Grease connector	C3604BD	
13	Band pin	SS400	Chromium plating	58	Grease hose	Nylon	
14	Round pin	SUS304		59	Vibrating body base	SS400	Hot dip galvanizing
15	Pin bolt	SUS304		60	Outer ring	SS400	
16	Upper frame	SUS304		61	Lower roller bearing	Commercially available	
17	Screen tension ring	SUS304		62	Vibrating body mounting nut, spring washer	SS400	Chromium plating
18	Screen	Commercially available		63	Snap ring	Commercially available	
19	Screen tightener flange	SUS304		64	Lower bearing cover	FC250	Coating
20	Tapping rubber (cube)	Natural rubber		65	Auxiliary weight	SS400	Chromium plating
21	Ball holder	SUS304		66	Auxiliary weight mounting bolt, spring washer	SS400	Chromium plating
22	Key	Commercially available		67	Lower weight	SS400	Chromium plating
23	Coupling	SS400	Chromium plating	68	Lower weight adjustment bolt, spring washer	SS400	Chromium plating
24	Coupling washer	SS400	Chromium plating	69	Grease socket	SS400	
25	Coupling mounting bolt, spring washer	SS400	Chromium plating	70	Motor	Commercially available	
26	Drive spring	SWOSM-B		71	Motor mounting bolt, nut, spring washer	SS400	Chromium plating
27	Drive spring bracket	SS400	Chromium plating	72	Hexagon socket set screw	SS400	
28	Bracket bolt, spring washer	SUS304		73	Motor base	SS400	Hot dip galvanizing
29	Crown nut	Commercially available		74	Grease nipple	SS400	Chromium plating
30	Ball bearing	Commercially available		75	Door	SS400	Hot dip galvanizing
31	V-wheel coupling	FC250	Coating	76	Door mounting eyebolt	SS400	Chromium plating
32	V-wheel shaft mounting bolt, spring washer	SS400	Chromium plating	77	Base	SS400	Hot dip galvanizing
33	V-wheel shaft	SS400	Coating	78	V-belt adjustment bolt, nut, washer	SS400	Chromium plating
34	Upper weight tightening bolt, spring washer	SS400	Chromium plating	79	Vibroisolating rubber mounting bolt, washer	SS400	Chromium plating
35	Upper weight washer	SS400	Chromium plating	80	Key	Commercially available	
36	Upper weight	FC200	Coating	81	V-belt	Commercially available	
37	Upper bearing cover mounting bolt, spring washer	SUS304		82	V-pulley	FC250	
38	Upper bearing cover	FC250	Coating	83	Tapping rubber nugget adjustment washer	SUS304	
39	Oil seal	Commercially available		84	Inner collar B	SS400	
40	Crown nut, star washer	Commercially available		85	Outer collar B	SS400	
41	Collar	SS400		86	Motor liner	SS400	Chromium plating
42	Outer ring mounting bolt, spring washer	SS400	Chromium plating	87	Vibroisolating rubber	Natural rubber	
43	Upper roller bearing	Commercially available		88	Vibroisolating rubber mounting nut, spring washer	SS400	Chromium plating
44	Inner collar A	S45C		89	Snap ring	Commercially available	
45	Outer collar A	SS400					

KL type assembly diagram (example KL-1000 type)

