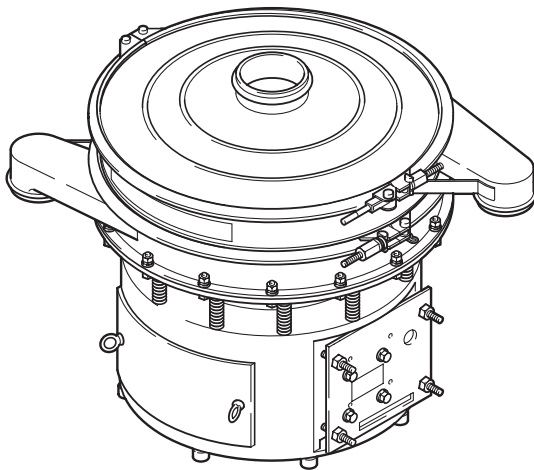


Innovation in Technology

**K O W A**

## **Vibrating Sifter**

### Operation Manual



Model:

R Type

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

# **Kowa Kogyosho Co., Ltd.**

2-28 Hutano, Mizuho-ku  
Nagoya 467-0861, Japan

Phone: +81-52-872-2211

Fax: +81-52-872-2171

KKE-0005-04-00

## ■ FOREWORD ■

- Thank you for selecting our R Type 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 R Type Kowa Vibrating Sifter as follows:
  - 1. Precautions for safe operation
  - 2. Basic handling and adjustment methodsTo 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. Thus, it 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.

# TABLE OF CONTENTS

<b>1. Important Safety Issues.....</b>	<b>1</b>
Explanation of symbols (marks) .....	1
Precautions during positioning and installation .....	2
Precautions during trial operation and normal operation.....	2
Precautions during maintenance and inspection.....	2
<b>2.Features .....</b>	<b>3</b>
Outline of Vibrating Sifter.....	3
R Type (automatic sorter) .....	3
<b>3.Names of Parts (overview of the unit) .....</b>	<b>4</b>
R Type (reverse type vibrating sorter).....	4
<b>4.Installation .....</b>	<b>5</b>
Pre-installation verification.....	5
Electrical wiring .....	5
<b>5.Operation.....</b>	<b>6</b>
Preparation for operation.....	6
Verifying the interlocking with the Control Panel .....	7
Trial operation .....	8
Operation.....	9
<b>6.Adjusting the lower weight.....</b>	<b>10</b>
Direction of movement of the material on the sifter screen according to the upper /lower weight phase during classification and discharge ....	10
Direction of movement of the substance on the sifter screen according to the lower weight phase .....	11
Changing the position of the lower weight stopper (waste stopper) .....	12
<b>7.Troubleshooting .....</b>	<b>13</b>
<b>8.Assembly Diagrams.....</b>	<b>14</b>
KFR type parts list .....	14
KFR type assembly diagram (example: KFR-1000 type).....	15
KGR type parts list .....	16
KGR type assembly diagram (example: KGR-1000 type) .....	17
<b>9.Replacing the vibrating body and the V-wheel .....</b>	<b>18</b>
Replacing the vibrating body .....	18
● Removal procedure .....	18
● Assembly procedure.....	21
Replacing the V-wheel.....	22
● Removal procedure .....	22
● Assembly procedure.....	22





# 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.



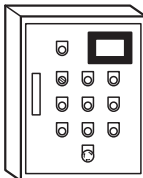
### ■ Examples of symbols (marks)

-  : 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 during positioning and installation

 <b>CAUTION</b>		
	<ul style="list-style-type: none"><li>● To install the R Type Vibrating Sorter, also follow the instructions in the Control Panel Operation Manual that is provided separately. Improper installation may result in a serious accident, electrical shock, or equipment failure.</li></ul> <p>[NOTE] The R Type Vibrating Sorter operates by interlocking with the Control Panel.</p>	

## Precautions during trial operation and normal operation

 <b>WARNING</b>		
	<ul style="list-style-type: none"><li>● Before operating the R Type Vibrating Sorter, be sure to familiarize yourself thoroughly with the details of operating the Control Panel. Failure to observe this precaution could prevent this unit from attaining its full potential and lead to injury or a serious accident.</li></ul>	

## Precautions during maintenance and inspection

 <b>WARNING</b>		
	<ul style="list-style-type: none"><li>● Before performing maintenance and inspection on the R Type Vibrating Sorter, also refer to the Control Panel Operation Manual. In case of a malfunction in the Vibrating Sifter unit, it could be a result of an improper operation of the Control Panel, which could lead to a serious accident or electrical shock.</li></ul>	

## 2

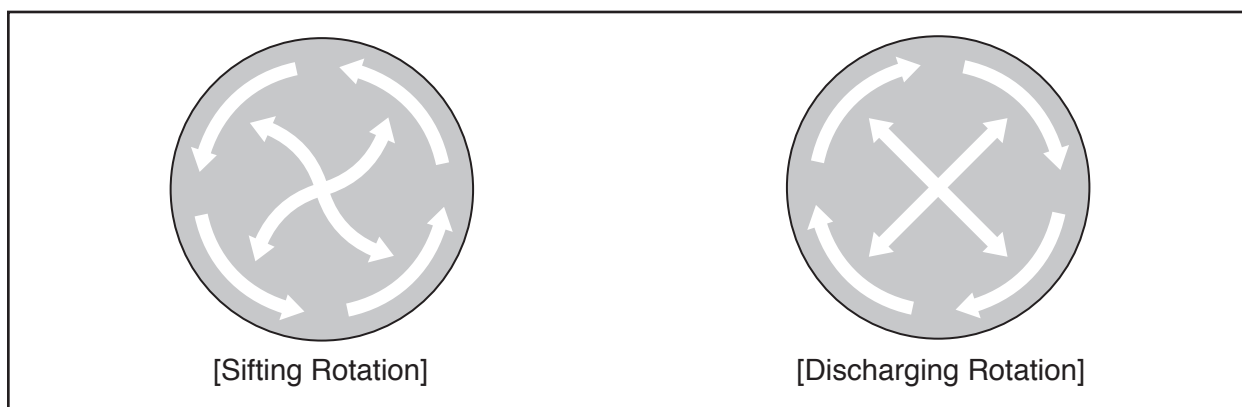
## Features

### Features of the Vibrating Sifter

The phase setting of the lower weight is given a certain characteristic in order to provide a function that automatically varies the vibration pattern to those of the sorting and discharging modes.


### R Type (Vibrating Sorter)

The standard type sifter achieves an optimal material flow by matching the phase of the lower weight to the type of the material to be sorted. In contrast, the R type can rotate the material on the screen counterclockwise (the conventional round-shape sifter rotates clockwise) in the sort mode. As a result, the length of time during which the material remains on the screen can be set as desired (while special skills are needed to adjust the conditions on the standard type) by simply setting the timing, thus realizing a high level of sorting precision.



Because the counterclockwise movement of the material in the sifting frame prevents the material from being discharged from above the screen, the area with the highest sifting efficiency can be utilized for sifting. Then, during discharge, the material moves clockwise to efficiently discharge the material within a short time. Because the lower weight has been changed from the fixed to the free type, the phase angle of the weight is to be set to a prescribed position in accordance with the rotating direction of the motor, thus effecting the respective vibration modes.

Through the features described above, the R type achieved an extremely high sorting precision of over 95%, in contrast to the sorting precision of 75 to 80% achieved by the standard type.

