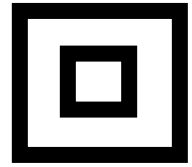


Mikasa



DOUBLE
INSULATION

PORTABLE VIBRATOR
(MOTOR VOLTAGE 220 - 240V)

UM-F23
UM-F28
UM-F32
UM-F38

INSTRUCTION MANUAL

en

We thank you for selecting Mikasa Portable Concrete Vibrator.
For your safe and proper operation, please read this manual and
be always sure to keep it ready for reference.



<http://www.mikasas.com>

202-01301



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1. Introduction

- This instruction manual describes the correct operation method of MGX portable 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 inquiries about repair parts, parts lists, service manuals, and repairs, please contact the store where you purchased the product, our sales office, or the Mikasa Parts Service Center. For parts lists, please visit our homepage at: <http://www.mikasas.com/> where you can access Mikasa WEB parts lists.

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 vibrator is for concrete compaction. During concrete casting, insert the vibrating end of this machine into the concrete. Gap will be eliminated from the concrete filled in the form, and the air bubbles contained in the concrete will be removed, which results in nice-looking well compacted concrete finish of high strength. 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 purposes other than concrete compaction. Also, do not remove the shaft to alter the motor and shaft to use them for other applications.

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


The portable vibrator consists of commutator motor part, vibration generating end part and flexible hose/flexible shaft part that connects the commutator motor to the vibration generating end. The combination of flexible hose/shaft part and motor part can be changed to meet the needs of each specific application.

2.4 Power transmission

The electricity from the power source runs the commutator motor. Via the flexible shaft, the motor running at high speed rotates the eccentric rotor, which makes the vibrating head to vibrate for concrete compaction.

2.5 Double insulation

A switch is used to turn on and off the commutator motor.


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

The triangle shaped  marks used in this manual and on the decals stuck on the main body indicate common hazards. Be sure to read and observe the cautions described.

 Warning labels indicating hazards to humans and to equipment.	
 DANGER	Denotes an extreme hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, is likely to result in serious injury or death.
 WARNING	Denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in serious injury or death.
 CAUTION	Denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury to people and may damage or destroy the product.
CAUTION (without at )	Failure to follow the instructions may result in damage to property.

4. CAUTIONS FOR SAFETY

4.1 General Cautions

WARNING

- Do not work if one of the following conditions exists.
 - you are tired or sick and not feeling well,
 - you have taken medicine or drug, or
 - you have had a drink.



CAUTION

- Read the operation manual well and work safely by taking correct steps of operation.
 - Prevent the operation of the machine by someone who does not have sufficient knowledge of operation.
- Work in proper work clothes.
 - 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.
 - 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.
 - 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.
- 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.



⚠ CAUTION

- 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].

4.2 Cautions before work

⚠ WARNING

- 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.
 - 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.
 - Unorganized littered work site is likely to cause accident.
- Consider the surrounding condition of work area.
 - 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

- 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

- Please check the followings before using the machine. Check the following items before plugging into the outlet.
- Check the power source to be used.
 - Always make sure the power is the one shown on the faceplate. The power voltage you can use is 220-240V 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

- Check of earth leakage braker.
 - 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

- Make sure the switch is turned off.
 - 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.
- Check the assembly of motor and flexible hose.
 - Check on whether the LOCK NUT of the flexible hose is completely tightened in a motor. (UM-F type is the left screw.)

⚠ WARNING

- Check of the plug and power outlet.
 - 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

- (Connection) Extension cord
 - 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 cable 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.(UM-F type can extend approximately 50m at 2 mm² .)
 - For outdoor use, use cable cord or cable connection (extension) cord.

4.3 Cautions during work

⚠ WARNING

- Always be alert and pay careful attention to your work.
 - 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.
- Avoid sudden start.
 - 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.
- Do not handle the cord carelessly.
 - 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.
- Do not use the vibrator that cannot be started or stopped by the operation of the switch.



⚠ DANGER

- 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.

⚠ CAUTION

- Do not operate continuously for a long time.
 - The rated time of the motor is 30 minutes. The rated time is the time that can be used at the rated output. Use within the rated time, and be sure to rest for the same amount of time (or longer) as the usage time.
- When not used, always turn off the switch.
- Do not use the machine with abnormal posture.
 - Always secure stable footing and keep good balance.

⚠ WARNING

- When working at high location, make sure that there is no one underneath. For safe work, use a safety wire to prevent the fall of the machine.
- Do not let children come near the machine.
 - Anyone other than the workers should not be allowed to touch the high frequency vibrator and extension cord.
 - Do not allow anyone other than the workers to come near the work area.

4.4 Cautions for maintenance

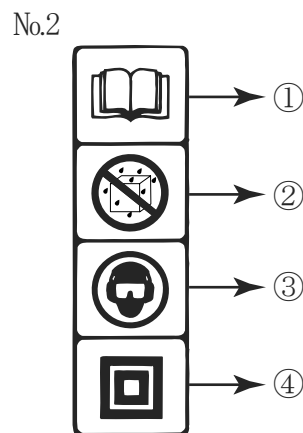
⚠ WARNING

- Before inspection and maintenance work, always turn off the switch and unplug from the power outlet.
- Do maintenance work carefully.
 - 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.