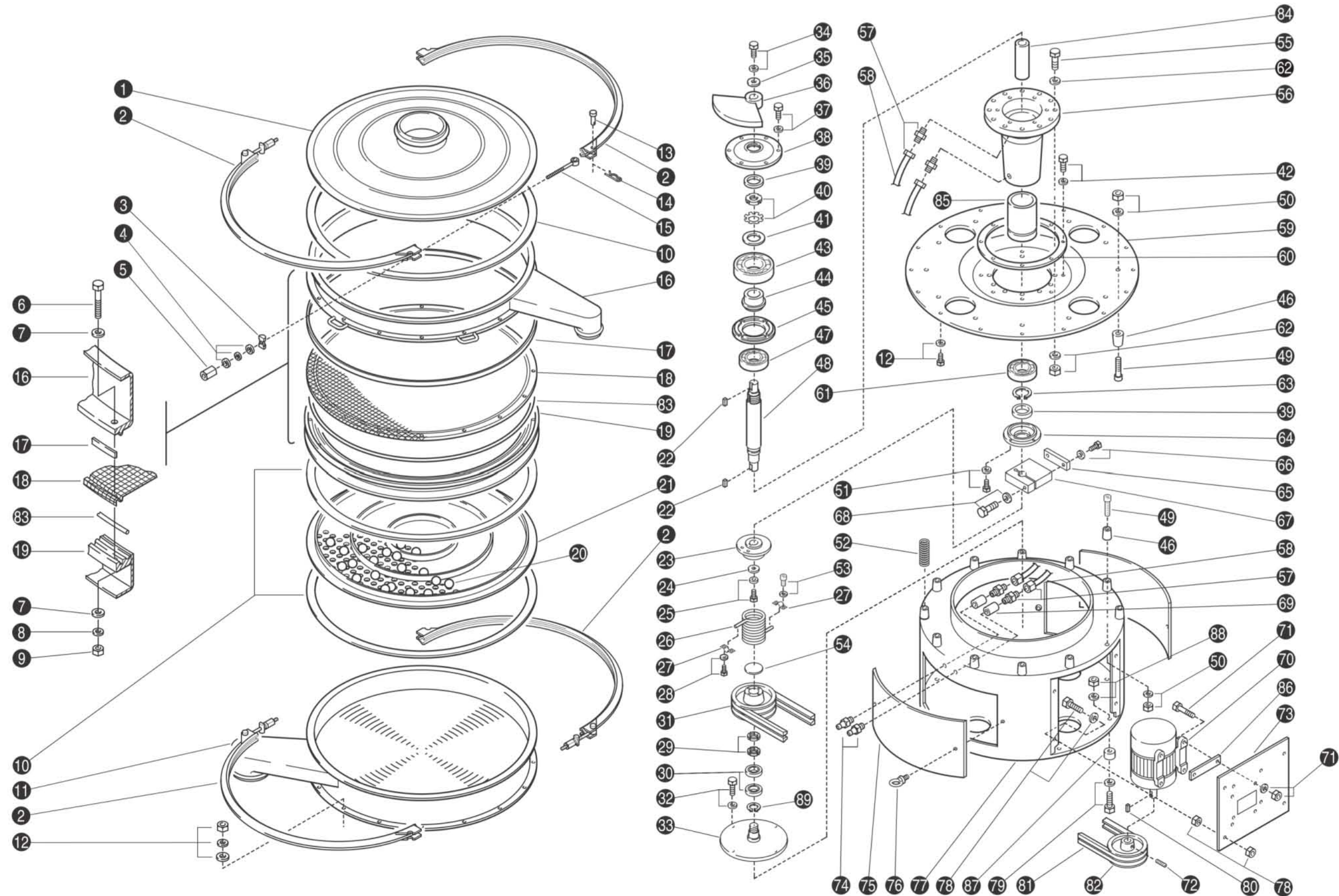




## KLO type parts list

Number	Name	Material	Surface treatment	Number	Name	Material	Surface treatment
1	Cover	SUS304		46	Spring retainer	SS400	Hot dip galvanizing
2	V-band	SUS304		47	Ball bearing	Commercially available	
3	Cotter	SCS13		48	Shaft	S45C	
4	Pinbolt spring washer, washer	SUS304		49	Spring retainer mounting hexagon socket bolt	SS400	Chromium plating
5	Pinbolt long nut	C3604BD		50	Spring retainer mounting nut, spring washer	SS400	Chromium plating
6	Screen tightening bolt	SUS304		51	Lower bearing cover mounting bolt, spring washer	SUS304	
7	Screen tightening bolt, washer	SUS304		52	Frame holder spring	SWPA	Nylon coating
8	Screen tightening bolt, spring washer	SUS304		53	Bracket hexagon socket bolt, spring washer	SS400	
9	Screen tightening bolt, nut	C3604BD		54	V-wheel seal	A ℓ	Coating
10	Packing	Natural rubber		55	Vibrating body mounting bolt	11T	
11	Lower frame	SUS304		56	Vibrating body	FC250	Coating
12	Lower frame mounting bolt, nut, spring washer, washer	SUS304		57	Grease connector	C3604BD	
13	Band pin	SS400	Chromium plating	58	Grease hose	Nylon	
14	Round pin	SUS304		59	Vibrating body base	SS400	Hot dip galvanizing
15	Pin bolt	SUS304		60	Outer ring	SS400	
16	Upper frame - top	SUS304		61	Lower roller bearing	Commercially available	
17	Screen tension ring	SUS304		62	Vibrating body mounting nut, spring washer	SS400	Chromium plating
18	Screen	Commercially available		63	Snap ring	Commercially available	
19	Upper frame - bottom	SUS304		64	Lower bearing cover	FC250	Coating
20	Tapping rubber (sphere)	Natural rubber		65	Auxiliary weight	SS400	Chromium plating
21	Ball holder	SUS304		66	Auxiliary weight mounting bolt, spring washer	SS400	Chromium plating
22	Key	Commercially available		67	Lower weight	SS400	Chromium plating