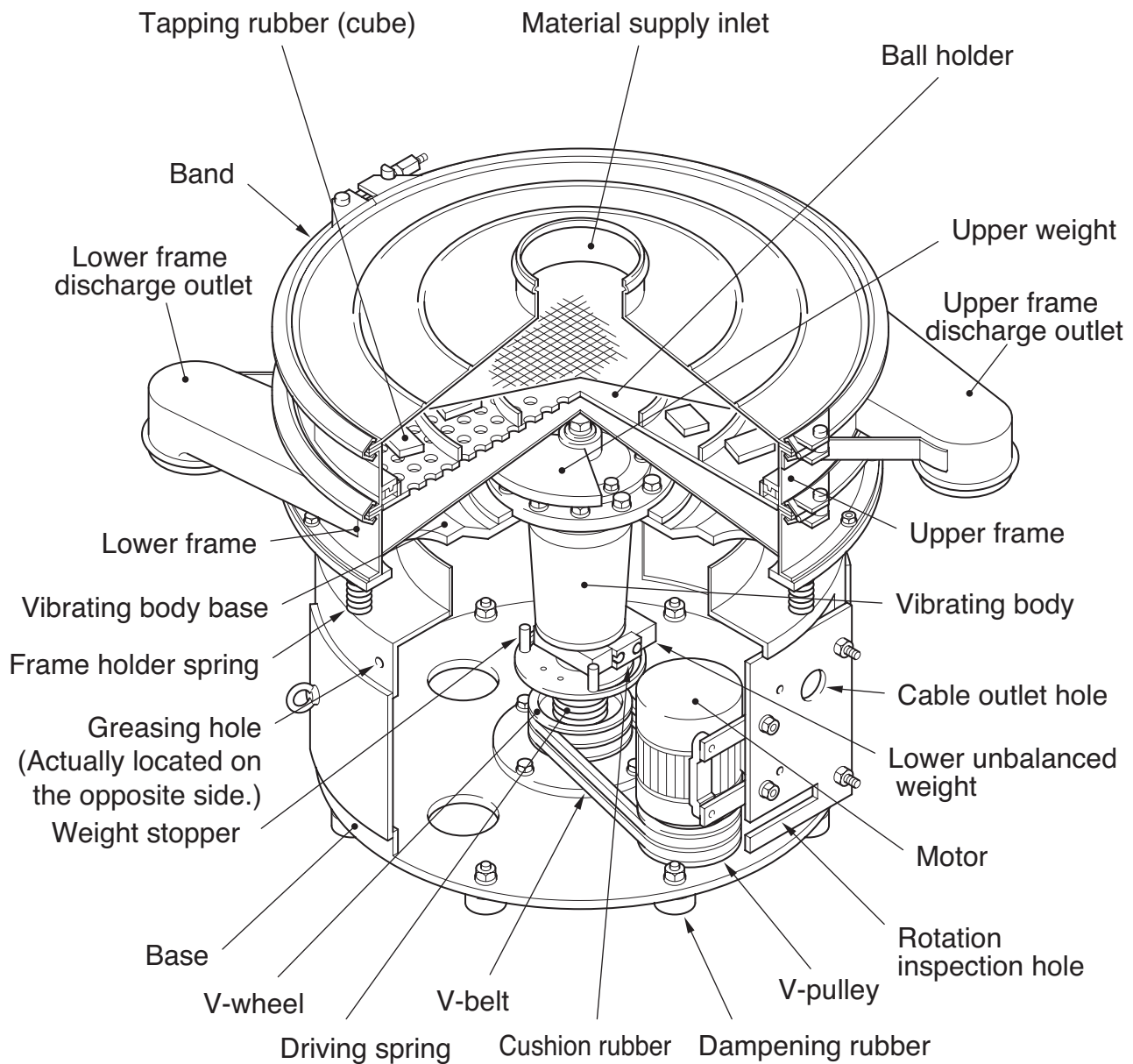
 **WARNING!!** Before using the R Type Vibrating Sifter, also refer to the Control Panel Operation Manual. Improper operation may result in a serious accident, electrical shock, or equipment failure.

This feature can be adopted in all models of standard type vibrating sifters.

[NOTE] • To upgrade the standard to the R type, certain parts in the drive portion must be replaced. For further details, contact the dealer where this unit was purchased, or Kowa.  
• This feature can also be included in the C (cassette) type sifter.

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

#### ▼ R Type (Reverse Type Vibrating Sorter)



[NOTE] The example illustrated above is for the KFR-1000 Type. For the detailed parts configuration of various models, refer to "8. Assembly Diagrams" starting on page 14.



# 4

## Installation

### Pre-installation verification

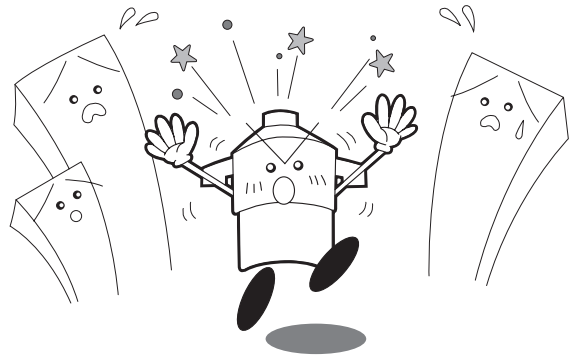
#### ● Installation site



- 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.
- Make sure the site in which the unit is to be installed allows the operator to monitor the operating condition of the Vibrating Sifter while taking control of the Control Panel. Failure to observe this precaution may lead to a serious injury or accident in case of an emergency or during operation changeovers.

Verify that the installation site provides sufficient space with 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 normal operation. Therefore, make sure to install the unit a minimum of 200mm from other machinery or piping.



### Electrical wiring

#### ● Electrical wiring work



- 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.
- Before carrying out wiring work, also refer to the Control Panel Operation Manual that is provided separately. Improper connection to the Control Panel may lead to short circuit, electrical shock, or equipment failure.



- 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.

# 5

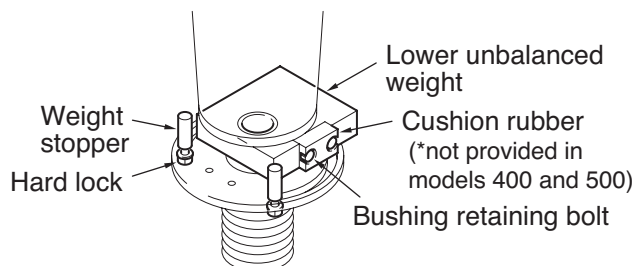
## Operation

### Preparation for operation

Perform the items described below before starting the Vibrating Sifter. Also refer to the Type F and G Operation Manual.

#### ● Verifying the tightness of the lower weight and the auxiliary weight

Verify that the cushion rubber that is mounted on the lower weight and the weight stopper that is mounted on the auxiliary weight have been completely secured.



