



HANDY-VIBRATOR SERIES HANDY HELD EXTERNAL VIBRATOR OPERATION MANUAL



EKCA • EKD

EXEN CORPORATION

☆ SAFETY PRECAUTIONS

- ☆ This product is for vibrating ready-mixed concrete from the outside of the formworks. Do not use the vibrator for any other purpose.
- ☆ Be sure to read and understand this operation manual carefully before using the product so that it can be operated safely and efficiently. Improper machine use may result in injury or machine failure. Keep this manual for further reference.
- ☆ The following symbols are DANGER, WARNING, and CAUTION instruction for the use of this product so that the product will not cause harm or damage to users or others.



DANGER

【DANGER】 indicates an imminent dangerous situation which may lead to death or serious injury.



WARNING

【WARNING】 refers to a hazard that may cause death or serious injury.



CAUTION

【CAUTION】 refers to a hazard that may cause minor or moderate injury.



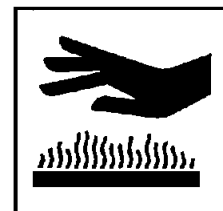
(To prevent death)

-  Please use power supply equipment that installs earth leakage circuit breaker.
It possibly causes electric shock although this product adopts double insulation structure.
-  Do not use the vibrator where rain or water may get into the motor.
If rain or water gets into the motor, the user may suffer an electric shock.



(To prevent injury or damages)

-  The business operator making use of this concrete vibrator has to manage working hours and must make efforts to prevent worker's health impairment comes from vibration.
Refer to the "Vibration total value" (page 13) section for the details about the vibration strength of the vibrator.
Observe the relevant legal requirements and guidelines of the country where the vibrator is used.
-  During work, hold a part with low vibration. Holding a part with high vibration for a long time (30 minutes or more) may cause injury due to vibration.
-  Use the vibrator only with the voltage specified on the nameplate.
Supplying a higher voltage will burn the motor. If the motor burns, the insulating parts may be damaged and the user may suffer an electric shock.
-  Do not swing the vibrator by holding the motor or cable.
There is a possibility that this could cause injury or damage to people or objects nearby.
-  The vibrator assembly becomes hot during operation. After use, be careful not to touch it. There is a risk of being burned.



○ INTRODUCTION

Thank you for purchasing the handy vibrator series external vibrator.

Be sure to read this operation manual before use.

Be sure to read and understand this operation manual carefully before using the product until it can be operated safely and efficiently. Handle and maintain it appropriately for safety operation.

Keep this manual for further reference.

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○ SAFETY



(For personal protection during operation)

- Put on a safety helmet, anti-vibration gloves, safety boots, face protection (safety glasses and mask), and safety harness before using the vibrator.



Safety helmet



Anti-vibration gloves



Safety boots



Face protector



Safety harness

- Ensure a footboard is placed when work on bad footing area such as on a rebar.
- If the product stops suddenly, turn the power switch "OFF" and remove the plug from the power supply equipment. If not, otherwise, the motor may burn or electric shock may occur.
- Vibration of the formwork may cause concrete to scatter around it. Use a face protector (safety glasses and mask) to protect your eyes and mouth.

