



IMBHOKODO
— BRIDGING —
SOLUTIONS

MAGHAMMERS IMPORTS & EXPORTS



NMI Africa

MULTIMAG CONTROLLER

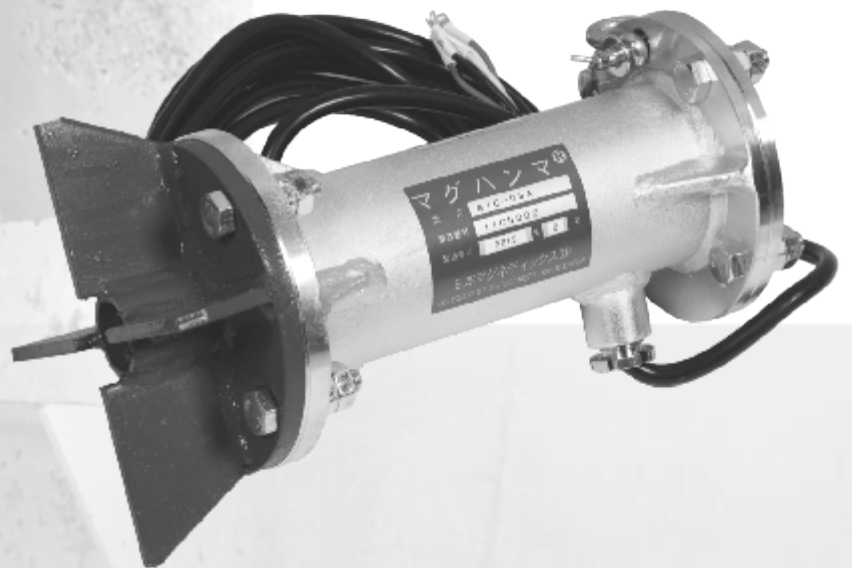


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SECTION 1



OPERATING DESCRIPTION: CONTROLLER

Immediately after the unit is powered up LED'S will light indicating "on" status - showing enabled or not enabled.

The Number of MagHammers being operated each separately, will have the corresponding number of lights. The sequence for each MagHammer is pre-programmed independently. Should additional number of impacts be required per each MagHammer, up to 4 sequential hits, this can be adjusted by the toggle on the left side of the Motherboard. Delay time between hits required, is 30 seconds minimum. However, the controller will operate one hammer at a time. After sequence for the current hammer is complete it will start the sequence for the next hammer. There is a pause period which is pre-set- if the digital input remains activated the hammer sequence will auto repeat.

Brief description of the steps in each hammers sequence:

1. Draw back hammer when powered.
2. Short delay because of magnetic field before changing direction
3. Hit with selected power level and for selected duration.
4. Wait for a short period. (other hammers not allowed to start)
5. Start pause period for this hammer. Start sequence for next hammer is activated.
6. At the end of the pause period if the input for this hammer is activated, start again at step 1.

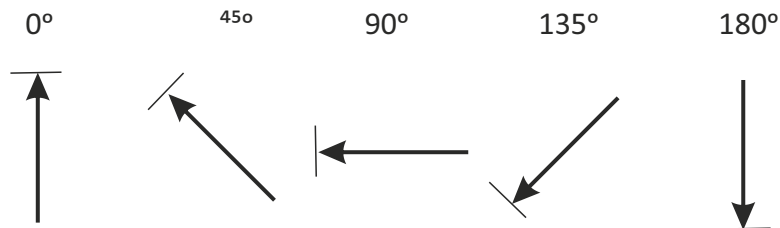
ENGINEERING MENU AND PARAMETERS

Engineering level parameters can be adjusted while the unit is in operation ie angle of inclination or magnitude of hit. Care must be taken when making changes to avoid damage to the load or equipment connected to the controller. Always take the necessary safety precautions and ensure that the correct options are selected.

MOUNTING DIRECTIONS

This sets the physical angle that the hammer is mounted in. The range is any angle for 0 to 180° (0 indicated that the hammer action is upwards. 90° is horizontal. 180° means the hammer action is downwards).

Some illustrations to help explain how the angle is measured:



IMPACT Power 1

This parameter sets the power that will be used for the impact / stroke. It is a percentage from 0-99%. 99% is full power

Hit Time 1

This sets the duration of the impact. The power will be kept at the above level for this time. It is set in 0.1 second steps up to 0.5 seconds maximum.

Off time 1

This sets the time period before the hammer sequence will auto repeat. The value is set in minutes and seconds.

Mounting Direction 2

This sets the physical angle that the hammer is mounted in. The range is any angle from 0° - 180° Degrees () - indicated that the hammer action is upwards. 90° Degrees is horizontal - 180° Degrees means the hammer action is downwards) (see mounting direction 1 for more information)

Impact Power 2

This parameter sets the power that will be used for the impact / strike. It is a percentage from 0-99%. 99% is full power

Hit Time 2

This sets the duration of the impact. The power will be kept at the above level for this time. it is set in 0.1 second steps up to 0.5 seconds maximum.

Off time 2

This sets the wait time after a hammer sequence is complete before any of the other hammers are allowed to operate. It is set in 0.1 second steps and the range is 0-25.5 seconds.

Pause / Repeat Time 3

This sets the time period before the hammer sequence will auto repeat. The value is set in minutes and seconds. The Max is 99 seconds.

