

Mikasa

PORTABLE VIBRATOR
(MOTOR VOLTAGE 110V~240V)

MGX-23
MGX-28
MGX-32
MGX-38

INSTRUCTION MANUAL

en



<http://www.mikasa.com>

208-02003



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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 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 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.

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 MGX 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 110-120V (Voltage display 120V) or 220-240V (Voltage display 220V) 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 flexible hose. <ul style="list-style-type: none"> • Check on whether the LOCK NUT of the flexible hose is completely tightened in a motor. (MGX type is the left screw.)
⚠ 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. (MGX 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>	

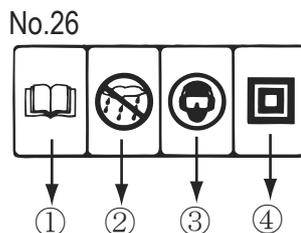
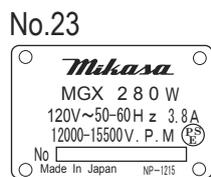
- **When not used, always turn off the switch.**
- **Do not use the machine with abnormal posture.**
 - Always secure stable footing and keep good balance.
- **When working at high location, make sure that there is no one underneath. For safe work, use a safety wire to prevent the fall of the machine.**
- **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

<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
23	9201-11100	Nameplate, Product No./MGX	
26	9201-10460	Nameplate, Combination of caution labels	NP-1046



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)

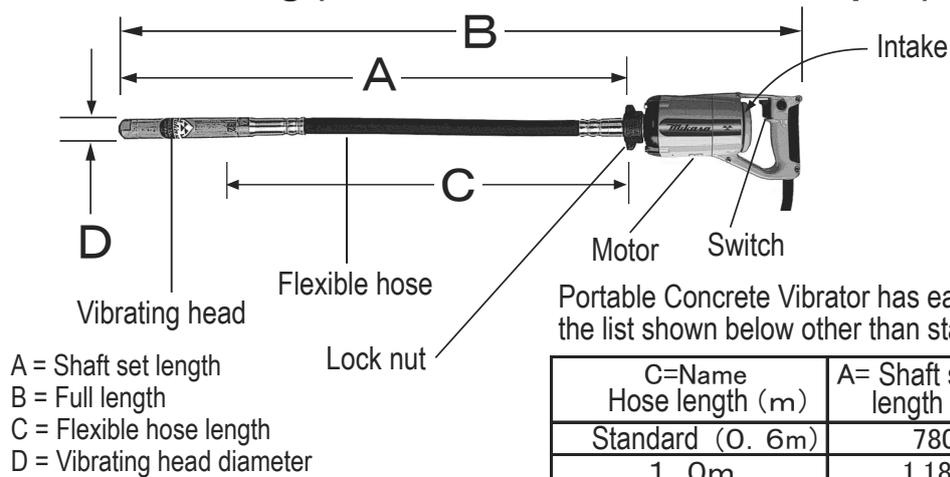


Figure 1: Name of each part

C=Name Hose length (m)	A= Shaft set length (mm)	B= Full length (mm)
Standard (0.6m)	780	1,035
1.0m	1,180	1,435
1.5m	1,680	1,935
2.0m	2,180	2,435

5-2 Specification

Model	Shaft set		Full (mm)	Shaft Dia. (mm)	Hose Dia. (mm)	Amplitude (mm)	Vibration Hz(V.P.M) (12,000~15,500)	Weight <Mass> (kg)	
	Dia. <D>	Length <A> (mm)						Shaft set (0.6m)	Motor
MGX-23	23	780	1,038	8	20	1.2	200~258	1.3	2.9 (With cord 4m)
MGX-28	28							1.7	
MGX-32	32							1.9	
MGX-38	38							2.2	
Use motor (Commutator motor)									
280W									
110V	120V	220V	230V	240V					
4.1A	3.8A	2.1A	2.0A	1.9A					

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.**

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 200 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)].

