No. 338-96-012

DIGITAL STROBOSCOPE

Model DT-311J

INSTRUCTION MANUAL

NIDEC-SHIMPO CORPORATION
1 Terada Kohtari ,Nagaokakyo-City, Kyoto,617-0833 Japan
Phone : 075-958-3617 Fax : 075-958-3699

NOTE IN HANDLING

(1) Do not apply strong shock or rapid temperature change to unit.
Especiary, do not leave it where temperature will rise for instance, in an automobile explosed direct sunlight, near a stove, etc.

(2) This instrument is protected against water drips, but do not pour shower also do not use in water.
Do not open and disassemble the unit.

(3) Do not use Stroboscope in an exprosion atmosphere because it generates high voltage pulses.

(4) Do not see flashes direct to avoide eye damages.

(5) Before operation make sure of no damage on the provided cord.
If the cord is damaged, replace it with new one.

(6) After metal connector of the cord has been fitted into body and fixed with screw, the power shall be plug in the receptacle, provided with grounding connection.
Fix the metal connector firmly, in order to protect against water drips.

2. CONFIGRATION

(1) Front panel

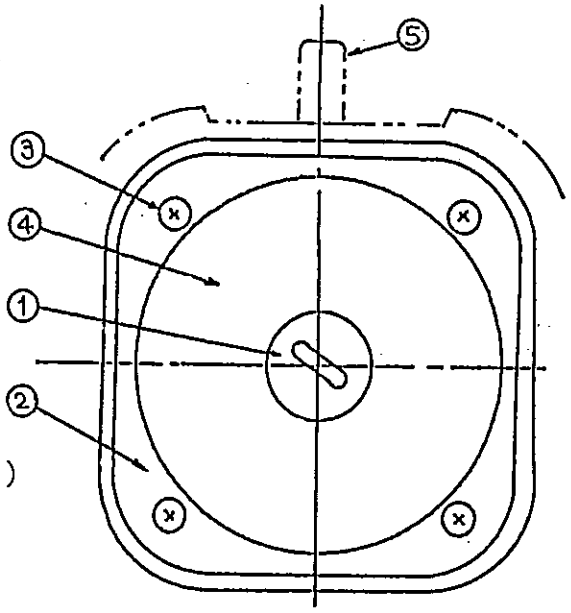
① Xenon lamp

② Protective window

③ Protective window fixing screws

④ Reflector

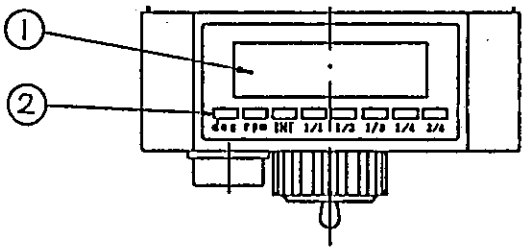
⑤ Handle



(2) Rear (Display & Operation panel)

① Delayed angle or rpm display

② Mode indicators



③ Power switch

④ Connector

⑤ Mode select switch

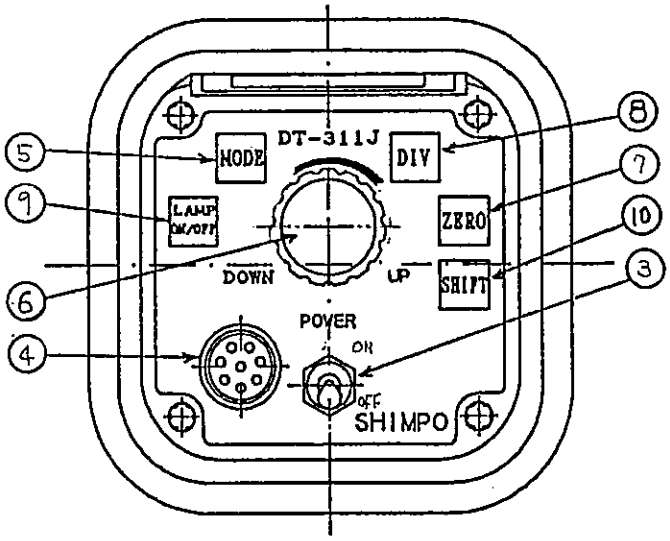
⑥ Phase shift and flash rate setting knob