Note: The sets of default parameters are provided to make installation easier.

After setting it to default ALL PARAMETERS MUST BE CHECKED AND ADJUSTED IF NECESSARY TO make sure they are correct for the installation before running it.

WARRANTY

MagHammers Imports and Exports cc warrants the products it manufactures to be free of defects in material and workmanship under normal use, and service for a period of 6 months from date of purchase. This Warranty shall not apply to products which have been subject to misuse, neglect, accident, or abnormal conditions of operation.

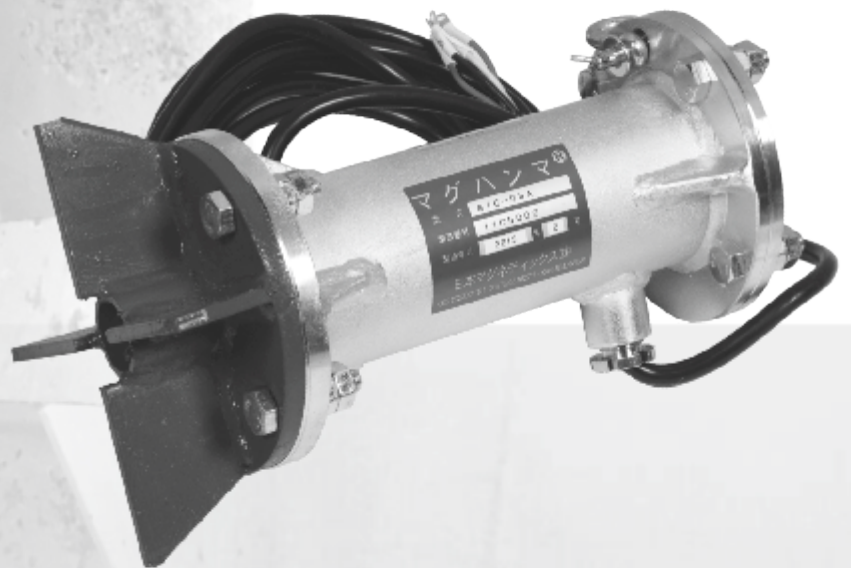
In the event of failure of a product covered by this Warranty, MagHammers Imports and Exports will repair any product returned to MagHammers Imports and Exports cc within 6 months of original purchase, provided the warrantor's examination discloses to its satisfaction that the product was defective. The warrantor may as its discretion, replace the product in lieu of repair.

With regard to any product returned within 6 months of purchase, said repairs or replacement will be made without charge. If the failure has been caused by misuse, neglect, accident, or abnormal conditions or operation, repairs will be billed at a nominal cost.

MagHammers Imports and Exports shall not be held liable for any special, incidental, or consequential damaged, whether in contract, tort, or otherwise.



SECTION 2



NOTICE FOR SAFE USE OF MAGHAMMER

Bolts fixing MAGHAMMER onto Base Plate:

1. Daily inspection is required.
When they get loose, MAGHAMMER will fall down.
2. Re-tighten bolts on the second day after start of operation.
3. Retighten them every three months.
4. MAGHAMMER is a hammering device and makes loud banging sounds during the operation.
An operator and people around should wear ear protectors.

The following persons are not allowed to use and operate MAGHAMMER

1. Those who have not read this HANDLING MANUAL for MAGHAMMER
 2. Those who are young (children) and/or any physically handicapped person who has any problems using & operating the MAGHAMMER.
-

NOTICE FOR SAFE OPERATION

Settings of Controller:

- | | |
|------------------------|--|
| 1. PAUSE TIME: | More than one minute.
(as long as possible) |
| 2. MOUNTING DIRECTION: | 5 (at Hopper angle 60°) |
| 3. IMPACT FORCE: | 5-10 |

CONTIN HIT Push Button Switch:

1. When AUTO-OFF-EXT selection switch is set at AUTO or EXT Continuous hammering can be operated.
2. Time of continuous hits should be less than one minute
(Re-start should be after five minutes pause)

Inspection of failure and its Correction:

1. Measure coils resistance and insulation resistance of MAGHAMMER.
2. Inspect output signals of Control Panel (LED red lamps flashing)
3. After the above inspection done, good ones should be connected.
4. If fault Controller should be connected, MAGHAMMERs coils will be damaged.

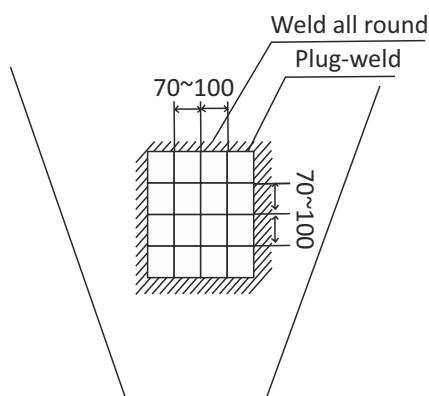
6. How to Install MAGHAMMER

1. MAGHAMMER can be installed inside a dusty environment, outside Exposed to rain and wind. Protection rate is Ip66.
*MAGHAMMER type SIS-A doesn't correspond.
2. Surface temperature of hoppers or chutes to which MAGHAMMER is to be installed should be lower than 60°C. If it is higher than 60°C, please consult with the sales agents. They will advise you.
3. Base Plate is to be fitted onto Hopper by all round welding. This welding job must be carried out by a skillful welder, because great impact is given to Base Plate as MAGHAMMER is a hammering device.
4. Reinforcement Plate should be fitted in case of thinner walls of hoppers, chutes etc.
 - 1) When wall thickness is thicker than the following, no reinforcement plate is required. Base Plate can be welded direct.