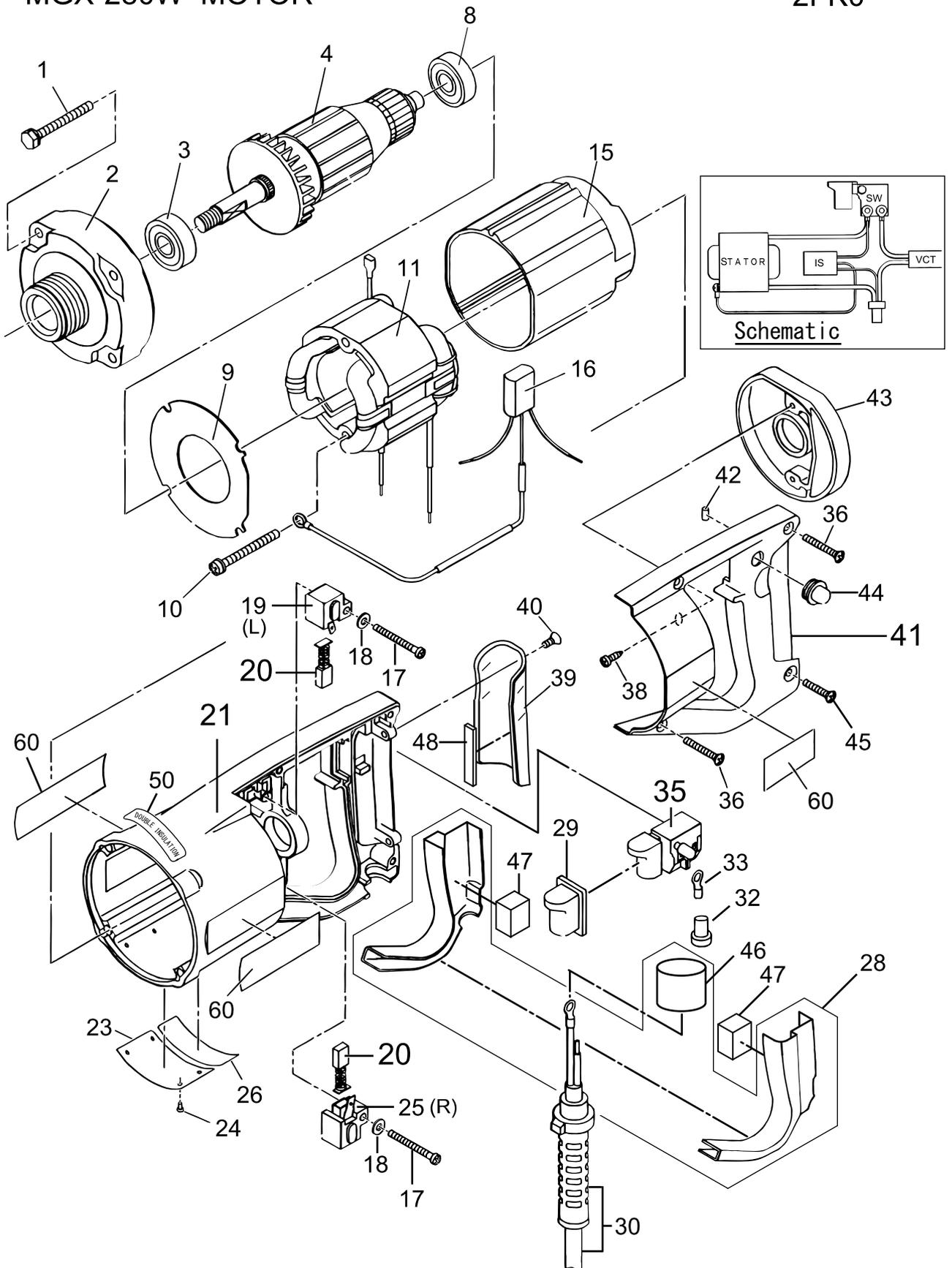
⚠ Warning • For vibrator repair, please contact your distributor.