- Tightening torque of the cushion rubber bolt  
 $=650 \sim 750\text{Kgf}\cdot\text{cm}$  (for M14 bolt)  
 $= 90 \sim 110\text{Kgf}\cdot\text{cm}$   
 (for M10 hexagon socket set screw)

- Tightening torque of the weight stopper nut  
 $=180 \sim 220\text{Kgf}\cdot\text{cm}$  (for M8 nut)  
 $=300 \sim 350\text{Kgf}\cdot\text{cm}$  (for M10 nut)

Tightening torque of the auxiliary weight bolt  
 $=180 \sim 220\text{Kgf}\cdot\text{cm}$  for M8 nut  
 $=300 \sim 350\text{Kgf}\cdot\text{cm}$  for M10 nut

#### ● Verifying the spring retainers

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

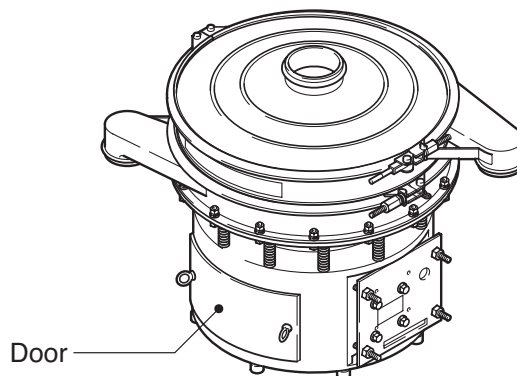
#### ● Verifying the doors



**WARNING!!**

**Operate the unit only with its doors closed. Operating the unit with the doors open may lead to a serious accident, as a loose or damaged cushion rubber, weight stopper, or auxiliary weight could be flung from the unit.**

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



[The example illustrated is for the KFR-1000 odel.]

## Verifying the interlocking with the Control Panel

To verify the interlocking of the Vibrating Sifter with the Control Panel, make sure to also refer to the operation manual that is provided with the Control Panel.



**WARNING!!**

- Before operating the unit, make sure to thoroughly familiarize yourself with the details of operating the Control Panel. Failure to observe this precaution could prevent this unit from attaining its full potential and lead to injury or a serious accident.



**WARNING!!**

- Verify the direction of the rotation of the vibrating body through the rotation inspection hole at the motor base. Failure to observe this precaution could cause an improperly tightened or damaged cushion rubber, weight stopper, or auxiliary weight to be flung from the unit, which may lead to a serious accident.
- Before changing the connection for reversing the direction, cut off the power supply at the Control Panel and make sure that the unit has come to a complete stop. Failure to observe this precaution could lead to short circuit, electrical shock, or injury.



**CAUTION**

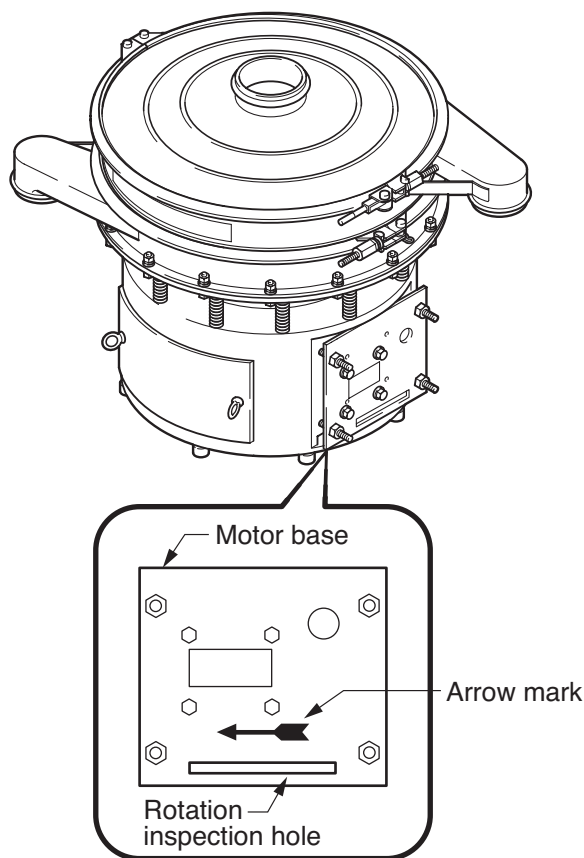
Because the performance of the Vibrating Sifter could be affected by operating it in reverse, make sure to verify the direction of its rotation.

- (1) Engage the Control Panel in the manual mode and press the switches listed below to verify the operating state of the Vibrating Sifter.

- ① Sorting switch .....rotates the vibrating body counterclockwise.
- ② Discharge switch .....rotates the vibrating body clockwise.

[NOTE] Verify through the rotation inspection hole whether the direction of the rotation of the vibrating body that results from the operation of switches ① and ② is the same as that of the arrow mark.

- (2) Engage the Control Panel in the automatic mode and press the auto-start switch to render the Vibrating Sifter in the operating state. Then, press the emergency stop switch to make sure that the Vibrating Sifter stops.




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

## Trial operation

### ● Performing a trial operation

Before performing a trial operation, make sure to also refer to the operation manual that is provided with the Control Panel.


 **WARNING!!** Before performing a trial operation, make sure to thoroughly familiarize yourself with the details of operating the Control Panel. Failure to observe this precaution could prevent this unit from attaining its full potential and lead to injury or 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 the Type F and G Operation Manual to take 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 trial 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 input side (power supply side).</li> </ul> <p>[NOTE] Refer to the full-load amperage values listed in the Type F and G Operation Manual. 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> <li>• Engage the Vibrating Sifter in the automatic mode and feed material in order to verify the sorting and discharging conditions.</li> </ul> <p>[NOTE] If a malfunction occurs during sorting or discharging, change the settings in accordance with the instructions in the Control Panel Operation Manual.</p>
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 with bare hands during operation or immediately after operation, as it may lead to burns.**

# 6

## Adjusting the lower weight

By varying the positions of the two stoppers located at the right and left sides of the lower unbalanced weight, the vibrating mode changes automatically to adjust the sorting and discharging actions.

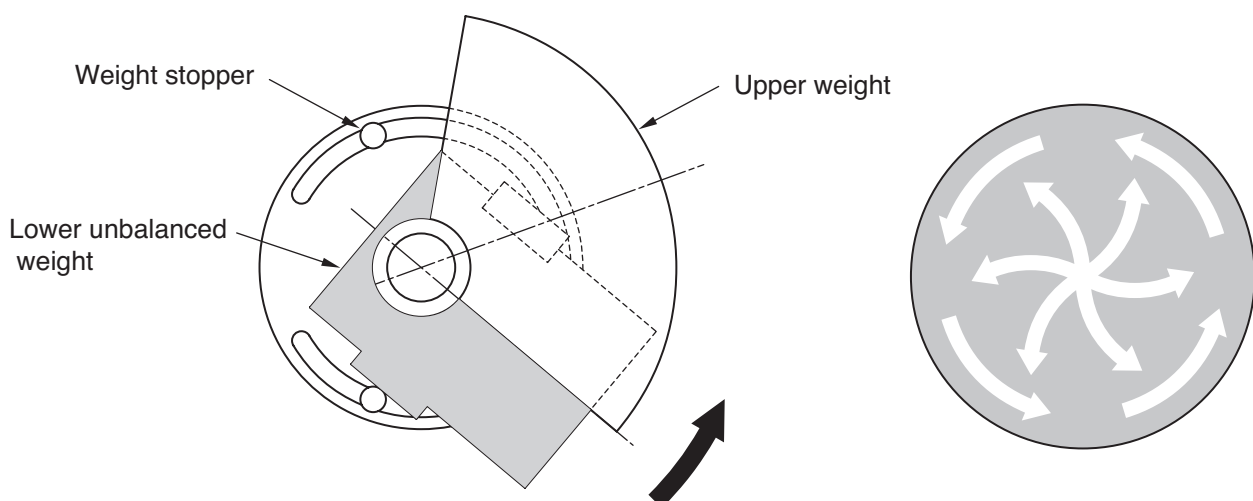


**Before performing the adjustment of the lower weight, make sure that the power supply (i.e. circuit breaker) has been properly disconnected and that the rotation of the vibrating body has stopped completely. In addition, indicate on the Control Panel that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious accident.**

