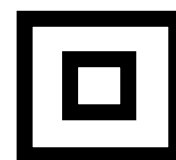


Mikasa



Double insulation

PORTABLE CONCRETE VIBRATOR

MGZ-F100A (110V)

INSTRUCTION MANUAL

en



<http://www.mikasas.com>



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1. Introduction

- This instruction manual describes the correct operation method of MGZ-F100A Portable Concrete Vibrator and its easy inspection and maintenance. To enhance your work efficiency and to make your work more effective, please read this manual before using the vibrator.
- After you finish reading, please keep this manual at hand so that you can refer to it whenever necessary.
- For repair parts, parts lists, service manuals and repair requests, please contact your distributor, our sales office or Mikasa Parts Service Center.
Parts lists are also available at our homepage, MIKASA website, at <http://www.mikasas.com>.

The illustrations in this instruction manual might differ in part from the actual product due to design change, etc.

2. Use of machine, warning, structure and power transmission

2-1. Use of machine

Portable concrete vibrator (MGZ-F100A), an external use portable vibrator, is for concrete casting of walls, pillars and joists with high bar arrangement density for which a vibrator used in the concrete cannot provide sufficient compacting. This vibrator, when pressed on the formwork panel, can give vibration to concrete from outside the form stop to prevent insufficient concrete filling and provide beautiful surface finish. Concrete casting in an area deep down the ground or anywhere far from the power source can be done easily by extending the cord. Because this vibrator is small and light, long work and machine handling can be done easily and safely.

2-2. Warning for incorrect applications and incorrect uses

Do not use this vibrator for purpose other than concrete compacting. The portable concrete vibrator (MGZ-F100A) should not be put directly in concrete. This is the vibrator to be used outside the concrete, and is supposed to be pressed on the outside of formwork. Never connect this vibrator to voltage other than 220V. If connected to wrong voltage, damage of the machine might occur, and there will be danger of electrification. To prevent the risk of electrification, make sure to use a breaker at the power source. Do not hold the vibrating head and the vibrating area near the vibrating head while you work. There is a risk of vibration induced disease.


2-3. Structure

At the end of this portable concrete vibrator (MGZ-F100A), there is a vibration part that can generate strong vibration. This part contains an eccentric pendulum that can generate vibration by using the rotary motion of a motor via a spring coupling. This motor is a commutator motor using voltage of 110V.

2-4. Power transmission

The power from a 220V power source rotates the commutator motor. Via the spring coupling, the motor rotating at high speed turns the eccentric pendulum, which generates vibration for concrete compaction. A switch is used to turn on and off the commutator motor.

2-5. Double insulation

This vibrator is marked with a “” symbol because two insulators are used as double insulation between the electricity conducting part and the outside frame that comes into contact with people.


Double insulation tools are highly safe against electrification.

If the existing part is replaced with a different part, or when the parts are assembled incorrectly, double insulation structure will be lost, and the vibrator might become unsafe to operate.


For disassembly/assembly of electric system and parts change or repair, please contact your distributor.


3. Warning signs


This manual explains the operation method of MGZ Type Portable Concrete Vibrators. Please work safely with our product by reading this manual and fully understanding the content.


The () mark used in this manual and the safety label on the machine are warning signs. For your safety, please follow the rule of warning signs.

Each () warning sign represents danger to people as shown below.

 **DANGER:** Extremely dangerous if the instruction is not followed, resulting in potential accident of death or serious injury.







 **WARNING:** Danger exists if the instruction is not followed, resulting in potential accident of death or serious injury.

 **CAUTION:** Potential for danger exists if the instruction is not followed, resulting in injury accident.

Caution (No  mark): Potential for physical damage if the instruction is not followed.

4. Cautions for safety

4-1 General cautions

<p> WARNING</p>	<ul style="list-style-type: none"> ● Do not work if one of the following conditions exists. <ul style="list-style-type: none"> ○ Your body condition is not good because of overwork or illness. ○ When you are under the influence of some medication. ○ When you are drinking. 	
<p> CAUTION</p>	<ul style="list-style-type: none"> ● Read the operation manual well and work safely by taking correct steps of operation. <ul style="list-style-type: none"> ○ Prevent the operation of the machine by someone who does not have sufficient knowledge of operation. ● Work in proper work clothes. <ul style="list-style-type: none"> ○ Always use protective gear (helmet, protective goggles, safety shoes, anti-vibration gloves, etc.) for safe operation of the machine, and wear appropriate work clothe. ○ For outdoor work, rubber gloves and slip-resistant shoes are recommended. ○ Long hair should be covered with a cap or hair cover. ● Please wear noise suppressing device. <ul style="list-style-type: none"> ○ When doing work that generates high level of noise, wear noise suppressing devices such as ear plugs or ear muffs. ● Check the machine carefully to make sure there is no breakage, crack or deformation. <ul style="list-style-type: none"> ○ Check also the cabtyre cord to make sure the conducting part is not exposed due to wear or crack. As the cabtyre cord wears relatively quickly, please replace with a new one at early timing. Also check the power outlet and the plug for breakage, deformation, burn or damage at the cord connection area. 	  

