

NoiseKen

INSTRUCTION MANUAL

MAGNETIC FIELD LOOP ADAPTOR

MODEL 03-00070A

NOISE LABORATORY CO., LTD.

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1. Important Safety Precautions

Important points for the safe use of this unit are provided below. Be sure to carefully read this information before use.

1. Do not use this unit in areas where open flames are prohibited or areas having an explosive atmosphere. Electrical discharges can occur during use, which can cause these atmospheres to ignite.
2. Do not allow people with pacemakers or other electronic medical devices to operate this unit and to enter the testing area while this unit is operating.
3. The section "Basic Safety Precautions" contains important safety recommendations, and so be sure to read the section carefully before making the testing environment settings, connections, and starting testing.

2. Application Form For Instruction Manual

We place an order for an instruction manual.

Model: 03-00070A

Serial No.: _____

Applicant:

Company name: _____

Address: _____

Department: _____

Person in charge: _____

Tel No.: _____

Fax No.: _____

Cut
line

Cut off this page "application form for instruction manual" from this volume and keep it for future use with care.

When an INSTRUCTION MANUAL is required, fill in the above Application Form and mail or fax it to your nearest sales agent of Noise Laboratory or Noise Laboratory.

Your sales agent:

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4. Preface

Thank you for purchasing the MAGNETIC FIELD LOOP ADAPTOR FOR GT-30R (DISCHARGE GUN) (03-00070A).

In order to obtain the maximum performance of the product, thoroughly read this book before use. Also, read the instruction manuals for the electrostatic discharge simulator and the discharge gun to ensure safety and reliability. This product cannot be used with the TC-815 series (our previous discharge gun model).

***Follow the safety precautions and warranty conditions described in the Instruction Manual for the MAGNETIC FIELD LOOP ADAPTOR.**

- This manual is intended to handle and utilize 03-00070A safety for the person who can obey the operation method and precautions.
- Keep this Instruction Manual in a readily accessible place.

Features

1. The MAGNETIC FIELD LOOP ADAPTOR is a one-turn loop coil for magnetic field generation that is used with the discharge gun for the electrostatic discharge simulator.
2. Thanks to its special structure, the product can produce a magnetic field containing many high-frequency components.

*** This product is incompatible with IEC standards.**

5. Basic Safety Precautions

5-1. Warning symbols and their meaning



Means a **Warning**.

If such a danger is not avoided, a potential danger which may result in a death or serious



Means a **Caution**.

If such a danger is not avoided, a potential danger which may result in a minor or medium degree of injury will be caused

5-2. Fundamental Safety Precautions



1. This unit cannot be used in an explosive area, fire prohibited area, etc. Use of this unit in such an area is liable to cause combustion or ignition. 【Precautions for human body and environments】
2. A person who has a pacemaker on should not operate this unit and also should not enter the area where it is operating. Non-compliance may lead to malfunctioning of the medical device due to interference. Precautions for human body and operation】
3. Our company and sales agents shall have no responsibility for any accident resulting in injury or death, any breakage or resultant damages due to irresponsible handling. 【Precautions for human body, operation, environments and connection】
4. Never fail to watch equipment while this unit is operating. When leaving this unit, stop running test by turning off power beforehand. Otherwise, a third person or equipment related to the test may be exposed to a danger. 【Precautions for human body, operation and environments】
5. Do not use a damaged connector or cable. Otherwise, you may receive an electric shock or the internal unit of this simulator and equipment connected to it may be damaged. 【Precautions for human body and connection】
6. Do not apply this unit for other use than the intended use of ESD test. 【Precautions for human body, operation and environments】
7. Be sure to ground PE terminal of AC inlet of this unit 【Precautions for human body and connection】