⑦ Zero setting switch

⑧ Divide ratio select switch

⑨ Lamp on/off switch

⑩ Shift switch



1. GENERAL

DT-311J DIGITAL STROBOSCOPE is designed to adjust timing of a weaving machine,and emit flashes synchronously with external signal and internal signal. For external signal, flashes can be delayed continuously from 0 up to 359 degrees at positive edge of external signal by adjusting knob and this delayed angle is displayed on LED.
Zero position can be set to any optional synchronous position.
Revolution per minutes can be displayed.

2. SPECIFICATIONS

(1)	Flashing range	200 - 1,500 rpm
(2)	Phase shift	0 - 359°
(3)	Internal signal range	200 up to 1,500 rpm
(4)	Delay setter	ROTARY ENCODER
(5)	Display	4digit 10mm high Red LED
(6)	Divide ratio	1/1, 1/2, 1/3, 1/4, 2/4 with shift
(7)	Input signal	High level 5 to 24v Pulse width 2 msec min. Lo level 0 to 1v Pulse width 2 msec min. 1p/r Output impedance less than 10 kΩ
(8)	Input impedance	47kΩ
(9)	Display mode	Phase shift (degree) , Tachometer
(10)	Accuracy	±1digit
(11)	Flashtube	Xenon lamp Max 10W ,at 1,500rpm Life 1,200hour(at 1,500rpm)
(12)	Operating temperature	0 to 40 ℃
(13)	Power requirement	110VAC±10% 50／60Hz
(14)	Power consumption	20VA MAX
(15)	Dimensions	149W×174H×214D mm
(16)	Weight	1.9Kg
(17)	Accessories included	6m cable with connector 1 PC. Japanese and English instruction manual 1 pc. each.

4. CABLE CONNECTION

Connect power and signal with provided cable as follow.

AC plug (with 3-prong plug)..... AC110V(50/60Hz)
Red clip ..... signal(positive)
Black clip 0V

5. MODE SELECTION

Press mode select switch (MODE) to select internal or external signal mode.

6. INTERNAL SIGNAL OPERATION

When internal signal mode is selected ("INT"LED lights) ,flash rate is adjusted by setting knob.

7. EXTERNAL SIGNAL OPERATION

When external signal mode is selected ("deg"or"rpm"LED lights) ,flashing rate is synchronized with external signal.

deg ..... Delayed Angle ..... degree
rpm ..... Number of revolution per 1 minute ..... rpm

(1) DIVIDE RATIO SETTING (See 8.FLASH INTERVAL for detail)

Select 1/1 to provide a flash per every rotation.
Select 1/2 to provide a flash per every 2 rotations.
Select 1/3 to provide a flash per every 3 rotations.
Select 1/4 to provide a flash per every 4 rotations.
Select 2/4 to provide two continuously flashes per 4 rotations.

(2) PHASE SHIFT

Turning the Phase shift setting knob in clockwise or counterclockwise, flashing phase will be shifted.

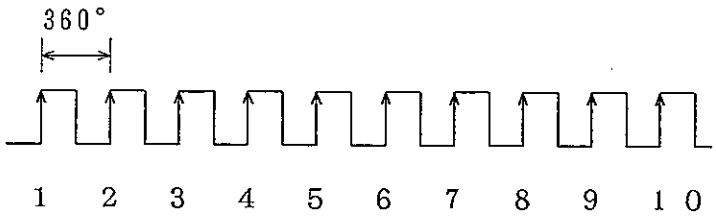
Pressing zero set button (ZERO) make display zero at any angle.