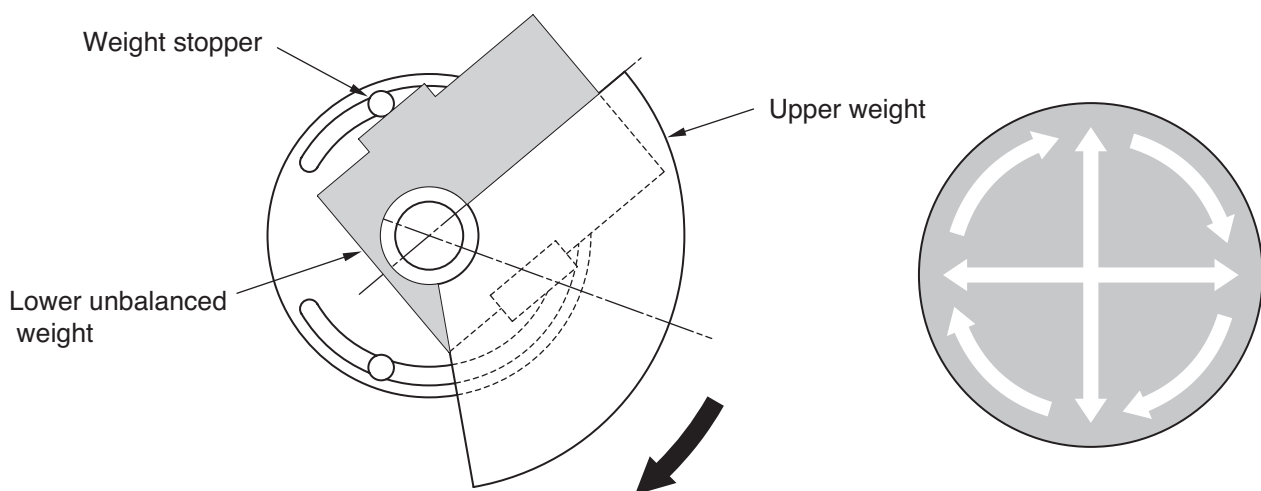
### The upper/lower weight phases and the material movement during sorting and discharging

According to the direction of the rotation of the motor, the lower weight moves by centrifugal force and is secured by the stopper to create vibrations. For sorting and discharging, the phases of the upper and lower weights can be individually adjusted to a desired position.

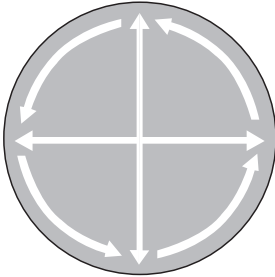
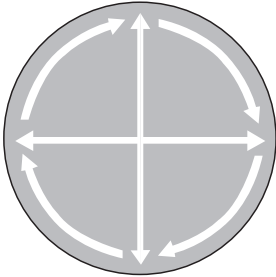
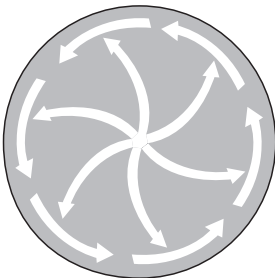
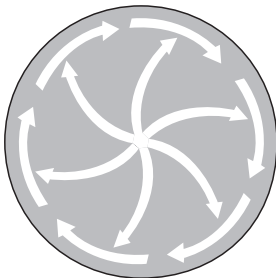
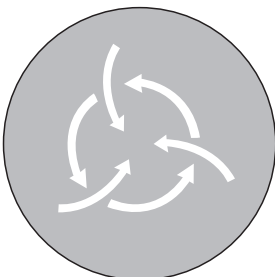
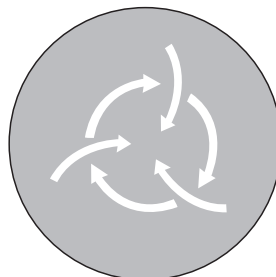
#### ● Negative (−) phase angle (shown in red) during sorting (counterclockwise rotation)



#### ● Positive (+) phase angle (shown in black) during discharging (clockwise rotation)



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

Sorting phase angle Counterclockwise※1	Movement of material on screen	Sorting phase angle Clockwise※1	Movement of material on screen
Angle 0°		Angle 0°	 The substance on the sifter screen advances outward in a straight line.
Angle -45°		Angle 45°	 The substance on the sifter screen advances outward in a spiral motion.
Angle -90°		Angle 90°	 The substance on the sifter screen advances towards the center in a spiral motion.

※1 Direction of rotation of the vibrating body

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

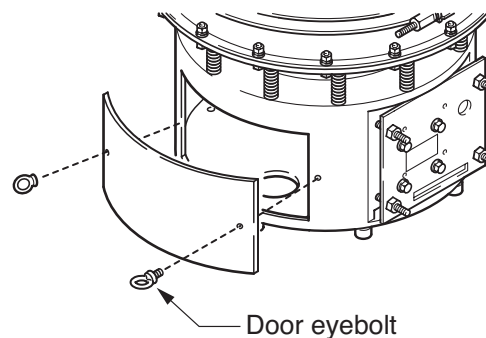
## Changing the position of the lower weight stoppers



### WARNING!!

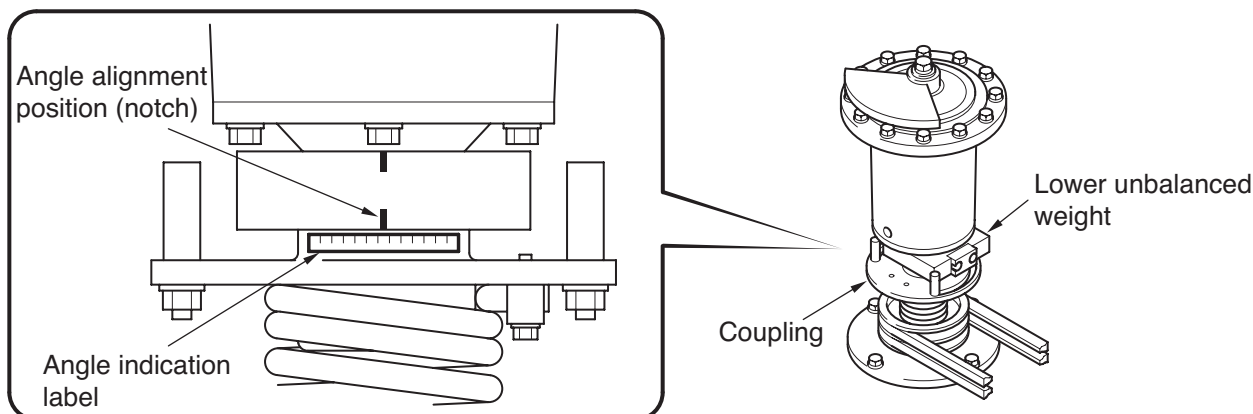
Make sure the doors are attached to both sides of the Vibrating Sifter unit after completing the adjustment of the lower weight. Operating the unit with the doors detached may lead to a serious accident, as a loose or damaged cushion rubber or weight stopper could be flung from the unit.

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



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

- (2) Loosen the hard lock (M10) of the weight stopper. Align the notch portion of the lower unbalanced weight to the desired angle as indicated on the angle indication label, which is affixed to the coupling.



