

Motorized Lens Switcher User's Manual

I . Summary

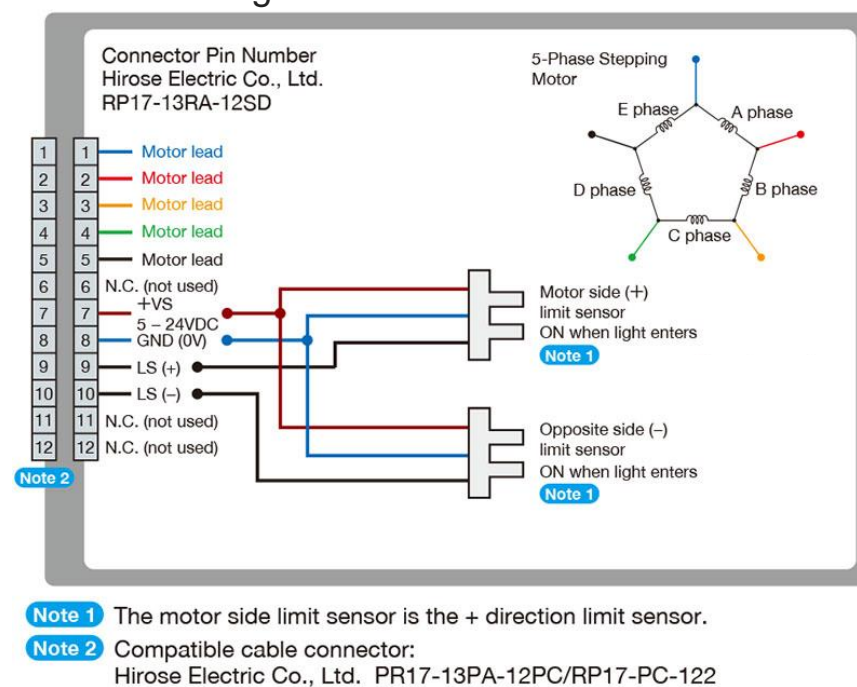
- Motorized lens switcher is designed to hold 2 objective lenses, to provide precise movements and feasible speed.
 - Using our proprietary extended contact bearing design to improve straightness.
 - When used with the GIP-101 series controller, objectives can be switched quickly and accurately either manually, using the push buttons on the controller, or automatically, using the computer interface.
- ※ GIP-101 series controller is not included, so please purchase separately.

■Specifications

Part Number	LACS-2H-A
Number of switched lens	2 holes (1hole: datum hole, 1holes: one-directional center core adjustment)
Travel	35mm (Switching distance)
Motor	5-phase stepping motor (0.75A/phase)
Guide Method	Extended contact bearing
Feeding Mechanism	Ball screw $\phi 4$ (1mm lead)
Travel per 1 pulse	2 μ m (FULL)/0.1 μ m (20 divided)
Switching reproducibility	$\leq \pm 3\mu$ m
Maximum travel speed (switch)	35mm/sec (A \Rightarrow B, about 1.0sec)
Objective lens size	$\phi 26 \times 0.706$ ※
Load capacity	2.0 kg
Weight	0.7 kg

※ RMS ($\phi 20.32 \times 0.706$), the conversion adapter is attached as an option.

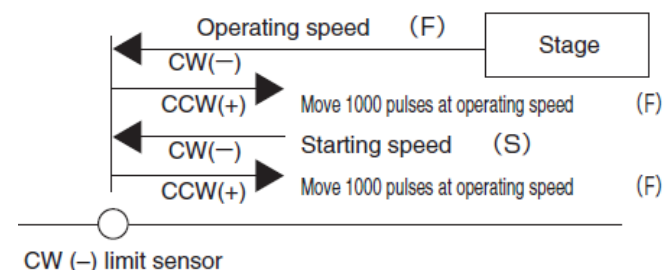
■Connection diagram



■Detecting the Mechanical Origin

MINI system

When the command is given to detect the mechanical origin, the stage begins moving clockwise (i.e., in the - direction) at the operating speed (F) specified in the memory switches, stopping when the clockwise (-) limit sensor is detected. It then moves counter-clockwise (i.e., in the + direction) at the operating speed (F) for 1000 pulses. After stopping, it begins moving clockwise (i.e., in the - direction) once more at the starting speed (S), stopping when the clockwise (-) limit sensor is reached. It then moves counter-clockwise (i.e., in the + direction) at the operating speed (F) for 1000 pulses. This position is taken as the mechanical origin.



II . Caution

- 1) Regarding the center core adjustment of the objective lens, note that it is not carried out precisely.
- 2) The mounting screw size of the objective lens is standardized as $\phi 26 \times 0.706$. Inquire separately when using other objective lens.
- 3) Select mounting screws referring to the external view. Fixing with screws longer than the tap length may damage the internal structure.
- 4) Be careful not to put high power and strong hit on the main part during maintenance. This may be a cause of malfunction.
- 5) This Lens Switcher was applied by stepping motor which drive current is 0.75A/phase. Setting over the above rate value is cause of motor heating and malfunction.
- 6) At the main part, there is a knob attached to screw which can be manually adjusted. Note that the controller's switch power must be turned off before make a manual adjustment.

⚠ Do not touch during operation.

⚠ The case must connect on a ground during operation.