- 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 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.

MGX-280W MOTOR

2FK0



MGX-280W MOTOR

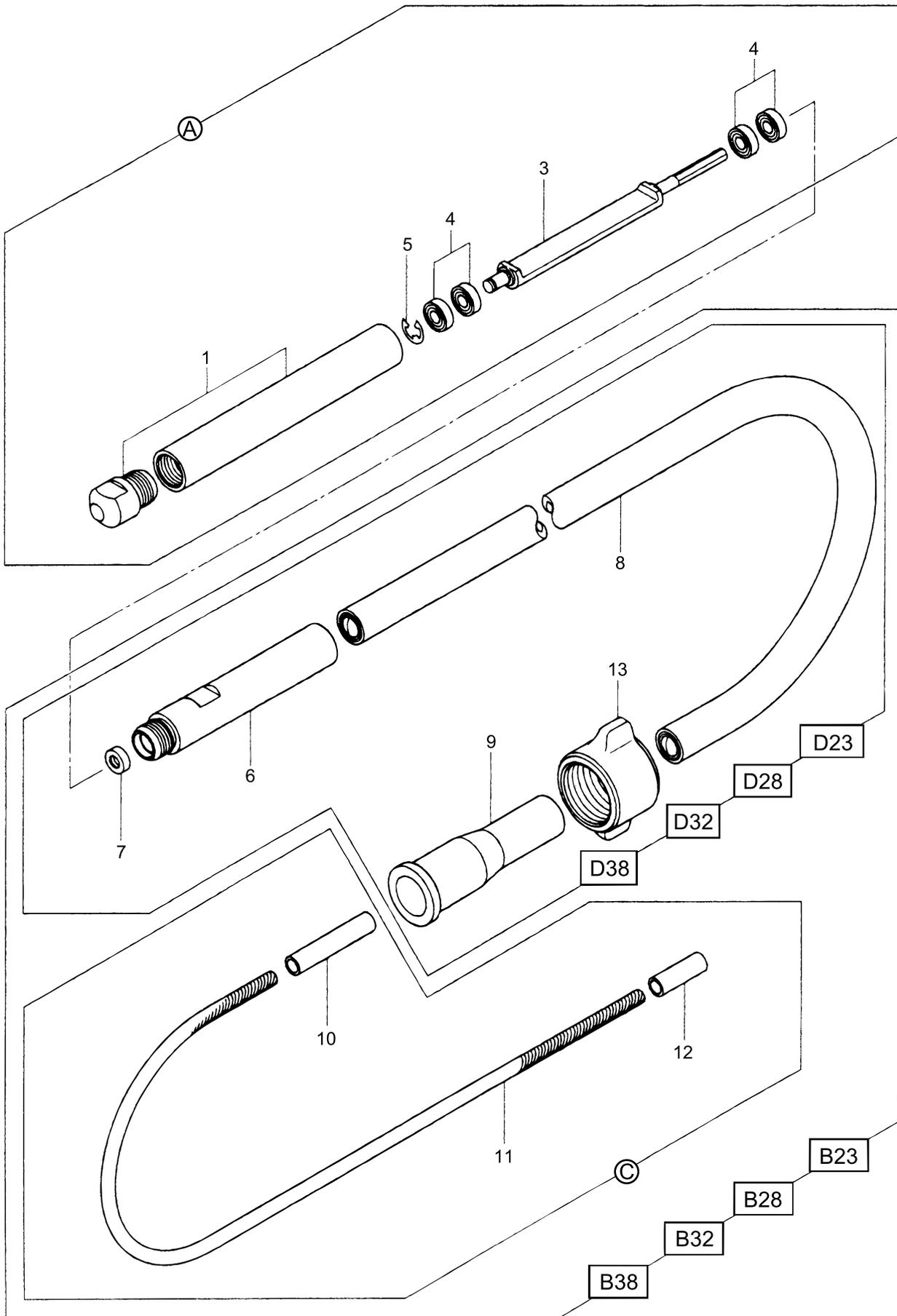
****2FK0****

REF	PARTS/NO.	PARTS NAME	Q'TY	REMARKS
1	0022-40530	BOLT 5X30 SW /SUS	4	
2	2474-58630	L-BRACKET / MGX	1	
3	0425-06000	BEARING 6000ZZSG	1	
4	2470-10102	ARMATURE AY/ 110-120V/MGX	1	MGX1(120V)
4	2470-10104	ARMATURE AY/ 220-240V/MGX	1	MGX2(220V)
8	0471-10040	BEARING 609ZZ / MGX	1	
9	2474-58570	FAN GUIDE / MGX	1	
10	0915-05060	SCREW 5X60 W/SW	2	
11	2470-10202	STATOR AY / 110-120V /MGX	1	MGX1(120V)
11	2470-10204	STATOR AY / 220-240V /MGX	1	MGX2(220V)
15	2472-16910	STATOR INSULATION / MGX	1	
16	2474-58640	CONDENSER AY / MGX	1	
17	0910-04025	SCREW 4X25	2	
18	0339-10180	POLY CARBONATE WASHER M4	2	
19	2474-58700	BRUSH HOLDER-L / MGX	1	
20	2474-58690	CARBON BRUSH 6X8/ MGX	2	
21	2473-46140	FRAME/MGX(NEW)	1	
23	9202-11100	PLATE,S/N /MGX/HIGH VOLT.	1	*1:MGX1/2