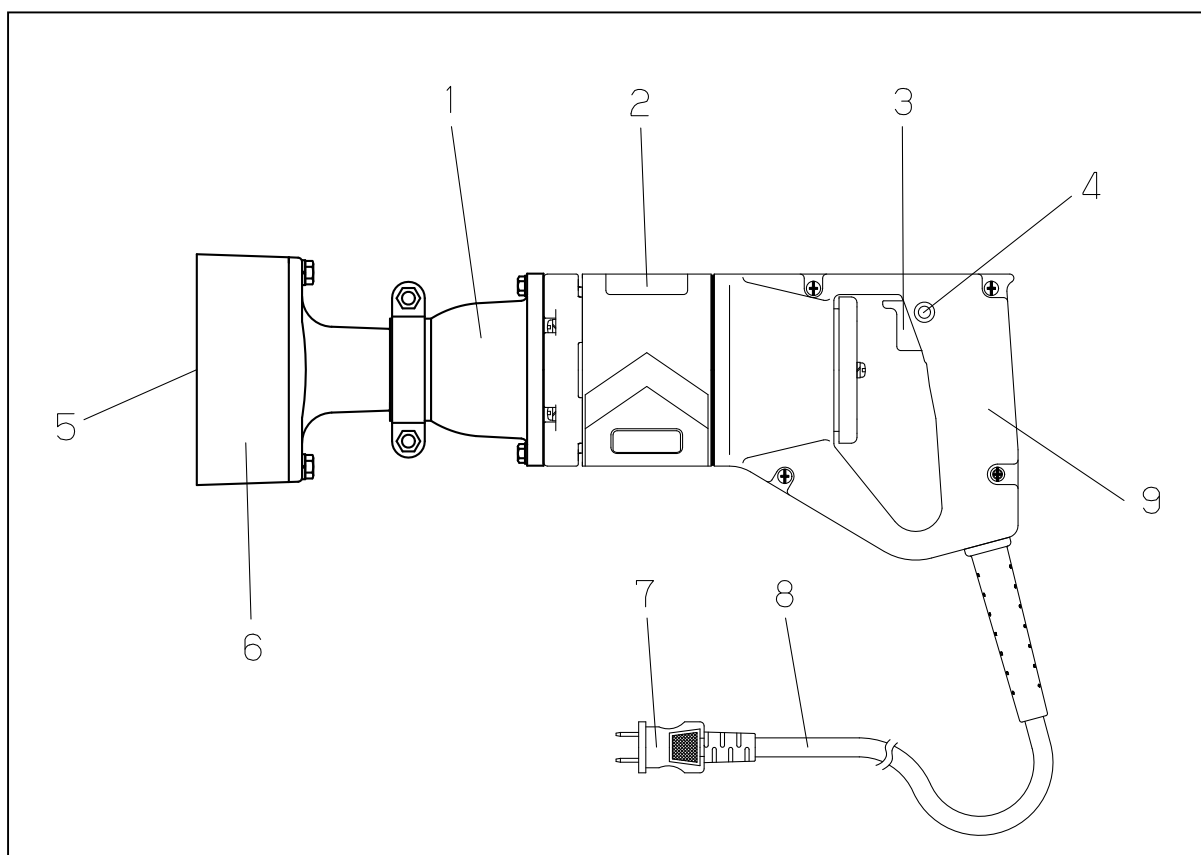


(For longer service life)

- In order the cable plug terminals always make good contact, remove any dirt or rust from them before inserting the plug into the outlet.
- Do not pull or suspend the cable from anything when placing concrete or moving. Otherwise, the cable may be break, causing malfunction.
- Do not place or drop any heavy objects on the cable. The cable may break and cause malfunction.
- If the vibrator is used at a location far from the power supply equipment, use an extension cable.

The maximum length of the extension cable should be 30m when a 2mm² cable is used.

○ NAMES OF PARTS



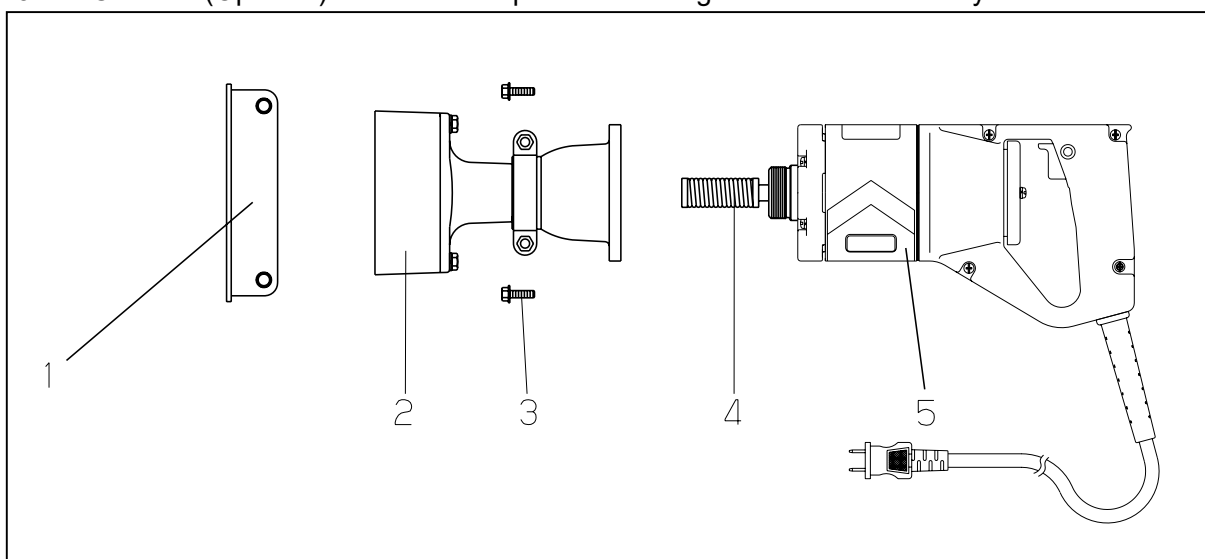
1	Rubber flange	6	Vibrating box
2	Label NPE	7	Plug
3	Switch	8	Cable
4	Push lock button	9	Handle covers
5	Vibrating surface	-	