Wall Thickness of Hopper, Chute, etc	MAGHAMMER
More than 3.2mm	SIC-05A
More than 4.5mm	SIC-1A
More than 6.0mm	SIC-2A
More than 9.0mm	SIC-3A

2) When wall thickness is thinner than the above, Reinforcement Plate should be fitted as follows:

MAGHAMMER	Thickness of Reinforcement Plate	Size of Reinforcement Plate
SIC-05A	3.2mm	250 x 250mm
SIC-1A	4.5mm	300 x 300mm
SIC-2A	6.0mm	350 x 350mm
SIC-3A	9.0mm	450 x 450mm



Make holes of 12-30mm diameter with 70-100mm intervals, plug weld these holes onto Hopper and weld all round Reinforcement Plate.

No spring washers or plain washers are used. In order to install MAGHAMMER, more than two workers are required. More than one worker should support MAGHAMMER, and other one should fix it on Base Plate with bolts and nuts. As Body of SIC-3A weighs 54kgs, lift it up by a crane or hoist with a wire coming through a shackle at the back of MAGHAMMER. Then, fix Body onto Base Plate.

(6) Sizes of fitting bolts and tightening torque are as follows:

MAGHAMMER	Sizes of Bolt (mm)	Tightening Torque (kgf-cm)
SIC-05A	M10 x 40L	249
SIC-1A	M12 x 45L	434
SIC-2A	M16 x 55L	1079
SIC-3A	M18 x 70L	1485

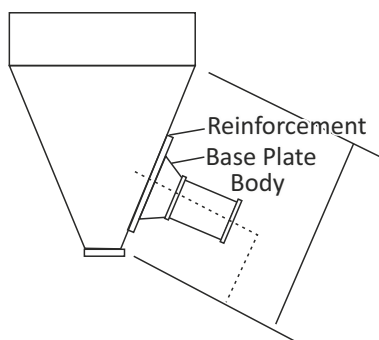
7. How to Install Controller

- Controller should be installed inside. Its case is dust and waterproof.
Protection rate is IP65. When positioning outside, Controller should be installed inside the special case for outside use.
- Controller should be installed at a temperature lower than 40°C (104°F).
If temperature is exceeded, measures to cool down the Controller are required. Heat capacity generated from the inside of Controller is minimal, and temperature rise of Controller itself is less than 5°C (41°F)
- Controller can be placed onto a metal wall or stand by making four holes and using plain washers. These arrangements should be carried out by customers.

8. Installing Position of MAGHAMMER

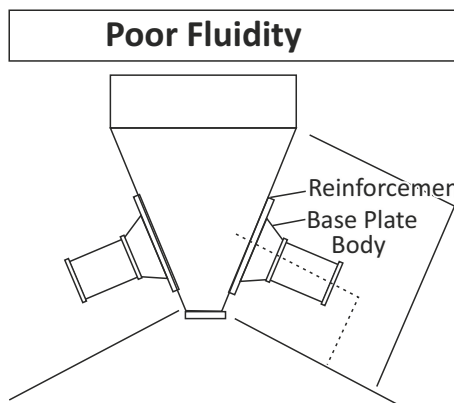
Hit Hopper or Chute with a hand hammer to find the spot most effective to solve clogging. That's the spot where the MAGHAMMER should be installed!

Normal Case



When media flows smoothly after impact with a Hand hammer, MAGHAMMER should be fitted 200-300mm above the outlet.

Note: This sketch shows the case with Reinforcement Plate.

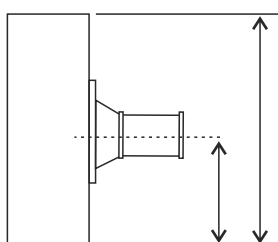


When media has poor fluidity, two or more MAGHAMMERS should be used to get better fluidity.

Each MAGHAMMER should be positioned at different heights above the outlet.

Note: This sketch shows two MAGHAMMERS in use. This sketch shows the case with Reinforcement plates.

Installation onto the vertical well.