24	2330-10020	RIVET 2.3X5	4	
25	2474-58710	BRUSH HOLDER-R / MGX	1	
26	9201-10460	DECAL,CAUTION /COMBI./MGX	1	
28	2479-10080	WIRE INSULATION(L,R SET)	1	INCL.28,46
29	2474-60060	SWITCH COVER/MGX-NEW	1	
30	2474-46150	CABTYRE CORD AY W/P / MGX	1	
32	2610-11090	TERMINAL 2-SD	1	
33	2430-11130	TERMINAL TGV1.25-4	1	
35	2473-46160	TRIGGER SWITCH /MGX(NEW)	1	
36	0924-04022	SCREW 4X22 SUS / MGX	3	
38	0940-10027	TAPPING SCREW 4X10	2	
39	2474-58600	VIBRATION PROOF COVER/MGX	1	
40	0924-04008	SCREW 4X8 SUS / MGX	2	
41	2474-58620	BODY COVER / MGX	1	
42	2474-58680	RUBBER PIN / MGX	1	
43	2474-58660	CAP (GRAY) / MGX	1	
44	2474-58590	SWITCH LOCK COVER / MGX	1	
45	0924-04018	SCREW 4X18 SUS / MGX	1	
46	2474-61180	CONTRACTION TUBE 25-40L	1	
47	2474-60080	DUST PROOF SEET1 / MGX	2	
48	2474-60090	DUST PROOF SEET2 / MGX	1	
50	9201-10550	DECAL, DOUBLE INSULATION	1	
60	9209-00030	DECAL,SET,MIKASA(L,R)	1	

*1:CONTACT MULTIQUIP PARTS DEPT.