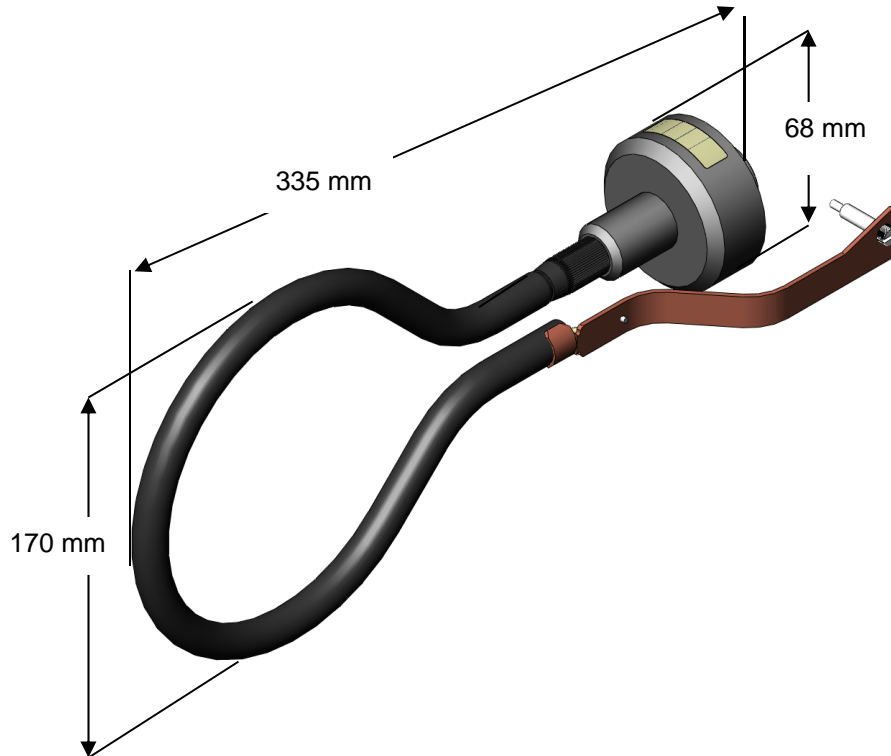
 **CAUTION 注意**

8. Place this unit in a steady place to avoid an accident such as fall. **【Precautions for human body and environments】**
9. Avoid giving a strong shock to this unit. Do not put a heavy item on this unit. Do not block the ventilation. Prevent foreign matter from getting into the unit through the vents. **【Precautions for environments】**
10. If dewing or condensation occurs, thoroughly dry it before operating the unit. **【Precautions for environments】**
11. Avoid using this unit in an extremely humid or dusty place. **【Precautions for environments】**
12. Repair, maintenance and internal adjustment of this unit should be performed by a qualified service engineer.
13. Do not wipe this unit with thinner, alcohol or similar solvent. When the body is dirty, soak a cloth in detergent, squeeze the cloth and wipe the body with it.

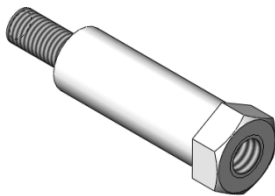
6. Package components

The product package includes the following items. Check that all items are present.

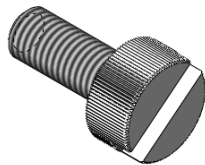
- Magnetic field loop adaptor



- Spacer



- SG screw



- Instruction manual (this book)

7. Specifications

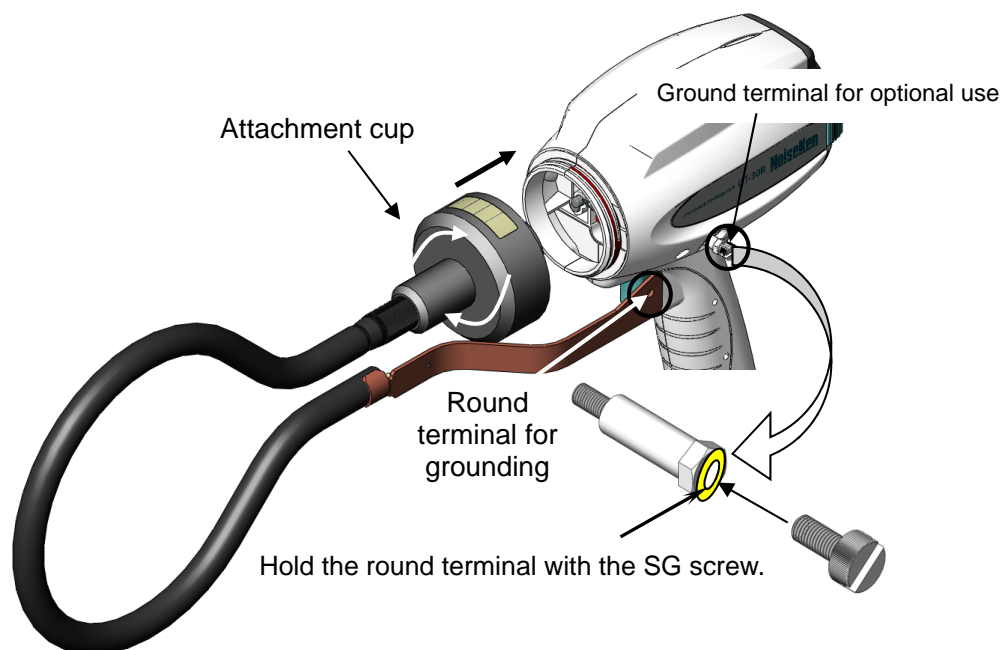
Item	Specifications
Structure	One-turn loop coil for magnetic field generation
Coil loop diameter	155 mm (inner diameter)
External dimensions	170 mm (loop diameter) 335 mm (projection from the discharge gun) 14.7 mm (thickness of the loop section)
Mass	Approx. 380 g
Max. voltage	30 kV
Charge/discharge capacitor	500 pF or less
Discharge resistance	100 Ω or more