- (3) The scale of the angle indication label on the coupling reads 0~90°(shown in red) to the left, and 0~90° (shown in black) to the right.
- (4) Tighten the hard lock (M10) of the weight stopper.
  - Tightening torque = 650~750kgf·cm (for M14 bolt)
  - = 90~110kgf·cm (for M10 hexagon socket set screw)
- (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.



# 7

## 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 rotation of the vibrating body has stopped completely. In addition, indicate on the Control Panel or the like that the unit is undergoing repairs. Failure to observe this precaution may lead to a serious accident.
- During the inspection of the Vibrating Sifter unit, also refer to the Control Panel Operation Manual. In case of a malfunction in the Vibrating Sifter unit, it could be the result of an improper operation of the Control Panel, which could lead to a serious accident or electrical shock.

Carefully read this Operation Manual as well as the Type F and G 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.

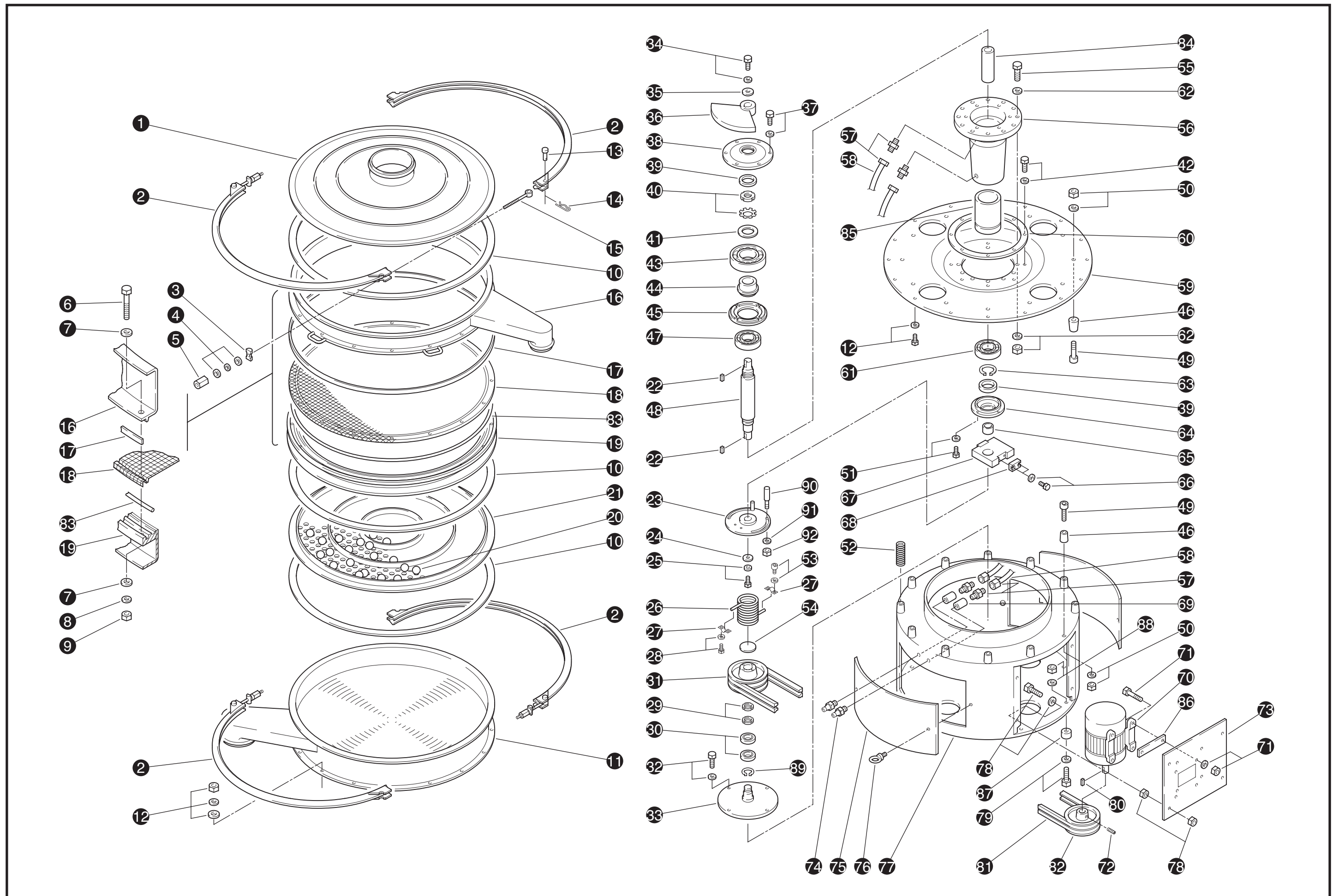
# 8

## Assembly Diagrams

### KFR type parts list

Number	Name	Material	Surface treatment	Number	Name	Material	Surface treatment
1	Cover	SUS304		47	Ball bearing	Commercially available	
2	Band	SUS304		48	Shaft	S45C	
3	Cotter	AC2A		49	Spring retainer mounting hexagon socket bolt	SS400	Chromium plating
4	Pinbolt spring washer, washer	SUS304		50	Spring retainer mounting nut, spring washer	SS400	Chromium plating
5	Pinbolt long nut	C3604BD		51	Lower bearing cover mounting bolt, spring washer	SUS304	
6	Screen tightening bolt	SUS304		52	Frame holder spring	SWPA	Nylon coating
7	Screen tightening bolt, washer	SUS304		53	Bracket hexagon socket bolt, spring washer	SS400	
8	Screen tightening bolt, spring washer	SUS304		54	V-wheel seal	A ℓ	Coating
9	Screen tightening bolt, nut	C3604BD		55	Vibrating body mounting bolt	11T	
10	Packing	Natural rubber		56	Vibrating body	FC250	Coating
11	Lower frame	SUS304		57	Grease connector	C3604BD	
12	Lower frame mounting bolt, nut, spring washer, washer	SUS304		58	Grease hose	Nylon	
13	Band pin	SS400	Chromium plating	59	Vibrating body base	SS400	Hot dip galvanizing
14	Round pin	SUS304		60	Outer ring	SS400	
15	Pin bolt	SUS304		61	Lower roller bearing	Commercially available	
16	Upper frame - top	SUS304		62	Vibrating body mounting nut, spring washer	SS400	Chromium plating
17	Screen tension ring	SUS304		63	Snap ring	Commercially available	
18	Screen	Commercially available		64	Lower bearing cover	FC250	Coating
19	Upper frame - bottom	SUS304		65	Bushing	Commercially available	
20	Tapping rubber nugget (ball)	Natural rubber		66	Bushing mounting bolt, spring washer, washer	SS400	Chromium plating
21	Ball holder	SUS304		67	Lower unbalanced weight	SS400	Chromium plating
22	Key	Commercially available		68	Cushion rubber	Urethane	
23	Coupling	SS400	Chromium plating	69	Grease socket	SS400	
24	Coupling washer	SS400	Chromium plating	70	Motor	Commercially available	
25	Coupling mounting bolt, spring washer	SS400	Chromium plating	71	Motor mounting bolt, nut, spring washer	SS400	Chromium plating
26	Drive spring	SWOSM-B		72	Hexagon socket set screw	SS400	
27	Drive spring bracket	SS400	Chromium plating	73	Motor base	SS400	Hot dip galvanizing
28	Bracket bolt, spring washer	SUS304		74	Grease nipple	SS400	Chromium plating
29	Crown nut	Commercially available		75	Door	SS400	Hot dip galvanizing
30	Ball bearing	Commercially available		76	Door mounting eyebolt	SS400	Chromium plating
31	V-wheel coupling	FC250	Coating	77	Base	SS400	Hot dip galvanizing
32	V-wheel shaft mounting bolt, spring washer	SS400	Chromium plating	78	V-belt adjustment bolt, nut, washer	SS400	Chromium plating
33	V-wheel shaft	SS400	Coating	79	Vibroisolating rubber mounting bolt, washer	SS400	Chromium plating
34	Upper weight tightening bolt, spring washer	SS400	Chromium plating	80	Key	Commercially available	
35	Upper weight washer	SS400	Chromium plating	81	V-belt	Commercially available	
36	Upper weight	FC200	Coating	82	V-pulley	FC250	
37	Upper bearing cover mounting bolt, spring washer	SUS304		83	O-ring	Urethane	
38	Upper bearing cover	FC250	Coating	84	Inner collar B	SS400	
39	Oil seal	Commercially available		85	Outer collar B	SS400	
40	Crown nut, star washer	Commercially available		86	Motor liner	SS400	Chromium plating
41	Collar	SS400		87	Vibroisolating rubber	Natural rubber	
42	Outer ring mounting bolt, spring washer	SS400	Chromium plating	88	Vibroisolating rubber mounting nut, spring washer	SS400	Chromium plating
43	Upper roller bearing	Commercially available		89	Snap ring	Commercially available	
44	Inner collar A	S45C		90	Weight stopper	SS400	Chromium plating
45	Outer collar A	S400		91	G1 washer	Commercially available	
46	Spring retainer	SSS400	Hot dip galvanizing	92	Hard lock	Commercially available	