23	Coupling	SS400	Chromium plating	68	Lower weight adjustment bolt, spring washer	SS400	Chromium plating
24	Coupling washer	SS400	Chromium plating	69	Grease socket	SS400	
25	Coupling mounting bolt, spring washer	SS400	Chromium plating	70	Motor	Commercially available	
26	Drive spring	SWOSM-B		71	Motor mounting bolt, nut, spring washer	SS400	Chromium plating
27	Drive spring bracket	SS400	Chromium plating	72	Hexagon socket set screw	SS400	
28	Bracket bolt, spring washer	SUS304		73	Motor base	SS400	Hot dip galvanizing
29	Crown nut	Commercially available		74	Grease nipple	SS400	Chromium plating
30	Ball bearing	Commercially available		75	Door	SS400	Hot dip galvanizing
31	V-wheel coupling	FC250	Coating	76	Door mounting eyebolt	SS400	Chromium plating
32	V-wheel shaft mounting bolt, spring washer	SS400	Chromium plating	77	Base	SS400	Hot dip galvanizing
33	V-wheel shaft	SS400	Coating	78	V-belt adjustment bolt, nut, washer	SS400	Chromium plating
34	Upper weight tightening bolt, spring washer	SS400	Chromium plating	79	Vibroisolating rubber mounting bolt, washer	SS400	Chromium plating
35	Upper weight washer	SS400	Chromium plating	80	Key	Commercially available	
36	Upper weight	FC200	Coating	81	V-belt	Commercially available	
37	Upper bearing cover mounting bolt, spring washer	SUS304		82	V-pulley	FC250	
38	Upper bearing cover	FC250	Coating	83	O-ring	Urethane	
39	Oil seal	Commercially available		84	Inner collar B	SS400	
40	Crown nut, star washer	Commercially available		85	Outer collar B	SS400	
41	Collar	SS400		86	Motor liner	SS400	Chromium plating
42	Outer ring mounting bolt, spring washer	SS400	Chromium plating	87	Vibroisolating rubber	Natural rubber	
43	Upper roller bearing	Commercially available		88	Vibroisolating rubber mounting nut, spring washer	SS400	Chromium plating
44	Inner collar A	S45C		89	Snap ring	Commercially available	
45	Outer collar A	SS400					