⚠ Make sure that controller was turned off before connecting connector to controller. Connecting during power on may be a cause of malfunction.

III. Usage and storage environment

Use the stage in the following environment.

Temperature: 5 to 40°C

Humidity: 10 to 80% (non condensing)

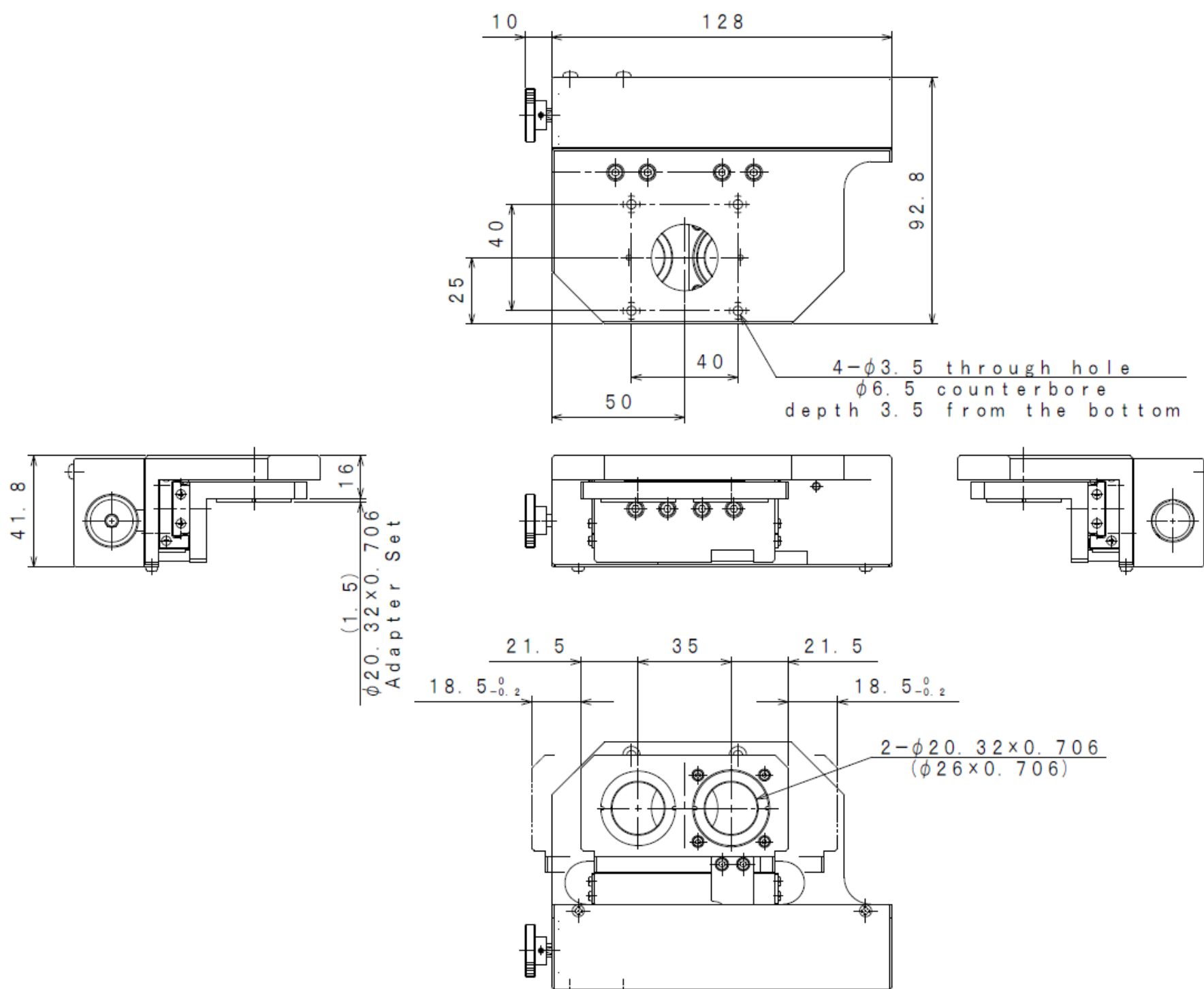
For long period storage, wrap actuator main part up by using anti-rust paper or store inside vinyl bag with desiccant.

Storage site

Temperature: 0 to 40°C

Humidity: 10 to 85% (non condensing)

IV. Outline drawing



V. Warranty

If any abnormality occurs during the warranty period, please contact your dealer or our company. Please submit this document at that time.

1. Warranty period 1 year after purchase
2. The warranty covers only when used in Japan.
3. In the case of trouble which seems to be no problem on the use side, such as indication abnormality in the warranty period, we will respond with free repair or a no-charge substitute. However, the shipping fee will be borne by the customer.
4. Please choose an appropriate place for storage and keep it.
5. Even within the warranty period, please be aware that it will be repaid for a fee in the following cases.
 - Case1. In case the repair, remodeling and etc. is not done by our company.
 - Case2. Malfunction or damage caused by any reason except of machine itself.
 - Case3. Malfunction or damage caused by incorrect use or incorrect storage by customer except as described in this specification.
 - Case4. In case the damage caused by a natural disaster such as a fire disaster, earthquake, flood disaster, or lightning damage that unconcerned to our company.
6. Breakdown due to malfunction, remodeling etc. due to handling after the warranty period and during use will be charged.