# KFR type assembly diagram (example: KFR-1000 type)

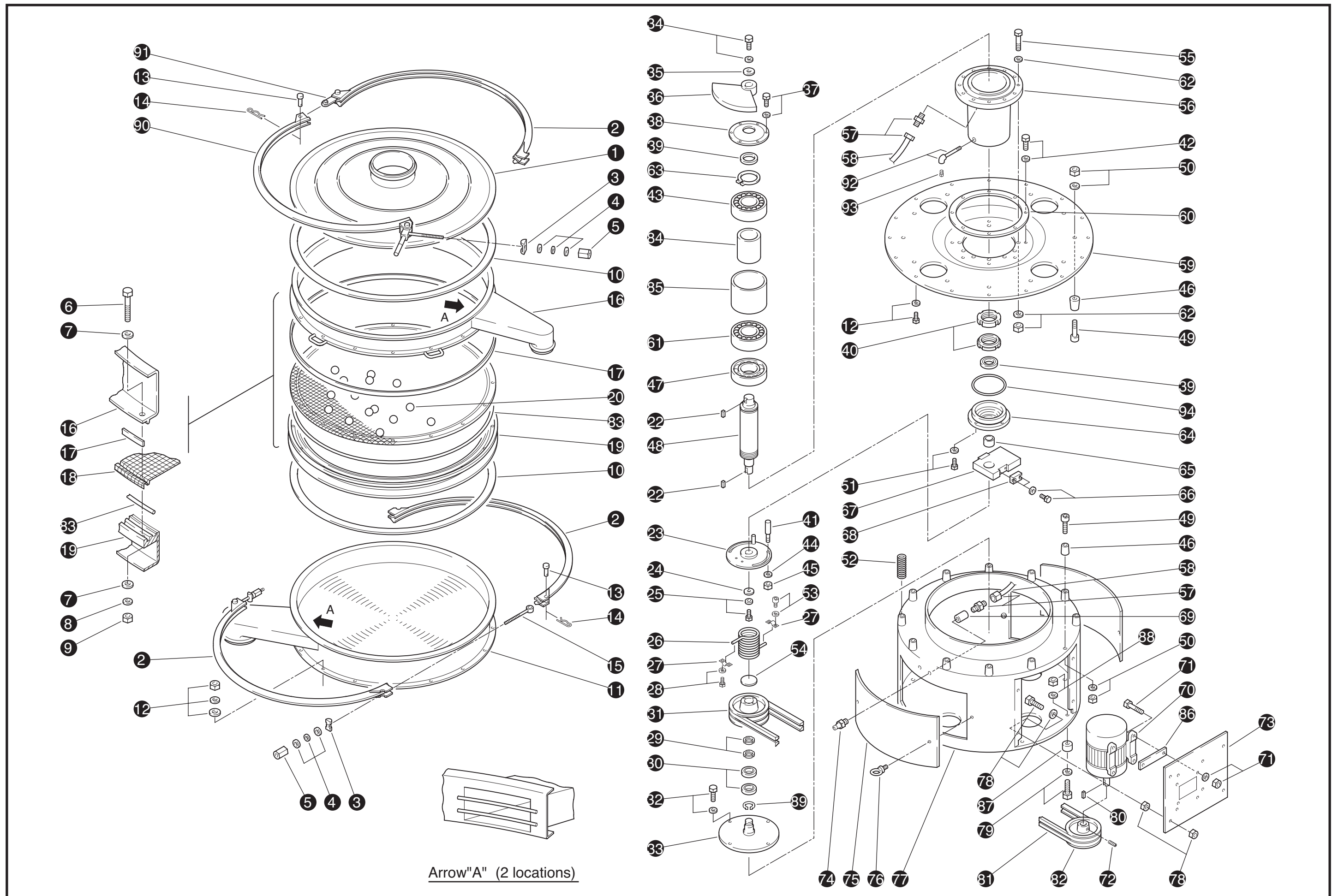


KGR type parts list

Number	Name	Material	Surface treatment	Number	Name	Material	Surface treatment
1	Cover	SUS304		49	Spring retainer mounting hexagon socket bolt	SS400	Chromium plating
2	Band	SUS304		50	Spring retainer mounting nut, spring washer	SS400	Chromium plating
3	Cotter	AC2A		51	Lower bearing cover mounting bolt, spring washer	SUS304	
4	Pinbolt spring washer, washer	SUS304		52	Frame holder spring	SWPA	Nylon coating
5	Pinbolt long nut	C3604BD		53	Bracket hexagon socket bolt, spring washer	SS400	
6	Screen tightening bolt	SUS304		54	Bearing holder	A ℓ	Coating
7	Screen tightening bolt, washer	SUS304		55	Vibrating body mounting bolt	11T	
8	Screen tightening bolt, spring washer	SUS304		56	Vibrating body	SS400	Coating
9	Screen tightening bolt, nut	C3604BD		57	Grease connector	C3604BD	
10	Packing	Natural rubber		58	Grease hose	Nylon	
11	Lower frame	SUS304		59	Vibrating body base	SS400	Hot dip galvanizing
12	Lower frame mounting bolt, nut, spring washer, washer	SUS304		60	Outer ring	SS400	
13	Band pin	SS400	Chromium plating	61	Lower roller bearing	Commercially available	
14	Round pin	SUS304		62	Vibrating body mounting nut, spring washer	SS400	Chromium plating
15	Pin bolt	SUS304		63	Snap ring	Commercially available	
16	Upper frame - top	SUS304		64	Lower bearing cover	SS400	Coating
17	Screen tension ring	SUS304		65	Bushing	Commercially available	
18	Screen	Commercially available		66	Bushing mounting bolt, spring washer, washer	SS400	Chromium plating
19	Upper frame - bottom	SUS304		67	Lower unbalanced weight	SS400	Chromium plating
20	Tapping rubber nugget (ball)	Silicon		68	Cushion rubber	Urethane	
22	Key	Commercially available		69	Grease socket	SS400	Chromium plating
23	Coupling	SS400	Chromium plating	70	Motor	Commercially available	
24	Coupling washer	SS400	Chromium plating	71	Motor mounting bolt, nut, spring washer	SS400	Chromium plating
25	Coupling mounting bolt, spring washer	SS400	Chromium plating	72	Hexagon socket set screw	SS400	
26	Drive spring	SWOSM-B		73	Motor base	SS400	Hot dip galvanizing
27	Drive spring bracket	SS400	Chromium plating	74	Grease nipple	SS400	Chromium plating
28	Bracket bolt, spring washer	SUS304		75	Door	SS400	Hot dip galvanizing
29	Crown nut	Commercially available		76	Door mounting eyebolt	SS400	Chromium plating
30	Ball bearing	Commercially available		77	Base	SS400	Hot dip galvanizing
31	V-wheel coupling	FC250	Coating	78	V-belt adjustment bolt, nut, washer	SS400	Chromium plating