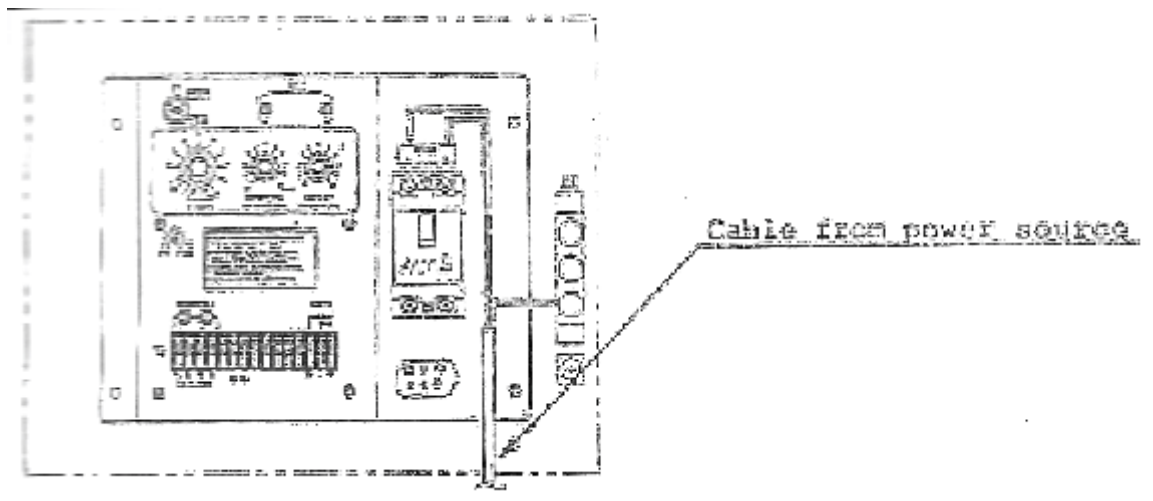
When media sticks onto the vertical walls of Chute, Transfer Pipe, etc, the most effective point is 1/3 high from the bottom/disengage area.

Note:

1. When installing MAGHAMMER on the vertical wall, whatever its height you should support MAGHAMMER with a chain or wire running through a shackle in order to prevent it from falling down.
For all models of MAGHAMMER, wire or chain bigger than 5mm diameter should be used.
2. When fixing MAGHAMMER onto Base Plate, be sure to tighten bolts and nuts as per the tightening torque shown on 6. (6).
3. Retighten bolts on the second day after the start of operation. Then, re-tighten every three months.
4. Be sure to position MAGHAMMER and Controller with the nameplates and note plates visible.

9. Wiring of MAGHAMMER and Controller.

1. Make two holes in the bottom of Control Box for cable glands from an electric source to Controller and from MAGHAMMER to Controller.
Fit cable glands and run cables through them. Be sure to fix cables with glands bushes. After fitting cables, pull them with the force of 100N.O.35N/m and make sure that cables will not move more than 2mm.
2. Connect an electric source of AC220-240V single-phase to L. and N. terminals of MCCB (molded case circuit breaker) of Controller as shown below. Power cable should be a multi-conductor power cable size (1.5 - 4.0mm²) x 3 cores. Be sure to connect earth cable to terminal marked PE.



3. Measure each resistance between conductors P1 and N1 and between {2 and N2 of MAGHAMMERs multi-conductor power cable to confirm they are the same as figures showing the column 2. (2)3) of Maintenance/Inspection (Page 18). Resistance figures may vary about + - 10% due to allowance at manufacturing and ambient temperature.
4. Measure each installation resistance between conductors P1 and PE and between P2 and PE with the Insulation - Resistance Tester of DC500v to confirm figures on the tester over 10MO (megohm). Be sure you wear a pair of insulation gloves to protect yourself from an electric shock.
5. Connect conductors P1, N1, P2, N2 and PE (earth) from MAGHAMMER to the same terminals, of Controller and tighten all screws firmly.
6. MAGHAMMER has a multi-conductor power cable of 5-meter long.

When a longer distance is required, please extend it by adding cable using a relay terminal box. Extension between MAGHAMMER and Controller should be less than 100 meter.

Sizes of extension cables should be IEC227 approved ones and be:

1.5mm² to 50-meter distance

2.5mm² to 100-meter distance

7. After all the above work has been completed, please confirm that the power source is OFF. Then, connect the other end of Power Cable from MCCB of Controller to the power supply terminals.

Note:

1. Electric wiring and measurements should be carried out by a qualified electrical engineer.
2. Electric terminals of P1, N1, P2 and N2 of Controller will accept cable of (1.5 - 2.mm² with thin twisted cable)
3. If the identification mark of each conductor is lost during installation work, you can find it from the number on each conductor as follows:
 - 1 for P1
 - 2 for N2

3 for P2

4 for N2

Yellow / Green spiral cable for PE.

4. Whenever MAGHAMMER is installed out of sight from Controllers position, Lockable Isolator should be installed near MAGHAMMER for safety of workers. The contacts of Lockable Isolator ,EN-60204-15.6> should have a gap of over 3mm. No lockable Isolator is attached to Controller when it is shipped from Japan. Therefore, when required, the customer should arrange it.
5. Power cable from Controller to the power source is out of our supply scope and should be arranged by the customer.

SA MULTIMAG SYSTEM INFORMATION IS ATTACHED HERETO.

THE SYSTEM INCORPORATES UP TO 6 X MAGHAMMERS PER ENCLOSURE. IP65 WITH
(MULTIMAG 6)

LOCKABLE ISOLATOR

PLEASE NOTE: OPTIONS FOR MONITORING VIA PLC TO MCC ARE OFFERED.

KINDLY CONTACT OUR OFFICES FOR FURTHER INFORMATION.

OPERATION

1. Safety Assurance - SHEQ

(1) Fitting Condition of MAGHAMMER

- 1) Make sure that Base Plate is firmly welded onto Hopper or Chute.
- 2) Make sure that MAGHAMMER is fitted on Base Plate with bolts and double nuts screwed up tightly.
- 3) Make sure that MAGHAMMER is firmly supported by wire or chain running through Shackle on the back of MAGHAMMER.

(2) Electric Source and Voltage

Electric source should be single phase AC220V-240V installed according to Bs76.