4.5 Labeling position

Fig.No.	Part No.	PartName	Remark
1	_____	DECAL, NAMEPLATE/UM-F	_____
2	9202-20400	DECAL, CAUTION(ICON)/UM-F	NPA-2040

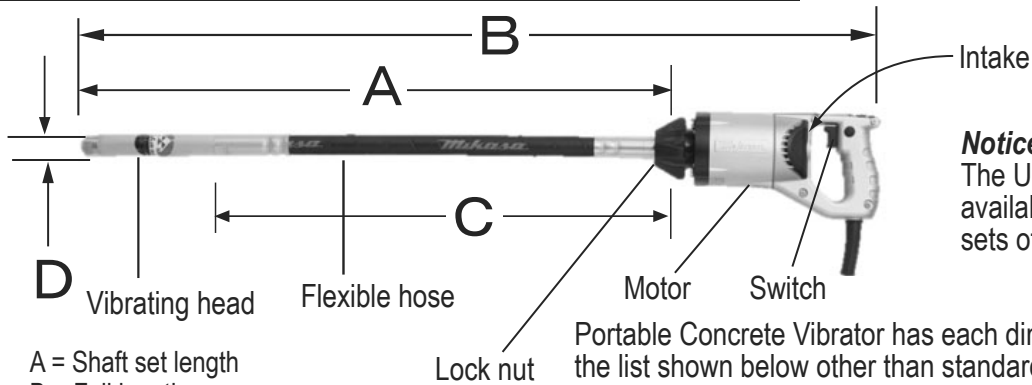


4.6 Descriptions of symbols used on safety label

- 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)



Notice:
The UM motor is available to the shaft sets of MGX series.

A = Shaft set length
B = Full length
C = Flexible hose length
D = Vibrating head diameter

Figure 1: Name of each part

Portable Concrete Vibrator has each dimensions of the list shown below other than standard length.

C=Name Hose length (m)	A= Shaft set length (mm)	B= Full length (mm)
Standard (0.6m)	770	1,030
1.0m	1,170	1,430
1.5m	1,670	1,930
2.0m	2,170	2,430

5.2 Specification

Model	Shaft set		Full (mm)	Shaft Dia. (mm)	Hose Dia. (mm)	Amplitude (mm)	Use motor (Commutator motor)	Vibration Hz(V.P.M)	Weight (kg)	
	Dia. <D>	Length <A>(mm)							Shaft set (0.6m)	Motor
UM-F23	23	770	1,030	8	20	1.2	280W	200 - 258	1.3	3.0 (With cord 5.5m)
UM-F28	28								1.7	
UM-F32	32								1.9	
UM-F38	38								2.2	

6. Concrete casting

● Before using the vibrator, do warm up for 2 to 3 minutes.

- When the ambient temperature is low, do warm up for more than 2 to 3 minutes before use.
- Securely insert the plug into the socket, and operate the switch quickly and properly.

CAUTION ● Before turning on the switch, take out the vibrating head of the vibrator out from the concrete.

- When the motor is started with the vibrating head in the concrete, the motor might not start if the voltage is low or some other unfavorable condition exists. If the switch is left turned on under such condition, the motor burnout might occur.

● Vertically insert the entire vibrating head in the concrete gently, then pull it out gently.

- In order to prevent excessive vibration from being applied, the standard insertion time for concrete of 12 to 18 cm slump should be about 15 sec. at one location for an interval of 30 to 50 cm.

● Do not immerse the motor part in the concrete.

- Only the part below the locknut may be immersed in the concrete.

CAUTION ● While using the vibrator, try not to bend the flexible hose too much. Also, do not put heavy objects on the hose, nor drop heavy objects on the hose.

- When moving the vibrator, do not drag the Cabtyre cord and the hose. Hold the motor handle when moving the vibrator.
- The rated time of the motor is 30 minutes. The rated time is the time that can be used at the rated output. Use within the rated time, and be sure to rest for the same amount of time (or longer) as the usage time.

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 Check of grease on flexible shaft and bearing

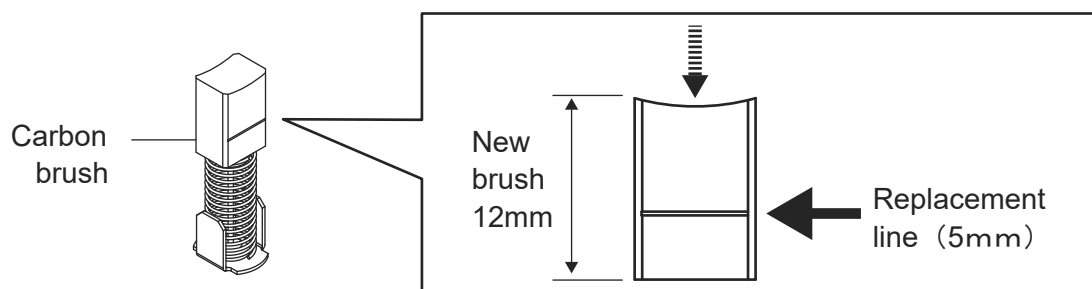
- After each operation of about 100 hours, cleanly wipe off the grease on the flexible shaft and bearing, then apply new grease evenly on the entire surface of the shaft. Pull out the rotor from the vibrating case, then wash well the inside of the case and the bearing of the rotor. When a new bearing is used, fill it sufficiently with grease. Do not put grease inside the case.
- 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 UM 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.

Mikasa

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