### KLO type assembly diagram (example KLO-1000 type)

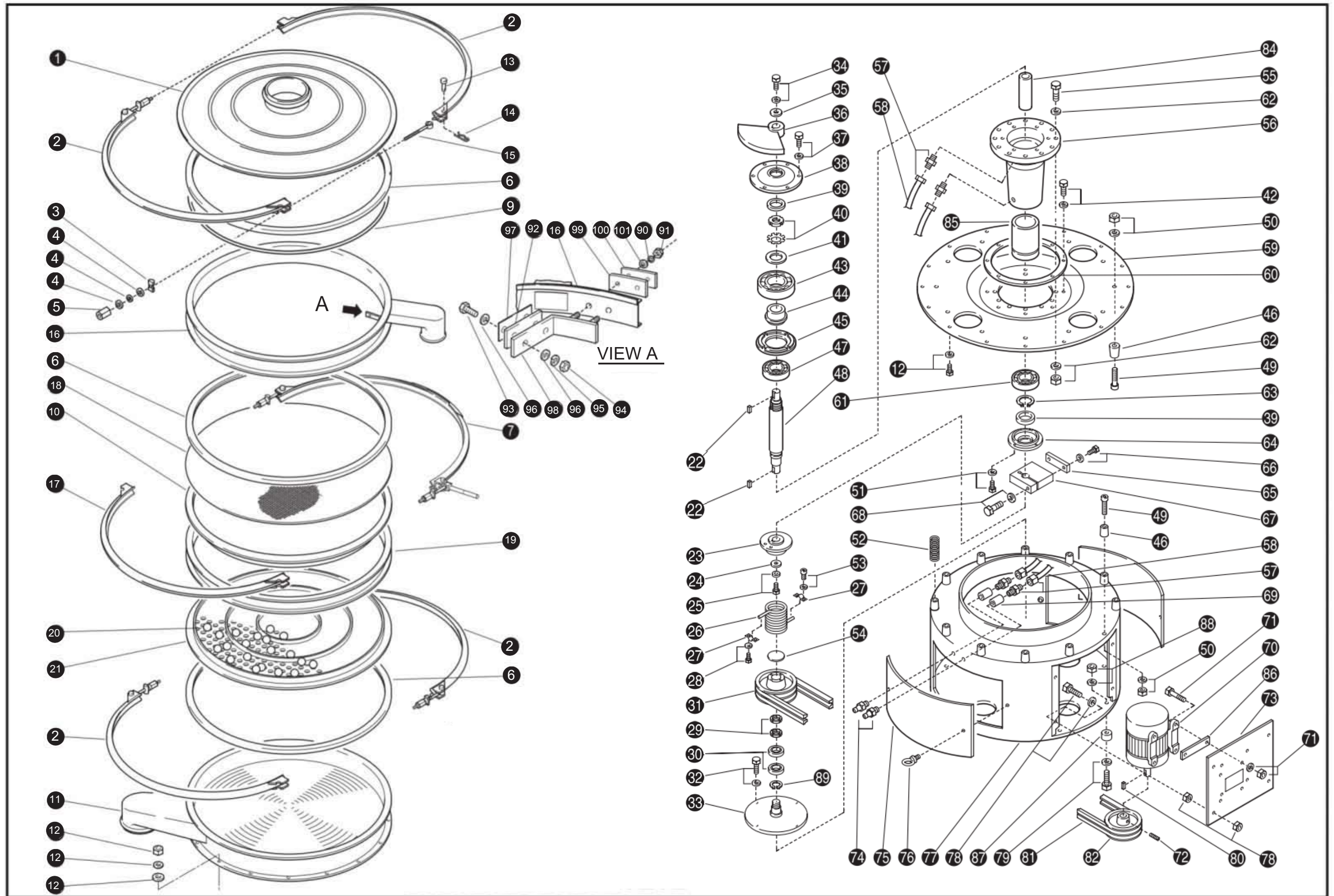


# KLC type parts list

Number	Name	Material	Surface treatment	Number	Name	Material	Surface treatment
1	Cover	SUS304		56	Vibrating body	FC250	Coating
2	V-Band	SUS304		57	Grease connector	C3604BD	
3	Cotter	SCS13		58	Grease hose	Nylon	
4	Pinbolt spring washer, washer	SUS304		59	Vibrating body base	SS400	Hot dip galvanizing
5	Pinbolt long nut	C3604BD		60	Outer ring	SS400	
6	U-Packing	Silicone rubber		61	Lower roller bearing	Commercially available	
7	V-One touch band for Cassette	SUS304		62	Vibrating body mounting nut, spring washer	SS400	Chromium plating
8				63	Snap ring	Commercially available	
9	Packing ring	SUS304		64	Lower bearing cover	FC250	Coating
10	Cassette angle			65	Auxiliary weight	SS400	Chromium plating
11	Lower frame	SUS304		66	Auxiliary weight mounting bolt, spring washer	SS400	Chromium plating
12	Lower frame mounting boll, nut, spring washer, washer	SUS304		67	Lower weight	SS400	Chromium plating
13	Band pin	SS400	Chromium plating	68	Lower weight adjustment bolt, spring washer	SS400	Chromium plating
14	Round pin	SUS304		69	Grease socket	SS400	
15	Pin bolt	SUS304		70	Motor	Commercially available	
16	Upper frame - top	SUS304		71	Motor mounting bolt, nut, spring washer	SS400	Chromium plating
17	V-band for Cassette	SUS304		72	Hexagon socket set screw	SS400	
18	Screen	Commercially available		73	Motor base	SS400	Hot dip galvanizing
19	Upper frame - bottom	SUS304		74	Grease nipple	SS400	Chromium plating
20	Tapping rubber (sphere)	Natural rubber		75	Door	SS400	Hot dip galvanizing
21	Ball holder	SUS304		76	Door mounting eyebolt	SS400	Chromium plating
22	Key	Commercially available		77	Base	SS400	Hot dip galvanizing
23	Coupling	SS400	Chromium plating	78	V-belt adjustment bolt, nut, washer	SS400	Chromium plating
24	Coupling washer	SS400	Chromium plating	79	Vibroisolating rubber mounting bolt, washer	SS400	Chromium plating
25	Coupling mounting bolt, spring washer	SS400	Chromium plating	80	Key	Commercially available	
26	Drive spring	SWOSM-B		81	V-belt	Commercially available	
27	Drive spring bracket	SS400	Chromium plating	82	V-pulley	FC250	
28	Bracket bolt, spring washer	SUS304		83	O-ring	Urethane	
29	Crown nut	Commercially available		84	Inner collar B	SS400	
30	Ball bearing	Commercially available		85	Outer collar B	SS400	
31	V-wheel coupling	FC250	Coating	86	Motor liner	SS400	Chromium plating
32	V-wheel shaft mounting bolt, spring washer	SS400	Chromium plating	87	Vibroisolating rubber	Natural rubber	
33	V-wheel shaft	SS400	Coating	88	Vibroisolating rubber mounting nut, spring washer	SS400	Chromium plating
34	Upper weight tightening bolt, spring washer	SS400	Chromium plating	89	Snap ring	Commercially available	
35	Upper weight washer	SS400	Chromium plating	90	Discharge guide mounting spring washer	SUS304	