Make sure with a volt tester that terminals of L. and N. of MCCB are within AC220V - 240V

2. Environmental Condition of Operation

MAGHAMMER is a hammering device and makes loud banging sounds during operation. Before switching on, an operator is required to announce to people around that loud banging will be heard. An operator and people around should wear ear protectors (head ear mufflers). Banging sounds at a 1-meter distance are measured to get the following sound levels:

MAGHAMMER	SIC-05A	SIC-A1	SIC-2A	SIC-3A
Sound Level (dB)	85	96	101	105

The above noise levels will vary according to the condition of Hopper, full or empty. When Hopper is empty, sound levels will be greater than above.

3. Function of Controller

(1) Inside of Controller

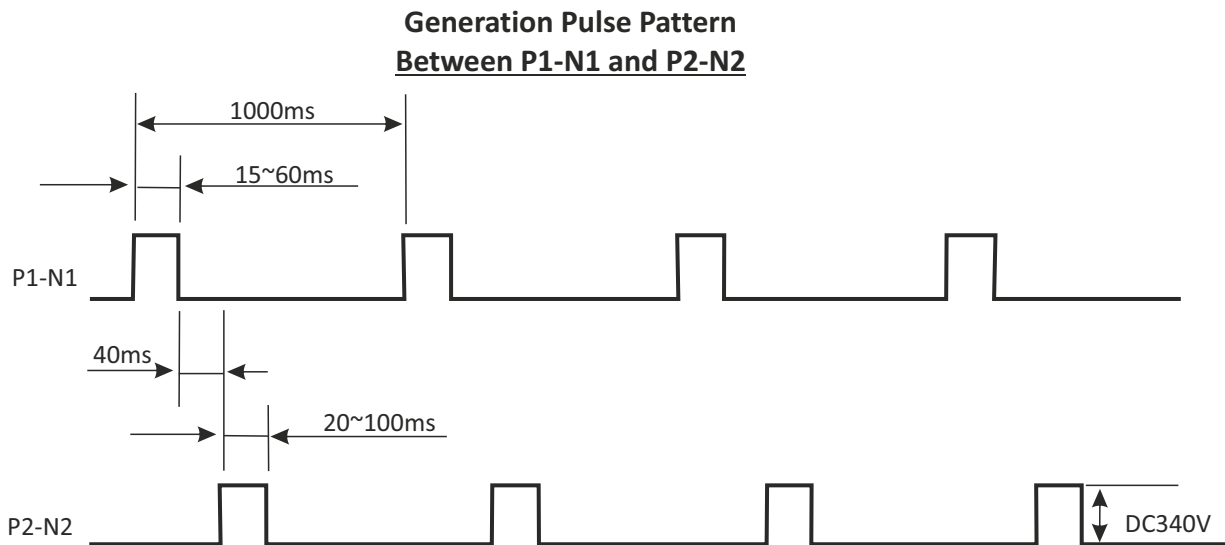
MCCB breaker	Conductors of the power cable (single-phase AC220V - 240V) should be connected direct to terminals L. and N. located on the top of MCCB in Controller.
F1 & F2 fuses	SB-1A has F1 only. SB-2A has both F1 and F2. These glass fuses (5 ampere, slow blow fuse) will be blown when having higher current at output terminals P1 - N1 and P2-N2. A plastic bag containing 2 spare fuses is adhered inside the panel door. Before renewing fuses, be sure that MCCB is switched off. Take off Cap of Fuse Bracket by unscrewing to the left, and replace Fuse with new one. Then put Cap back and screw it tight.

PAUSE TIMER	This control can set pause time from 30 seconds (at "0") to 10 minutes (at "10"). Pause time means one cycle of "hits and pause".
MOUNTING DIRECTION Control	This control can be set pulse width supplied to return coils of MAGHAMMER. By turning left, you can get narrower width and weak power of Piston withdrawal, and by turning right, wider width and stronger power of Piston withdrawal. Before adjusting this control, set IMPACT MAGNITUDE control to position 10. Then, turn this control from 0 gradually to the position where you can get the loudest bang sound (this is the best position). For example, when the MAGHAMMER is installed at the hopper cone with an angle of 60° inclination, i.e. standing with 30° upward, this control setting at the position 5 to 6 will be appropriate. When MAGHAMMER is installed on a vertical wall of Hopper, i.e. standing horizontally, this control should be set at the position 7 to 8 as stronger withdrawal power is required.
IMPACT MAGNITUDE control	This control can set pulse width supplied to drive coils of MAGHAMMER. By turning left, you can get narrower width and weaker hammering impact, and by turning right, wider width and stronger impact. When this control is set at less than 5, impact force is unstable. Therefore, setting at 5 to 10 is recommended.
TIMER Preset	Timing will be adjusted at attenuation, on installation.
Terminal Base	Conductors from the MAGHAMMER should be connected to the terminals of the Controller, P1 to P1, N1 to N1, P2 to P2 and PE to earth terminal.
LED red	Lamps above Terminal Base LED red lamps above P1 - N1 and P2 - N2 are lighted when output pulse is on. They flash on and off with one second intervals when Controller is normal.
PE terminal.	It is an earth terminal for protection of Controller. To avoid electric shock, an earth cable from the ground should be connected to it.