○ HOW TO ASSEMBLY THE PARTS



Before connecting the motor to the vibrator assembly and holder, be sure to turn OFF the power switch on the motor and unplug the power plug from the power supply.

1. Screw the spring assembly onto the motor.
2. Insert the spring assembly (female) and the vibrator assembly (male), and then, secure the vibrator assembly with 4-M5 bolts.
3. KC holder (Optional) is available to prevent wearing the vibrator assembly.



- ▶ 1. Holder assembly 2. Vibrator assembly 3. Bolt M5X18 W 4. Spring assembly
5. Motor

○ OPERATIONS

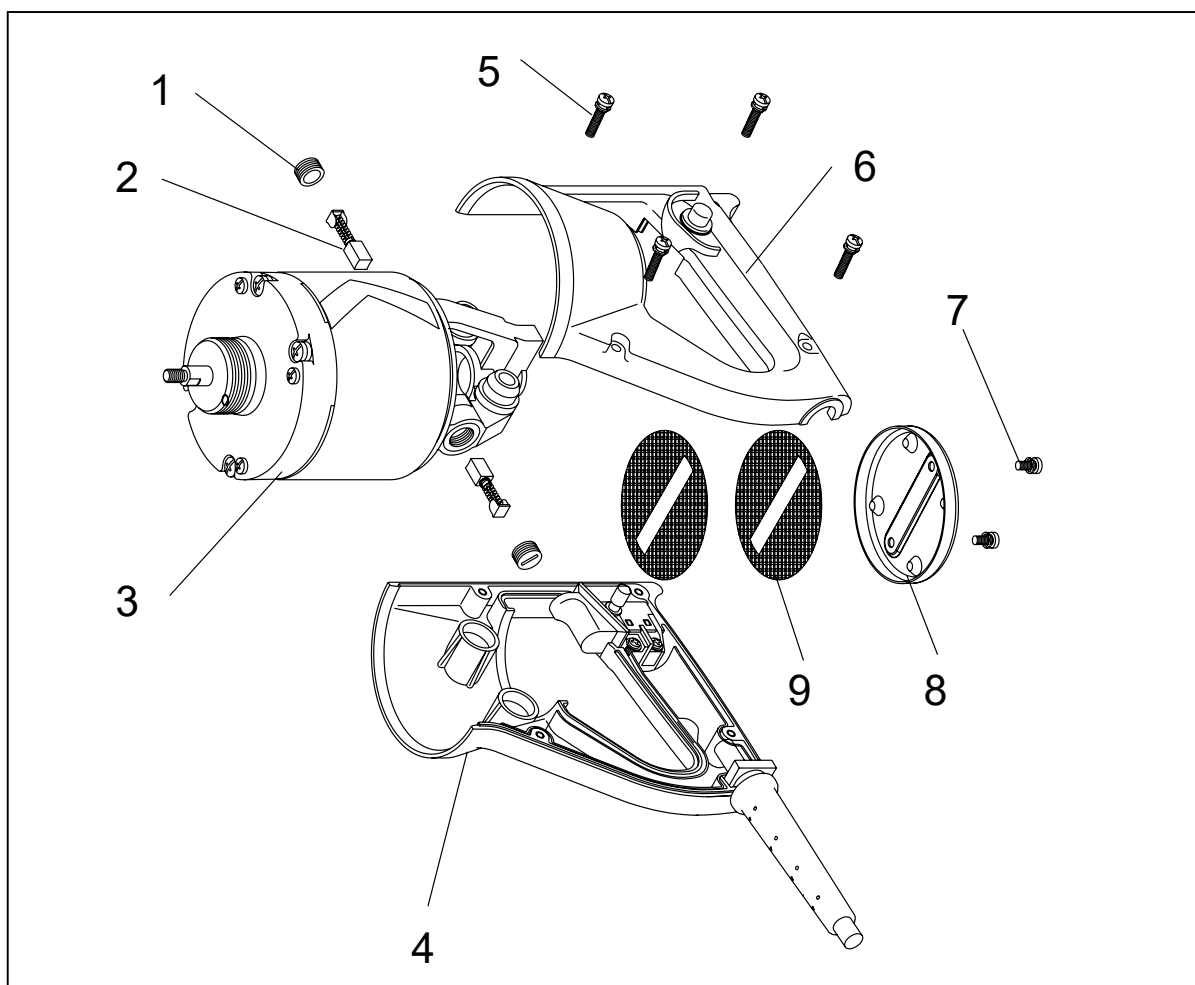
1. Make sure that the motor switch is OFF.
2. Make sure that the motor and vibrator assembly are securely connected.
3. Insert the motor plug into the power outlet on the power supply equipment.
4. Grab the motor and hang the vibrator.
5. Turn ON the switch of the motor.
Note : Push the switch lock button when use continuously.
6. Push the vibration surface against the formwork.
7. After work has been completed turn the motor switch OFF.
8. Remove the plug from power supply equipment.