8. FLASH INTERVAL

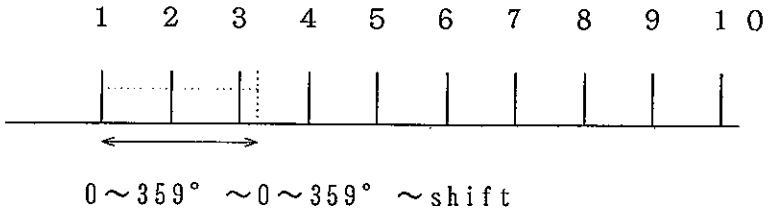
(1) FLASH MODE

Flashing behavior at each mode.

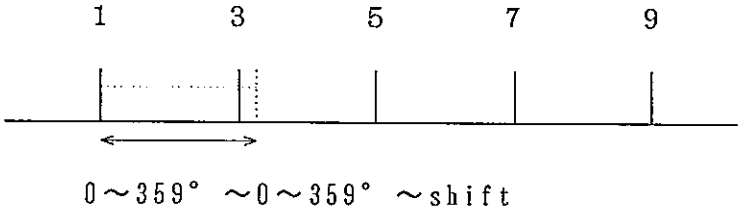
Input pulse



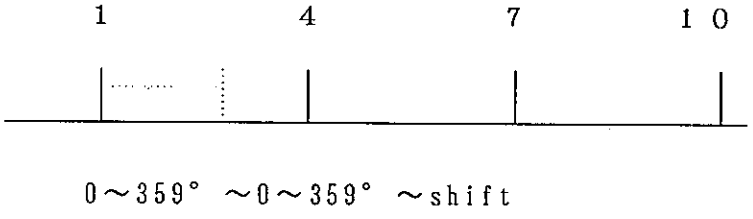
MODE 1/1



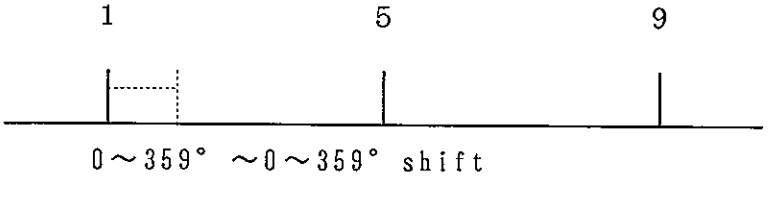
MODE 1/2



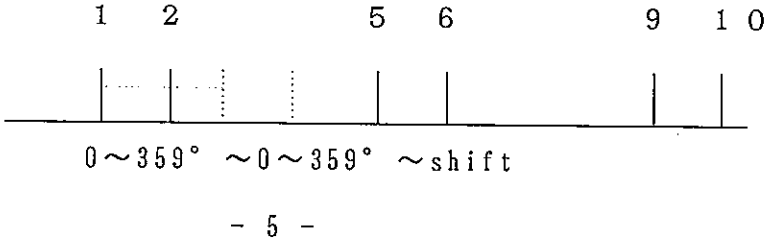
MODE 1/3



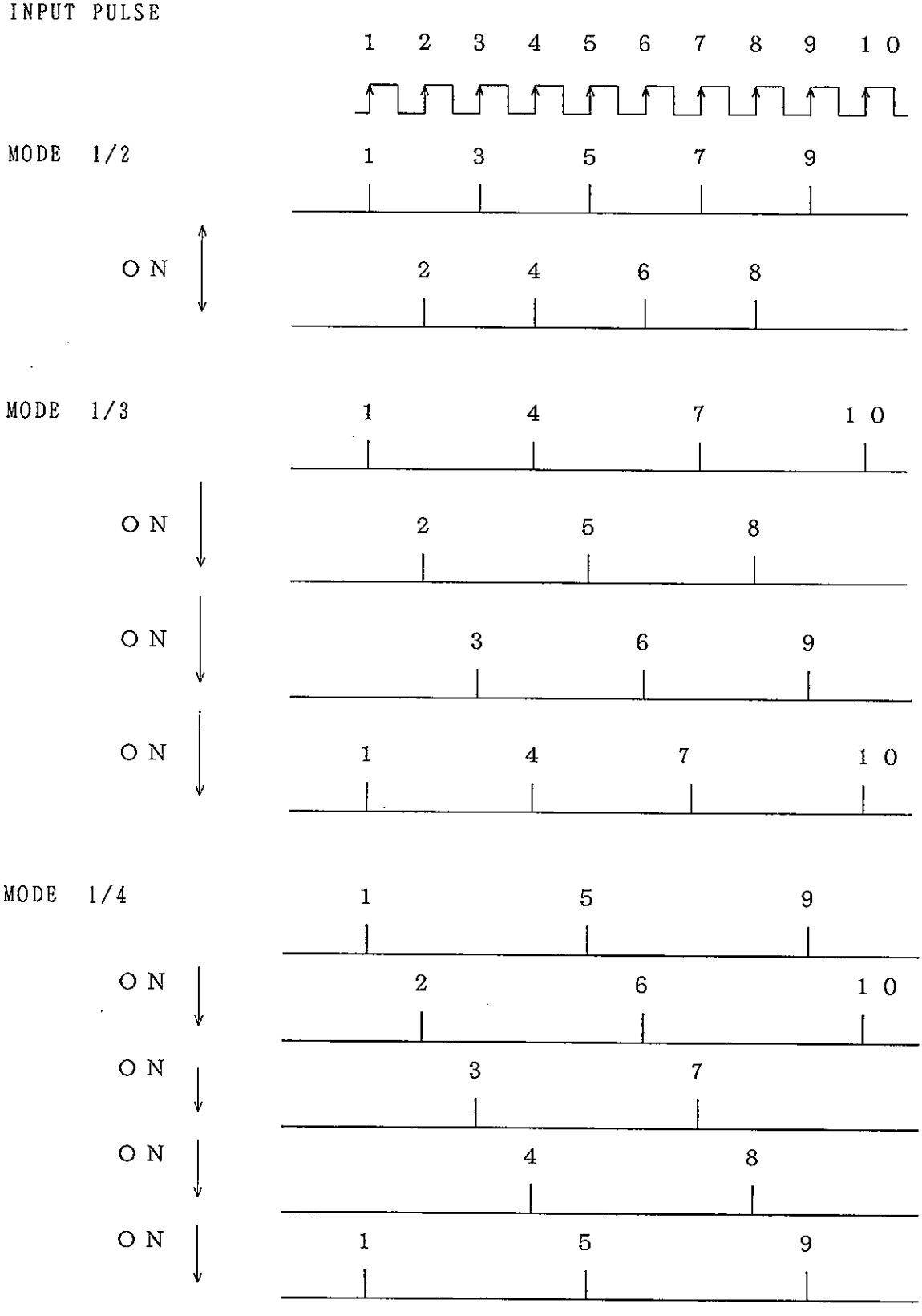
MODE 1/4

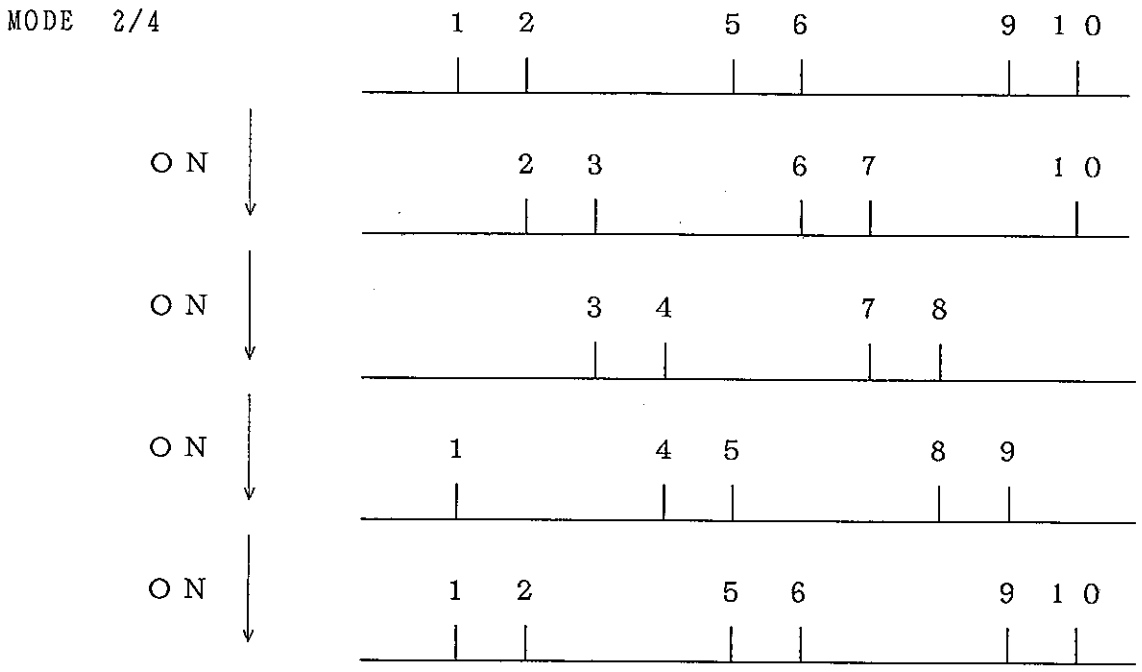


MODE 2/4