Note: **This product is incompatible with IEC standards.**

8. Connection to equipment

1. Remove the discharge cup of GT-30R.
2. Mount the attachment cup of the magnetic field loop adaptor by turning it clockwise.
3. Uncover the ground terminal for optional use on the discharge gun by hand.
4. Use a nut screwdriver, etc. to insert the spacer (7.8 Nm or less).
5. Place the adaptor's round terminal for grounding and secure it by manually tightening the SG screw.

* Excessive tightening may damage the screw.



9. Operation

For the constants of the CR unit for the discharge gun, select the appropriate values from our options.

For reference, the Ford standard sets forth 330 pF and 2 k Ω as CR constants for the discharge gun.

- Set the electrostatic discharge simulator into contact discharge mode. Apply a magnetic field while keeping the loop section a certain distance from the EUT.
- Connect the discharge gun grounding cable to the ground plane.

For details, refer to Ford Motor Company's standard for in-vehicle equipment.

<Reference standard>

Ford Motor Company

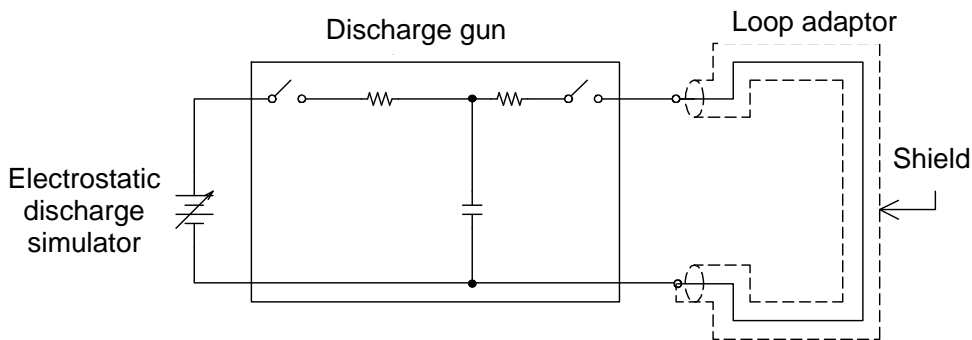
Electronic Component EMC Requirements & Test Procedures

ES-XW7T-1A278-AB

10. Mechanism of magnetic field generation/reference data

10-1.10-1. Mechanism of magnetic field generation

The electric charge on the charge/discharge capacitor is released and passes through the discharge resistor to the loop coil, generating a magnetic field. The loop coil has a coaxial delay line and generates a reflection current to produce a magnetic field containing many high-frequency components.



10-2.10-2. Reference data

The output waveform from the magnetic field loop adaptor 03-00070A is shown below.

A receiving probe (magnetic field loop coil with an electric field shield) (01-00049A) is placed parallel to and 10 cm away from the magnetic field loop adaptor. The voltage at the 50 Ω terminal of the probe is measured.

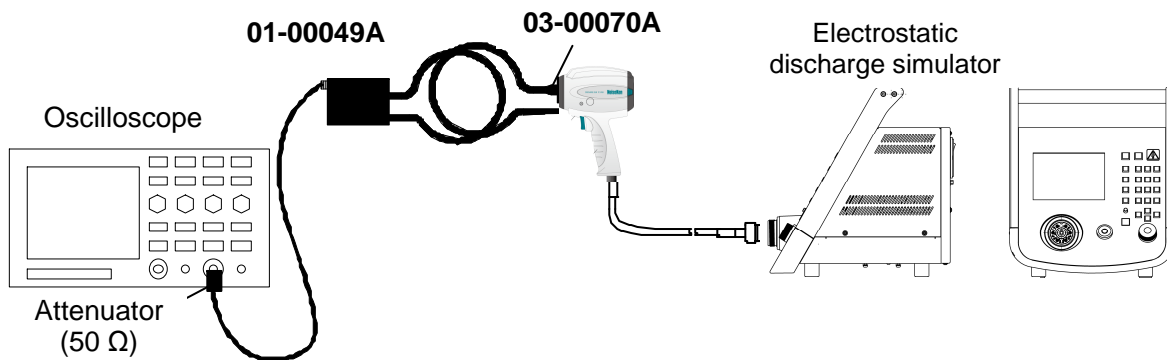


Fig. 1 Connection

Measurement conditions

VOLTAGE SETTING		+10 kV
ATTENUATOR ON THE RECEIVING SIDE		40 dB
DISCHARGE GUN		
CR unit	Discharge resistance	2 kΩ
	Charge/discharge capacitor	330 pF