36	Upper weight	FC200	Coating	91	Discharge guide mounting nut	SUS304	
37	Upper bearing cover mounting bolt, spring washer	SUS304		92	Discharge guide rubber	Silicone rubber	
38	Upper bearing cover	FC250	Coating	93	Discharge guide rubber mounting bolt	SUS304	
39	Oil seal	Commercially available		94	Discharge guide rubber mounting nut	SUS304	
40	Crown nut, star washer	Commercially available		95	Discharge guide rubber mounting spring washer	SUS304	
41	Collar	SS400		96	Discharge guide rubber mounting washer	SUS304	
42	Outer ring mounting bolt, spring washer	SS400	Chromium plating	97	Discharge guide rubber clamp	SUS304	
43	Upper roller bearing	Commercially available		98	Discharge guide	SUS304	
44	Inner collar A	S45C		99	Discharge guide rubber mounting gasket	Natural rubber	
45	Outer collar A	SS400		100	Discharge guide rubber mounting gasket clamp	SUS304	
46	Spring retainer	SS400	Hot dip galvanizing	101	Discharge guide mounting washer	SUS304	
47	Ball bearing	Commercially available					
48	Shaft	S45C					
49	Spring retainer mounting hexagon socket bolt	SS400	Chromium plating				
50	Spring retainer mounting nut, spring washer	SS400	Chromium plating				
51	Lower bearing cover mounting bolt, spring washer	SUS304					
52	Frame holder spring	SWPA	Nylon coating				
53	Bracket hexagon socket bolt, spring washer	SS400					
54	V-wheel seal	Al	Coating				
55	Vibrating body mounting bolt	11T					



# KLC type assembly diagram (example KLC-1000 type)



## 10 Replacing the vibrating body and the V-wheel



**WARNING!!**

- Before replacing the vibrating body and the V-wheel, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the vibrating body has stopped completely. In addition, indicate on the control board or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious accident.
- Never disassemble or reassemble the vibrating body and the V-wheel. Failure to observe this precaution may cause abnormal operation or improper assembly, which may lead to injury.
- After replacing the vibrating body and the V-wheel, make sure to attach the doors on the unit and perform a trial operation to ensure that the unit operates properly. Improper assembly can lead to injury, electrical shock, or malfunction.

This section describes the procedure for replacing the vibrating body and the V-wheel. Special equipment and skills are required for disassembling and reassembling the vibrating body and the V-wheel. Therefore, contact the dealer where this unit was purchased, or Kowa, for performing such operations.

[NOTE] Refer to "Trial operation" on page 22 for further details on trial operation.



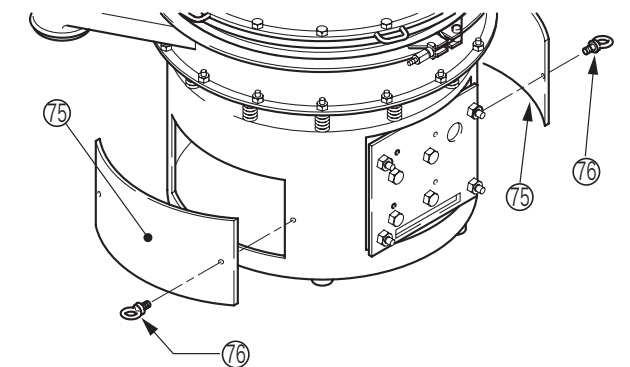
**CAUTION**

The example illustrated in this section is for the KGO-1000 Type. For details of other models, refer to the diagram for the applicable model in "9. Assembly Diagrams" starting from page 46.