○ REPLACING THE BRUSH

⚠ Before replacing the brush, be sure to turn "OFF" the power switch of the motor and unplug the power cable from the power supply.

1. Remove the screws that secure the air intake cover and remove the Air intake cover and filter.
2. Remove the screws of the motor handle and remove the handle cover.
3. Remove brush holder cap.
4. Pull the brush out of the brush holder and replace the brush.

Note : When change armature, be sure to remove brush to avoid the brush damage.



- ▶ 1. Brush holder cap 2. Brush 3. Motor 4. Motor handle 5. Screw 6. Handle cover
7. Screw 8. Air intake cover 9. Filter

○ CLEANING AND TRANSPORTATION AFTER USE

- After use, be sure to clean it well.
- 1. Be sure to remove dust attached to the vibrator before it becomes hardened.
- 2. Remove dust and concrete attached to the motor and/or cable completely.
- 3. When transporting the vibrator, hold the motor or vibrator. Do not pull the cable.

○ INSPECTION

- Before carrying the vibrator to the worksite and also after use, be sure to check the following. It will greatly help prevent problems during operation.
- 1. Are there any damage or wear on the vibrator assembly?
- 2. Looseness of the fix bolt on the vibrator assembly portion?
- 3. Are there any wear or cracks on the cable?
- 4. Is there any dirt or rust on the plug terminals?
- 5. Can the switch be turn "ON" and "OFF" properly?
(During shipment, the switch should always be turned "OFF".)
- 6. Switch lock function (Lock/Release)
- 7. Is the insulation resistance of the motor normal? (DC500V, 10MΩ or more)
- 8. Is the vibrator operation sound normal during operation?
(It is normal if there is regular and continuous sound.)

○ REPLACEMENT PERIOD FOR CONSUMABLES

○ Consumables should be replaced periodically according to the below table.

Consumables	Replacement period. (visual and auditory check)	Replacement frequency (in hours)
Vibrating box	Determined wear status (visual)	Upon found
Lubricating oil	Determined by the noise during operation (auditory)	100 - 200
Bearing	Determined by the noise during operation (auditory)	100 - 300
Brush	Determined wear status (visual)	200
Rubber Seal	Determine depending on the wear or scratches (visual)	Upon found
O-ring	Determined wear status (visual)	Upon found

Note: The above replacement time of consumable parts is a rough guide. Because it depends on usage, we recommend replacing consumables at earlier than the above.

○ TROUBLESHOOTING

Phenomenon	Sign	Cause	Solution
Vibrator operates	Noise (metallic or other noise)	Bearing abnormality (Rough, Worn)	Replace the bearings
		Lack of grease	Apply grease
		Bevel gear wear	Bevel gear exchange
	Vibration is weak	Field coil abnormality	Replace the field coil
		Armature abnormality	Replace the armature
	Does not vibration	Bevel gear wear	Bevel gear exchange
		Broken spring assembly	Replacement of spring assembly
Vibrator does not start	Humming noise	Bearing abnormality (Locking/Broken)	Replace the bearings
		Field coil abnormality	Replace the field coil
		Armature abnormality	Replace the armature
	No sound	Field coil disconnection	Replace the field coil
		Armature disconnection	Replace the armature
		Broken cable	Repair or replace the cable
		Worn brush	Replace the brush