4. Circuit Diagram of Controller

Circuit Diagram is shown on page 24 and 27, of which the details are as follows.

- (1) AC220 - 240V conductors of power cable are able to be connected to terminals L. and N. of MCCB
- (2) DC340V gets into PCB (Printed Circuit Board) through Fuse 5A. This voltage is connected to outlet terminals P11, P12, P21 and P22 inside PCB.
- (3) Inside PCB there are IC (Integrated Circuit) and Control Circuits consisting of various electrical parts. These can read and control the setting of controls and switches as per 3. Function of Controller above.
- (4) Time chart of the above cycle is as follows



5. How to Operate Controller

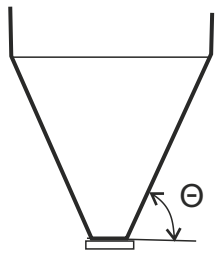
(1) MCCB Breaker

Switch on MCCB Breaker to send an electric current to the inside of Controller, then POWER lamp is on.

(2) MOUNTING DIRECTION control

As explained in function of Controller on pages 9-11, this control should be adjusted to the angle of the Hopper on which the MAGHAMMER is installed. To find the best setting for this control, set the IMPACT MAGNITUDE control at 10 and turn MOUNTING DIRECTION control standby from the extreme left position. The Position that gives the loudest banging sound is the best setting

For reference, the following table shows angles and volume settings



Hopper angle (Θ)	90°	75°	60°	45°	30°
Position of MOUNTING DIRECTION control	8	7	6	5	4

(6) IMPACT MAGNITUDE control

When this control is turned fully left, Impact force is the lowest. By turning it right gradually, you will get stronger impact force by and by. Set the control at more than 5 because impacting force is unstable if setting at less than 5.

(7) PAUSE TIME control

This is an important control.

As far as you can be satisfied with hammering effect against clinging and bridging, you should set a longer pause time, this will ensure longer lifetime of the MAGHAMMER.

Note 1) Durability of MAGHAMMER:

As MAGHAMMER is a hammering device with Piston Rod Travelling up and down in the cylinder. Hence, Piston Rod, Cylinder, Impact Plate and Cushion Rubber are consumable parts.

MAGHAMMERs function until overhauling is as follows:

SIC-05A	4,000,000 hits
SIC-1A	3,000,000 hits
SIC-2A	2,000,000 hits
SIC-3A	1,000,000 hits

As mentioned above you should have pause time as long as possible, as far as you are satisfied with the hammering cycle for solving clinging and bridging problems. This will ensure longer lifetime of the MAGHAMMER.

Note 2) Hammering prospects of MAGHAMMER:

MAGHAMMER is designed to generate a greater impact force in a very compact body.

When hammering a large amount of electric current flows and coils inside MAGHAMMER generates heat. The maximum hammering ratio is one hit per 3 seconds. To prevent overheating beforehand, you should check the heat of the MAGHAMMER body. Just touch it with your bare hands.

If you can touch it for more than 10 seconds, there is no heating trouble. If it is too hot to touch, it is overheating. You should decrease hammering time or increase pause time right away to cool down the coils of the MAGHAMMER.

6. How to check failure on Installation.

- (1) Confirm if AC220V - 240V single - phase current is between terminals L. and N. of MCCB
- (2) Confirm if conductors P1, N1, P2, N2 and PE from MAGHAMMER are connected to each terminal of the terminal base of controller.
- (3) Confirm if LED red lamps above P1-N1 and P2-N2 are flashing on and off. In case these lamps should not flash on and off, Controller itself is out of order.
- (4) Confirm if MOUNTING DIRECTION control is set as per the following settings:

Hopper Angle (°)	90°	75°	60°	45°	30°
Position of MOUNTING DIRECTION control	8	7	6	5	4

- (5) Confirm that IMPACT MAGNITUDE control is set at more than 5. If set at lower than 5, strong impact force cannot be achieved.

If the MAGHAMMER will not work even after the above are confirmed one by one, please contact the service department.

**PAGE 16 AND 17 ARE A QUICK READY REFERENCE
FOR TROUBLESHOOTING**

MAINTENANCE / INSPECTION

1. Purpose of Inspection

MAGHAMMER is a hammering device.

As Piston Rod travels at high speed inside Cylinder, great mechanical load is put on the MAGHAMMER itself and Base Plate. For safety operations, therefore periodical inspection is essential. Its details are shown next.

2. Inspection

	Inspection Item	Period	Details	Measures	
1	Base Plate: Outside appearance Welded parts	Monthly	Sight inspection for cracks and breakages	Any cracks and breakages to be welded / repaired.	
2.	Bolts fitting MAGHAMMER onto Base Plate	Daily	Inspection for loosening and missing	Re-tightening required every 3 months	
3.	MAGHAMMER: Outside appearance	Monthly	Sight inspection for Cracks and breakages	In case of any cracks or breakages found, it cannot be used any more. Replace it with a new one.	
4.	Bolts on Rear Cover of MAGHAMMER	Every 3 months	Inspection for Loosening and missing	Re-tightening required	
5.	Chain or Wire supporting MAGHAMMER	Daily	Sight inspection of chain,wire, shackle & upper supporting parts.	Daily inspection and necessary care are essential for safety.	
6.	Control Cable of MAGHAMMER	Every 3 months	Inspection for damage of outside appearance of cable and unreasonable bend	Control Cable with any damage cannot be used anymore. It should be replaced with a new one. Make sure of proper bends.	
7.	Settings of Controller on attenuation	As Required	Mounting Direction Settings (Figures in right column are just for reference. Setting should be at figures that product the loudest sound of bangs)	Hopper Angle 90° 75° 60° 30°	Control Setting 8 7 5 4
8	Magnitude	As Required	Impact magnitude control	By setting at 5-10, stable impact can be obtained.	