⚠ CAUTION	<ul style="list-style-type: none"> ● Always check the machine to see if there is any loosened bolt or abnormal part. Operate the machine after making sure the machine is in normal condition. ● The faceplate (operation method, warning information, etc.) on the machine is very important for safe operation of the machine. Clean the machine and always keep the information on the faceplate clearly legible. ● When the information on the faceplate (operation method, warning information, etc.) on the machine is difficult to read, replace it with a new one. ● It is dangerous if young children come into contact with the machine. Use some measure, such as "Do not enter" sign around the work area or proper storage (storage location) of the machine, to prevent children from coming near the machine. ● MIKASA is not responsible for remodeling without manufacturer's permission or accident caused by any use other than [warning for incorrect purpose and incorrect use]. 	
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4-2 Cautions before work

⚠ WARNING	<ul style="list-style-type: none"> ● Before working, carefully make sure that there is no buried pipe such as electric wire tubes, water pipes or gas pipes in the area where work is to be done. <ul style="list-style-type: none"> ○ If there are buried objects, the tool might touch them, causing an accident of electrification or electric leak, or gas leakage. ● Always keep the work area clean. <ul style="list-style-type: none"> ○ Unorganized littered work site is likely to cause accident. ● Consider the surrounding condition of work area. <ul style="list-style-type: none"> ○ Do not use the machine in rain, and when the plug or the outlet of vibrator and extension cord is wet. ○ Keep the work area sufficiently lighted. ○ Do not use the machine in the environment where there is flammable liquid gas nearby. 	
CAUTION	<ul style="list-style-type: none"> ● Noise prevention rule For noise, there are laws and rules established by the ordinances of each municipality. It is necessary to use the machine at below the specified allowable noise level to prevent noise problem in the vicinity. Depending on the situation, use noise shielding fence when working. 	
⚠ DANGER	<ul style="list-style-type: none"> ● Please check the followings before using the machine. Check the following items before plugging into the outlet. <ul style="list-style-type: none"> ○ Check the power source to be used. <ul style="list-style-type: none"> * Always make sure the power is the one shown on the faceplate. The power voltage you can use is 100-120V single phase. If you use the voltage that exceeds the display, the motor coil might be burned out. * If the voltage is low, the current flowing to the motor circuit increases and there arises potential for danger of burnout. Also do not use direct current power. That will result not only in damage of the product but also in accident. 	

⚠ DANGER	<ul style="list-style-type: none"> ○ Check of earth leakage braker. <ul style="list-style-type: none"> • Because this product is double insulation structure, the setting of earth leakage braker is exempted by a law. But this machine is very dangerous because it's used at a juicy place. Use electric leakage braker by all means.
⚠ WARNING	<ul style="list-style-type: none"> ○ Make sure the switch is turned off. <ul style="list-style-type: none"> • If the machine is plugged without knowing that the switch turned on, the machine starts to operate unexpectedly, causing an accident. The switch is turned on when it pulled trigger, and turned off when separated trigger. • Always check that the switch can be turned on and off by pulling and separating of the trigger.
⚠ WARNING	<ul style="list-style-type: none"> ○ Check the assembly of motor and vibration absorber <ul style="list-style-type: none"> • Before starting, check the cylindrical vibration absorber of the vibrator to make sure it is assembled straight to the front cover (front side closed) of the motor without any damage. (With MGZ-F100A, the cylindrical vibration absorber is fixed with bolts.)
⚠ WARNING	<ul style="list-style-type: none"> ○ Check of the plug and power outlet. <ul style="list-style-type: none"> • If you experience looseness when the plug is inserted into the outlet, or if the plug comes off from the outlet, you need some repair. If used without repair, overheating might occur, resulting in an accident.
CAUTION	<ul style="list-style-type: none"> ○ (Connection) Extension cord <ul style="list-style-type: none"> • Use an (connection) extension cord that is not damaged. • If the power source is far away from the machine and you need an extension cord, use the one with sufficient size that allows the flow of necessary current, and try to make the length of the cord as short as possible for maximum efficiency and trouble free operation of the machine. • Use the extension cabtyre cord of thickness more than core line 1.25 mm². • As the cord gets longer, the voltage becomes lowered in proportion to the length, which results in poor motor starting operation and lowering of output. (MGZ type can extend approximately 50m at 2 mm².) • For outdoor use, use cabtyre cord or cabtyre cable connection (extension) cord.