MSX-23,MSX/MP/MPS-28,32,38
CONCRETE VIBRATOR

2BP0



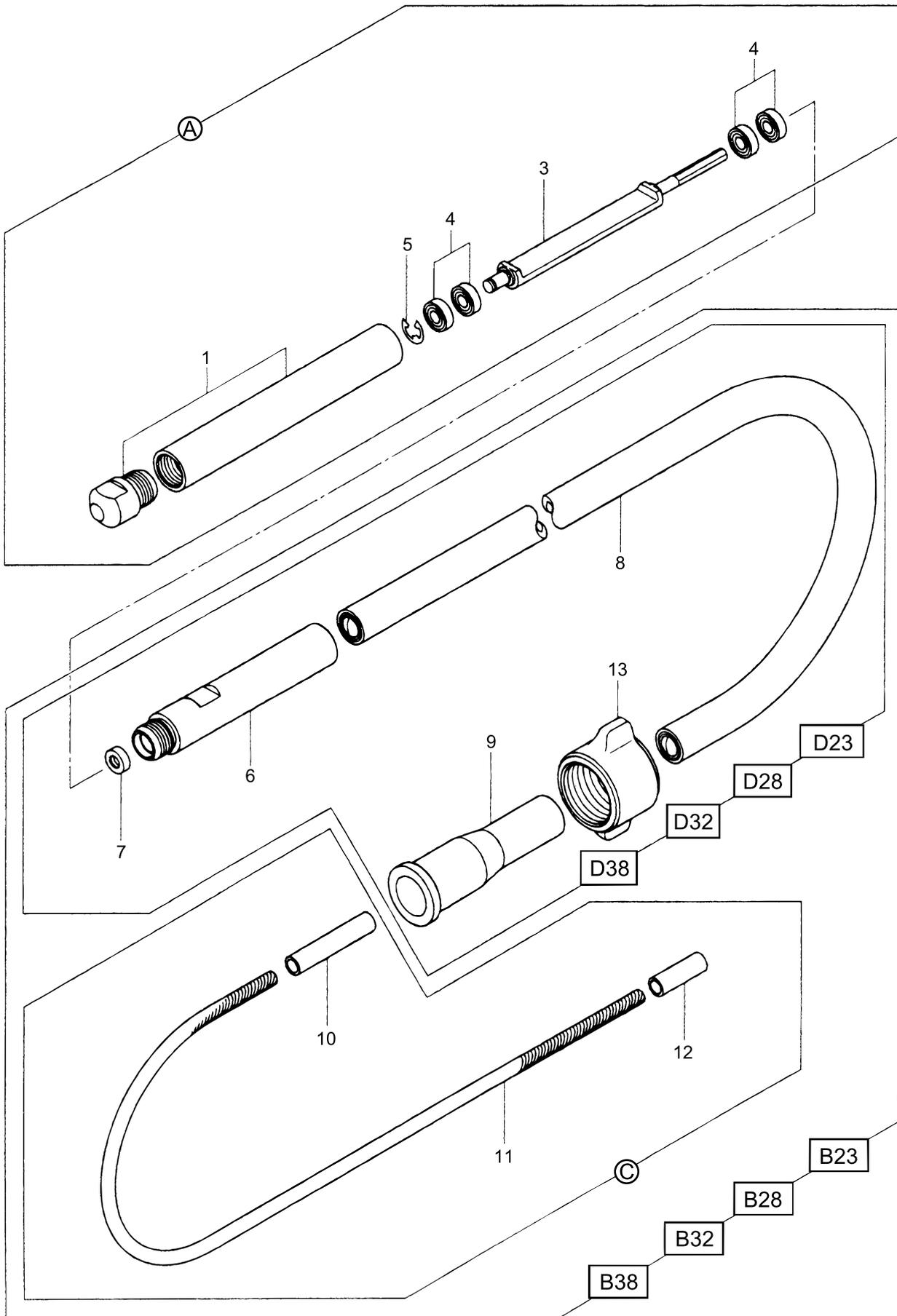
PORTABLE MULTI-PURPOSE CONCRETE VIBRATOR