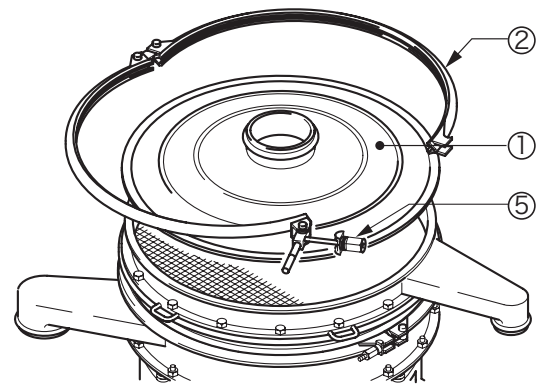
### Replacing the vibrating body

#### ● Removal procedure

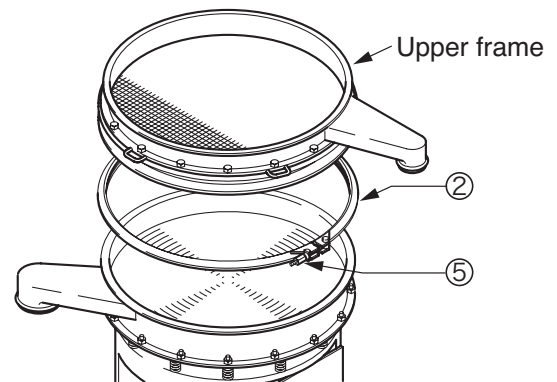
- (1) Detach the door eyebolts (76) and remove the door (75).



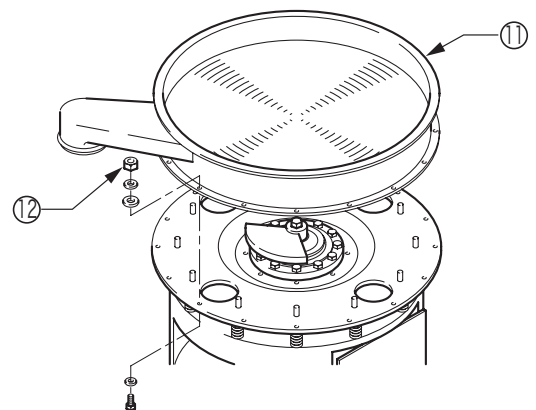
- (2) Loosen the long nut ⑤ for the pinbolt of the band ② and remove the cover ① .



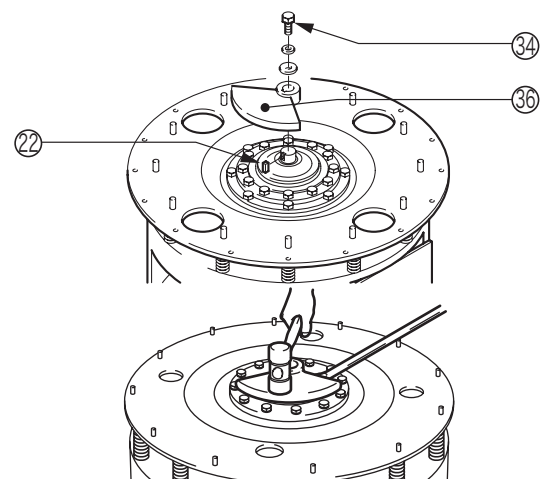
- (3) Loosen the long nut ⑤ for the pinbolt of the band ② and remove the band ② and the upper frame.



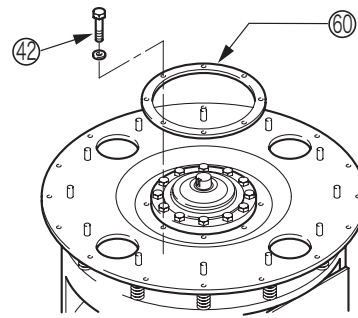
- (4) Detach the lower frame nuts ⑫ and remove the lower frame ⑪ .