Note: 01-00049A has a built-in 20 dB attenuator and is also provided with a 20 dB attenuator.

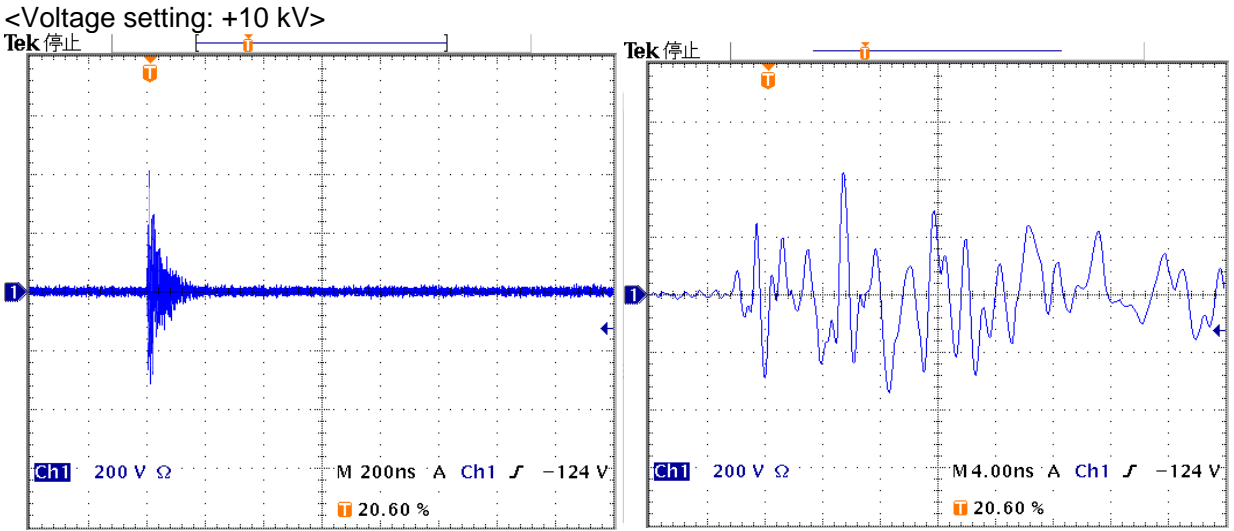
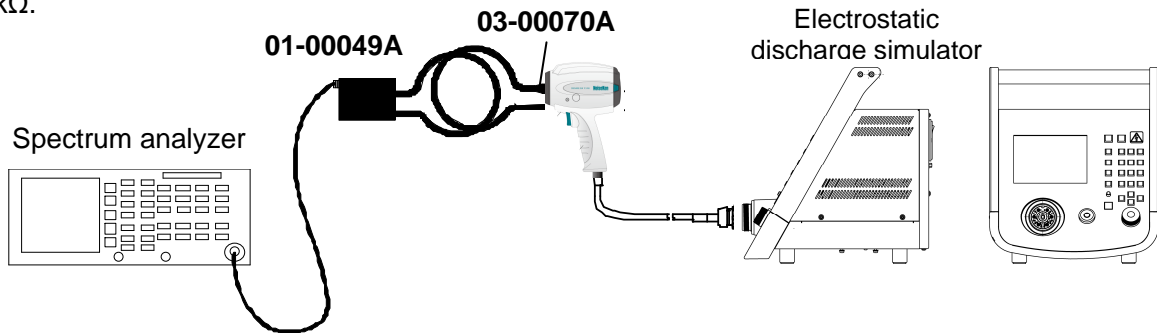


Fig. 2 Reference waveform

<Spectrum chart>

A receiving probe (magnetic field loop coil with an electric field shield) (01-00049A) is placed parallel to and 10 cm away from the magnetic field loop adaptor to measure the spectrum using a spectrum analyzer. The measured spectrum is shown below. The electrostatic discharge simulator is set into contact discharge mode, and the output voltage is +1 kV. The CR unit for the discharge gun is 330 pF - 2 kΩ.