○ SPECIFICATIONS

■ Specification

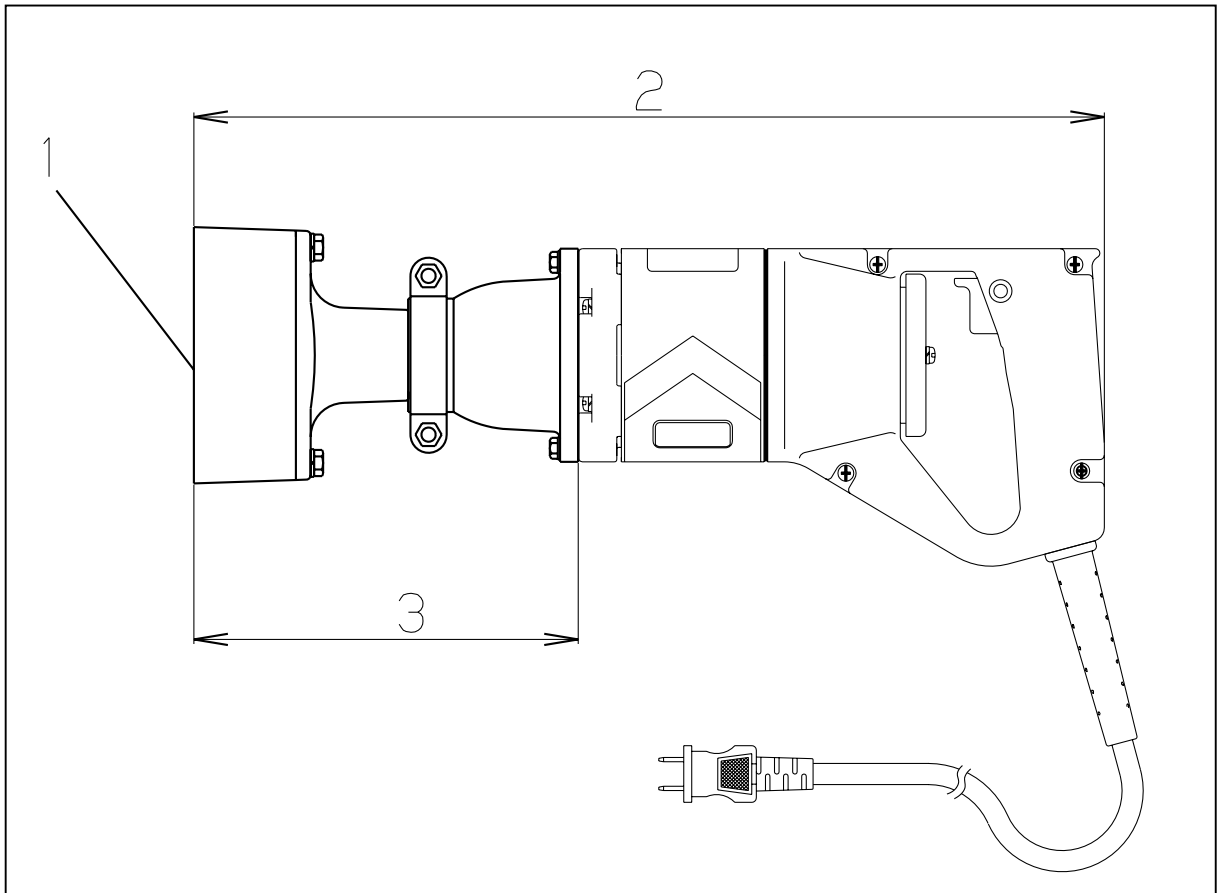
Model	Output (W)	Voltage (V)	Current (A)	Frequency (Hz)	Total height (mm)	Vibrating surface Width × Length (mm)	Mass (kg)
EKCA	280	100	5.0	160~200	404	76×113	4.7
With holder		110	4.5		407	120×150	5.8
		115	4.3				
EKD		200	2.5	140~180	424	110×150	5.9
		220	2.3				
With holder		230	2.2		427	200×200	7.6
		240	2.1				

■ Vibration total value

Model	Vibration total value (m/s ²)
EKCA	4.2
EKD	7.4

Note : Vibration total value is a value that uses the measuring instrument based on ISO 5349-1, and it was measured by the method found in ISO 5349-2.

■ Dimension drawing



▶ 1. Vibrating surface 2. Total height 3. Vibrator assembly

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