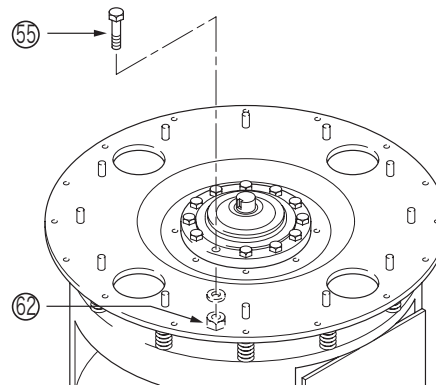
- (5) Detach the upper weight bolt ③④ . Using a wooden mallet, lightly tap around the upper weight ③⑥ , and use a stick to pry and remove the upper weight. At the same time, remove the key ②② .



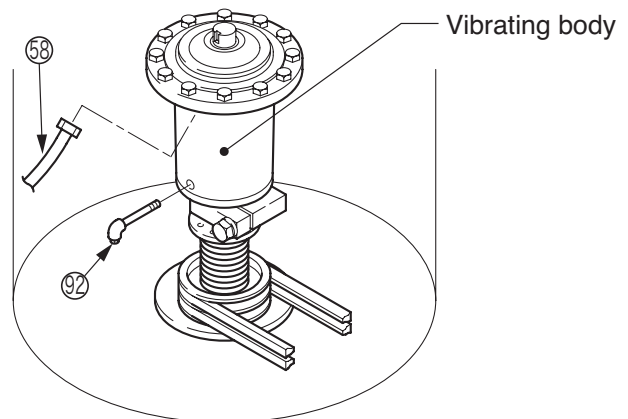
- (6) Detach the outer ring bolt ④② to remove the outer ring ⑥①.



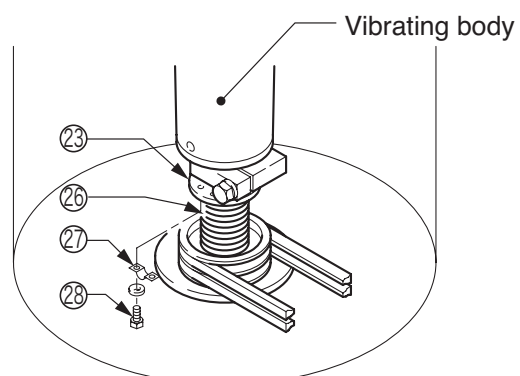
- (7) Remove the vibrating body mounting nuts and spring washers ⑥②, and the vibrating body mounting bolts ⑤⑤.



- (8) From the vibrating body, remove the grease hose ⑤⑧, and the pipe ⑨②, which is used for discharging waste or excess grease.



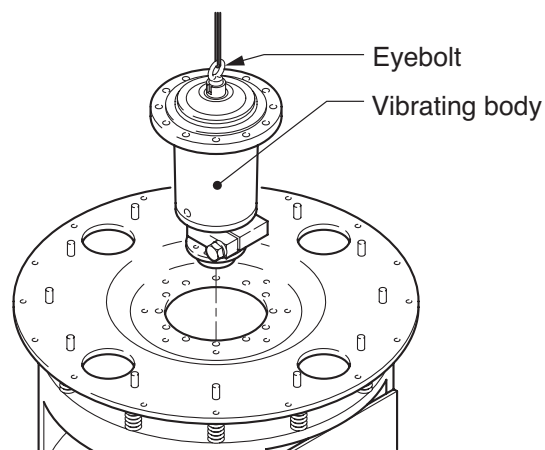
- (9) Detach the bracket bolt ②⑧ to remove the bracket ②⑦ of the coupling ②③, which connects the vibrating body and the drive spring ②⑥.





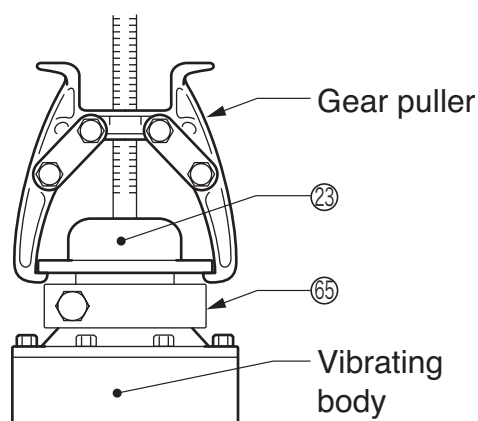
- (10) Suspend the vibrating body by attaching an eyebolt to the shaft of the vibrating body.