Note: 01-00049A has a built-in 20 dB attenuator.

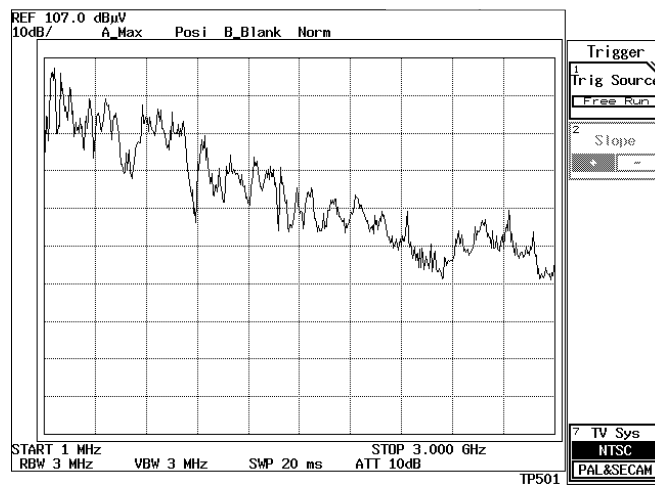


Fig. 3 Spectrum chart (reference)

11. Warranty

Servicing terms

The following terms are applicable to servicing by Noise Laboratory Co., Ltd., (hereafter referred to as the Company) provided to maintain the intended performance of its products.

1. Scope

The following terms shall apply only to products made by the Company.

2. Technical servicing fee

In the event of a failure of a product within the warranty period (see warranty section), the Company will repair a product without charge. After the warranty expires, repairs will be billed at a nominal cost.

3. Ownership of defective parts

Any defective part exchanged under the Company's servicing belongs to it.

4. Limited liability

In the event that damages resulting from servicing by the Company are intentional or caused by negligence, the Company will pay the cost but at the purchase value of the relevant product maximum. But, notwithstanding the foregoing, the Company shall not be responsible for any incidental or consequential damages of any nature, including without limitation thereof loss of would-be profit or compensation demanded from a third party

5. Refusal to offer servicing

The company may not accept a repair order in the following cases:

- More than 5 years have passed since the product discontinued
- More than 8 years have passed after delivery
- Required component for servicing already discontinued and no alternative is available.
- Product changed, repaired or remodeled without obtaining a prior permission from the Company.
- Product severely damaged to the extent it has lost its original form

Limited warranty

Noise Laboratory Co., Ltd. (hereafter referred to as the Company) warrants its products to be free from defects in materials and workmanship under normal use and service for a period of one year from date of delivery. In the event of failure of a product covered by this warranty, the Company will repair the product or may, at its option, replace it in lieu of repair without charge.

Notwithstanding the foregoing, the Company shall not be responsible for any incidental or consequential damages of any nature, including without limitation thereof loss of would-be profit or compensation demanded from a third party. This warranty is valid only in Japan.

1. Scope

This warranty shall only apply to products made by the Company.

2. Period

One year from date of delivery. The warranty may be valid in 6 months after servicing if the same failure on the same component has repeated.

3. Exclusions

The followings are exclusions from this warranty:

Consumable parts (including HV relay)

Failure caused by misuse, neglect, accident or abnormal conditions of operation

Failure caused by remodeling on the user side without prior permission from the Company

Failure caused by servicing by unauthorized personnel by the Company

Failure due to force majeure including but not limited to, acts of God, fire, war, riot, rebellion and others

Failure due to shock or drop in or after transit

Failure due to operation in environment being out of ambient specifications.

A unit shipped to overseas.

12. Maintenance

1. When repair, maintenance or internal adjustment of the unit is required, a qualified service engineer takes charge of such work.
2. Maintenance on the user side is restricted to the outside cleaning and functional check of the unit.
3. When checking or replacing the fuse, turn off the switch of the unit and disconnect the plug socket beforehand.
4. When cleaning the unit, turn off the switch of this unit and the connected equipment and disconnect the plug socket beforehand.
5. Avoid using chemicals for cleaning. Otherwise, the coating of the unit may peel off or the sight glass may be broken.
6. Do not open the cover of this unit.

13. Noise Laboratory Support Network

- If a symptom that seems a trouble is found, check the symptom against the following check sheet and inform the model name and serial Number of the product together with the symptom to Noise Laboratory or our nearest sales agent in your area.
- When the product is returned to Noise Laboratory, write the state of the trouble, contents of your request, model name and serial number in a repair order, pack the product and repair order sheet in the former package or equivalent suitable for transit, and send them back.

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