4-3 Cautions during work

⚠ WARNING	<ul style="list-style-type: none"> ● Always be alert and pay careful attention to your work. <ul style="list-style-type: none"> ○ When using the vibrator, work very carefully with careful attention to the operation method, work method and the surrounding condition. ○ Use your common sense. ○ When you are tired, do not use the machine.
⚠ DANGER	<ul style="list-style-type: none"> ● Avoid sudden start. <ul style="list-style-type: none"> ○ Do not carry the machine with the switch turned on while connected to the power source. ○ Before plugging, make sure that the switch is turned off.
⚠ CAUTION	<ul style="list-style-type: none"> ● Do not handle the cord carelessly. <ul style="list-style-type: none"> ○ Do not pull the cord when trying to unplug it. ○ Do not use the machine by hanging it with the cord. ○ Do not put the cord near heat, oil or sharp corner.
⚠ DANGER	<ul style="list-style-type: none"> ● Do not use the vibrator that cannot be started or stopped by the operation of the switch.

<p>⚠ DANGER</p>	<ul style="list-style-type: none"> • If you notice abnormal condition of the machine or abnormal noise while using the machine, turn off the switch immediately to stop the machine. Then contact the sales store or the rental store to ask for inspection and repair. Electric leak or fire accident might occur.
<p>CAUTION</p>	
<p>⚠ WARNING</p>	
<p>⚠ WARNING</p>	

4-4 Cautions for maintenance

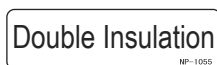
<p>⚠ WARNING</p>	<ul style="list-style-type: none"> • Before inspection and maintenance work, always turn off the switch and unplug from the power outlet. • Do maintenance work carefully. <ul style="list-style-type: none"> ○ Check the cord regularly, and if damage is detected, contact the sales store for repair. ○ If repair is done by someone without proper repair knowledge or skill, the machine will not function properly, and even accident and injury might occur. ○ When using a connection (extension) cord, check it regularly and if damage is detected, replace it with a new one. ○ Keep the holding part dry and clean all the time. Keep the holding part free of oil and grease.
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4-5 Labeling position

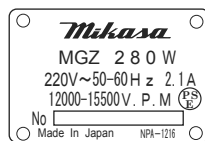
Fig.No.	Part No.	Part name	Remark
105	9202-12160	Nameplate, Product No./MGZ	NPA-1216
103	9201-10460	Nameplate, Combination of caution labels	NP-1046
106	9201-10550	Nameplate, Double insulation	NP-1055



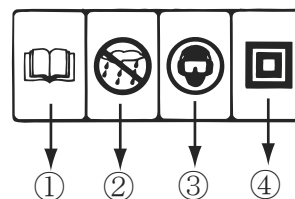
No.106



No.105



No.103



4-6 Descriptions of symbols used on safety label

- ① **Read the instruction manual carefully.**
Read the instruction manual before use, and operate the machine safely.
- ② **Do not use in rain (to avoid electrification, short circuit).**
Do not use the machine in rain.
Do not wash with water.
Do not leave the machine in rain without covering.
Do not transport the machine in rain without covering.
- ③ **Wear ear and eye protection gear**
- ④ **Double insulation**
Double insulation structure. Grounding not required.

5. Appearance

5-1 Outline drawing (dimension and name of each part)