32	V-wheel shaft mounting bolt, spring washer	SS400	Chromium plating	79	Vibroisolating rubber mounting bolt, washer	SS400	Chromium plating
33	V-wheel shaft	SS400	Coating	80	Key	Commercially available	
34	Upper weight tightening bolt, spring washer	SS400	Chromium plating	81	V-belt	Commercially available	
35	Upper weight washer	SS400	Chromium plating	82	V-pulley	FC250	
36	Upper weight	FC200	Coating	83	O-ring	Urethane	
37	Upper bearing cover mounting bolt, spring washer	SUS304		84	Inner collar B	SS400	
38	Upper bearing cover	SS400	Coating	85	Outer collar B	SS400	
39	Oil seal	Commercially available		86	Motor liner	SS400	Chromium plating
40	Bearing locking nut	Commercially available		87	Vibroisolating rubber	Natural rubber	
41	Weight stopper	SS400	Chromium plating	88	Vibroisolating rubber mounting nut, spring washer	SS400	Chromium plating
42	Outer ring mounting bolt, spring washer	SS400	Chromium plating	89	Snap ring	Commercially available	
43	Upper roller bearing	Commercially available		90	One-touch band	SUS304	
44	G1 washer	Commercially available		91	Linkage plate	SUS304	
45	Hard lock	Commercially available		92	Waste or excess grease discharge pipe	SS400	Chromium plating
46	Spring retainer	SS400	Hot dip galvanizing	93	Grease plug	Commercially available	
47	Ball bearing	Commercially available		94	O-ring	Commercially available	
48	Shaft	S45C					



# KGR type assembly diagram (example: KGR-1000 type)



## 9 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 rotation of the vibrating body has stopped completely. In addition, indicate on the control panel 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 the Type F and G Operation Manual for further details on trial operation.



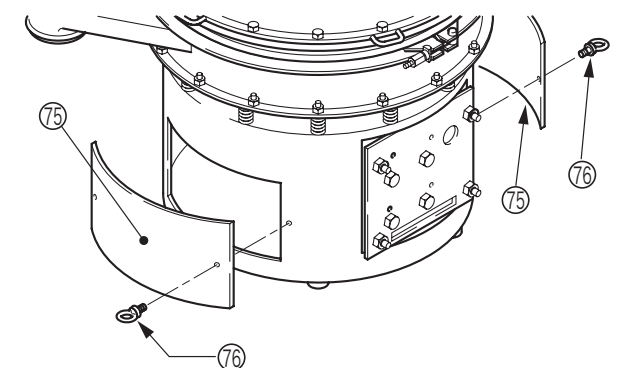
### CAUTION

The example illustrated in this section is for the KGR-1000 Type. The shape and the configuration of the unit may vary depending on the model. Also refer to the section "8. Assembly Diagrams" starting from page 14.

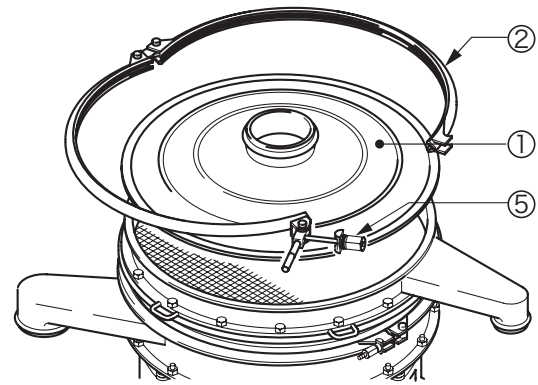
## Replacing the vibrating body

### ● Removal procedure

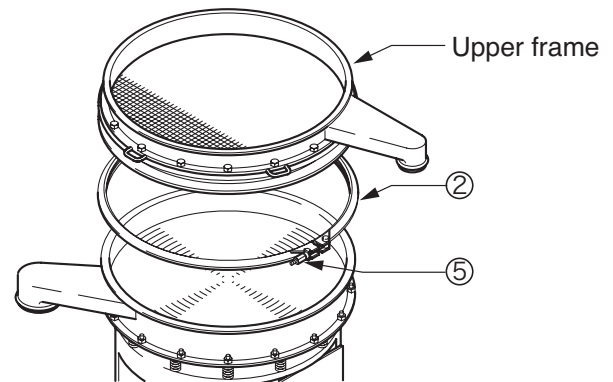
- (1) Detach the door eyebolts (76) and remove the door (75).



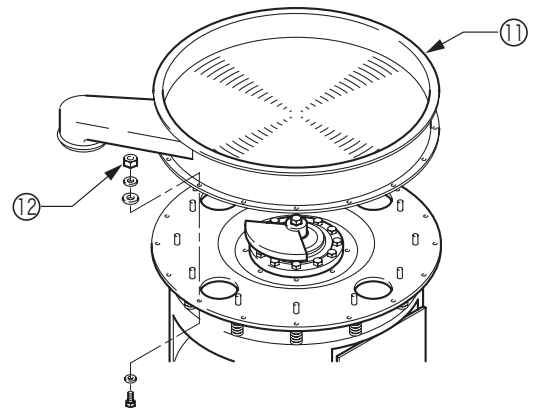
- (2) Loosen the long nut ⑤ for the pinbolt of the band ② and remove the band ② and the cover ① .



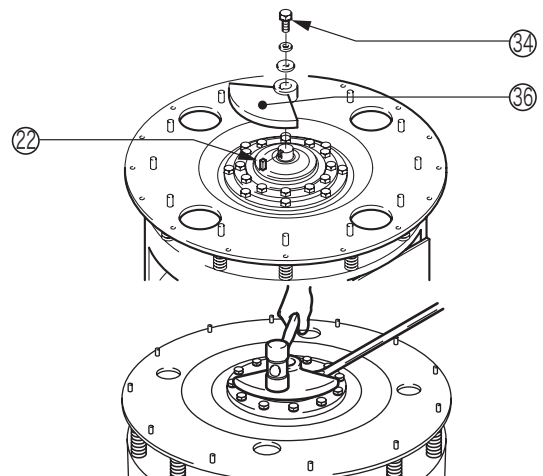
- (3) Loosen the long nut ⑤ for the pinbolt of the band ② and remove the band ② and the upper frame.