MGX-23/28/32/38 VIBRATOR

REF	PARTS/NO.	PARTS/NAME	Q' TY	REMARKS	MODEL
A	2429-13040	VIBRATING HEAD AY MSX-23	1	23	MGX23
A	2429-13010	VIBRATING HEAD ASS'Y 28	1	28	MGX28
A	2429-13020	VIBRATING HEAD ASS'Y 32	1	32	MGX32
A	2429-13030	VIBRATING HEAD ASS'Y 38	1	38	MGX38
B23	2429-23170	LEAD SHAFT AY STD /MSX-23	1	STD	MGX23
B23	2429-23180	LEAD SHAFT AY 1M /MSX-23	1	1M	MGX23
B23	2429-23190	LEAD SHAFT AY 1.5M/MSX-23	1	1.5M	MGX23
B23	2429-23200	LEAD SHAFT AY 2M /MSX-23	1	2M	MGX23
B23	2429-23330	LEAD SHAFT AY 2.5M /MGX-23	1	2.5M	MGX23
B28	2429-23210	LEAD SHAFT AY STD /MSX-28	1	STD	MGX28
B28	2429-23220	LEAD SHAFT AY 1M /MSX-28	1	1M	MGX28
B28	2429-23230	LEAD SHAFT AY 1.5M/MSX-28	1	1.5M	MGX28
B28	2429-23240	LEAD SHAFT AY 2M /MSX-28	1	2M	MGX28
B28	2429-23340	LEAD SHAFT AY 2.5M /MGX-28	1	2.5M	MGX28
B32	2429-23250	LEAD SHAFT AY STD /MSX-32	1	STD	MGX32
B32	2429-23260	LEAD SHAFT AY 1M /MSX-32	1	1M	MGX32
B32	2429-23270	LEAD SHAFT AY 1.5M/MSX-32	1	1.5M	MGX32
B32	2429-23280	LEAD SHAFT AY 2M /MSX-32	1	2M	MGX32
B32	2429-23350	LEAD SHAFT AY 2.5M /MGX-32	1	2.5M	MGX32
B38	2429-23290	LEAD SHAFT AY STD /MSX-38	1	STD	MGX38
B38	2429-23300	LEAD SHAFT AY 1M /MSX-38	1	1M	MGX38
B38	2429-23310	LEAD SHAFT AY 1.5M/MSX-38	1	1.5M	MGX38
B38	2429-23320	LEAD SHAFT AY 2M /MSX-38	1	2M	MGX38
B38	2429-23360	LEAD SHAFT AY 2.5M /MGX-38	1	2.5M	MGX38
C	2429-33050	FLEXIBLE SHAFT AY STD/MSX	1	STD	MGX23-38
C	2429-33060	FLEXIBLE SHAFT AY 1M /MSX	1	1M	MGX23-38
C	2429-33070	FLEXIBLE SHAFT AY1.5M/MSX	1	1.5M	MGX23-38
C	2429-33080	FLEXIBLE SHAFT AY 2M /MSX	1	2M	MGX23-38
C	2429-33090	FLEXIBLE SHAFT AY 2.5M /MGX	1	2.5M	MGX23-38
D23	2429-41540	FLEX.HOSE AY STD /MSX-23	1	STD	MGX23
D23	2429-41550	FLEX.HOSE AY 1M /MSX-23	1	1M	MGX23
D23	2429-41560	FLEX.HOSE AY 1.5M /MSX-23	1	1.5M	MGX23
D23	2429-41570	FLEX.HOSE AY 2M /MSX-23	1	2M	MGX23
D23	2429-41660	FLEX.HOSE AY 2.5M /MGX-23	1	2.5M	MGX23
D28	2429-41240	FLEX.HOSE AY STD /MSX-28	1	STD	MGX28
D28	2429-41250	FLEX.HOSE AY 1M /MSX-28	1	1M	MGX28
D28	2429-41260	FLEX.HOSE AY 1.5M /MSX-28	1	1.5M	MGX28
D28	2429-41270	FLEX.HOSE AY 2M /MSX-28	1	2M	MGX28
D28	2429-41280	FLEX.HOSE AY 2.5M /MGX-28	1	2.5M	MGX28
D32	2429-41340	FLEX.HOSE AY STD /MSX-32	1	STD	MGX32
D32	2429-41350	FLEX.HOSE AY 1M /MSX-32	1	1M	MGX32
D32	2429-41360	FLEX.HOSE AY 1.5M /MSX-32	1	1.5M	MGX32
D32	2429-41370	FLEX.HOSE AY 2M /MSX-32	1	2M	MGX32
D32	2429-41380	FLEX.HOSE AY 2.5M /MGX-32	1	2.5M	MGX32