9	Hammering	Daily	Sound Inspection	In normal operation, you can hear a metallic sound. In case of any problem, you hear weak or no sound. then inspection as per the procedures shown next, should be taken.
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3. Inspection of Failure and Its Correction.

In case of faulty operation, inspect Controller first. When Controller is found OK, inspect MAGHAMMER next.

1. Inspection of Controller

1.1 Check LED red Lamps above terminals P1-N1 and P2-N2 flash as many times as the figures set by HIT TIME control. A lamp above P1-N1 flashes faster than a lamp above P2-N2.

1.2 When LED red Lamps do not flash, Controller is out of order.

Inspect MAGHAMMER as mentioned below.

Note: If faulty MAGHAMMER should be connected to the Controller, Controller will be damaged.

2. Inspection of MAGHAMMER

2.1. Switch off MCCB in Controller and disconnect cable from terminals P1, N1, P2, N2 and PE (Earth) connecting to Controllers terminals.

2.2 Measure insulation resistance between conductors P1 and PE or between N1 and PE with a DC500V megohm-meter. Also measure resistance between P2 and PE or between N2 and PE. Insulation resistance more than 1MΩ is normal.

In case of a brand new MAGHAMMER, it is more than 10MΩ, which will come down during service. (More than 1MΩ is normal as mentioned above. If less than 1MΩ, there insulation deterioration of MAGHAMMERs coils and / or conductors.

MAGHAMMER needs overhaul or replacement. For conductors, qualified electrical engineers should replace them with new ones.

3. Measure each resistance between P1 and N1 and between P2 and N2. Normal figures are as per the following table. Just after operation, coils have high temperature, hence resistance would be about 30% larger. That is normal.

Resistance of Coils of MAGHAMMER (20°C)

	Between P1 and N1	Between P2 and N2
SIC-05A	63Ω	63Ω
SIC-1A	51Ω	46Ω
SIC-2A	33Ω	24Ω
SIC-3A	23Ω	21Ω

In case of extremely larger or smaller figures than above, there is a possibility of layer short on coils. Therefore, replacement of coils or MAGHAMMER itself will be required.

4. When MAGHAMMER does not work with insulation resistance of MAGHAMMER coils more than 1MΩ and coils resistance within 10 to 30% of the above figures, the following reasons could be considered.

A. Dust from Piston Rod staying inside Cylinder of MAGHAMMER:

Dust is created because of scuffing. A teaspoonful of this dust will badly influence the movement of the Piston Rod, and much greater will seize the Piston.

B. Seizure of the Cylinder and Piston Rod: This will not occur often, but can be caused when alien objects such as broken pieces of an impact plate or a cushion rubber are trapped between Cylinder and Piston Rod, or when the bolts fitting the MAGHAMMER onto the Base Plate get so loose as to cause distortion of the cylinder duct and sever the movement of hammering. In such cases, MAGHAMMER should be inspected.

If MAGHAMMER has no problem, replace Controller with new one.

4. Overhaul and Repair of MAGHAMMER

After hammering several hundred thousand times, dust is created by the scuffing action between the Cylinder and the Piston Rod. This dust formation can dull the movement of the Piston, resulting in less impact force leading to poor performance. Removal of dust and renewal of Piston Rod should ensure normal impact force to be restored - Refer to supplier.

You can overhaul MAGHAMMER - Refer to supplier.

1. Measures when cylinder is worn down:

As cylinder is set too close to coils and Yoke, replacement of the cylinder requires special skill. Therefore, please ask the service department - Supplier: Maghammers SA.

2. Measures when coils are in trouble:

Replacement of coils requires special skill. Please ask the service department- Supplier: Maghammers SA..

5. Overhaul and Repair of Controller

Please ask the service department - Supplier: Maghammers SA.

6. Service Department

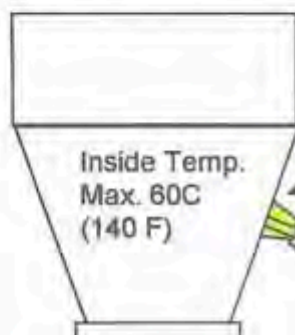
You may contact the following sales agents in the following cases:

1. If the MAGHAMMER does not function correctly.
2. When consumable parts of MAGHAMMER and fuses of Controller are required

MagHammer Model Selection by Material and Ambient Temperatures

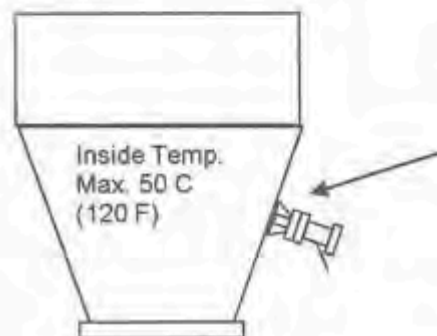
Standard MagHammer

SIC-05A / SIC-1A / SIC-02A / SIC-03A



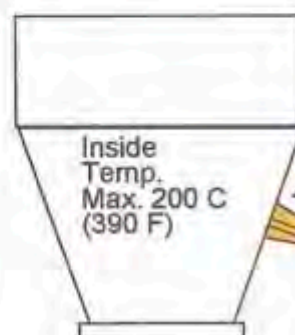
Base Plate
Long Type

Ambient Temp.
Max. 40 C
(100 F)