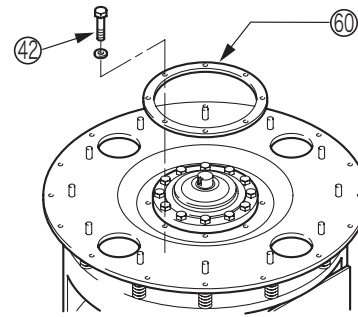
- (4) Detach the lower frame nuts ⑫ and remove the lower frame ⑪ .



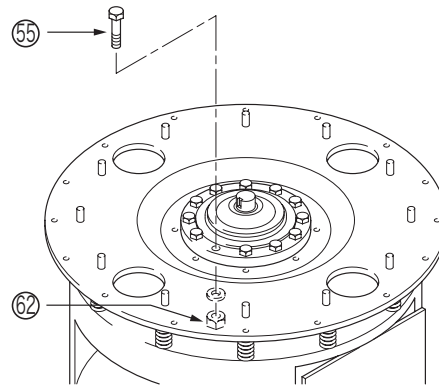
- (5) Detach the upper weight bolt ③④ . Using a wooden mallet, lightly tap around the upper weight ③⑥ , and use a stick to pry and remove the upper weight. At the same time, remove the key ②② .



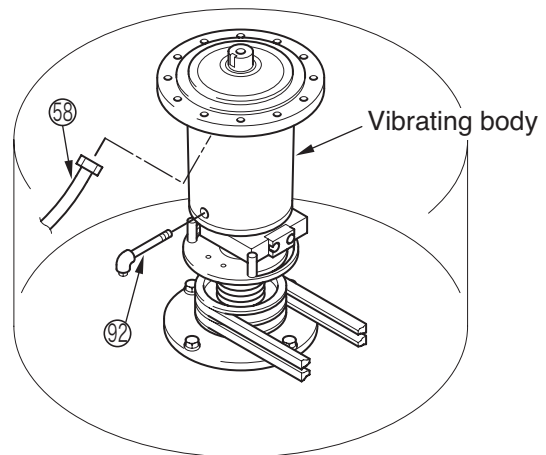
- (6) Detach the outer ring bolt ④② to remove the outer ring ⑥① .



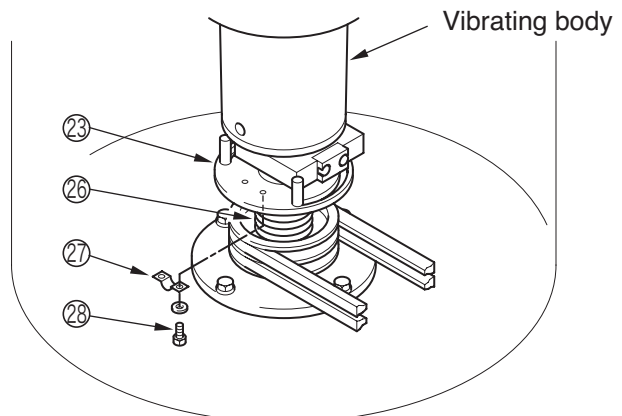
- (7) Remove the vibrating body mounting nuts and spring washers ⑥②, and the vibrating body mounting bolts ⑤⑤.



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



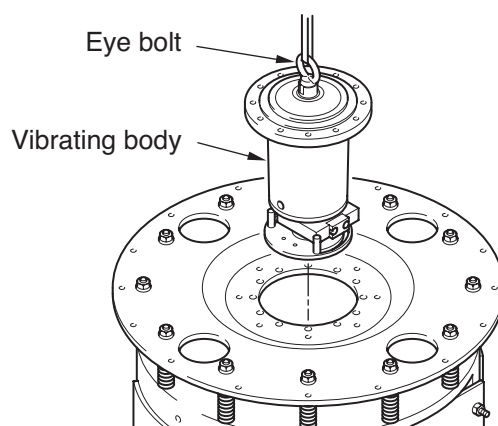
- (9) Detach the bracket bolt ②⑧ to remove the bracket ②⑦ of the coupling ②③, which connects the vibrating body and the drive spring ②⑥ .





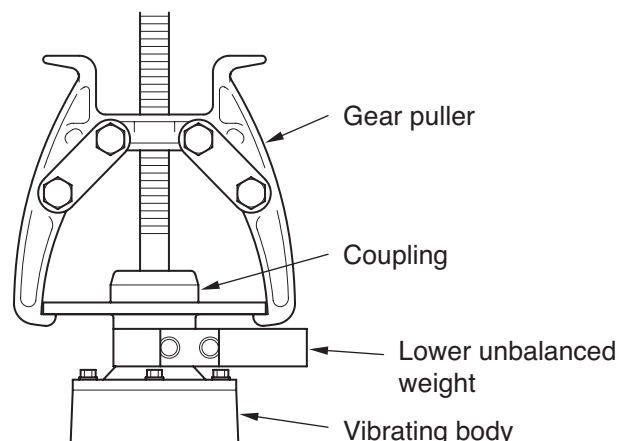
- (10) Suspend the vibrating body by attaching an eyebolt to the shaft of the vibrating body.

[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.

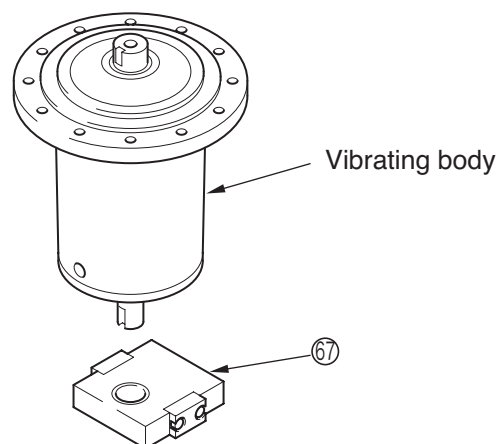



- (11) Detach the coupling bolt ②⑤. Using a gear puller, remove the coupling ②③ from the vibrating body. At the same time, remove the key ②②.

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



- (12) Remove the lower unbalanced weight ⑥⑦ 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 long nut for the pinbolt and the vibrating body mounting bolts.

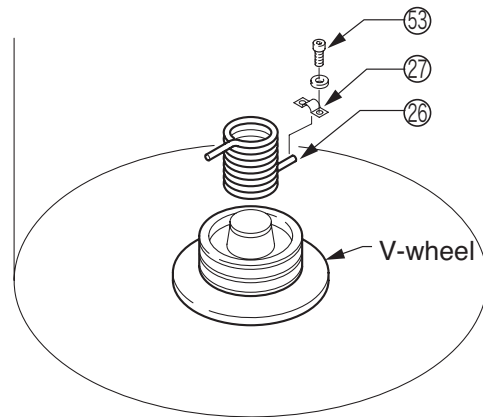
■ Long nut for pin bolt = 400~450kgf·cm

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

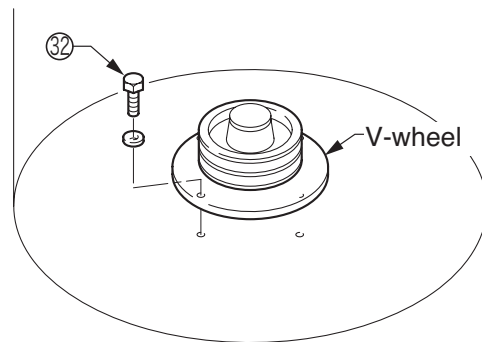
## Replacing the V-wheel


### ● Removal procedure

- (1) Lift the vibrating base in accordance with the steps described in "Adjusting or replacing the V-belt" on page 27.
- (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)".