[NOTE] An eyebolt for suspending the vibrating body must be obtained locally. The 400 and 500 types use the M6 thread size, and other models use the M10 thread size.




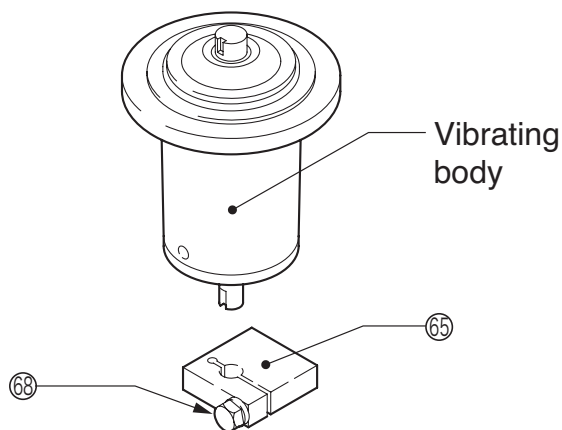
- (11) Detach the coupling bolt ②⑤. Using a gear puller, remove the coupling ②③ from the vibrating body. At the same time, remove the key ②②.

[NOTE] Be sure to remember the angle at which the lower weight ⑥⑤ is mounted before removing the coupling ②③.



- (12) Loosen the lower weight adjustment bolt ⑥⑧ and remove the lower weight ⑥⑤ from the vibrating body. Replace the vibrating body with a new part.

 **WARNING!!** Never disassemble or reassemble the vibrating body and the V-wheel. Failure to observe this precaution may cause abnormal operation or improper assembly, which may lead to injury.





## ● Installation procedure

- For installation, reverse the order of the removal procedure by performing steps "(12)" to "(1)".
- Listed below are the torque values for tightening the lower weight adjustment bolt, the long nut for the pinbolt, and the vibrating body mounting bolts.

■ Lower weight adjustment bolt	Tightening torque
M 14	650~750 kgf·cm
M10 hexagon socket set bolt	90~110kgf·cm

### ■ Long nut for pinbolt

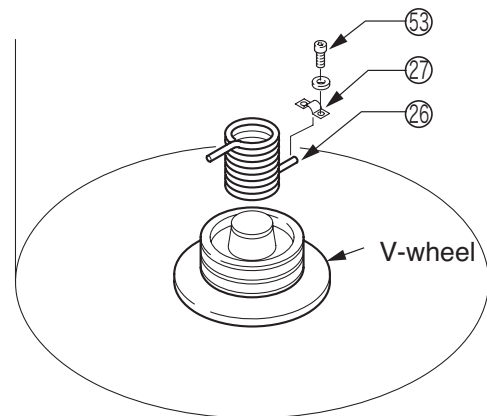
■ Vibrating body mounting bolt	Tightening torque
M12	Approx. 700 kgf·cm
M14	Approx.1000 kgf·cm
M16	Approx.1300 kgf·cm

## Replacing the V-wheel

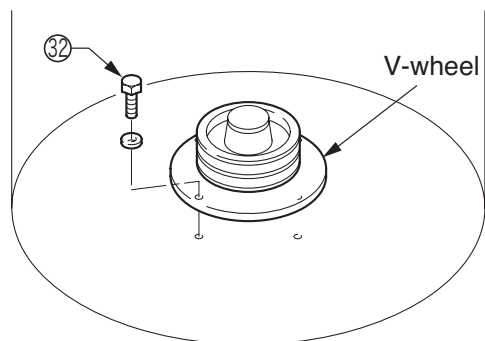
### ● Removal procedure


(1) Lift the vibrating base in accordance with the steps described in "Adjusting or replacing the V-belt" on page 37.

(2) Detach the hexagon socket bolt ⑤③ from the bracket of the V-wheel and remove the drive spring bracket ②⑦ and the drive spring ②⑥.



(3) Detach the V-wheel shaft bolt ③② and remove the V-wheel. Replace the V-wheel with a new part.



 **WARNING!!** Never disassemble or reassemble the vibrating body and the V-wheel. Failure to observe this precaution may cause abnormal operation or improper assembly, which may lead to injury.

### ● Installation procedure

For installation, reverse the order of the removal procedure by performing steps "(3)" to "(1)".

# Vibrating Sifter Checklist (example)

Model type	
Unit number	
Delivered date	

[illegible]