MSX-23,MSX/MP/MPS-28,32,38
CONCRETE VIBRATOR

2BP0



PORTABLE MULTI-PURPOSE CONCRETE VIBRATOR

MGX-23/28/32/38 VIBRATOR

REF	PARTS/NO.	PARTS/NAME	Q' TY	REMARKS	MODEL
D38	2429-41440	FLEX.HOSE AY STD /MSX-38	1	STD	MGX38
D38	2429-41450	FLEX.HOSE AY 1M /MSX-38	1	1M	MGX38
D38	2429-41460	FLEX.HOSE AY 1.5M /MSX-38	1	1.5M	MGX38
D38	2429-41470	FLEX.HOSE AY 2M /MSX-38	1	2M	MGX38
D38	2429-41480	FLEX.HOSE AY 2.5M /MGX-38	1	2.5M	MGX38
1	2429-53040	CASE AY /MSX-23	1		MGX23
1	2429-53010	CASE ASS'Y 28	1		MGX28
1	2429-53020	CASE ASS'Y 32	1		MGX32
1	2429-53030	CASE ASS'Y 38	1		MGX38
3	2423-36950	ECCENTRIC ROTATOR /MSX-23	1		MGX23
3	2423-21540	ECCENTRIC ROTATOR 28	1		MGX28
3	2423-21550	ECCENTRIC ROTATOR 32	1		MGX32
3	2423-21560	ECCENTRIC ROTATOR 38	1		MGX38
4	0425-00697	BEARING 697ZZSG/MC3	4		MGX23
4	0403-00608	BEARING 608/MC3	4		MGX28
4	0403-00629	BEARING 629/MC3	4		MGX32
4	0400-06200	BEARING 6200	4		MGX38
5	0803-00060	STOP RING E-6	1		MGX23
5	0803-00070	STOP RING E-7	1		MGX28
5	0803-00080	STOP RING E-8	1		MGX32
5	0803-00090	STOP RING E-9	1		MGX38
6	2424-50300	HOSE COUPLING (F) /MSX-23	1		MGX23
6	2424-21010	HOSE COUPLING/F 28	1		MGX28
6	2424-21130	HOSE COUPLING/F 32	1		MGX32
6	2424-21150	HOSE COUPLING/F 38	1		MGX38
7	0649-01030	OIL SEAL DS7144	1		MGX23
7	0606-00010	OIL SEAL VC-8184	1		MGX28
7	0606-00020	OIL SEAL VC-9225	1		MGX32
7	0602-01010	OIL SEAL SC-10257	1		MGX38
8	9590-27699	FLEXIBLE HOSE 20D-11.5D	1	!NS	MGX23
8	9590-27799	FLEXIBLE HOSE 24.6D-12.5D	1	!NS	MGX28-38
9	2424-50310	HOSE COUPLING (M) /MSX-23	1		MGX23
9	2424-09700	HOSE COUPLING/M	1		MGX28-38
10	2424-54490	CONNECTOR(F) /MSX	1		MGX23-38
11	9590-25999	FLEXIBLE SHAFT 8D	1	!NS	
11	9590-25228	FLEXIBLE SHAFT 8D NEW	1	!NS	
12	2424-54480	CONNECTOR(M) /MSX	1		MGX23-38
13	2424-30690	LOCK NUT	1		MGX23-38

!NS : Not supplied individually but supplied in an assembly or a group.

Mikasa