Every time depressing shift button(SHIFT),flashes slide to next pulse.





9. LAMP ON/OFF SWITCH

LAMP ON/OFF switch can stop flashing.
Turn lamp off while no operation to save lamp life.

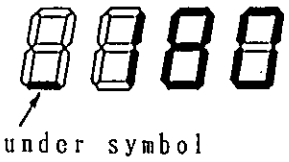
Flashing will be turned off in 30 minute after the power on, and the display will be flashing rapidly. To continue operation,press LAMP ON/OFF switch, flashing will continue in next 30 minute.

10. ALARMS

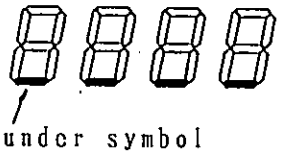
LOW SPEED INDICATOR(External signal operation only)

Below 180rpm under symbol appears.

At degree mode



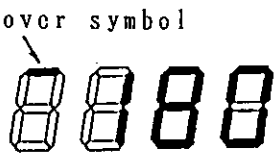
At rpm mode



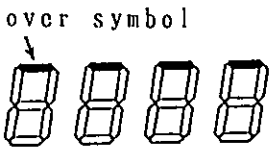
HIGH SPEED INDICATOR(External signal operation only)

Over 1,650rpm over symbol appears.

At degree mode



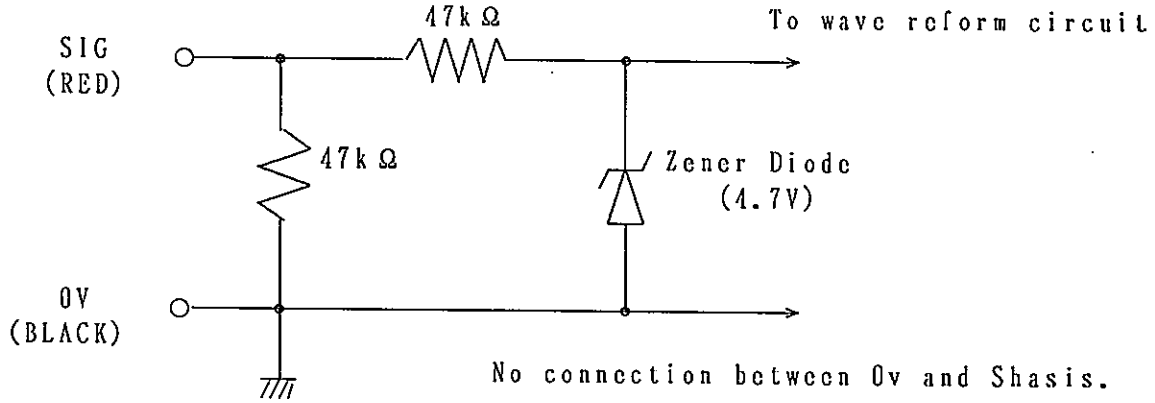
At rpm mode



When power is low, flashes stop as "LLLL" is displayed.