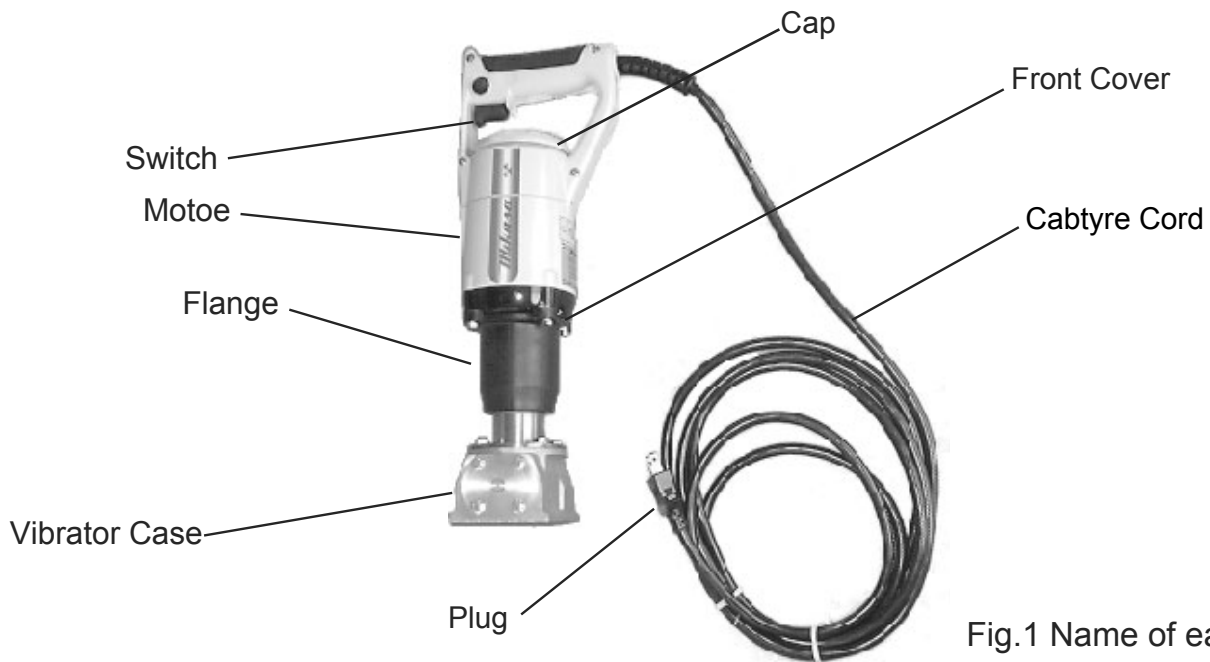


Fig.1 Name of each part

5-2 Specification

Model	LengthxDia. (mm)	Vibrato in board size (mm)	Vibration Hz(V.P.M.)	Use motor (Commutator motor)	Weight<Mass> (kg)
MGZ-F100A	395x78	78x100	166~200 (10,000~12,000)	280W 110V 4.1A	5.0

6. Concrete casting

- **Do not put the portable concrete vibrator (MGZ-F100A) directly into concrete.**
 - The portable concrete vibrator (MGZ-F100A) is a vibrator used from outside, so when using, press it on the outside of formwork.
- **When using, press the vibrating part on the formwork.**
 - To prevent excessive vibration from being applied, for concrete with slump of about 12 to 18cm, follow the standard of using at an interval of 30 to 50cm with the length of vibration applied at one site for about 15 seconds.
 - While the machine is vibrating, do not hold the vibrating portion directly with your hand.
- **When using, do not bend the cylindrical vibration absorber located between the motor and vibrating portion. Do not put nor drop a heavy object on the cylindrical vibration absorber.**
- **When moving the vibrator, do not drag the motor holding the Cabtyre cord or the vibration portion. Hold the motor handle when moving.**

7. Maintenance and storage

⚠ Danger • Always turn off the switch and unplug from the power outlet before starting check or maintenance work.

7-1 Check of bolts used to fix parts

- Regularly check the bolts used to fix parts to see if there is any looseness. If looseness is found, tighten again securely.
- If the machine is used with loosened bolts, an accident leading to injury might occur.

7-2 Remove the mortar that has adhered at the air vent (cap).

- If the air vent is clogged, overheating occurs, which might result in burnout. (Refer to Figure 1)

7-3 Checking bearing grease

- At every 50 to 100 hours, wipe off the old grease at the area where the motor is attached, then apply new grease. (Use grease that contains molybdenum.)
- At about 200 hours of operation, wipe off the old grease on pinion and gear part inside the vibrator case, then apply about 40g of new grease.
To disassemble the case, remove the cover at both ends of the case. The assembled pendulum axis can be taken out from one side. Wash inside and the pendulum bearing well. When a new bearing is used, fully fill grease in the bearing. To inside the vibrator case, do not put grease more than necessary.
- Use heat resistant grease that will not be deteriorated by change in temperature. Use [for example, Pyronoc No.2 of Nippon Oil Corporation (previously Nisseki Mitsubishi)].

⚠ Warning • For vibrator repair, please contact your distributor.

- This product complies with the applicable safety requirements. Please do not try to make alterations.
- For repair, please contact your distributor.
If repair is done by someone without proper knowledge and skill, it might result in the performance of the machine being compromised, and even there might arise a risk of accident or injury.
- **Check of carbon brush**
 - If you notice a drop in motor revolution or lowering of the force, remove the back cover of the motor to check the wear of carbon brush.
 - For MGX model, the carbon brush should be replaced with a new one when its remaining length is less than 5mm (length of new brush is 12mm).
Contact your distributor if you need to replace a carbon brush.

Caution • Make sure to use a MIKASA genuine carbon brush when replacing the carbon brush with a new one.

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