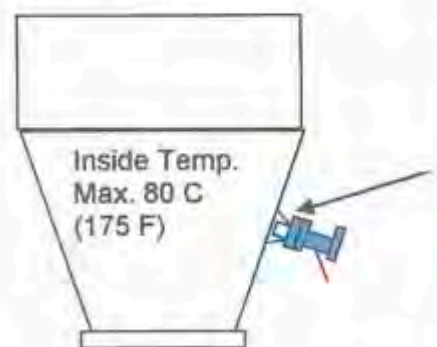
High Temp. Model "T"

SIC-05AT / SIC-1AT / SIC-02AT / SIC-03AT



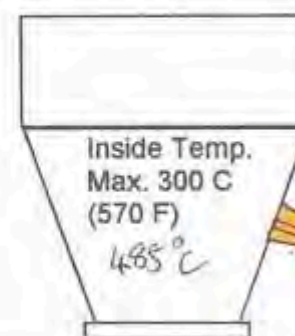
Base Plate
Ultra Long

Ambient Temp.
Max. 40 C
(100 F)



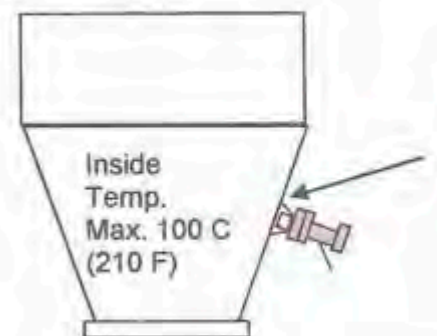
Highest Temp. Model "H"

SIC-05AH / SIC-1AH / SIC-02AH / SIC-03AH



Base Plate
Ultra Long

Ambient Temp.
Max. 40 C
(100 F)





Nippon Magnetics Inc.

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EC DECLARATION OF CONFORMITY

We hereby declare that the following our product conform with the essential health and safety requirement of the Low Voltage Directive 2006/95/EC.

Product	Electro Magnetic Hammer
Model	Control Panel: SB-1S, SB-2S Maghammer: SIC-05A, SIC-1A, SIC-2A, SIC-3A SIC-05AS, SIC-1AS, SIC-2AS, SIC-3AS SIS-05A, SIS-1A, SIS-2A, SIS-3A SIC-05AH, SIC-1AH, SIC-2AH, SIC-3AH
Manufacturer	Nippon Magnetics, INC. 716-2, Kitadanisoira, Dazaifu-shi, Fukuoka-ken 818-0114, Japan

The above product has been evaluated for conformity with low voltage directive and EMC directive by the following European standard. The technical construction file (TCF) for this product is retained at the above manufacturer's location.

Low Voltage Directive
- EN 60335-1:2012 (Fifth Edition)

Year of affixation of the CE Marking: April 2014

Signature	: <u>Hiroyuki Tanaka</u>
Date	: <u>April 15, 2014</u>
Name	: Hiroyuki Tanaka
Title	: Dept. Deputy Manager

Being the responsible person appointed by the manufacturer and employed by Nippon Magnetics, INC.

WARRANTY

MagHammers Imports and Exports cc warrants the products it manufactures to be free of defects in material and workmanship under normal use, and service for a period of 6 months from date of purchase. This Warranty shall not apply to products which have been subject to misuse, neglect, accident, or abnormal conditions of operation.

In the event of failure of a product covered by this Warranty, MagHammers Imports and Exports will repair any product returned to MagHammers Imports and Exports cc within 6 months of original purchase, provided the warrantor's examination discloses to its satisfaction that the product was defective. The warrantor may as its discretion, replace the product in lieu of repair.

With regard to any product returned within 6 months of purchase, said repairs or replacement will be made without charge. If the failure has been caused by misuse, neglect, accident, or abnormal conditions or operation, repairs will be billed at a nominal cost.

MagHammers Imports and Exports shall not be held liable for any special, incidental, or consequential damaged, whether in contract, tort, or otherwise.



WARNING / DANGER PLEASE READ

MAX TEMPERATURE 40 Degrees celcius

- **TWO MAGHAMMERS MAY NOT OPERATE OFF ONE CIRCUIT**
- **CONTACTORS ARE NOT TO BE EXCHANGED UNLESS FROM APPROVED PARTS LIST**
- **NO MODIFICATION OF CONTROLLER PARTS WHAT SO EVER**
- **ADHERE TO MANUFACTURER RULES IN MANUAL FOR DELAY TIMING BETWEEN HITS**
- **ANY CONTROLLER MODIFIED WILL NEGATE WARRANTY**
- **ANY MAGHAMMER CASING OPENED, WILL NEGATE WARRANTY**
- **IF SYSTEM NOT WORKING PLEASE CONTACT THE BELOW FOR ASSISTANCE**

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REGIONS.**