During alarm symbol is shown flash can not be emitted.

11. INPUT CIRCUITRY



12. LAMP REPLACEMENT

Life of the lamp is about 1,200 hours when flashes per rotation of 1,500 rpm. Although rotation speed is displayed no flash is emitted, flash is intermittently emitted, this indicates the lamp must be replaced.
Be sure to replace the specified lamp. (TFU-102B-A32)

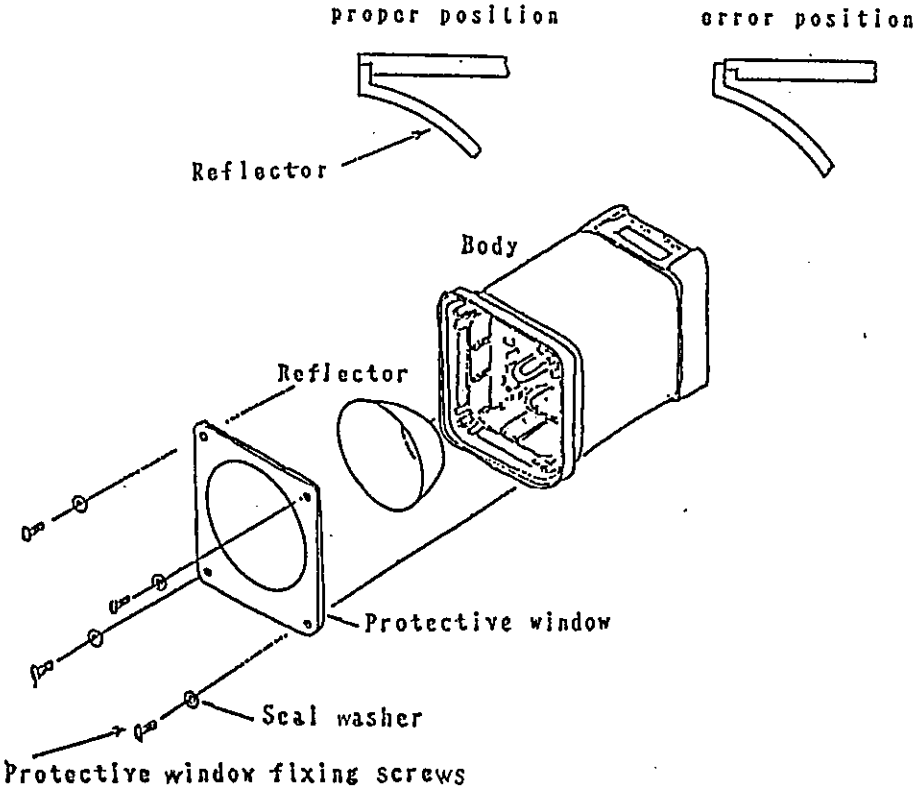
(1) After unplugging line cord from power line, in about 20 to 30 minute, be sure stroboscope is cool before replacement procedure for this.

(2) Remove lamp protecting window by loosing 4 screws on the window. Insert a fine screw driver into a hole of the protective window and pull out.

(3) Remove reflector and pull out lamp base.
Do not pull out lamp glass direct.

(4) Press lamp base to socket in proper direction to install new lamp.

(5) Fix reflector on former position and fix protective window with 4 screws and seal-washers.
Be sure to mount the reflector in the center in order to keep performance against water drips.



13. INITIAL RESET

If pressing LAMP ON/OFF button and ZERO button,and Power switch will turned on,the memory will be cleared,and the factory adjustment condition may be resumed. Perform this procedure when mulfunction occured. (e.g.cause of exessive noise.)